2013 Report on Ohio Mineral Industries: An Annual Summary of the State's Economic Geology

with
Directories of Reporting Coal and Industrial Mineral Operators

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A Brief Look at the Ceramic Floor and Wall Tile Industry in Ohio

by Mark E. Wolfe

INTRODUCTION

Ceramic floor and wall tiles are a natural, utilitarian product that can create an architecturally dynamic effect. Glazed brick tiles in geometric patterns were used as early as the thirteenth century B.C.E. in Iran. In Middle East countries during the eleventh century, ceramic tiles were cut into small pieces and used to construct elaborate mosaics. And painted tiles were very popular in Europe beginning in the fourteenth century. The modern ceramic floor and wall tile industry began when long-time pottery owner and entrepreneur Herbert Minton formed a partnership with Michael Hollins in 1845 and opened a factory in Stoke-on-Trent, Staffordshire, England. Minton, Hollins, & Co. was at the forefront of the growing encaustic tile market that the English dominated during the nineteenth century. Encaustic (burnt in) tile is a complex form of terra cotta, where different colored clays are fired together after inlaying contrasting colored clays. Minton tiles were in great demand, having been used extensively in the U.S. Capitol beginning in 1855 (Allen and United States, 2001), as well as other significant nineteenth century public structures.

Enterprising businessmen in Zanesville, Ohio, began experimenting with local clay to produce floor tiles as early as 1875 (Orton, 1884). F. H. Hall used a fireclay of uncertain origin to produce some of the first ceramic tiles in the United States and patented the process. Benedict Fischer of New York invested in the new enterprise and convinced Gilbert Elliott to emigrate from England in 1876 to oversee tile production (Wires and others, 1972). The new Ohio-based company was named Fischer and Lansing and is generally credited with creating the American ceramic floor and wall tile industry (Karlson, 1998).

AMERICAN ENCAUSTIC TILING COMPANY (1878–1935)

American Encaustic Tiling Company (AET) of Zanesville, Ohio, was incorporated in 1878 from the former company, Fischer and Lansing, also of Zanesville. In 1877, Fischer and Lansing had installed the ceramic tile floor at the Muskingum County Courthouse located in Zanesville (fig. 1). The courthouse floors are the oldest surviving American-made tile floors in the nation (Sims, 2003). Stockholders of AET were chiefly from New York City; AET had a large showroom in New York and nearly all the finished products were sold in the city. A new factory with six kilns was completed in Zanesville in 1878. The highest-quality tiles manufactured by AET were considered as good as tiles produced by the English and French. The company used clays mined in Muskingum County mixed with metallic oxides for color (Stout and others, 1923). The most complex tiles had six colors, with a seventh kind of clay through the center of the tile to keep the complex mixture from warping. The clay presses that created the tiles were ingeniously designed machinery, the invention of George A. Stansberry, a Superintendent of AET and a mechanical engineer who had previously been commissioner of the Vienna Exposition. Finished tiles were dried for six weeks after pressing before being fired.

FIGURE 1. View of the ceramic tile floor in the rotunda of the Muskingum County Courthouse in Zanesville, Ohio. The courthouse floor was installed in 1877 by the Zanesville-based company, Fisher and Lansing, and is the oldest surviving American-made ceramic tile floor in the United States. The photo was taken in 2014; the tile floor displays remarkable longevity for a public building with 137 years of continual foot traffic.

The large AET tile installation at the New York State Capitol building in the late 1870s helped establish the company's reputation and increased the popularity of American-made floor and wall tiles. The Columbian Exposition at Chicago in 1893 had a large display of floor and wall tiles from around the world and highlighted the tremendous opportunities in the U.S. market. American Encaustic Tiling soon became the largest tile manufacturer in the United States, employing more than 1,000 people by the late 1920s. However, the Great Depression created severe financial difficulties for AET; one of the companies' last large ceramic floor tile installations can be seen in the Noble County Courthouse in Caldwell, Ohio (Anonymous, 1934; fig. 2). The AET Zanesville plant was closed in 1935.

MOSAIC TILE COMPANY (1894–1967)

Karl Langenbeck, Herman Mueller, and William Shinnick, Jr., formed the Mosaic Tile Company in 1894 in Zanesville. Mueller and Langenbeck had been associated with AET during the 1880s and early 1890s. Langenbeck was the first chemist specializing in ceramics in the United States (Langenbeck, 1895). Mueller was a skilled sculptor and engineer who received patents for several mosaic tile techniques, including the pseudo-mosaic-encaustic designs used to create the Columbus Frieze on the front of St. Nicholas Catholic Church in Zanesville in 1898 (fig. 3).

FIGURE 2. Interior view from the third floor of the Noble County Courthouse in Caldwell, Ohio, showing the extensive use of ceramic floor and wall tile supplied by American Encaustic Tiling Company and Mosaic Tile Company, both of Zanesville, Ohio. The building was dedicated in 1934 and includes brick from the nearby Ava Brick Company, sandstone building stone from Briar Hill Stone Company in Glenmont, Ohio, and gypsum from American Gypsum Company near Port Clinton, Ohio.

FIGURE 3. View of the encaustic mosaic tile installation on the west façade of the St. Nicholas Catholic Church in Zanesville, Ohio. The depiction of Columbus arriving in the Americas was designed and installed by the Mosaic Tile Company of Zanesville in 1898.

The first Mosaic Tile factory was constructed on Pershing Road in Zanesville in 1894 and it employed 30 men (Brick and Clay Worker, 1897). The initial production of art tile was not a financial success, so Mueller and Langenbeck decided to start production of semi-vitreous floor tile and by 1901, they had created a thriving business. In 1903, Langenbeck and Mueller resigned from Mosaic, likely due to artistic (versus commercial) differences with the investors (Wires and others, 1972). Mueller formed the successful Mueller Mosaic Company in Trenton, New Jersey, in 1908. Langenbeck continued his contributions to the advancement of chemistry in ceramics, primarily through his work with the American Ceramic Society, in which he served as president from 1900 through 1901 (Langenbeck, 1922).

Mosaic continued to grow under the management of William Shinnick. Well-known art director Harry Rhead, who had produced many successful designs at nearby Roseville Pottery, was hired by Mosaic in 1918. Rhead developed the "faience tile" product line in 1920. *Faience* is a pottery glaze suitable for painted decoration. In 1922, Mosaic installed its colored wall tile in the Henry Ford Hospital in Detroit, three years before any competitors had developed a similar product, and would continue its dominance of the hospital market throughout the 1920s. Mosaic would have its greatest volume of production from 1925 through 1927, when 1,250 people were employed at its Zanesville operation.

In 1897, the Library of Congress relocated from the U.S. Capitol to a new building across the street in Washington, D.C. In 1900, 16,000 square feet of floor tile was bought from Mosaic and installed in the renovated Capitol building (Allen and United States, 2001). Some other notable installations of Mosaic tile were gauges and tiling for the locks, stations, and control houses on the Panama Canal (Bennett, 1915), and the lining of the Holland Tunnel in New York City. Mosaic survived the Great Depression by adapting to the changing market and hiring experienced artists in the design department. Faience tile was discontinued in 1959 and Mosaic closed in 1967.

GEOLOGY OF MUSKINGUM COUNTY CLAY DEPOSITS

Mosaic used the Pennsylvanian-age Tionesta clay of the Pottsville Group for the body of the buff, cream, and granite colored tiles. The clay was mined by stripping at the W. L. Bunting mine, one mile south of Drake in Falls Township, Muskingum County, and it was delivered to the plant by the Wheeling and Lake Erie Railroad (Stout, 1918). Mosaic is also reported to have used the Tionesta clay mined from the King mine at Ellis in Muskingum Township and may have mixed it with 33 percent Lower Kittanning clay (Allegheny Group) from the Ayers mine located near the plant (fig. 4). Clays used by AET were also mined in Muskingum County (fig. 5).

The Pottsville Group is in the lower portion of the Pennsylvanian in Ohio (fig. 6). In Muskingum County, the Mississippian/Pennsylvanian boundary is unconformable, with erosion removing significant portions of the stratigraphic succession. In discontinuous areas of central and southern Muskingum County, Pottsville Group rocks overlie the Mississippian-age Maxville Limestone, which represents a marine transgression. Thick sequences of fluvial sandstones containing interbedded carbonaceous shales and thin coal seams with associated underclays are common in the Lower Pottsville. The Tionesta clay probably represents a paleosol in which coal swamp plants were rooted, or the Tionesta may have resulted from deposition in nearshore, brackish lagoons that were exposed to a fluctuating sea-level environment.

The clay geochemistry of the Tionesta in Muskingum County was compared with clays from the Bovey and Wareham Basins of England that were used in the English tile industry (table 1). The Tionesta is generally higher in silica dioxide (SiO_2), iron oxide (Fe_2O_3), and titanium trioxide (TiO_3)

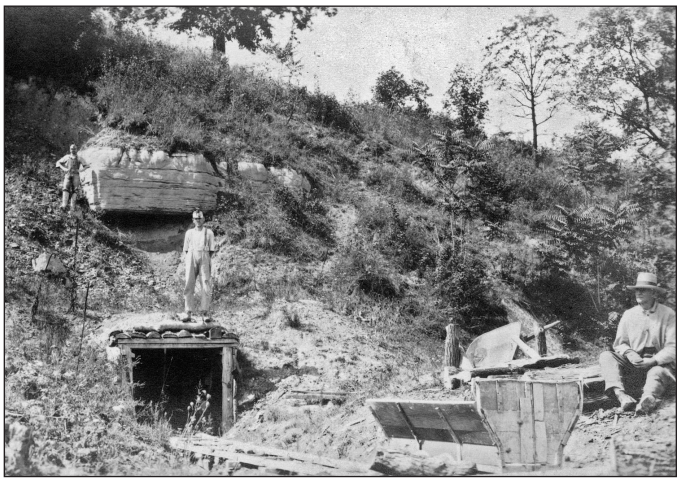


FIGURE 4. Carl Crabtree mine located on Blunt Run north of Zanesville in Muskingum County, Ohio. The Pennsylvanian-age Tionesta clay was being mined. Notice the outcropping Putnam Hill limestone approximately 15 feet above the mine entrance. Photo *circa* 1920.

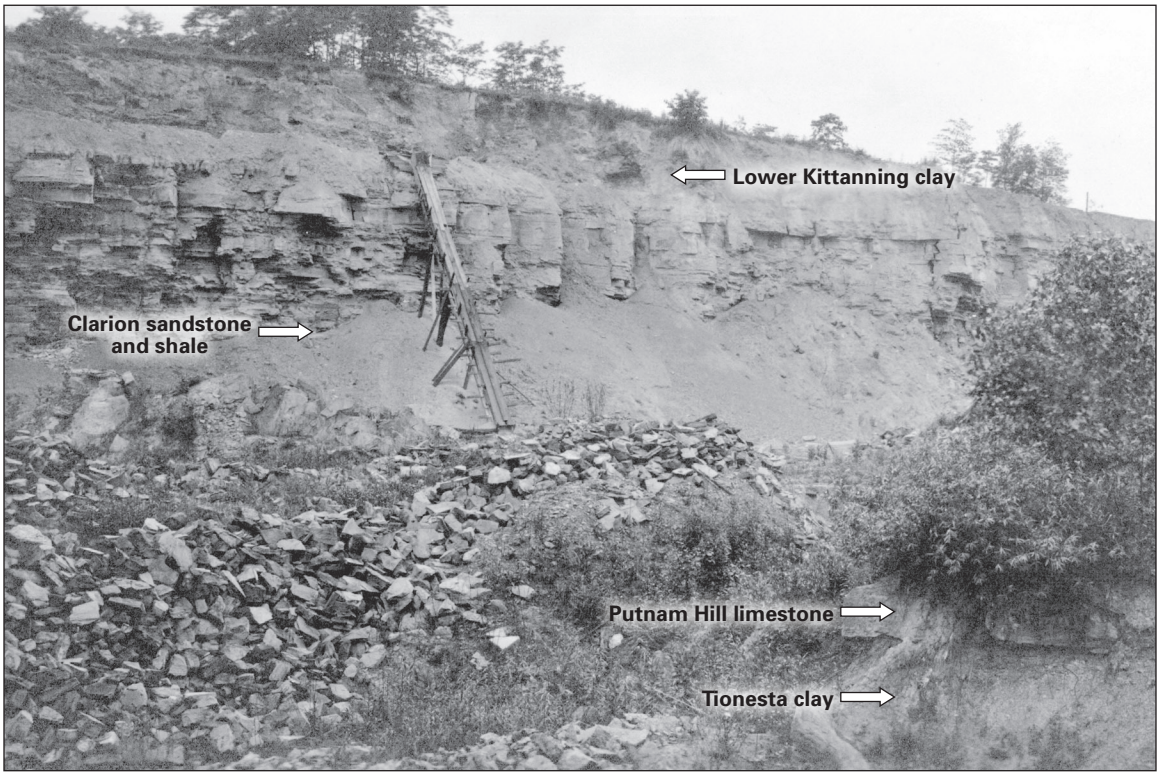
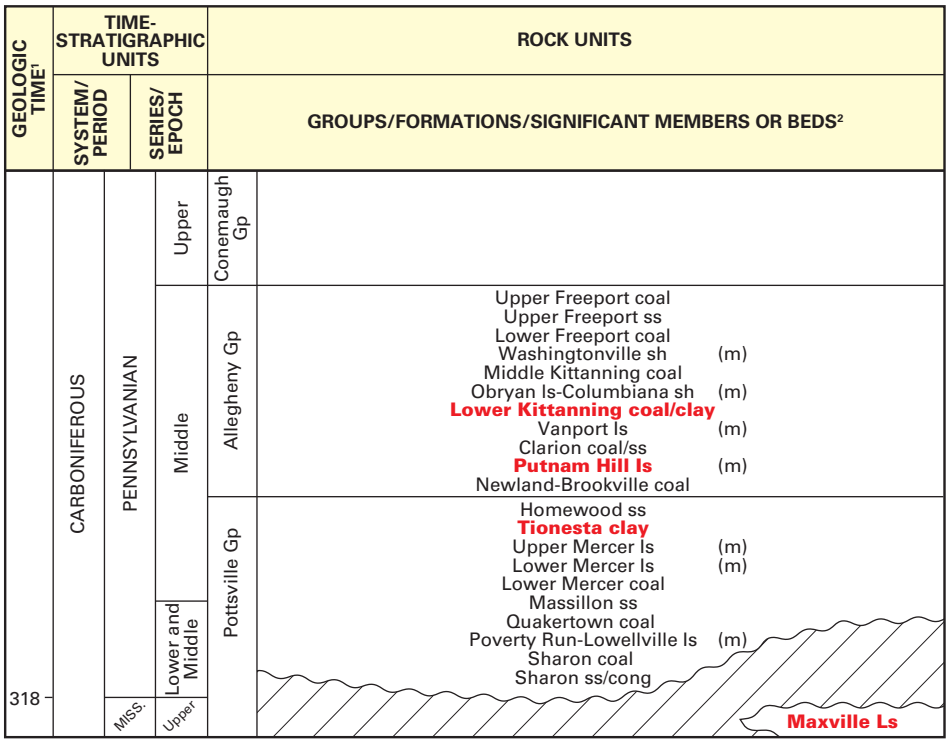


FIGURE 5. Quarry that supplied clay and shale to manufacture ceramic products in Zanesville, Ohio. The stratigraphy of the exposure (from the top of the quarry) includes the Pennsylvanian-age Lower Kittanning clay (Allegheny Group), Clarion sandstone and shale (Allegheny Group), Putnam Hill limestone (Allegheny Group, foreground), and the underlying Tionesta clay (Pottsville Group). Photo *circa* 1917.



[1]Million years before present.
[2](m) indicates a marine zone.

FIGURE 6. Abbreviated stratigraphic column of Pennsylvanian-age rocks in Ohio, including those used to produce ceramic floor and wall tiles (in red). Modified from Ohio Division of Geological Survey (1990).

TABLE 1. ***Comparison of geochemistry between Tionesta clay of Ohio and ball clays of England[1]***

Chemical analysis	Tionesta clay (Ohio), %	Bovey Basin (England), %	Wareham/Dorset (England), %
SiO_2	57	55	51
Al_2O_3	26	29	33
Fe_2O_3	2	1	2
TiO_3	1.5	1.2	1.2
CaO	0.4	<0.2	0.3
MgO	0.9	<0.3	0.4
K_2O/NaO	2.3	2.6	0.7
C	0.2	1.2	0.3
Loss on ignition	8.9	10.6	9.2

[1]Modified from Stout and others (1923) and Bristow and others (2002).

and is generally not as plastic as the English clays, but it has good molding properties that are important to the production of tiles. The English clays have higher aluminum oxide (Al_2O_3), a high plasticity ("ball clay"), and green strength (Bristow and others, 2002). The lower Fe-Ti content of English clays allows them to produce a white body when firing; the Tionesta generally produces a cream to light brown colored body. Both clays have low carbon content that result in fast firing, an important aspect in modern tile production. The English ball clays have a complex geochemistry and often are mixed with other clays to achieve the proper molding and firing characteristics (Bristow and others, 2002). Adjusting firing temperatures within the kiln, sometimes by trial and error, is also important to producing high-quality tile. An early evaluation of the use of domestic clays to replace imported clays can be found in Langenbeck (1924).

ADDITIONAL HISTORIC OHIO CERAMIC TILE COMPANIES

The success of AET and Mosaic encouraged the creation of other ceramic tile manufacturers in Ohio. An early Zanesville venture, Ohio Encaustic Tile Company, was in existence for only three years (1883–1886). Another early tile company, Zanesville Majolica Company, also had limited commercial success (1882–1884). The J. B. Owens Floor & Wall Tile Company (Zanesville) was a successor company to Owens Pottery (1896–1907) and manufactured

ceramic tile from 1907 through 1929. Additional companies associated with Owens include the Zanesville Tile Company and the Empire Floor and Wall Tile Company. The Standard Tile Company (South Zanesville) produced solid color wall tiles from 1923 to 1943. The Ohio Tile Company (Hamilton Tile Works) of Hamilton produced tile from 1883 into the 1920s. The Burnt Tile & Porcelain Company of Columbus produced mosaic floor tile from 1914 to 1920 but converted to producing electrical porcelain in later years. The Strobel Tile Company of Cincinnati manufactured faience tile for a few years beginning in 1906. The Unitile Company of Uhrichsville made a unique art tile from 1917 to 1927. Figures, stories, and other complex designs could be produced on sets of tiles by inlaying various color clays.

THE TWENTY-FIRST CENTURY OHIO CERAMIC FLOOR AND WALL TILE INDUSTRY

According to Ceramic Tile and Stone Consultants, sales of ceramic tile increased 6.2 percent in the United States during 2012 to a value of $2.3 billion wholesale. Imports, primarily from Mexico, Italy, and China, constituted $1.4 billion of the total. In the United States, Texas produced the most ceramic tiles (35 percent), followed by Tennessee (9 percent). Average manufacturing cost was $1.06 per square foot ($ft^2$). The use of ceramic tile in the United States is 7.4 ft^2 per capita compared to greater than 35 ft^2 per capita in Spain and Brazil, indicating a potential for further growth in the domestic market (Ceramic Tile and Stone Consultants, 2014).

Ohio companies produced a variety of ceramic floor and wall tiles for homeowners and commercial users in 2013 (see table 2; does not include small producers of hand-made decorative tile). The majority of the raw material used to manufacture tile in Ohio is Pennsylvanian-age shale and clay mined throughout the state. The mines can be single-commodity, captive-use type operations, but many sites can economically extract multiple commodities, such as coal and limestone, along with the clay and shale. The close association of various lithologies is due to the cyclic nature of the Pennsylvanian-age sedimentation in Ohio, with interbedded marine and nonmarine rock sequences. The marine transgressions and regressions are likely related to widespread glaciation at that time which created changes in sea-level.

Modern tile manufacturing is a highly automated, complex operation that relies on strict quality control to meet rigorous customer specifications. The general process for an Ohio tile manufacturer would begin with the clay and shale being delivered to the plant from a nearby surface mine (fig. 7). The clay and shale, often along with approximately 5 percent recycled tiles, are ground and pass across sieves to maintain consistent size of less than 0.04 inches (fig. 8). Recycling of manufactured tiles improves shrinkage characteristics during firing in the kiln and also reduces generated waste. Additional tile scrap is marketed for road maintenance.

After grinding (fig. 9), the clay and shale is moved by conveyor, passing under powerful magnets to remove any metal fragments, and stored in covered bins holding several hundred tons. Moisture content is strictly controlled to avoid clumping and allow for proper molding characteristics as the clay and shale are extruded to form the individual tiles. Color additives such as chromium, iron oxide, manganese, and barite or special additives such as silicon carbide are added to meet customer specifications. After forming, the unfired tiles pass

TABLE 2. ***Ceramic floor and wall tile manufacturers in Ohio, 2013***

Name	Contact	Products	Information
Ironrock/Metropolitan Ceramics	1201 Millerton St. SE Canton, OH 44707 (800) 325-3945 www.ironrock.com	Unglazed ceramic quarry tile	Founded in 1866; introduced "split-tile" extrusion process in 1975. Significant installations include major commercial airports and several national restaurants chains. Use Brookville clay and shale mined in Mahoning Co. and Upper Freeport shale from Tuscarawas County.
Rookwood Pottery, Inc.	1920 Race St. Cincinnati, OH 45202-7722 (513) 381-2510 www.rookwood.com	Architectural ceramic tiles	Original Rookwood operated from 1880–1941. Reopened in 2006 with original trademarks and molds.
Sandkuhl Clay Works, Inc.	0536 Kossuth-Amanda Rd. Spencerville, OH 45887 (419) 657-2905 www.sandkuhl.com	Finished face structural clay tile	Began business in 1912. Use clay-rich glacial till.
Seneca Tiles, Inc.	7100 S. County Rd. 23 Attica, OH 44807 (800) 420-4335 www.senecatiles.com	Hand-made ceramic quarry and architectural tile	Use beehive kiln from 1906.
Summitville Tiles, Inc.	P.O. Box 173 Summitville, OH 43962 (330) 223-1511 www.summitville.com	Ceramic quarry tile	Founded in 1920; began producing quarry tile in 1947. Uses Pennsylvanian-age, Conemaugh Group shale mined in Columbiana Co.

FIGURE 7. Clay and shale storage at the Ironrock/Metropolitan Brick ceramic tile plant located south of Canton, Ohio.

FIGURE 8. Inclined screens used to ensure proper size of clay and shale at the Ironrock/Metropolitan Brick ceramic tile plant located south of Canton, Ohio.

FIGURE 9. Interior view of the Clearfield Dry Pan roller-type crusher at the Ironrock/Metropolitan Brick ceramic tile plant located south of Canton, Ohio.

along additional conveyors and are automatically loaded onto large kiln carts using robotic arms. The tiles then are conveyed along a computer-controlled track system to the dryers and automatically loaded into the gas-fired tunnel kilns (fig. 10).

The tiles are slowly heated in the kiln to the firing temperature of approximately 1200°C (2200°F) for clay or 1120°C (2050°F) for shale, then tiles are slowly cooled to ensure the structural integrity of the finished product (fig. 11). All finished tiles must meet industry standards for abrasion resistance, absorption, breaking strength, thickness, shear bond strength, and warpage. Ohio tile manufacturers may test for additional parameters such as freeze/thaw, static coefficient of friction, scratch hardness, chemical resistance, and stain resistance to meet internal or customer requirements. The finished tile is then quality checked and packaged for shipment, again generally using robotics or possibly manually sorted and packaged for certain applications.

SUMMARY

Ohio companies that manufacture ceramic floor and wall tiles have maintained a leadership role in the United States ceramic industry for more than 135 years. Abundant Ohio-sourced clay and shale that meet or exceed the physical and chemical requirements to produce high-quality tiles, along with employees that maintain engineering, artistic, and business excellence, have allowed the industry to flourish within the state. The challenges of worldwide competition within the tile industry, changing consumer tastes, and alternative, possibly lower initial costs for wall and floor coverings will need to be met with the innovation and determination shown in the past century by the Ohio ceramic floor and wall tile industry.

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FIGURE 10. Unfired tile entering the tunnel kiln at Ironrock/Metropolitan Brick ceramic tile plant located south of Canton, Ohio.

FIGURE 11. Finished tile exiting the tunnel kiln at the Ironrock/Metropolitan Brick ceramic tile plant located south of Canton, Ohio. Tiles are heated, fired to approximately 1200°C, and slowly cooled over a 24-hour period.

2013 Ohio Economic Geology in Brief

Reports were filed in 2013 for 99 coal-mining operations, including 3 mines with their own coal-washing facilities. Coal production was reported from 59 individual operations. Reports also were filed for 6 separate coal-washing plants and associated facilities. Of the 559 industrial-mineral-mining operations known to be operating in 2013, 347 operations were reported active. A total of 36 mines reported production of multiple mineral commodities, including coal and/or one or more industrial minerals. There were 643 new wells completed for oil and gas in 2013, of which 623 were productive and 20 were dry.

The total tonnage of coal and industrial minerals produced in Ohio during 2013 was 117,700,890 tons (table 3) or approximately 10.3 tons per capita. The total value[1] of coal was $1,199,674,459 in 2013; the value of oil and gas was $1,355,625,470; and the total value[1] of all industrial minerals was $893,425,812 in 2013 (table 3, fig. 12). The combined total value of fuel and nonfuel minerals produced in Ohio during 2013 was $3,448,725,741 or approximately $298 per capita. Reported and estimated total employment in the extractive industries of Ohio in 2013 was more than 12,000 people.

[1]Includes reported and estimated values. Some operations reporting sales did not report a value for those sales. A countywide- or statewide-average price per ton was calculated for each industrial-mineral commodity based on sales for which the value was reported. A countywide, average price per ton was calculated for coal based on sales for which the value was reported and method of production. These calculated averages were used to estimate the value of the sales for which the actual values were not reported.

TABLE 3. ***2013 Fuel and nonfuel mineral sales and production in Ohio***

Commodity	Production[1]	Sales[2]	Value[3]	Change in value from 2012 (percent)
Coal	24,844,584 tons	24,874,770 tons	$1,199,674,459	+1.5
Limestone and dolomite	57,562,592 tons	57,871,840 tons	$512,247,281	+3.6
Sand and gravel	28,708,583 tons	29,691,597 tons	$200,273,102	+4.2
Salt	3,964,757 tons	4,391,138 tons	$123,256,445	−3.5
Sandstone and conglomerate	1,343,705 tons	1,308,675 tons	$41,913,113	−10.1
Clay	389,816 tons	434,475 tons	$4,019,771	+115.4
Shale	886,853 tons	869,182 tons	$11,716,100	+58.4
Gas	167,923,260 thousand cubic feet	not available	$589,410,643	+137.5
Oil	8,005,588 barrels	not available	$766,214,827	+67.3

[1]The production figures for industrial minerals are estimates, as many operators do not know actual production. For those operators that do not report production, production is assumed equal to sales or estimated from ODNR Division of Mineral Resources Management records.
[2]Includes material for captive use.
[3]The FOB value of industrial minerals sold was estimated for mines that failed to report this information and for those producting material for captive use. These estimates were caluclated using a countywide- or statewide-average price per ton calculated on reported FOB values.

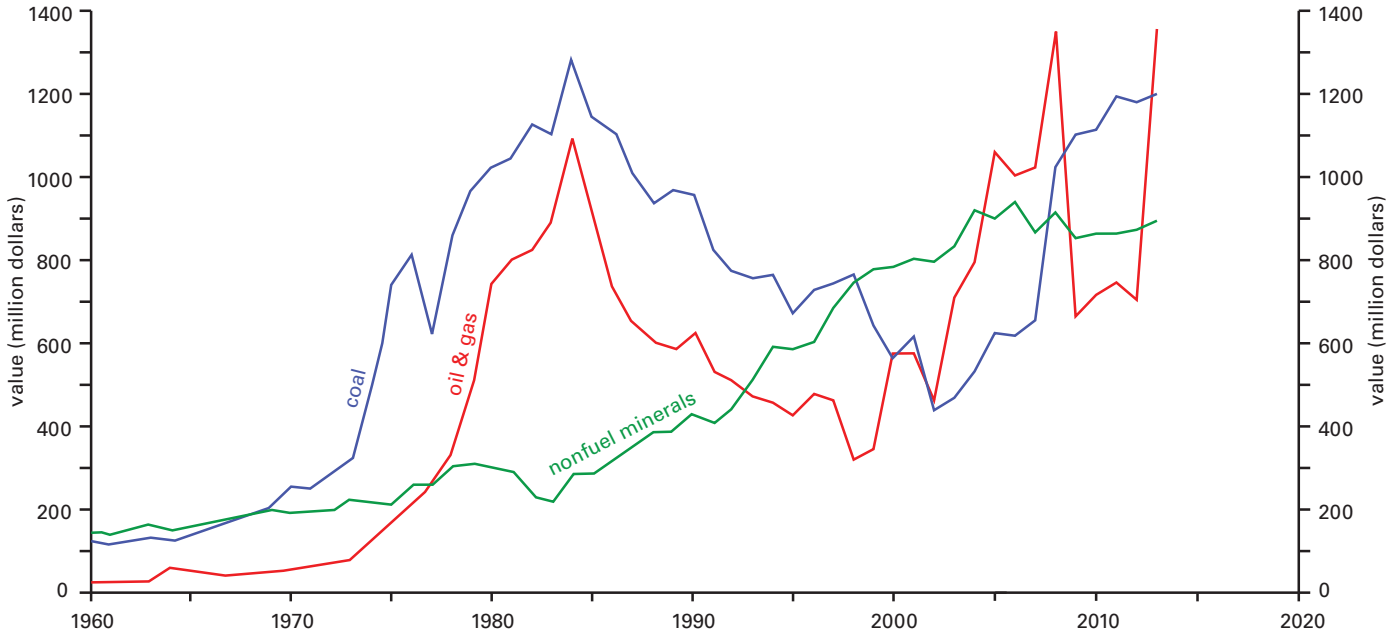

FIGURE 12. Value of coal, nonfuel minerals, and oil and gas in Ohio.

COAL

(See also Appendix A)

Coal was first recognized in Ohio by pioneers during the 1740s and the first map of Ohio coal deposits was made in 1752 (Crowell, 1995). The first recorded coal production occurred in Jefferson County during 1800 and in the 213 years since, nearly 3.9 billion tons of coal have been produced from coal seams in the state (Crowell, 1995). This represents a value of over $200 billion in 2013 dollars.

A new surface mine in Jefferson County began production in the second half of 2013. Through September 2014, permits for mine expansions were issued for five underground mines and five surface mines, covering a total area of 11,242 acres. Permits also were issued for eight new surface mines with a total area of 2,309 acres.

Ohio coal is used primarily to generate electricity; 70 percent of the state's electricity is produced by burning coal (PUCO, 2013). Ohio coal is also used in commercial, institutional, and industrial applications, while minor amounts are exported.

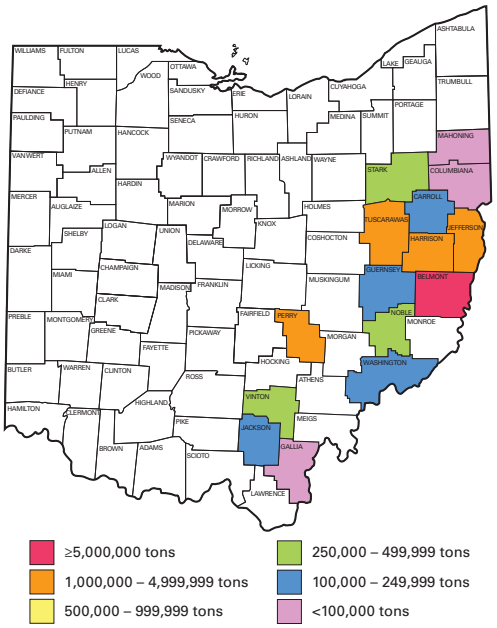

FIGURE 13. Coal production in Ohio in 2013, by county and quantity.

Production

Coal was produced by 24 companies at 59 mines in 15 Ohio counties during 2013. Production decreased 5.7 percent from 2012 (Wolfe, 2013a), totaling 24,844,584 tons in 2013 (table 2). In 2013, tonnage from underground production exceeded tonnage from surface production, continuing a trend that began in 1995; 7,459,054 tons (30.0 percent of total production) were produced at 49 surface mines, and 17,385,530 tons (70.0 percent of total production) were produced at 10 underground mines (table 4).

Of 25 coal-producing states, Ohio ranked tenth in 2013. The top five states, in descending order of production, were Wyoming (388.3 million tons), West Virginia (112.9 million tons), Kentucky (80.1 million tons), Pennsylvania (55.1 million tons), and Illinois (52.3 million tons; USDOE, 2014).

In Ohio, the five leading counties for 2013 production were Belmont, Harrison, Perry, Jefferson, and Tuscarawas Counties (table 5, fig. 13); these counties produced 92.6 percent of the 2013 total production.

The Pennsylvanian-age Monongahela Group Pittsburgh (No. 8) coal was the most heavily mined seam, followed by the Allegheny Group Middle Kittanning (No. 6), the Allegheny Group Upper Freeport (No. 7), the Monongahela Group Meigs Creek (No. 9), and the Allegheny Group Lower Freeport (No. 6a) seams (see fig. 14 and table 8).

Coal produced from these five seams constituted 92.0 percent of the total 2013 production. Since 1816, mining of the Pittsburgh (No. 8) in eastern Ohio has produced more than 1 billion tons of coal (Crowell, 1995).

In underground mining, 67.6 percent of the coal was produced by longwall mining and 32.4 percent was mined by continuous miner; no coal was produced by conventional mining in 2013. In surface operations, 82.2 percent of the coal was mined by conventional surface methods, 3.1 percent was mined by augering, and 14.7 percent was mined by highwall miner.

Rail was the primary means of coal disposition, carrying 54.8 percent of the total sales. Trucking transported 45.0 percent, and water carried 0.2 percent of the coal sold in 2013. A total of 172,104 tons was reported as stored (table 9).

Economic Impact

A total of 24,874,770 tons of coal were sold in 2013; total value[2] was $1,199,674,459 (fig. 15). This was the sixth consecutive year that coal values were greater than $1 billion, which had not happened since the early 1980s.

The average price per ton of all coal sold was $48.23; surface-mined coal averaged $46.96 per ton and underground-mined coal averaged $48.77 (table 10).

The total average annual employment reported in 2013 was 2,985 employees; 2,266 of these were production employees (table 11). Production employees worked an average of 191 days producing coal in 2013. The average annual wage earned by all production employees was $73,068 based on those employees for whom wages were reported. The average annual wage for surface-mine production employees was $56,658, and the average annual wage for underground-mine production employees was $80,075. Wages earned by all employees totaled $237,521,456 in 2013 (table 12).

[2]Includes reported and estimated values. See footnote 1, p. 9.

SYSTEM	GROUP	LITHOSTRATIGRAPHIC UNITS
Permian	Dunkard	Washington (No. 12) coal
Pennsylvanian	Monongahela	Waynesburg (No. 11) coal Uniontown (No. 10) coal Meigs Creek (No. 9) coal Pomeroy (No. 8a, Redstone) coal Pittsburgh (No. 8) coal
	Conemaugh	Ames marine zone Harlem coal Wilgus coal Brush Creek marine zone Mahoning (No. 7a) coal
	Allegheny	Upper Freeport (No. 7) coal Lower Freeport (No. 6a) coal Middle Kittanning (No. 6) coal Lower Kittanning (No. 5) coal Vanport marine zone Clarion (No. 4a) coal Winters coal Newland (No. 4, Brookville) coal
	Pottsville	Upper Mercer (No. 3a) coal Quakertown (No. 2) coal Sharon (No. 1) coal

FIGURE 14. Stratigraphic column of coals mined in Ohio during 2013 (black), other significant coal beds (red), and associated key beds (blue) used for stratigraphic correlation. Modified from Larsen (1991, fig. 2), Collins (1979, fig. 3), and Brant and Delong (1960, table 9).

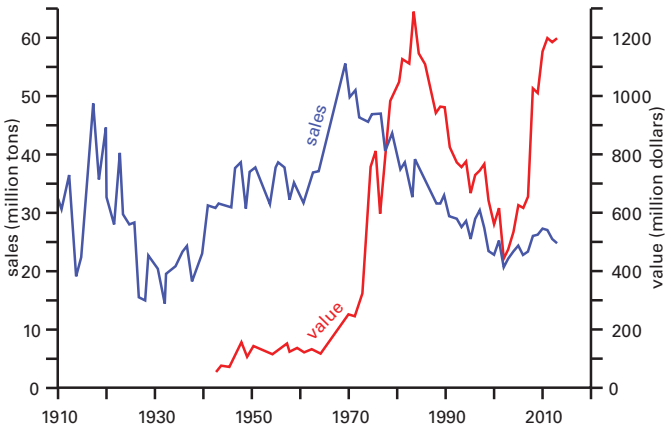

FIGURE 15. Sales and value of coal in Ohio.

TABLE 4. ***2013 Ohio coal production, by county and mining method***

County	All methods (short tons)	Total number of mines	Underground				Surface				
			Number of mines reporting	Production (short tons)			Number of mines reporting	Production (short tons)			
				Total	Longwall	Continuous miner		Total	Strip	Auger	Highwall
Belmont	14,427,283	10	2	13,544,913	11,748,668	1,796,245	8	882,370	687,225	69,304	125,841
Carroll	242,336	1	1	242,336		242,336					
Columbiana	40,025	2					2	40,025	40,025		
Gallia	589	1					1	589	589		
Guernsey	156,334	1					1	156,334	153,456	2,878	
Harrison	3,442,250	7	2	1,330,456		1,330,456	5	2,111,794	2,070,628	41,166	
Jackson	152,993	2					2	152,993	152,993		
Jefferson	1,629,372	7	2	488,772		488,772	5	1,140,600	332,514	1,006	807,080
Mahoning	3,616	1					1	3,616	3,616		
Noble	356,534	4					4	356,534	355,842	692	
Perry	2,365,053	4	2	1,567,544		1,567,544	2	797,509	745,231	52,278	
Stark	408,424	3					3	408,424	407,850	574	
Tuscarawas	1,146,421	12	1	211,509		211,509	11	934,912	705,763	65,450	163,699
Vinton	350,114	3					3	350,114	350,114		
Washington	123,240	1					1	123,240	123,240		
TOTAL[1]	24,844,584	59	10	17,385,530	11,748,668	5,636,862	49	7,459,054	6,129,086	233,348	1,096,620

[1]Any tally inconsistencies are due to rounding of production tonnages.

TABLE 5. ***2013 Ohio coal production and sales, by county, in descending order of production***

County	Production (short tons)	Sales (short tons)
Belmont	14,427,283	14,449,727
Harrison	3,442,250	3,420,828
Perry	2,365,053	2,366,561
Jefferson	1,629,372	1,640,473
Tuscarawas	1,146,421	1,146,421
Stark	408,424	408,424
Noble	356,534	356,533
Vinton	350,114	357,567
Carroll	242,336	238,241
Guernsey	156,334	156,334
Jackson	152,993	157,883
Washington	123,240	123,240
Columbiana	40,025	40,025
Mahoning	3,616	3,451
Gallia	589	589
Athens	0	8,473
TOTAL	24,844,584	24,874,770

TABLE 6. ***2013 Ohio coal production, by production size group and change from 2012***

Production size group	2013		Change from 2012 (short tons)
	Number of mines reporting	Production (short tons)	
1,000,000 tons and over	3	14,669,445	–4,479,191
500,000 to 999,999 tons	6	4,285,000	+3,565,553
250,000 to 499,999 tons	7	2,262,966	–1,316,073
100,000 to 249,999 tons	16	2,762,158	+618,132
50,000 to 99,999 tons	9	695,304	+179,115
25,000 to 49,999 tons	2	69,206	–40,959
Less than 25,000 tons	16	100,505	–26,039
TOTAL	59	24,844,584	–1,499,462

TABLE 7. ***2013 Ohio coal production, by county and month***

County	Production (short tons)												
	Total annual	January	February	March	April	May	June	July	August	September	October	November	December
Belmont	14,427,283	1,450,203	1,270,137	1,412,092	1,246,850	1,744,246	1,406,049	961,272	1,094,069	1,122,660	1,037,886	969,832	711,987
Carroll	242,336	16,396	16,851	11,051	18,790	16,633	18,053	21,331	24,611	22,988	28,488	21,390	25,754
Columbiana	40,025	8,439	10,583	10,864	9,280	423		1	6	11	45	337	36
Gallia	589								589				
Guernsey	156,334			6,119	10,481	14,928	17,688	13,907	14,321	18,225	22,324	16,513	21,828
Harrison	3,442,250	286,202	274,006	288,703	258,274	288,036	266,608	290,243	318,577	285,792	324,277	289,558	271,974
Jackson	152,993	7,828	11,507	25,016	17,226	25,753	9,181	4,984	16,824	6,365	9,086	8,583	10,640
Jefferson	1,629,372	113,962	119,942	151,413	167,717	144,242	139,985	153,058	134,829	142,330	149,310	103,485	109,099
Mahoning	3,616	1,460	483	1,673									
Noble	356,534	51,634	35,505	27,479	21,562	24,620	27,452	29,939	28,719	30,301	31,005	22,977	25,341
Perry	2,365,053	190,543	165,878	208,299	188,263	190,006	205,663	172,442	224,298	213,879	222,226	193,249	190,307
Stark	408,424	26,787	33,876	34,751	36,237	37,445	32,032	38,414	39,758	33,916	37,173	27,509	30,526
Tuscarawas	1,146,421	89,414	87,109	98,898	75,922	77,442	86,297	92,788	102,967	81,389	92,198	75,177	186,820
Vinton	350,114	36,460	35,192	33,954	30,427	30,302	33,253	24,734	22,536	20,474	33,152	27,144	22,486
Washington	123,240	11,872	10,510	9,464	7,832	7,395	11,451	11,408	10,865	8,162	12,637	10,254	11,390
TOTAL[1]	24,844,584	2,291,200	2,071,579	2,319,776	2,088,861	2,601,471	2,253,712	1,814,521	2,032,969	1,986,492	1,999,807	1,766,008	1,618,188

[1]Any tally inconsistencies are due to rounding of production tonnages.

TABLE 8. ***2013 Ohio coal production,***

County	Production							
	Total	Newland (No. 4, Brookville)	Winters	Clarion (No. 4a)	Lower Kittanning (No. 5)	Middle Kittanning (No. 6)	Lower Freeport (No. 6a)	Upper Freeport (No. 7)
Belmont	14,427,283							
Carroll	242,336					242,336		
Columbiana	40,025							40,025
Gallia	589					589		
Guernsey	156,334							
Harrison	3,442,250						1,124,532	205,924
Jackson	152,993	56,367		27,949	48,719	14,829		5,129
Jefferson	1,629,372							206,488
Mahoning	3,616				3,616			
Noble	356,534							
Perry	2,365,053				284,029	1,467,266	162	613,596
Stark	408,424				139,748	225,785	36,774	6,117
Tuscarawas	1,146,421	13,975			373,877	566,648		191,921
Vinton	350,114	70,625	29,246	28,477	154,505	30,652		27,983
Washington	123,240							
TOTAL[1]	24,844,584	140,967	29,246	56,426	1,004,494	2,548,105	1,161,468	1,297,183

[1]Any tally inconsistencies are due to rounding of production tonnages.

TABLE 9. ***2013 Disposition of Ohio coal, by county***

County	Number of mines	Disposition[1] (short tons)						Stored
		Total[1]	Rail	Water	Truck	Conveyor	Unspecified/ other	
Athens	1	8,473	8,015		458			
Belmont	10	14,449,727	10,022,083		4,427,644			19,651
Carroll	1	238,241			238,241			4,095
Columbiana	2	40,025			40,025			
Gallia	1	589			589			
Guernsey	1	156,334			156,334			
Harrison	7	3,420,828	1,079,733		2,341,087		8	34,672
Jackson	2	157,883		20,768	137,115			1,252
Jefferson	7	1,640,473	502,520		1,137,953			11,102
Mahoning	1	3,451			1,197	2,254		5,049
Noble	4	356,533			356,533			
Perry	4	2,366,561	1,915,281		451,280			88,251
Stark	3	408,424			408,424			
Tuscarawas	12	1,146,421	100,000		1,046,421			
Vinton	3	357,567		31,643	325,924			8,032
Washington	1	123,240			123,240			
TOTAL[2]	60	24,874,770	13,627,632	52,411	11,192,465	2,254	8	172,104

[1]Does not reflect tonnage stored. Reflects tonnage sold and shipped from mine.
[2]Any tally inconsistencies are due to rounding.

by county and seam

(short tons)						
Mahoning (No. 7a)	Wilgus	Pittsburgh (No. 8)	Pomeroy (No. 8a, Redstone)	Meigs Creek (No. 9)	Waynesburg (No. 11)	County[1]
		13,712,086		675,521	39,676	Belmont
						Carroll
						Columbiana
						Gallia
		141,262		15,072		Guernsey
		1,626,627	385,388	99,779		Harrison
						Jackson
286,746		1,106,466	29,672			Jefferson
						Mahoning
				356,534		Noble
						Perry
						Stark
						Tuscarawas
	8,626					Vinton
				123,240		Washington
286,746	8,626	16,586,441	415,060	1,270,146	39,676	TOTAL[2]

TABLE 10. ***2013 Dollar value of coal at mine, by county and mining method***

County	Total				Underground				Surface			
	No. of mines	Tonnage sold (short tons)	Value at mine[1] (dollars)	Per ton average (dollars)	No. of mines	Tonnage sold (short tons)	Value at mine[1] (dollars)	Per ton average (dollars)	No. of mines	Tonnage sold (short tons)	Value at mine[1] (dollars)	Per ton average (dollars)
Athens	1	8,473	$610,574	$72.06	1	8,473	$610,574	$72.06				
Belmont	10	14,449,727	646,209,293	44.72	2	13,567,357	607,809,831	44.80	8	882,370	$38,399,462	$43.52
Carroll	1	238,241	19,068,662	80.04	1	238,241	19,068,662	80.04				
Columbiana	2	40,025	1,746,245	43.63					2	40,025	1,746,245	43.63
Gallia	1	589	17,650	29.97					1	589	17,650	29.97
Guernsey	1	156,334	6,868,849	43.94					1	156,334	6,868,849	43.94
Harrison	7	3,420,828	168,034,814	49.12	2	1,309,034	74,666,880	57.04	5	2,111,794	93,367,934	44.21
Jackson	2	157,883	7,996,277	50.65					2	157,883	7,996,277	50.65
Jefferson	7	1,640,473	98,118,968	59.81	2	499,873	25,105,402	50.22	5	1,140,600	73,013,566	64.01
Mahoning	1	3,451	300,797	87.16					1	3,451	300,797	87.16
Noble	4	356,533	13,257,513	37.18					4	356,533	13,257,513	37.18
Perry	4	2,366,561	148,106,072	62.58	2	1,569,052	113,065,922	72.06	2	797,509	35,040,150	43.94
Stark	3	408,424	17,955,869	43.96					3	408,424	17,955,869	43.96
Tuscarawas	12	1,146,421	48,706,457	42.49	1	211,509	8,500,000	40.19	11	934,912	40,206,457	43.01
Vinton	3	357,567	18,154,743	50.77					3	357,567	18,154,743	50.77
Washington	1	123,240	4,521,676	36.69					1	123,240	4,521,676	36.69
TOTAL	60	24,874,770	$1,199,674,459	$48.23	11	17,403,539	$848,827,271	$48.77	49	7,471,231	$350,847,188	$46.96

[1]The FOB value of coal sold was estimated for those mines that failed to report this information. These estimates were calculated using a countywide-average price per ton by mining method, based on reported FOB values deemed to be reliable.

TABLE 11. ***2013 Ohio coal mine employment, by occupational group and month[1]***

Occupational group	Number of employees												
	Total annual[2]	January	February	March	April	May	June	July	August	September	October	November	December
Production workers	2,266	2,237	2,238	2,234	2,200	2,206	2,241	2,252	2,269	2,300	2,327	2,363	2,328
Non-production workers	719	691	691	694	705	704	709	729	733	735	733	743	762
TOTAL	2,985	2,928	2,929	2,928	2,905	2,910	2,950	2,981	3,002	3,035	3,060	3,106	3,090

[1]Employment was estimated for mines not reporting employment.
[2]Represents the average number of employees for the year.

TABLE 12. ***2013 Wage and salary payments to Ohio coal mine employees, by county and occupational group***

County[1]	Wage and salary payments (nearest whole dollar)[2,3]			
	All occupations	Underground production employees	Surface production employees	Other
Athens	$94,664			$94,664
Belmont	140,079,105	$82,515,420	$6,424,057	51,139,628
Carroll	4,059,369	3,648,522		410,847
Columbiana	847,013		256,153	590,860
Coshocton	747,435			747,435
Gallia	35,000		35,000	
Guernsey	1,037,113		933,402	103,711
Harrison	26,539,888	14,237,237	8,811,233	3,491,418
Jackson	849,463		849,463	
Jefferson	14,775,846	7,480,720	5,236,677	2,058,449
Mahoning	107,654		7,620	100,034
Noble	2,458,591		2,345,602	112,989
Perry	28,328,360	18,320,052	3,638,397	6,369,911
Stark	2,405,244		2,171,284	233,960
Tuscarawas	9,891,451	2,189,710	5,579,467	2,122,274
Vinton	4,523,451		2,551,533	1,971,918
Washington	741,809		741,809	
TOTAL	$237,521,456	$128,391,661	$39,581,697	$69,548,098

[1]For those operations reporting activity in more than one county, wage and salary payments were evenly split between the counties involved unless county-specific information was provided by the operator.
[2]For those operations reporting only a total wage and salary payment for all workers, an equal pay rate was assumed for all employees. In cases where quarterly employment was reported but wage and salary payments were not, wage and salary payments for that quarter were estimated from reported payments in the other quarters to arrive at the annual figure. For mines reporting employment and no wage and salary payments, wage and salary payments were estimated using a countywide or statewide average.
[3]Any tally inconsistencies are due to rounding.

INDUSTRIAL MINERALS

(See also Appendix B)

Industrial minerals are nonmetallic, nonfuel rocks or minerals that have economic value and are essential to modern society. Industrial minerals have been mined or quarried in Ohio since the establishment of early settlements and include salt, sandstone, conglomerate, clay, shale, limestone, dolomite, gypsum, sand, and gravel. Hundreds of construction, chemical, and industrial products rely on the availability of industrial minerals.

The production of multiple commodities, including coal and/or one or more industrial minerals, is important to successful mine operations in many areas of Ohio. The most common multiple operations are sand and gravel with clay; coal along with clay, shale, or limestone; and limestone with associated clay or shale. The production of sand and gravel along with clay is often located in the glaciated portions of northern and western Ohio, where deposits of sand and gravel can be overlain by clay-rich glacial tills. The Pennsylvanian-age cyclic sedimentation in eastern Ohio includes coals, clays, shales, and limestones in close proximity, allowing for economic recovery of multiple commodities.[3]

Industrial minerals were produced in a total of 81 Ohio counties in 2013 and 329 companies held valid permits for 559 industrial-mineral mining operations. Industrial minerals were reported as produced or sold by 272 companies from 347 active operations. The combined value of all industrial minerals sold in 2013 was $893,425,812 (table 13).

The total average annual employment reported in 2013 for industrial-mineral operations was 3,611 people (2,638 production employees and 973 nonproduction employees; table 14). Total wages for all employees at industrial-mineral operations in 2013 were $178,265,443. The average annual wage, based on those employees for whom wages were reported, was $49,367.

[3]The following links will provide more information on the general bedrock and glacial geology of Ohio:
http://geosurvey.ohiodnr.gov/portals/geosurvey/PDFs/BedrockGeology/BG-1_8.5x11.pdf
http://geosurvey.ohiodnr.gov/portals/geosurvey/PDFs/Glacial/glacial.pdf

TABLE 13. ***2013 Value of Ohio industrial minerals***

Commodity	Sales (tons)	Change from 2012 (tons/percent)	Value[1]	Percent of total value
Limestone and dolomite	57,871,840	–316,899/–0.5	$512,247,281	57.3
Sand and gravel	29,691,597	+281,277/+1.0	$200,273,102	22.4
Salt	4,391,138	+838,324/+23.6	$123,256,445	13.8
Sandstone and conglomerate	1,308,675	–100,503/–7.1	$41,913,113	4.7
Clay	434,475	+145,153/+50.2	$4,019,771	0.4
Shale	869,182	+474,992/+121	$11,716,100	1.3
Total	94,566,907	+1,322,344/+1.4	$893,425,812	100.0

[1]The FOB value of industrial minerals sold was estimated for those mines that failed to report this information and for those producing material for captive use. These estimates were calculated using a countywide- or statewide-average price per ton based on reported FOB values.

TABLE 14. ***2013 Employment at Ohio industrial-mineral operations, by county and commodity***

County	Total employees[1]	Number of employees[2]															
		Total[1]		Limestone and dolomite		Sand and gravel		Sandstone and conglomerate		Clay		Shale		Salt		Multiple commodities	
		Production	Nonproduction	Production	Nonproduction	Production	Nonproduction	Production	Nonproduction	Production	Nonproduction	Production	Nonproduction	Production	Nonproduction	Production	Nonproduction
Adams	29	13	16	13	16												
Allen	22	13	9	13	9												
Ashland	28	20	8			20	8										
Ashtabula	23	7	16			6	2									1	14
Athens	9	5	4			3	3									2	1
Auglaize	26	22	4	19	2	2	2			1							
Belmont	14	12	2	12	2												
Brown	25	11	14	11	14												
Butler	129	54	75	13	5	41	70										
Carroll	9	7	2			6	2	1									
Champaign	13	10	3			10	3										
Clark	20	13	7	4	3	9	4										
Clermont	64	50	14	25	7	25	7										
Clinton	26	22	4	21	4	1											
Columbiana	30	22	8			15	5	6	2			1	1				
Coshocton	25	17	8	4		6	4	7	4								
Crawford	17	17		17													
Cuyahoga	199	142	57									3		139	57		
Darke	16	13	3	8	2											5	1
Defiance	12	10	2			7	2			3							
Delaware	26	26		26													
Erie	83	71	12	56	12			15									
Fairfield	1	1				1											
Franklin	229	148	81	91	45	57	36										
Fulton	1	1				1											
Gallia	2	2				2											
Geauga	76	61	15			7	1	54	14								
Greene	91	67	24	24	8	34	14									9	2
Guernsey	49	16	33	14	33			2									
Hamilton	94	55	39	6	6	49	33										
Hancock	5	5		5													
Hardin	19	17	2	17	2												
Harrison	34	28	6	26	6							2					
Highland	14	9	5	5	5	4											
Hocking	23	17	6			17	6										
Holmes	47	30	17	8		17	17			5							
Huron	1	1						1									
Jackson	11	7	4	6	2					1	2						
Knox	71	42	29			31	26	11	3								
Lake	149	114	35			1	2	3	3					110	30		
Licking	32	21	11			12	8			2	1	5		2	2		
Logan	46	32	14	27	11	5	3										
Lorain	3	2	1					2	1								
Lucas	60	48	12	45	9	1	2			2	1						
Madison	4	3	1			3	1										

TABLE 14. ***2013 Employment at Ohio industrial-mineral operations, by county and commodity (cont.)***

County	Total employees[1]	Number of employees[2]															
		Total[1]		Limestone and dolomite		Sand and gravel		Sandstone and conglomerate		Clay		Shale		Salt		Multiple commodities	
		Production	Nonproduction	Production	Nonproduction	Production	Nonproduction	Production	Nonproduction	Production	Nonproduction	Production	Nonproduction	Production	Nonproduction	Production	Nonproduction
Mahoning	65	46	19	25	18			21	1								
Marion	16	13	3	7		4	3					2					
Medina	12	6	6			6	6										
Meigs	22	18	4			18	4										
Mercer	22	20	2	20	2												
Miami	52	35	17	32	14	3	3										
Monroe	9	9		9													
Montgomery	66	47	19	11	5	36	14										
Morrow	7	7				7											
Muskingum	87	65	22	32	14	14	4			4	1					15	3
Noble	10	9	1	9	1												
Ottawa	103	88	15	88	15												
Paulding	95	75	20	28	4											47	16
Perry	6	4	2						1			4	1				
Pickaway	24	20	4	5	1	15	3										
Pike	50	38	12	8	2	3	1	27	9								
Portage	111	83	28			63	20									20	8
Preble	43	30	13	7	2	22	11									1	
Putnam	21	17	4	10	2	7	2										
Richland	33	28	5			28	5										
Ross	19	16	3			16	3										
Sandusky	244	215	29	206	27											9	2
Scioto	7	5	2			5	2										
Seneca	57	20	37	20	37												
Shelby	8	5	3		2	5	1										
Stark	88	78	10			78	10										
Summit	6	4	2			3								1	2		
Tuscarawas	89	63	26	2	1	35	6			11	7	2	1			13	11
Union	37	29	8	29	8												
Van Wert	34	31	3	31	3												
Warren	36	25	11			25	11										
Washington	38	27	11			27	11										
Wayne	28	20	8			6	2					1	1	12	5	1	
Williams	1	1				1											
Wood	63	49	14	41	8											8	6
Wyandot	95	88	7	70	3	18	4										
TOTAL	3,611	2,638	973	1,206	372	838	387	150	38	29	12	20	4	264	96	131	64

[1]Any tally inconsistencies are due to computer rounding of fractions produced by partial-year employment.
[2]Employment is not included for mines that were owner operated.

LIMESTONE AND DOLOMITE

(See also Appendix C)

Limestone and dolomite are Ohio's most versatile industrial minerals. Both are used by the construction industry as aggregate, as an essential ingredient in the cement industry, to produce lime, as a flux in the steel and glass industries, as filler in a multitude of products, as an agricultural supplement, in water purification, and as a building stone. Ohio has long been a national leader in the production of lime and construction aggregates.

In 2013, the primary use for crushed and broken limestone and dolomite was road construction/resurfacing. Other major uses for various forms of limestone and dolomite included stone for asphaltic concrete and Portland cement concrete, commercial building construction, and the production of lime. Since 2011, there has been a significant increase in the railroad transportation of aggregates and other industrial minerals in Ohio, largely to support the development of hydrocarbons in eastern Ohio.

Production

Limestone and dolomite were reported sold or produced by 57 companies at 107 operations in 50 Ohio counties during 2013 (fig. 16). Reported production totaled 57,562,592 tons.

Ohio ranks sixth in the production of crushed stone (which includes crushed sandstone) out of 50 producing states. The states leading Ohio in the production of crushed stone, in descending order, are Texas, Missouri, Pennsylvania, Florida, and Kentucky (USGS, 2014a).

Devonian-age and Silurian-age carbonates located in the western half of Ohio are the primary geologic units producing crushed stone. Pennsylvanian-age and Missisppian-age limestones are important sources of aggregate in local markets of eastern Ohio (Stout, 1941; Lamborn, 1951), particularly the Youngstown (Mahoning County) and Zanesville (Muskingum County) areas. The top five geologic units in Ohio producing limestone or dolomite during 2013, in order of greatest tonnage (see fig. 17), were:

- Devonian-age Columbus Limestone
- Silurian-age Lockport Dolomite
- Devonian-age Detroit River Group
- Silurian-age Greenfield/Tymochtee Dolomites
- Silurian-age Cedarville Dolomite

Lime produced from Ohio limestone and dolomite totaled 1,477,574 tons in 2013 and came from four operations in Ottawa, Sandusky, and Seneca Counties (table 16). Ohio ranks fourth nationally in the production of lime out of 24 producing states and Puerto Rico. The top five states, in descending order of lime production, are Missouri, Kentucky, Alabama, Ohio, and Texas (USGS 2014b).

Economic Impact

Estimated sales of limestone and dolomite totaled 57,871,840 tons, (fig. 18 and table 15; –0.5 percent from 2012, see Wolfe, 2013a). Wyandot, Ottawa, Erie, Franklin, and Sandusky Counties accounted for 39.3 percent of those sales.

The total value[4] of limestone and dolomite sold in 2013 was $512,247,281 (fig. 18). Average price per ton was $8.90.

An annual average of 1,206 employees worked an average of 185 days to produce limestone and dolomite. Total wages of $85,468,099 were paid to a total of 1,578 employees (1,206 production employees and 372 nonproduction employees; table 14). The average annual wage, based on those employees for whom wages were reported, was $54,162.

[4]Includes reported and estimated values. See footnote 1, p. 9.

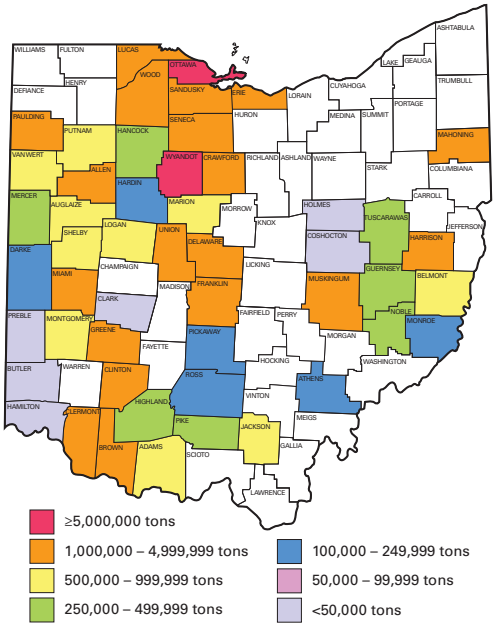

FIGURE 16. Sales of limestone and dolomite in Ohio in 2013, by county and quantity.

TABLE 15. *2013 Ohio limestone and dolomite sales, by county and use*

County	Tons sold														
	Total all types	Crushed and broken stone										Dimension stone	Stone for portland cement manufacture	Agricultural stone (aglime)	Raw stone for burning
		Total	Riprap	Flux stone	Stone for portland cement concrete	Stone for asphaltic concrete	Road construction/ resurfacing	Commercial building	Railroad ballast	Extenders/ fillers	Unspecified/ other				
Adams	762,480	762,480					600,000	100,000			62,480				
Allen	1,071,950	1,050,653	8,428		146,414	175,249	646,202	9,537	11,599	7,963	45,261			21,297	
Athens	237,278	237,278	11,581				225,697								
Auglaize	618,955	618,185	4,673		302,512	55,000	256,000							770	
Belmont	836,390	836,390	3,185				622,019	150,000			61,186				
Brown	1,254,826	1,254,826					400,000	200,000			654,826				
Butler	17,868	17,868									17,868				
Clark	7,348	7,348									7,348				
Clermont	1,535,219	1,507,380	7,182		159,135	283,195	387,715	670,153						27,839	
Clinton	1,193,188	1,159,190	34,710		169,915	283,192	461,496	140,375	37,604		31,898			33,998	
Coshocton	6,063											6,063			
Crawford	1,084,000	919,000	3,000		280,000	244,000	369,000			23,000				165,000	
Darke	181,810	181,810	447		34,388	32,929	73,982	37,564		2,500					
Delaware	2,990,000	2,956,000	78,000		616,000	315,000	1,547,000	400,000						34,000	
Erie	3,871,068	3,679,347	83,045		768,794	303,110	702,062	550,000			1,272,336			191,721	
Franklin	3,718,679	3,718,679	20,140		629,539	821,513	1,344,049	655,910			247,528				
Greene	1,450,363	658,584			27,232	81,696	347,241	136,811			65,604		791,779		
Guernsey	426,467	426,467					426,467								
Hamilton	30,205	30,205				14,252					15,953				
Hancock	354,000	354,000	2,000		8,000	46,000	298,000								
Hardin	162,497	162,497					100,000	50,000			12,497				
Harrison	1,290,806	1,290,217	1,671				1,223,353	65,193						589	
Highland	310,641	295,888	4,518		94,650	124,214	48,440	24,066						14,753	
Holmes	45,427	1,042	482							560		44,385			
Jackson	611,035	611,035	23,919				200,000	100,000			287,116				
Logan	553,963	553,963	25,921		177,744		118,514	198,120			33,664				
Lucas	1,782,684	1,782,684	20,000				1,364,987	300,000			97,697				
Mahoning	2,278,099	2,278,099	10,369		800,000		1,021,317	200,000			246,413				
Marion	589,000	584,000	6,000		83,000	67,000	428,000							5,000	
Mercer	478,041	478,041	20,000				300,000	100,000			58,041				
Miami	1,179,352	1,081,839	11,404	10,102	96,900	14,488	508,650	287,383		152,912				97,513	
Monroe	101,233	101,233					101,233								
Montgomery	723,326	515,319					299,651	200,000			15,668		208,007		
Muskingum	1,469,365	1,469,365	1,380			500,000	812,788	20,000			135,197				
Noble	266,187	266,187	2,452				205,827				57,908				

TABLE 15. *2013 Ohio limestone and dolomite sales, by county and use (cont)*

County	Tons sold														
	Total all types	Crushed and broken stone										Dimension stone	Stone for portland cement manufacture	Agricultural stone (aglime)	Raw stone for burning
		Total	Riprap	Flux stone	Stone for portland cement concrete	Stone for asphaltic concrete	Road construction/ resurfacing	Commercial building	Railroad ballast	Extenders/ fillers	Unspecified/ other				
Ottawa	5,423,601	5,152,220	40,300		92,000	18,000	4,525,912	361,700			114,308				271,381
Paulding	1,162,411	629,653	10,000				301,264	200,000			118,389		532,758		
Pickaway	214,000	214,000	6,600		30,000	40,000	72,400	60,000	5,000						
Pike	467,880	467,880	4,577		100,000	100,000	170,000	60,000	10,000		23,303				
Preble	40,000	40,000	10,000				30,000								
Putnam	623,934	623,934	10,000		111,000	28,000	337,167	20,000			117,767				
Ross	210,000	210,000					135,000	75,000							
Sandusky	3,555,439	1,063,587	5,281		302,721	164,082	331,534	259,969						10,912	2,480,940
Seneca	2,031,378	1,421,097	7,587		75,637	144,945	303,007	100,000		303,491	486,430	2,602		24,106	583,573
Shelby	537,345	537,345	8,612				528,733								
Tuscarawas	286,751	286,751					234,420				52,331				
Union	1,744,749	1,744,749				400,000	700,000	300,000			344,749				
Van Wert	504,626	504,626	10,000		34,000		288,478	100,000			72,148				
Wood	1,421,057	1,421,057	12,323		212,079	276,287	575,598	320,000		5,162	19,608				
Wyandot	6,158,856	6,027,856	89,000	75,000	923,082	698,325	2,479,315	986,163	40,000	217,000	519,971			131,000	
TOTAL	57,871,840	52,191,854	598,787	85,102	6,274,742	5,230,477	26,452,518	7,437,944	104,203	712,588	5,295,493	53,050	1,532,544	758,498	3,335,894

TABLE 16. *2013 Production of lime from Ohio, by county and use*

County	Total tons[1]	Building (tons)	Chemical and industrial (tons)	Refractory (tons)
Ottawa	123,355	74,044	49,311	
Sandusky	1,081,628		1,081,628	
Seneca	272,591		272,591	
TOTAL	1,477,574	74,044	1,403,530	0

[1]Burning produced a 55.7% weight loss.

SYSTEM	GROUP	LITHOSTRATIGRAPHIC UNITS
Pleistocene		Glacial clay
Permian	Dunkard	
Pennsylvanian	Monongahela	Fishpot limestone Redstone limestone
	Conemaugh	Bellaire sandstone Ames limestone Buffalo sandstone Brush Creek limestone
	Allegheny	Lower Kittanning clay Vanport limestone Putnam Hill limestone Clarion shale Newland-Brookville clay/limestone
	Pottsville	Tionesta clay Middle Mercer clay Flint Ridge clay Massillon sandstone Sharon conglomerate
Mississippian		Maxville Limestone Logan Formation Black Hand Sandstone Buena Vista Sandstone
Devonian		Berea Sandstone Bedford Shale Ohio Shale Chagrin Member Ten Mile Creek Dolomite Dundee Limestone
	Detroit River	
		Delaware Limestone Columbus Limestone
Silurian	Salina	Salina Dolomite "Salt beds"
		Tymochtee Dolomite Greenfield Dolomite Peebles Dolomite Cedarville Dolomite Lockport Dolomite Laurel Limestone Dayton Limestone Brassfield Limestone
Ordovician	Cincinnati	
	Black River	Black River Limestone

FIGURE 17. Stratigraphic column of industrial minerals mined in Ohio during 2013. Modified from Slucher and others (2006), Ohio Division of Geological Survey (1990), and Brant and Delong (1960, table 9).

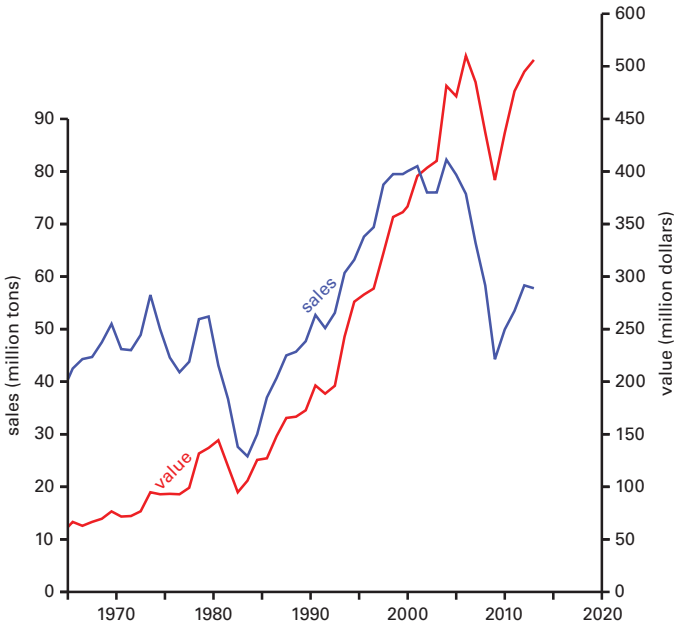

FIGURE 18. Sales and value of limestone and dolomite in Ohio.

SAND AND GRAVEL

(See also Appendix D)

Sand and gravel are common raw materials but can be found as major constituents of asphalt, concrete, mortar, landscaping, roofing shingles, soil additives, and many other products. Sand-and-gravel production increased rapidly in Ohio during the 1950s with the development of improved mining and processing machinery and increased demand from road building (Ohio Division of Geological Survey, 1959). Many depleted sand-and-gravel operations have been redeveloped as parks, residential, or commercial facilities due to their proximity to urban areas.

Commercial and residential building, Portland cement concrete, asphaltic concrete, and road construction/resurfacing were the major uses for Ohio sand and gravel in 2013.

Production

Sand and gravel were reported sold or produced by 150 companies at 217 operations in 59 Ohio counties during 2013 (fig. 19). Estimated production of sand and gravel totaled 28,708,583 tons in 2013.

Ohio ranks ninth nationally, out of 50 producing states and Puerto Rico, in the production of construction sand and gravel. The states leading Ohio, in descending order of production, are Texas, California, Minnesota, Michigan, Arizona, Washington, Colorado, and North Dakota. Ohio ranks fifth nationally in the production of aggregates, including crushed stone. The states leading Ohio in the production of aggregates are Texas, California, Pennsylvania, and Missouri (USGS, 2014c).

Sand-and-gravel deposits in Ohio primarily are associated with Wisconsinan-age glacial outwash and kame terraces in the valleys and tributaries of the Great Miami, Scioto, and Muskingum Rivers located in the southwestern, central, and eastern portions of the state, respectively. Important sand-and-gravel deposits also are found in glacial kames in northeast Ohio, particularly south of Cleveland in Portage, Summit, and Stark Counties. Additional sand-and-gravel resources are found in beach ridges associated with ancestral Lake Erie and alluvium of modern floodplains of the Ohio River and its tributaries.

Economic Impact

Estimated sales of sand and gravel totaled 29,691,597 tons, (fig. 20 and table 17; +1.0 percent from 2012, see Wolfe, 2013a). Sand accounted for 16,346,291 tons of the total sand and gravel sold, and gravel accounted for 13,345,306 tons (table 17). Hamilton, Stark, Portage, Franklin, and Butler Counties led in sales, accounting for 45.2 percent of the total.

The total value[5] of sand and gravel sold in 2013 was $200,273,102 (fig. 20). Average price per ton was $7.07.

An annual average of 838 employees worked an average of 145 days in 2013 to produce sand and gravel. Total wages of $63,384,529 were paid to a total of 1,225 employees (838 production employees and 387 nonproduction employees). The average annual wage, based on those employees for whom wages were reported, was $51,742.

[5]Includes reported and estimated values. See footnote 1, p. 9.

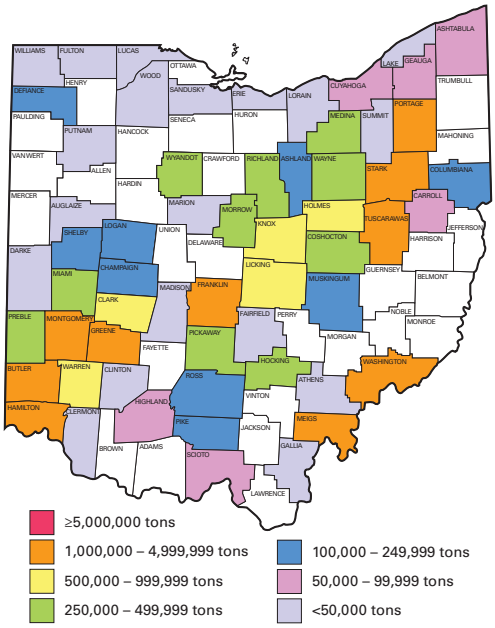

FIGURE 19. Sales of sand and gravel in Ohio in 2013, by county and quantity.

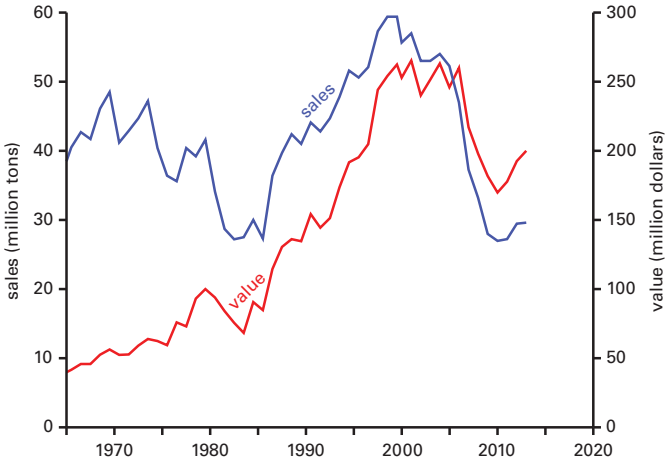

FIGURE 20. Sales and value of sand and gravel in Ohio.

TABLE 17. *2013 Ohio sand and gravel sales, by county and use*

County	Tons sold																
	Total sand and gravel	Total sand	Total gravel	Building		Portland cement concrete		Asphaltic concrete		Road construction/ resurfacing		Filtration		Foundry sand	Industrial sand	Other/unspecified	
				Sand	Gravel	Sand	Gravel	Sand	Gravel	Sand	Gravel	Sand	Gravel			Sand	Gravel
Ashland	212,393	70,550	141,843	21,165	42,553					42,331	85,106					7,054	14,184
Ashtabula	97,862	57,450	40,412	32,356	26,654	17,394					10,000	1,320	3,758			6,380	
Athens	28,051	18,208	9,843	18,208	9,843												
Auglaize	10,265	8,192	2,073	8,192	2,073												
Butler	2,055,358	968,351	1,087,007	353,094	364,955	151,226	99,437	68,155	84,017	304,600	497,022					91,276	41,576
Carroll	87,506	43,753	43,753					43,753			37,190		6,563				
Champaign	185,942	64,330	121,612	10,000	30,000	20,000	25,000	20,000	25,000	10,000	20,000					4,330	21,612
Clark	584,608	242,565	342,043	65,800	83,000	50,000	66,000	78,000	114,000	40,000	69,000					8,765	10,043
Clermont	47,579	47,579				39,423						8,156					
Clinton	65	65														65	
Columbiana	170,914	79,475	91,439	38,700	38,894					5,081	1,456	32,971	51,089			2,723	
Coshocton	378,018	129,957	248,061	14,411	64,255			84,404	44,511	11,654	103,715					19,488	35,580
Cuyahoga	84,563	84,563														84,563	
Darke	31,000	11,000	20,000	11,000	20,000												
Defiance	159,764	145,301	14,463	10,844	12,148	134,457											2,315
Erie	20		20														20
Fairfield	4,608	4,282	326	1,023	326											3,259	
Franklin	2,240,869	1,358,164	882,705	95,020	288,265	931,766	310,681	131,639	165,249	199,739	19,510						99,000
Fulton	19,380	19,380		16,026												3,354	
Gallia	3,222	3,222		2,998								224					
Geauga	90,253	60,253	30,000	60,000	30,000											253	
Greene	1,154,438	389,648	764,790	57,425	213,424	176,818	146,237	26,760	52,154	70,000	185,000	8,000				50,645	167,975
Hamilton	3,144,615	1,722,582	1,422,033	899,639	895,671	116,495	63,770	176,636	121,350	350,000	266,765		950			179,812	73,527
Highland	95,634	55,428	40,206		13,563	50,976			15,863		10,099	4,452	681				
Hocking	468,173	340,510	127,663	16,487	10,531	10,042	6,861	212,762	70,414	13,246	4,162		3,800			87,973	31,895
Holmes	799,216	437,981	361,235	154,866	215,745	103,943	40,239	105,910	33,050	46,846	57,941	26,416	14,260				
Knox	863,897	427,185	436,712	30,965	106,922	166,420	21,222	160,417	134,109	27,579	116,727		15,864			41,804	41,868
Lake	15,728	15,728		225												15,503	
Licking	888,261	494,058	394,203	131,488	220,259	132,917	31,529	110,049	70,752	100,000	40,404					19,604	31,259
Logan	111,415	44,933	66,482	10,972	20,000	3,658				20,000	30,000	140				10,163	16,482
Lorain	5,186	5,186		5,186													
Lucas	1,200	1,200		300								900					
Madison	47,192	18,141	29,051	6,987	29,051			11,154									
Marion	22,703	10,681	12,022	301		10,380	7,483				3,095		1,334				110
Medina	278,476	176,466	102,010	10,466	83,010	100,000		39,000	12,000							27,000	7,000

TABLE 17. *2013 Ohio sand and gravel sales, by county and use (cont.)*

County	Tons sold																
	Total sand and gravel	Total sand	Total gravel	Building		Portland cement concrete		Asphaltic concrete		Road construction/ resurfacing		Filtration		Foundry sand	Industrial sand	Other/unspecified	
				Sand	Gravel	Sand	Gravel	Sand	Gravel	Sand	Gravel	Sand	Gravel			Sand	Gravel
Meigs	1,119,388	677,705	441,683	70,000	70,000	352,000	170,949	30,000	30,000	140,000	130,000					85,705	40,734
Miami	428,956	246,311	182,645	100,500	104,500	40,000				100,000	50,000					5,811	28,145
Montgomery	1,029,272	501,602	527,670	294,796	254,826	108,992	140,756			50,000	80,300				7,712	40,102	51,788
Morrow	365,000	121,000	244,000	13,000		44,000		34,000		30,000	244,000						
Muskingum	219,277	174,865	44,412	10,272	6,123			21,668	3,878	1,412	856					141,513	33,555
Pickaway	370,553	182,445	188,108	28,150	47,953	75,000		65,000	50,000	12,482	86,474					1,813	3,681
Pike	192,917	171,174	21,743	93,000	21,743											78,174	
Portage	2,970,959	1,925,119	1,045,840	355,495	317,564	659,005	141,473	201,428	231,474	377,244	222,769	425	44,106			331,522	88,454
Preble	301,080	104,065	197,015	104,065	197,008												7
Putnam	10,470	10,470		10,470													
Richland	304,744	136,687	168,057	21,041	112,790			34,893		2,666	18,438		20,510			78,087	16,319
Ross	231,983	126,930	105,053	26,585	32,528	12,470	6,258	31,979	42,369	21,418	11,273					34,478	12,625
Sandusky	46,059	43,862	2,197			419	2,197			43,443							
Scioto	73,331	50,139	23,192	19,601	20,003	30,343	2,994									195	195
Shelby	177,527	90,475	87,052		151	82,700	66,665		15,348							7,775	4,888
Stark	3,009,544	1,684,432	1,325,112	328,183	236,623	196,729	27,385	353,207	551,796	551,904	352,910					254,409	156,398
Summit	29,851	19,050	10,801	18,773	2,085					277	2,857						5,859
Tuscarawas	1,649,669	990,559	659,110	361,234	322,159	172,496	47,290	173,464	130,176	254,355	156,980				25,962	3,048	2,505
Warren	877,534	355,535	521,999	307,522	487,607			19,488	17,394							28,525	16,998
Washington	1,065,969	737,120	328,849	206,911	86,664	271,414	18,774	100,000	107,176	130,000	81,630					28,795	34,605
Wayne	357,725	187,309	170,416	60,716	125,585	70,708	5,384	37,264	26,359	15,711	10,819	2,910	2,269				
Williams	37,940	13,616	24,324	13,616	24,324												
Wood	15,540	15,184	356			15,184	356										
Wyandot	417,935	224,270	193,665	71,062	64,738	114,000		34,000			4,000	1,119	124,927			4,089	
TOTAL[1]	29,691,597	16,346,291	13,345,306	4,599,136	5,356,116	4,461,375	1,448,940	2,405,030	2,148,439	2,971,988	3,010,498	87,033	290,111		33,674	1,788,055	1,091,202

[1]Any tally inconsistencies are due to rounding of production tonnages.

SANDSTONE AND CONGLOMERATE

(See also Appendix E)

Extensive high-quality sandstone and conglomerate deposits are located in central and eastern Ohio, from near Lake Erie to the Ohio River. During the mid-1800s, these geologic resources were developed into a large building-stone industry, for glass production, and to support the steel and associated industries. Ohio led the nation in sandstone production for many decades; this natural resource continues to support the state's industries today.

Crushed sandstone was used primarily for construction, glass sand, industrial sand, hydraulic fracturing proppant, and aggregate. Dimension stone was used primarily for rough construction purposes. GeoFacts No. 27, *Fracture Sand in Ohio*, was released by the ODNR Division of Geological Survey in September 2013 and provides a summary of potential sand resources that may be suitable for use in hydraulic-fracturing (Wolfe, 2013b).

Production

Sandstone and conglomerate were reported sold and/or produced by 21 companies at 27 operations in 17 Ohio counties during 2013 (fig. 21). Reported production of sandstone and conglomerate was 1,343,705 tons in 2013.

Based on the latest data available from the USGS in 2011, Ohio ranks seventeenth out of 34 producing states nationally in production of all dimension stone. Ohio ranks fourth in the production of sandstone dimension stone. The top five states, in descending order of total dimension-stone production, are Texas, Indiana, Wisconsin, Massachusetts, and Georgia (USGS, 2014d). National standings for crushed stone are included in the Limestone and Dolomite section (p. 20).

The Pennsylvanian-age Sharon conglomerate in northeastern Ohio was the most productive sandstone mined for industrial purposes during 2013. The Pennsylvanian-age Massillon sandstone and the Mississippian-age Black Hand Sandstone also were important sources of high-silica sandstone. The Massillon sandstone and the Devonian-age Berea Sandstone of northern Ohio, as well as the Mississippian-age Buena Vista Sandstone in southern Ohio, remain the primary geologic units quarried for building stone (Bownocker, 1915; see also fig. 17).

Economic Impact

Sales of sandstone and conglomerate totaled 1,308,675 tons (fig. 11; –7.1 percent from 2012, see Wolfe, 2013a). Geauga, Pike, Mahoning, Knox, and Guernsey Counties accounted for 88.0 percent of the total sales. Crushed sandstone and conglomerate accounted for 1,276,811 tons of the total sales (table 18) and dimension stone accounted for 31,864 tons (table 19).

The total value[6] of sandstone and conglomerate sold in 2013 was $41,913,113 (fig. 22). Average price per ton was $31.02 for crushed stone and $119.85 for dimension stone.

An annual average of 150 employees worked an average of 132 days in 2013 to produce sandstone and conglomerate. Total wages of $6,592,516 were paid to a total of 188 employees (150 production employees and 38 nonproduction employees). The average annual wage, based on those employees for whom wages were reported, was $35,067.

[6]Includes reported and estimated values. See footnote 1, p. 9.

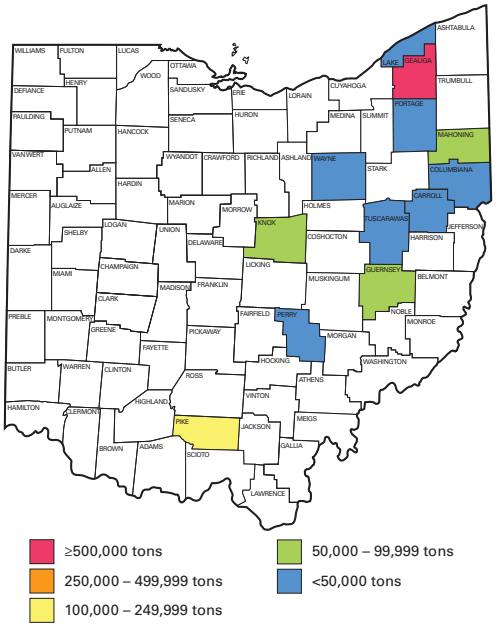

FIGURE 21. Sales of sandstone and conglomerate in Ohio in 2013, by county and quantity.

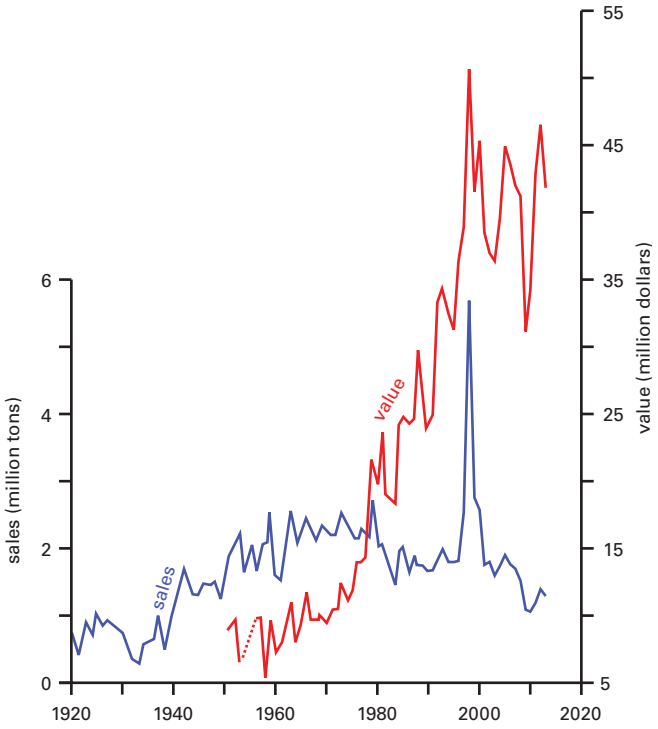

FIGURE 22. Sales and value of sandstone and conglomerate. Value line dashed where data not available.

TABLE 18. *2013 Ohio sales of crushed sandstone and conglomerate, by county and use*

County	Tons sold														
	Total	Foundry sand	Glass sand	Metallurgical pebble	Refractory	Riprap	Aggregate	Silica flour	Polishing/ grinding sand	Fire and furnace sand	Engine sand	Frac sand	Construction	Industrial sand	Other/ unspecified
Carroll	3,570					3,570									
Columbiana	12,996					285	5,540						7,171		
Geauga	765,839	115,573	173,408	4,294			42,904		3,299			27,691	236,743	161,927	
Guernsey	57,240					7,000							50,240		
Knox	78,034	611	22,735	537	2				1,128				27,073	15,999	9,949
Lake	34,548						24,372						10,176		
Mahoning	94,402												94,402		
Perry	20,035				20,035										
Pike	156,411	7,231										2,539	2,046	99,668	44,927
Portage	18,362						9,000						9,362		
Tuscarawas	33,668	2,232											30,000		1,436
Wayne	1,706												1,706		
TOTAL	1,276,811	125,647	196,143	4,831	20,037	10,855	81,816		4,427			30,230	468,919	277,594	56,312

TABLE 19. *2013 Ohio sales of dimension sandstone, by county and use*

County	Tons sold									
	Total	Refractory	Rough construction	Rubble	Grindstones	Rough architectural	Finished	Curbing	Flagging	Other/ unspecified
Columbiana	283					283				
Coshocton	10,945		10,945							
Erie	10,001		1,681	108			8,210		2	
Huron	7,865		7,865							
Knox	140		140							
Lorain	2,285			1,924			315			46
Summit	345		345							
TOTAL	31,864		20,976	2,032		283	8,525		2	46

CLAY AND SHALE

(See also Appendices F and G)

The ceramics industry in Ohio has a long and dynamic history. Potteries were established by the early 1800s to supply dinnerware and by the early 1900s, Ohio was producing tremendous amounts of building bricks, sewer pipe, roof and floor tiles, paving bricks, art pottery, and refractory products. Edward Orton, Jr., established the first ceramics engineering program in the nation at Ohio State University in 1894. Ohio is home to the leading producer of unglazed quarry tile in the United States; one of the nation's oldest continually operating tile manufacturers; and a 110-years-old roofing tile manufacturer whose products can be seen in 34 states and on nine federal buildings in Washington, D.C. Both the American Ceramic Society and the Edward Orton, Jr. Ceramic Foundation are headquartered in Westerville, Ohio. Ohio clay and shale is still being used to produce important ceramic products, though production tonnages are much less than 100 years ago. General discussions of clay and shale geology in Ohio can be found in Lamborn and others (1938) and Stout and others (1923).

Clay and shale mined in Ohio in 2013 was used largely for captive use in the production of common clay products, such as building bricks; in the construction industry; and to produce lightweight aggregate. Ohio ceramic products are shipped throughout the eastern United States and Canada.

Production

Clay was reported sold and/or produced by 20 companies at 29 operations in 14 Ohio counties during 2013 (fig. 23). Reported production of clay in 2013 was 389,816 tons.

Shale was reported sold and/or produced by 17 companies at 24 operations in 14 Ohio counties during 2013 (fig. 24). Reported production of shale in 2013 was 886,853 tons.

Based on 2011 data, the latest available from USGS, Ohio ranks fifth out of 40 producing states nationally in the production of common clay and shale. The states leading Ohio are Texas, Alabama, North Carolina, and Georgia (Virta, 2012).

Economic Impact

Clay sales (including material for captive use) totaled 434,475 tons (fig. 25; +50.2 percent from 2012, see Wolfe, 2013a); Tuscarawas, Lucas, Jackson, Muskingum, and Portage Counties accounted for 92.4 percent of the total sales (table 20).

The total value[7] of clay sold (including material for captive use) in 2013 was $4,019,771 (fig. 25). Average price was $9.25 per ton.

An annual average of 29 employees worked mining clay (including multiple commodities) for an average of 78 days in 2013. Total wages of $1,519,742 were paid to a total of 41 employees (29 production employees and 12 nonproduction employees). The average annual wage, based on those employees for whom wages were reported, was $37,067.

Shale sales (including material for captive use) totaled 869,182 tons (fig. 26; +120 percent from 2012, see Wolfe, 2013a); Tuscarawas, Cuyahoga, Marion, Paulding, and Greene Counties accounted for 86.0 percent of the total sales (table 21).

The total value[8] of shale sold (including material for captive use) in 2013 was $11,716,100 (fig. 15). Average price was $13.48 per ton.

An annual average of 20 employees worked mining shale (including multiple commodities) for an average of 97 days in 2013. Total wages of $1,143,883 were paid to a total of 24 employees (20 production employees and 4 nonproduction employees). The average annual wage, based on those employees for whom wages were reported, was $47,662.

Nearly all the clay and shale produced in Ohio is used to produce value-added products (e.g., building bricks, industrial ceramics, pottery, expanded aggregate, quarry tile), thus the economic impact is much greater than the combined $15.7 million mined value.

[7]Includes reported and estimated values. See footnote 1, p. 9.
[8]Includes reported and estimated values. See footnote 1, p. 9.

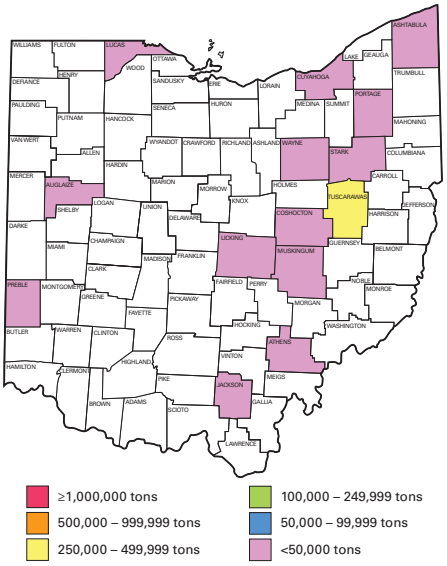

FIGURE 23.—Clay sales in Ohio in 2013, by county and quantity.

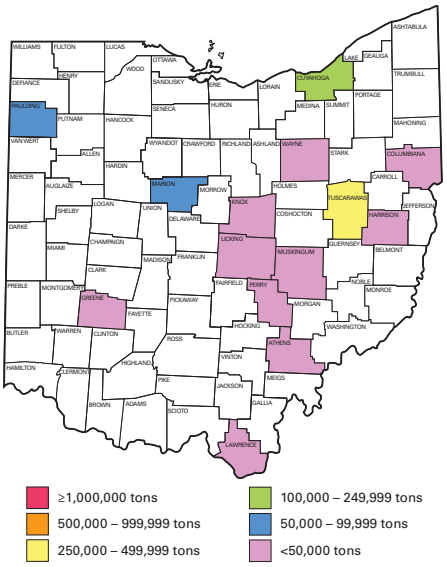

FIGURE 24.—Shale sales in Ohio in 2013, by county and quantity.

TABLE 20. ***2013 Ohio clay sales, by county and use***

County	Tons sold[1]								
	Total	Common clay products	Stoneware	Vitrified products	Cement manufacture	Refractories	Construction	Landfill use	Other/ unspecified
Ashtabula	1,839						1,704		135
Athens	21							21	
Auglaize	1,624	1,624							
Coshocton	2,669								2,669
Cuyahoga	1,444								1,444
Jackson	18,720					18,720			
Licking	13,058						13,058		
Lucas	44,300							44,300	
Muskingum	18,132	18,132							
Portage	15,766	362					15,404		
Preble	283						283		
Stark	11,120	11,120							
Tuscarawas	305,092	105,092					100,000	100,000	
Wayne	407						407		
TOTAL	434,475	136,330				18,720	130,856	144,321	4,248

[1]Any tally inconsistencies are due to rounding of total tons sold.

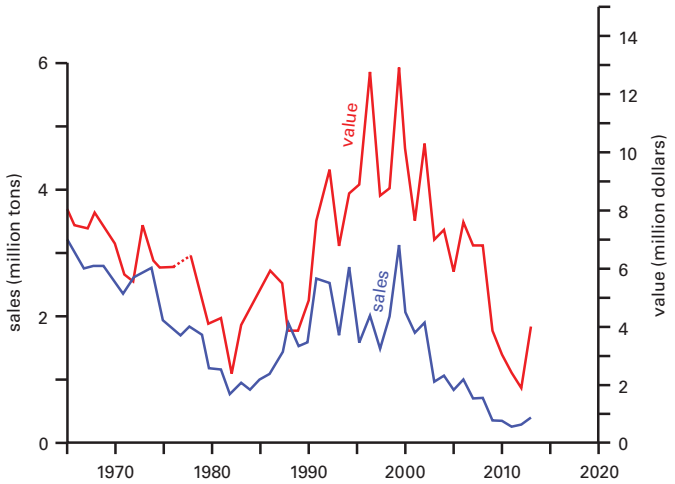

FIGURE 25.—Sales and value of clay in Ohio. Value line dashed where data not available.

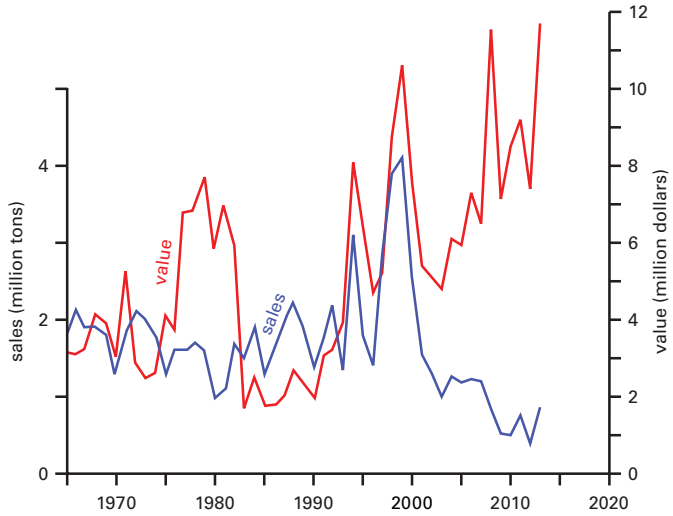

FIGURE 26.—Sales and value of shale in Ohio.

TABLE 21. ***2013 Ohio shale sales, by county and use***

County	Tons sold[1]							
	Total	Common clay products	Vitrified products	Cement manufacture	Lightweight aggregate	Construction	Landfill use	Other/ unspecified
Athens	75					44	13	18
Columbiana	19,270	19,270						
Cuyahoga	154,470				154,470			
Greene	44,241			44,241				
Harrison	31,701	31,701						
Knox	914					914		
Lawrence	9,600							9,600
Licking	28,815	28,815						
Marion	83,889	83,889						
Muskingum	16,431	16,140					291	
Paulding	75,106			75,106				
Perry	12,994	12,994						
Tuscarawas	389,544	99,544				100,000	190,000	
Wayne	2,132					554		1,578
TOTAL	869,182	292,353		119,347	154,470	101,512	190,304	11,196

SALT

(See also Appendix H)

Salt was one of the first industrial minerals produced in Ohio. It was a valuable commodity to early pioneers and was obtained from natural salt springs. The first State Legislature enacted laws concerning the salt springs during 1803–1804 and wells were drilled in Jackson and Muskingum Counties, leading to the first commercial salt production in the state. The most important area for early salt production was in Meigs County, beginning in 1850. By 1903, Ohio was producing 14.7 percent of all the salt in the United States (Bownocker, 1906). The modern salt industry in Ohio began in 1956 with the construction of the underground salt mine at Fairport Harbor in Lake County. A second large underground operation was constructed in Cleveland, beginning in 1957.

The primary use for Ohio salt in 2013 was ice control. Salt also was used as an additive in animal feed, for cattle blocks, and as a commercial and residential water-softening agent.

Production

Salt was reported produced by 4 companies at 6 operations in 5 Ohio counties during 2013 (fig. 27). Estimated production of salt was 3,964,757 tons in 2013.

The top five salt-producing states nationally, based on the latest data available from Kostick (2013), are Louisiana, Texas, New York, Ohio, and Kansas.

Both solution-mined and rock salt in Ohio is produced from the Silurian-age Salina Group. The Salina salt beds are restricted to the subsurface in eastern Ohio. The Salina Group in eastern Ohio is subdivided into seven units, A through G, from lowest to highest. The salt produced in Ohio comes from the F unit, which is further subdivided into four beds. Individual salt beds are less than 100 feet thick and may contain thin interbeds of anhydrite and dolomite. Depth to the F unit varies from 1,900 feet in the Cleveland mine to over 2,000 feet at the Fairport Harbor mine (Clifford, 1973; Tomastik, 2002; see also fig. 17). The primary use for Ohio salt was ice control. Salt also was used as an additive in animal feed, for cattle blocks, and as a commercial and residential water-softening agent.

Economic Impact

Estimated total tonnage of salt sold in 2013 was 4,391,138 tons (fig. 28; +23.6 percent from 2012, see Wolfe, 2013a). Rock salt sales totaled 3,469,716 tons from two underground mines, one each in Cuyahoga and Lake Counties. Four brining operations, two in Licking County and one each in Summit and Wayne Counties, sold an estimated total of 1,233 tons of salt in brine and 920,189 tons of evaporated salt.

The total value[9] of the salt sold in 2013 was $123,256,445 (fig. 28). Average price per ton of rock salt was $18.27 and of salt in brine and evaporated salt was $64.98. The average price per ton of all salt sold was $28.07.

An annual average of 264 employees worked to produce salt an average of 291 days in 2013. Total wages of $20,156,674 were paid to a total of 360 employees (264 production employees and 96 nonproduction employees). The average annual wage, based on those employees for whom wages were reported, was $55,991.

[9]Includes reported and estimated values. See footnote 1, p. 9.

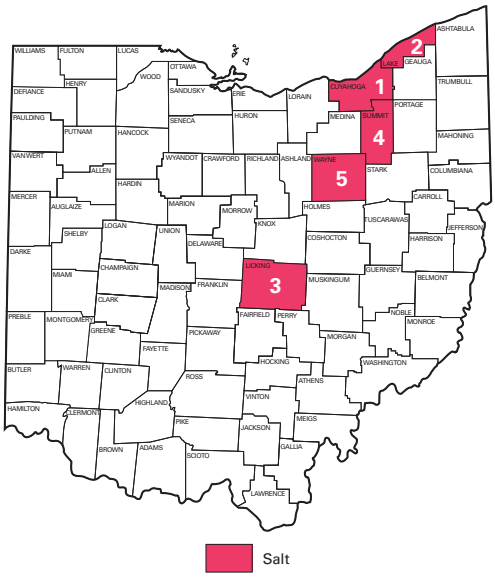

FIGURE 27.—Counties producing salt in Ohio in 2013 and their rankings in sales.

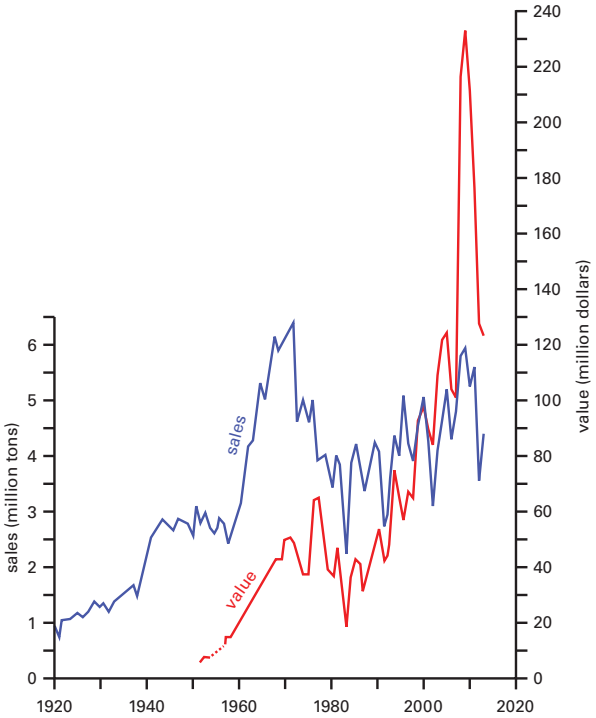

FIGURE 28.—Sales and value of salt in Ohio. Value line dashed where data not available.

GYPSUM

There was no gypsum production or sales reported in 2013. Gypsum has not been produced in Ohio since 2004 (fig. 29). A history of gypsum production in Ohio can be found in Wolfe (2001).

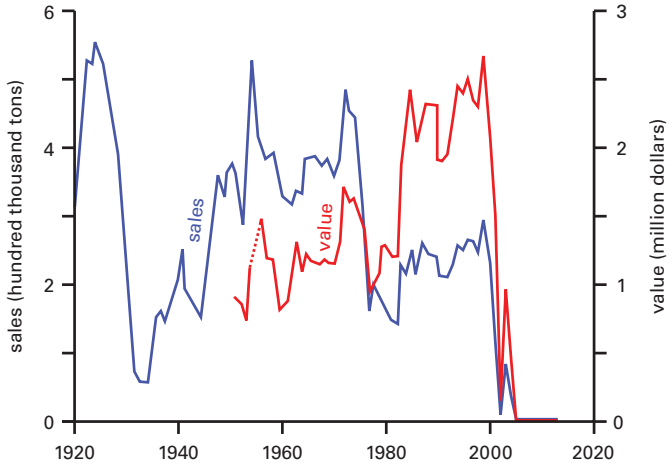

FIGURE 29.—Sales and value of gypsum in Ohio. Value line dashed where data not available. Some sales and values were estimated because in order to maintain confidentiality, actual sales and values were not reported.

PEAT

There was no peat production or sales reported in 2013. Peat has not been produced in Ohio since 2012 (fig. 30). Dachnowski (1912) contains information on the origin, formation, and uses of peat in Ohio.

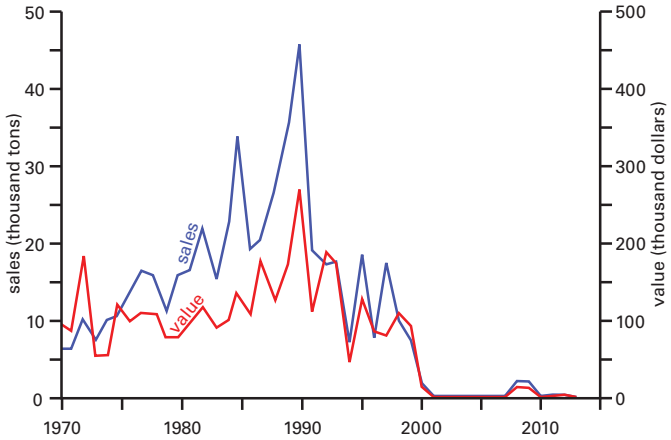

FIGURE 30.—Sales and value of peat in Ohio.

OIL AND GAS

(This information is summarized from DOGRM, in press)

The ODNR Division of Oil & Gas Resources Management (DOGRM) estimates that 643 wells were drilled in 2013, an increase of 90 wells from 2012. Wells were drilled in 41 of Ohio's 88 counties (fig. 31), a decrease of three counties from 2012. The top ten counties in number of new wells drilled in 2013 were Carroll, Harrison, Guernsey, Noble, Monroe, Stark, Columbiana, Belmont, Coshocton, Knox and Meigs (tied for tenth). There were 623 productive wells and 20 dry holes for a completion rate of 96.9 percent (table 22).

The Ordovician-age Utica-Point Pleasant interval was the most actively drilled in 2013 with 61 percent of all wells drilled, followed by the "Clinton" sandstone at 18 percent. Statewide, the longest lateral leg of a horizontal well was drilled to a length of 19,946 feet into the Utica-Point Pleasant interval.

The total reported crude oil production in Ohio in 2013 was 8,005,588 barrels (fig. 32), a 56.9 percent increase from 2012. Through 2013, Ohio wells have produced 1,154,488,072 barrels. The dollar value of crude oil produced in Ohio in 2013 was $766,214,827, an increase of 67.3 percent. Average price per barrel in 2013 was $95.71, a 4 percent increase from the 2012 price.

Natural gas production in Ohio in 2013 was 167,923,260 thousand cubic feet (MCF; fig. 32), a 93.7 percent increase from 2012. This production figure includes an estimated 671,329 MCF of gas used on the lease. Through 2013, Ohio wells have cumulatively produced 8,848,011,244 MCF of natural gas. The dollar value of natural gas produced in Ohio in 2013 was $589,410,643, an increase of 137.5 percent from 2012. The average price per MCF in 2013 was $3.51, an increase of $0.65 per MCF from 2012.

The combined total value of Ohio oil and gas production in 2013 was $1,355,625,470, an increase of 92 percent from 2012.

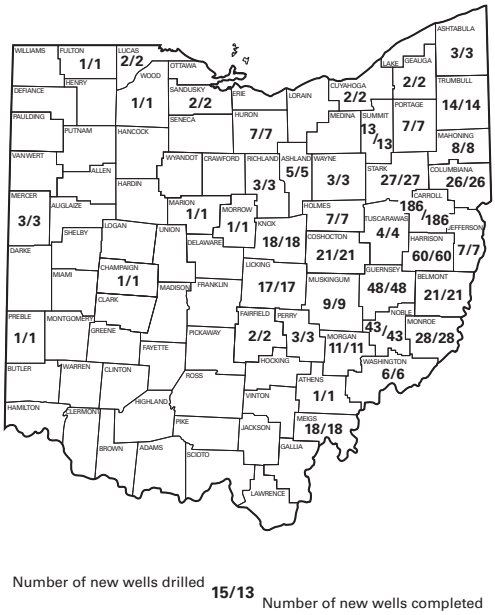

FIGURE 31.—New wells drilled and completed (including dry holes) for oil and gas in Ohio in 2013, by county (from DOGRM, in press).

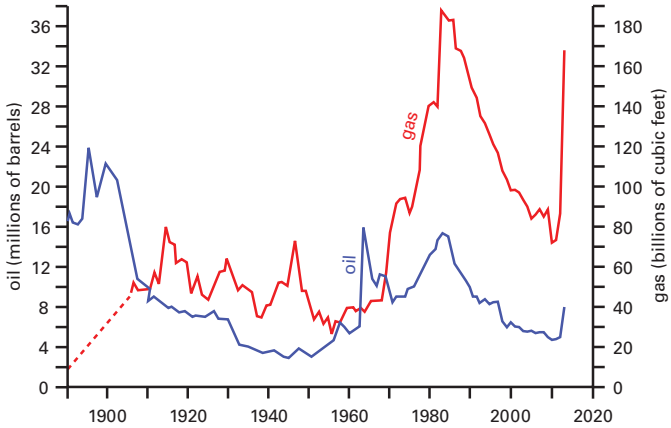

FIGURE 32.—Production of oil and gas in Ohio. Gas line dashed where data not available.

TABLE 22. ***2013 Ohio summary of new oil and gas well completions, by county***

County[1]	Development wells		Exploratory wells		Total wells	Percent productive	Drilled footage		
	Productive	Dry	Productive	Dry			Productive	Dry	Total
Ashland	1	1	3	0	5	80	16,422	630	17,052
Ashtabula	2	0	0	1	3	67	7,164	5,364	12,528
Athens	1	0	0	0	1	100	1,750	0	1,750
Belmont	14	0	7	0	21	100	353,371	0	353,371
Carroll	150	0	36	0	186	100	2,593,791	0	2,593,791
Champaign	0	0	0	1	1	0	0	2,040	2,040
Columbiana	12	0	14	0	26	100	360,782	0	360,782
Coshocton	20	0	0	1	21	95	66,332	6,319	72,651
Cuyahoga	2	0	0	0	2	100	7,868	0	7,868
Fairfield	2	0	0	0	2	100	3,955	0	3,955
Fulton	0	0	0	1	1	0	0	4,361	4,361
Geauga	2	0	0	0	2	100	8,483	0	8,483
Guernsey	32	0	16	0	48	100	445,858	0	445,858
Harrison	48	0	12	0	60	100	886,965	0	886,965
Holmes	7	0	0	0	7	100	17,614	0	17,614
Huron	4	0	2	1	7	86	20,594	4,200	24,794
Jefferson	3	0	4	0	7	100	108,465	0	108,465
Knox	16	1	0	1	18	89	41,524	5,300	46,824
Licking	15	1	1	0	17	94	32,191	3,794	35,985
Lucas	0	1	0	1	2	0	0	5,231	5,231
Mahoning	5	0	3	0	8	100	106,135	0	106,135
Marion	0	1	0	0	1	0	0	2,967	2,967
Meigs	18	0	0	0	18	100	37,559	0	37,559
Mercer	0	0	2	1	3	67	2,420	1,823	4,243
Monroe	14	0	14	0	28	100	332,289	0	332,289
Morgan	6	0	5	0	11	100	71,955	0	71,955
Morrow	0	1	0	0	1	0	0	3,999	3,999
Muskingum	9	0	0	0	9	100	42,371	0	42,371
Noble	37	0	6	0	43	100	526,045	0	526,045
Perry	3	0	0	0	3	100	7,853	0	7,853
Portage	3	1	2	1	7	71	38,264	12,097	50,361
Preble	0	0	0	1	1	0	0	1,640	1,640
Richland	2	0	1	0	3	100	13,578	0	13,578
Sandusky	1	0	0	1	2	50	2,638	2,208	4,846
Stark	27	0	0	0	27	100	150,024	0	150,024
Summit	13	0	0	0	13	100	53,370	0	53,370
Trumbull	5	0	8	1	14	93	141,730	7,142	148,872
Tuscarawas	3	0	1	0	4	100	15,908	0	15,908
Washington	3	0	3	0	6	100	50,151	0	50,151
Wayne	2	0	0	1	3	67	6,860	6,428	13,288
Wood	1	0	0	0	1	100	1,600	0	1,600
TOTAL	483	7	140	13	643	97	6,573,879	75,543	6,649,422

[1]No wells were drilled in these counties in 2013: Adams, Allen, Auglaize, Brown, Butler, Clark, Clermont, Clinton, Crawford, Darke, Defiance, Delaware, Erie, Fayette, Franklin, Gallia, Greene, Hamilton, Hancock, Hardin, Henry, Highland, Hocking, Jackson, Lake, Lawrence, Logan, Lorain, Madison, Medina, Miami, Montgomery, Ottawa, Paulding, Pickaway, Pike, Putnam, Ross, Scioto, Seneca, Shelby, Union, Van Wert, Vinton, Warren, Williams, and Wyandot.

TABLE 23. ***2013 Ohio summary of new oil and gas well completions, by geologic unit***

Producing Zones	Development		Exploratory		Total Wells	Percent Productive	Drilled Footage		
	Productive	Dry	Productive	Dry			Productive	Dry	Total
Pennsylvanian (Cow Run)	0	0	1	0	1	100	1,100	0	1,100
Upper Mississippian (Undifferentiated)	0	0	0	0	0	0	0	0	0
Mississippian									
1st & 2nd Berea	37	2	0	0	39	95	56,406	1,430	57,836
Devonian									
Ohio Shale-Marcellus	34	0	10	0	44	100	246,639	0	246,639
Oriskany	0	0	1	0	1	100	5,300	0	5,300
Silurian									
Clinton-Medina	111	1	1	0	113	99	447,500	4,500	452,000
Ordovician									
Utica/Point Pleasant	276	0	113	0	389	100	5,610,464	0	5,610,464
Trenton	2	0	2	0	4	100	6,658	0	6,658
Beekmantown	8	0	5	0	13	100	85,049	0	85,049
Cambrian-Ordovician									
Rose Run	7	0	1	4	12	67	54,277	26,422	80,699
Cambrian									
Trempealeau	8	4	6	8	26	54	60,486	36,763	97,249
PreCambrian	0	0	0	1	1	0	0	6,428	6,428
TOTAL	483	7	140	13	643	97	6,573,879	75,543	6,649,422

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TABLE 24. ***Ohio counties[1] and their state mine number abbreviations[2]***

County	Abbreviation	County	Abbreviation	County	Abbreviation
Adams	Ads	Hamilton	Hmn	Noble	Ne
Allen	An	Hancock	Hk	Ottawa	Oa
Ashland	Ald	Hardin	Hdn	Paulding	Pg
Ashtabula	Asa	Harrison	Hn	Perry	Py
Athens	As	Henry	Hy	Pickaway	Pky
Auglaize	Ae	Highland	Hd	Pike	Pke
Belmont	Bt	Hocking	Hg	Portage	Pe
Brown	Bn	Holmes	Hs	Preble	Pre
Butler	Br	Huron	Hrn	Putnam	Pm
Carroll	Cl	Jackson	Jkn	Richland	Rd
Champaign	Cpn	Jefferson	Jfn	Ross	Rs
Clark	Ck	Knox	Kx	Sandusky	Sy
Clermont	Ct	Lake	Lke	Scioto	So
Clinton	Cln	Lawrence	Le	Seneca	Sa
Columbiana	Ca	Licking	Lg	Shelby	Shy
Coshocton	Cn	Logan	Lgn	Stark	Sk
Crawford	Cd	Lorain	Ln	Summit	St
Cuyahoga	Cya	Lucas	Ls	Trumbull	Tl
Darke	Dke	Madison	Mdn	Tuscarawas	Ts
Defiance	De	Mahoning	Mg	Union	Un
Delaware	Del	Marion	Mn	Van Wert	Vt
Erie	Ee	Medina	Ma	Vinton	Vn
Fairfield	Fd	Meigs	Ms	Warren	Wan
Fayette	Fe	Mercer	Mr	Washington	Wn
Franklin	Fn	Miami	Mi	Wayne	We
Fulton	Ftn	Monroe	Me	Williams	Ws
Gallia	Ga	Montgomery	My	Wood	Wd
Geauga	Gea	Morgan	Mon	Wyandot	Wt
Greene	Ge	Morrow	Mw		
Guernsey	Gy	Muskingum	Mum		

[1]Fayette, Henry, Morgan, and Trumbull Counties reported no production or sales of mineral commodities in 2013.
[2]As used for State of Ohio mine numbers.

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2013 COAL COMPANIES WITH SALES AND/OR PRODUCTION

Company	Number of mines	Production (tons)	Sales (tons)
American Energy Corp.	1	8,039,549	8,067,735
American Landfill, Inc.	1	311	311
Anthony Mining Co., Inc.	1	103,900	103,900
B & N Coal, Inc.	4	455,443	455,443
Belden Brick Co.	2	4,026	4,026
Buckingham Coal Co., Inc.	2	1,567,544	1,577,525
Collier Ports, Inc.	1	589	589
D. & D. Mining Co.	1	3,616	3,451
Egypt Valley Stone, LLC	1	18,191	18,191
F. & M. Coal Co.	1	3,999	3,999
Harrison Resources, LLC	1	764,369	764,369
Hopedale Mining, LLC	1	1,124,532	1,103,110
Kimble Clay & Limestone Co.	1	210,000	210,000
L & M Mineral Co.	1	3,474	3,474
Ohio American Energy, Inc.	1	502,520	502,520
Ohio Valley Coal Co.	1	5,505,364	5,499,622
Oxford Mining Co., LLC	1	61,811	61,811
Oxford Resource Partners, LP	23	4,798,753	4,798,752
Rosebud Mining Company	5	714,031	714,030
Sands Hill Mining, LLC	3	153,200	165,544
Sidwell Materials, Inc.	1	7,494	7,494
Solomon's Mines, Inc.	1	3,137	3,137
Sterling Mining Co.	2	448,824	455,831
Waterloo Coal Co., Inc.	2	349,907	349,906
TOTAL: 24 companies	59	24,844,584	24,874,770

2013 OHIO ALPHABETICAL DIRECTORY OF PRODUCING COAL MINE OPERATORS

For those mines that have not been assigned a state mine number, a letter designation is used (example: Bt-C).
The designation **(u)** indicates an underground mine.
To convert short tons to metric tons, multiply the given tonnage by 0.907185.

Name, address, telephone number, and president/owner/manager of company	Name of mine	County(ies)	2013 production (tons)	State mine number	Mineral Resources Management permit number
American Energy Corp. 43521 Mayhugh Hill Rd., Twp Rd. 88 Beallsville, OH 43716 (740) 338-3100 Robert E. Murray, pres.	Century Mine (u)	Belmont	8,039,549	Bt-67	D-0425
American Landfill, Inc. 7916 Chapel St. SE Waynesburg, OH 44688 (330) 866-3265 Chad Abell, pres.	American Landfill, Inc.	Stark	311	Sk-246	D-1090
Anthony Mining Co., Inc. P.O. Box 1298 Steubenville, OH 43952 (740) 266-8100 Albert Carapelotti, pres.	Carson-Harrah	Harrison	103,900	Hn-766	D-1041
B & N Coal, Inc. P.O. Box 100 Dexter City, OH 45727 (740) 783-3575 Carl Baker, Jr., pres.	Estadt Mine Westfork Mine Whigville III Mantel Mine	Noble Noble Noble Washington	62,325 107,432 162,446 123,240	Ne-BN Ne-BN5 Ne-BN8 Ne-BN7	D-1038 D-2218 D-2332 D-2285
Belden Brick Co. P.O. Box 20910 Canton, OH 44701 (330) 265-2030 Robert F. Belden, pres.	Wallick Pit Shanesville Pit	Tuscarawas Tuscarawas	1,925 2,101	Ts-1841 Ts-1939	IM-45 IM-47
Buckingham Coal Co., Inc. P.O. Box 400 Corning, OH 43730-0400 (740) 347-4565 Gerald N. Little, pres.	Buckingham Mine No. 7 (u) Buckingham Mine No. 6 (u)	Perry Perry	613,596 953,948	Py-B1 Py-B2	D-2223 D-2269
Collier Ports, Inc. 5181 Symmes Creek Rd. Patriot, OH 45658 (740) 352-5013 Leroy H. Collier, pres.	Collier	Gallia	589	Ga-C	D-2400
D. & D. Mining Co. 3379 E. Garfield Rd. New Springfield, OH 44443 (330) 549-3127 Donald Thompson, pres.	D. & D. Strip	Mahoning	3,616	Mg-D	D-2164
Egypt Valley Stone, LLC P.O. Box 188 Morristown, OH 43759 (740) 782-0042 Richard Petrozzi, pres.	Shugert	Belmont	18,191	Bt-E	IM-2299
F. & M. Coal Co. 3925 County Rd. 56 Toronto, OH 43964 (740) 544-5203 Edward Fiala, partner	Grabbit Pit	Jefferson	3,999	Jfn-FM1	D-2216

2013 OHIO ALPHABETICAL DIRECTORY OF PRODUCING COAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County(ies)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Harrison Resources, LLC P.O. Box 205 Cadiz, OH 43907 (740) 942-4393 Chuck Ungurean, pres.	Sexton 2	Harrison	764,369	Hn-H	D-2289
Hopedale Mining, LLC 86900 Sinfield Rd. P.O. Box 415 Hopedale, OH 43976 (740) 937-2225 Chris Nalton, pres.	Hopedale Mining, LLC (u)	Harrison	1,124,532	Hn-169	D-0424
Kimble Clay & Limestone Co. 3596 State Route 39 W Dover, OH 44622-9801 (330) 343-1226 Keith B. Kimble, pres.	Kimble Clay & Limestone Co.	Tuscarawas	210,000	Ts-K10	D-2264
L & M Mineral Co. 2010 County Rd. 144 Sugarcreek, OH 44681 (330) 852-3696 John E. Ling, Jr., pres.	Luikart	Tuscarawas	3,474	Ts-1914	D-0701
Ohio American Energy, Inc. 46226 National Rd. St. Clairsville, OH 43950 (740) 338-3100 Robert E. Murray, pres.	Northstar 2 Mine	Jefferson	502,520	Jfn-04	D-2362
Ohio Valley Coal Co. 46226 National Rd. St. Clairsville, OH 43950 (740) 338-3149 Robert E. Murray, owner	Powhatan No. 6 (u)	Belmont	5,505,364	Bt-68	D-0360
Oxford Mining Co., LLC P.O. Box 427 Coshocton, OH 43812 (740) 622-6302 Charles C. Ungurean, pres.	Keener	Tuscarawas	61,811	Ts-OX2	D-2404
Oxford Resource Partners, LP P.O. Box 427 Coshocton, OH 43812 (740) 622-6302 Charles C. Ungurean, pres.	Jeffco	Belmont	32,318	Bt-J	D-2319
	Lafferty	Belmont	1,922	Bt-OX3	D-2198
	Wheeling Valley	Belmont	254,646	Bt-OX5	D-2315
	Marietta Egypt Valley	Belmont	141,488	Bt-OX6	D-2386
	Shugert	Belmont	227,208	Bt-OX7	D-2387
	Bedway-Kaczor	Belmont	199,103	Bt-OX8	D-2398
	Rosebud Miller	Columbiana	36,888	Ca-R OX	D-2359
	King Crum	Guernsey	156,334	Gy-01	D-2403
	Sandy Ridge	Harrison	236,324	Hn-A1	D-2292
	Standingstone Mine	Harrison	908,297	Hn-02	D-2277
	Picken/Strip #3	Harrison	98,904	Hn-V	D-2286
	Pasco	Jefferson	87,349	Jfn-06	D-2408
	Ellis	Jefferson	542,270	Jfn-OX	D-2369
	Shuman	Noble	24,331	Ne-02	D-2379
	New Lex-Rambo	Perry	366,525	Py-01	D-2254
	Pole Cat Road	Perry	430,984	Py-03	D-2376
	East Canton	Stark	398,261	Sk-0	D-2364
	Strasburg Slurry	Tuscarawas	6,475	Ts-HC	D-0981
	Hunt	Tuscarawas	272,646	Ts-K8	D-2226

2013 OHIO ALPHABETICAL DIRECTORY OF PRODUCING COAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County(ies)	2013 production (tons)	State mine number	Mineral Resources Management permit number
	Stillwater Page	Tuscarawas	111,381	Ts-O6	D-2325
	Stone Creek-Kaiser/Mathais	Tuscarawas	117,045	Ts-O9	D-2340
	West	Tuscarawas	80,540	Ts-OX	D-2361
	Stone Creek Kopka	Tuscarawas	67,514	Ts-OX1	D-2393
Rosebud Mining Company	Vail Mine	Harrison	205,924	Hn-R1	D-2355
301 Market St.	Kirk	Jefferson	4,462	Jfn-B1	D-2241
Kittanning, PA 16201	Bergholz Mine (u)	Jefferson	282,284	Jfn-B1R	D-1180
(724) 545-6222	Hamilton	Stark	9,852	Sk-R	D-2357
J. Clifford Forest, pres.	Tusky Mine (u)	Tuscarawas	211,509	Ts-TR	D-2177
Sands Hill Mining, LLC	Sands Hill Rockcamp II	Jackson	60,706	Jkn-S2 Jkn	D-1087
P.O. Box 650	Big Valley	Vinton	8,626	Vn-S4	D-2114
Hamden, OH 45634-0650	Big Rock	Vinton	83,868	Vn-S7	D-2344
(740) 384-4211					
Dave Zatezelo, pres.					
Sidwell Materials, Inc.	Uniontown Stone	Belmont	7,494	Bt-S	D-2261
4620 Limestone Valley Rd.					
Zanesville, OH 43701					
(740) 849-2422					
Jeffrey R. Sidwell, pres.					
Solomon's Mines, Inc.	Solomon's Mines, Inc.	Columbiana	3,137	Ca-SM	IM-1258
7732 Salem-Unity Rd.					
Salem, OH 44460					
(330) 337-0123					
Jack Solomon, pres.					
Sterling Mining Co.	Sterling-Carroll Hollow Deep (u)	Carroll	242,336	Cl-S1	D-2091
10900 South Ave.	SMC-Shean Hill (u)	Jefferson	206,488	Jfn-ST2	D-2187
P.O. Box 217					
North Lima, OH 44452					
(330) 549-2165					
W. Thomas Mackall, pres.					
Waterloo Coal Co., Inc.	Layne	Jackson	92,287	Jkn-W2	D-712
P.O. Box 626	Dundas-Oreton	Vinton	257,620	Vn-191 Vn	D-0867, D-0957, D-1004
Jackson, OH 45640					
(740) 286-5633					
Denton Bowman, pres.					

2013 OHIO DIRECTORY OF COAL PREPARATION PLANTS AND ASSOCIATED FACILITIES, BY COUNTY

For those mines that have not been assigned a state mine number, a letter designation is used (example: Bt-C).

County	Name, address, telephone number, and president/owner/ manager of company	Name of plant	Township	State mine number	Mining and reclamation permit number	Type of facility
Belmont	Marietta Coal Co. 67705 Friends Church Rd. St. Clairsville, OH 43950 (740) 695-2197 John Nicolozakes, mgr.	Loading Dock	Pultney	Bt-936	D-0216	loading dock, prep plant—jig, flotation, centrifugal dryer, crushers, screens
	Ohio Valley Coal Co. 56854 Pleasant Ridge Rd. Alledonia, OH 43902 (740) 926-1351 John Forelli, pres.	Powhatan #6	Smith, Washington	Bt-68	D-0360	prep plant—jigs, cyclones, centrifuges, thickeners, filters, screens
	Ohio Valley Transloading Co. 56854 Pleasant Ridge Rd. Alledonia, OH 43902 (216) 765-1240 Robert E. Murray, pres.	Harbour Facility	York	Bt-1198		dock
	Oxford Resource Partners, LP P.O. Box 427 Coshocton, OH 43812 (740) 622-6302 Charles C. Ungurean, pres.	Bellaire Dock	Pultney	Bt-832	D-0838	loading dock
	Rayle River Coal 67705 Friends Church Rd. St. Clairsville, OH 43950 (740) 695-2197 John Nicolozakes, pres.	Rayle River Terminal	Pultney	Bt-1191		coal transfer facility
Columbiana	Rosebud Mining Company 301 Market St. Kittanning, PA 16201 (724) 545-6222 J. Clifford Forest, pres.	Kensington Preparation Plant	West	Ca-879	D-0806	prep plant—heavy-media washer, cyclone, centrifuges, breaker
Coshocton	Oxford Resource Partners, LP P.O. Box 427 Coshocton, OH 43812 (740) 622-6302 Charles C. Ungurean, pres.	Lori Tipple	Franklin	Cn-736	D-0671	tipple
Gallia	Sands Hill Mining, LLC P.O. Box 650 Hamden, OH 45634-0650 (740) 384-4211 Dave Zatezalo, pres.	Sands Hill Coal Co., Inc.	Addison	Ga-183	D-0834	tipple
	Waterloo Coal Co., Inc. P.O. Box 626 Jackson, OH 45640 (740) 682-7787 T. L. Darlington, Jr., pres.	Waterloo Dock #1	Addison	Ga-229	D-0725	dock, tipple
Harrison	Hopedale Mining, LLC P.O. Box 415 Hopedale, OH 43907 (740) 937-2225 David G. Zatezalo, pres.	Hopedale Prep Plant	Green	Hn-169	D-0424	prep plant—heavy-media vessel, heavy-media cyclones, spirals, dryers, thickeners, crushers, screens

2013 OHIO DIRECTORY OF COAL PREPARATION PLANTS AND ASSOCIATED FACILITIES, BY COUNTY (cont.)

County	Name, address, telephone number, and president/owner/ manager of company	Name of plant	Township	State mine number	Mining and reclamation permit number	Type of facility
Mahoning	Thompson Bros. Mining Co. 3379 E. Garfield Rd. New Springfield, OH 44443 (330) 549-3979 Donald Thompson, owner	Thompson Bros. Mining Co.	Springfield	Mg-588	D-0711	tipple
Meigs	Meigs Point Dock, LLC P.O. Box 388 New Haven, WV 25265 (304) 255-7458 David Jude, pres.	Meigs Point Dock	Sutton	Ms-M	D-2323	dock
	Waterloo Coal Co., Inc. P.O. Box 626 Jackson, OH 45640 (740) 682-7787 T. L. Darlington, Jr., pres.	Waterloo Dock #3	Salisbury	Ms-285	D-0698	tipple, dock
Scioto	Norfolk Southern Railroad 914 Hayport Rd. Wheelersburg, OH 45694 (740) 574-8491 Charles G. Howard, asst. to mgr.	NS Wheelersburg Terminal	Porter	So-96		dock
Tuscarawas	Oxford Resource Partners, LP P.O. Box 427 Coshocton, OH 43812 (740) 622-6302 Charles C. Ungurean, pres.	Strasburg Wash Plant	Franklin, Lawrence	Ts-1942	D-0287	prep plant—jigs, cyclones, centrifuges, crushers, screens, picking tables
		Slurry Wash Plant	Franklin, Lawrence	Ts-HC	D-0981	prep plant—cyclones
Vinton	Waterloo Coal Co., Inc. P.O. Box 626 Jackson, OH 45640 (740) 682-7787 T. L. Darlington, Jr., pres.	Benedict Tipple	Swan	Vn-145	D-0159	tipple
		Dundas Tipple	Clinton	Vn-178	D-0185	tipple

2013 OHIO DIRECTORY OF PRODUCING COAL MINE OPERATORS, BY COUNTY

NOTE: This directory lists only coal-producing operations and excludes tipples; loading docks; preparation plants; or other active, nonproducing operations that would contribute to employment and wage statistics presented in tables 11–12 (p. 16). For those mines that have not been assigned a state mine number, a letter designation is used (example: Bt-C). There is no correlation between the "Seam: Number" column and the "Production: Tonnage" column. The "Seam: Number" column represents the seam(s) mined at the operation. No production tonnage is listed by seam. Days in production were estimated for those companies not providing this information. To convert short tons to metric tons, multiply the given tonnage by 0.907185.

Seam identification of principal Ohio coals

1	Sharon	4	Newland (Brookville)	6a	Lower Freeport	9	Meigs Creek
2	Quakertown	4a	Clarion	7	Upper Freeport	11	Waynesburg
3	Lower Mercer	5	Lower Kittanning	7a	Mahoning	12	Washington
3a	Upper Mercer	5a	Strasburg	8	Pittsburgh		
3b	Tionesta	6	Middle Kittanning	8a	Pomeroy (Redstone)		

H	Harlem
W	Wilgus
WI	Winters

Type of mine/production

S	Surface
UG	Underground

Name of company	Name of mine	Township	Seam		Type of mine	Production		Days in production in 2013	Disposition		Employment			State mine number
			Number	Thickness (inches)		Method	Tonnage		Method	Tonnage	Production UG	Production S	Other	
BELMONT COUNTY—Total production = 14,427,283														
American Energy Corp.	Century Mine	Wayne, Washington	8	66	UG	longwall cont. miner *Total*	6,909,561 1,129,988 *8,039,549*	355	rail truck *Total*	6,421,157 1,646,578 *8,067,735*	654		136	Bt-67
Egypt Valley Stone, LLC	Shugert	Kirkwood, Union	8	42	S	strip	18,191	189	truck	18,191		3	2	Bt-E
Ohio Valley Coal Co.	Powhatan No. 6	Smith	8	62	UG	longwall cont. miner *Total*	4,839,107 666,257 *5,505,364*	355	rail truck *Total*	3,600,926 1,898,696 *5,499,622*	457		218	Bt-68
Oxford Resource Partners, LP	Bedway-Kaczor	Richland, Union, Wheeling	9	42	S	strip auger *Total*	178,530 20,573 *199,103*	253	truck	199,103		20	2	Bt-OX8
	Jeffco	Warren	9	42	S	strip	32,318	63	truck	32,318		6	7	Bt-J
	Lafferty	Union	9	46	S	strip	1,922	4	truck	1,922		0	2	Bt-OX3
	Marietta Egypt Valley	Kirkwood	8	42	S	strip auger *Total*	122,069 19,419 *141,488*	253	truck	141,488		18	2	Bt-OX6
	Shugert	Union	9 11	50 24	S	strip highwall *Total*	101,367 125,841 *227,208*	121	truck	227,208		16	5	Bt-OX7
	Wheeling Valley	Wheeling	9	45	S	strip auger *Total*	232,828 21,818 *254,646*	253	truck	254,646		39	4	Bt-OX5
Sidwell Materials, Inc.	Uniontown Stone	Wheeling	8	42	S	auger	7,494	95	truck	7,494		5	1	Bt-S

2013 OHIO DIRECTORY OF PRODUCING COAL MINE OPERATORS, BY COUNTY (cont.)

Name of company	Name of mine	Township	Seam		Type of mine	Production		Days in production in 2013	Disposition		Employment			State mine number
			Number	Thickness (inches)		Method	Tonnage		Method	Tonnage	Production UG	Production S	Other	
CARROLL COUNTY—Total production = 242,336														
Sterling Mining Co.	Sterling-Carroll Hollow Deep	Fox	6	36	UG	cont. miner	242,336	250	truck	238,241	44		5	Cl-S1
COLUMBIANA COUNTY—Total production = 40,025														
Oxford Resource Partners, LP	Rosebud Miller	Elk Run	7	24	S	strip	36,888	72	truck	36,888		12	2	Ca-R OX
Solomon's Mines, Inc.	Solomon's Mines, Inc.	Salem	7		S	strip	3,137	19	truck	3,137		1		Ca-SM
GALLIA COUNTY—Total production = 589														
Collier Ports, Inc.	Collier	Greenfield	6	30	S	strip	589		truck	589		1		Ga-C
GUERNSEY COUNTY—Total production = 156,334														
Oxford Resource Partners, LP	King Crum	Millwood	8 9	33 35	S	strip auger *Total*	153,456 2,878 *156,334*	200	truck	156,334		18	2	Gy-01
HARRISON COUNTY—Total production = 3,442,250														
Anthony Mining Co., Inc.	Carson-Harrah	Green	8 8a 9	58 20 12	S	strip	103,900	252	truck	103,900		16	8	Hn-766
Hopedale Mining, LLC	Hopedale Mining, LLC	Green, German, Archer	6a	60	UG	cont. miner	1,124,532	357	rail truck other *Total*	1,079,733 23,369 8 *1,103,110*	144		22	Hn-169
Harrison Resources, LLC	Sexton 2	Athens	8 8a 9	56 24 41	S	strip	764,369	304	truck	764,369		49	13	Hn-H
Oxford Resource Partners, LP	Picken/Strip #3	Athens	8 9	55 40	S	strip	98,904	144	truck	98,904		18	2	Hn-V
	Sandy Ridge	Archer, Cadiz	8 8a	54 16	S	strip auger *Total*	207,271 29,053 *236,324*	253	truck	236,324		15	2	Hn-A1
	Standingstone Mine	Cadiz	8 8a 9	50 18 36	S	strip auger *Total*	896,184 12,113 *908,297*	253	truck	908,297		69	8	Hn-O2
Rosebud Mining Company	Vail Mine	Freeport		7	UG	cont. miner	205,924	251	truck	205,924	25		4	Hn-R1
JACKSON COUNTY—Total production = 152,993														
Sands Hill Mining, LLC	Sands Hill Rockcamp II	Milton	4a 5 6 7	40 19 8 15	S	strip	60,706		truck water *Total*	44,829 20,768 *65,597*				Jkn-S2

Waterloo Coal Co., Inc.	Layne	Madison	4 5 6		S	strip	92,287	125	truck	92,286		13		Jkn-W2
JEFFERSON COUNTY—Total production = 1,629,372														
F. & M. Coal Co.	Grabbit Pit	Smithfield, Green	8 8a	54 18	S	strip	3,999	152	truck	3,999		1	2	Jfn-FM1
Ohio American Energy, Inc.	Northstar 2 Mine	Cross Creek	8	54	S	highwall	502,520	225	rail	502,520		30	2	Jfn-O4
Oxford Resource Partners, LP	Ellis	Wells	8 8a	50 18	S	strip highwall *Total*	284,687 257,583 *542,270*	253	truck	542,270		49	5	Jfn-OX
	Pasco	Wells	8 8a	52 17	S	strip auger highwall *Total*	39,366 1,006 46,977 *87,349*	83	truck	87,349		8	1	Jfn-O6
Rosebud Mining Company	Kirk	Springfield, Ross	7a		S	strip	4,462	42	truck	4,462		2		Jfn-B1
	Bergholz Mine	Ross	7a		UG	cont. miner	282,284	251	truck	282,283	31		5	Jfn-B1R
Sterling Mining Co.	SMC-Shean Hill	Brush Creek	7	36	UG	cont. miner	206,488	250	truck	217,590	24		5	Jfn-ST2
MAHONING COUNTY—Total production = 3,616														
D. & D. Mining Co.	D. & D. Strip	Springfield	5	30	S	strip	3,616	12	truck conveyor *Total*	1,197 2,254 *3,451*		1	3	Mg-D
NOBLE COUNTY—Total production = 356,534														
B & N Coal, Inc.	Estadt Mine	Stock, Enoch	9	36	S	strip	62,325	252	truck	62,325		8	1	Ne-BN
	Westfork Mine	Jefferson, Aurelius	9	36	S	strip	107,432	252	truck	107,432		11	1	Ne-BN5
	Whigville III	Marion	9	42	S	strip	162,446	252	truck	162,446		12	1	Ne-BN8
Oxford Resource Partners, LP	Shuman	Beaver	9	38	S	strip auger *Total*	23,639 692 *24,331*	34	truck	24,330		6	3	Ne-O2
PERRY COUNTY—Total production = 2,365,053														
Buckingham Coal Co., Inc.	Buckingham Mine No. 7	Monroe	7	60	UG	cont. miner	613,596	274	rail truck *Total*	583,786 33,335 *617,121*	93		60	Py-B1
	Buckingham Mine No. 6	Monroe	6	72	UG	cont. miner	953,948	274	rail truck *Total*	900,511 51,420 *951,931*	116		37	Py-B2
Oxford Resource Partners, LP	New Lex-Rambo	Clayton, Harrison	5 6	42 52	S	strip auger *Total*	353,467 13,058 *366,525*	249	truck	366,525		27	3	Py-O1

2013 OHIO DIRECTORY OF PRODUCING COAL MINE OPERATORS, BY COUNTY (cont.)

Name of company	Name of mine	Township	Seam		Type of mine	Production		Days in production in 2013	Disposition		Employment			State mine number
			Number	Thickness (inches)		Method	Tonnage		Method	Tonnage	Production UG	Production S	Other	
PERRY COUNTY (continued)	Pole Cat Road	Clayton	5	42	S	strip	391,764	263	rail	430,984		32	4	Py-03
			6	52		auger	39,220							
			6a	18		*Total*	*430,984*							
STARK COUNTY—Total production = 408,424														
American Landfill, Inc.	American Landfill, Inc.	Sandy, Osnaburg	5	24	S	strip	311	1	truck	311		3		Sk-246
Oxford Resource Partners, LP	East Canton	Osnaburg	5	28	S	strip	397,687	253	truck	398,261		35	4	Sk-0
			6	36		auger	574							
			6a	14		*Total*	*398,261*							
			7	22										
Rosebud Mining Company	Hamilton	Paris	5		S	strip	9,852	107	truck	9,852		1		Sk-R
TUSCARAWAS COUNTY—Total production = 1,146,421														
Belden Brick Co.	Shanesville Pit	Sugar Creek	4	8	S	strip	2,101	14	truck	2,101		2		Ts-1939
	Wallick Pit	Franklin, Wayne	4	20	S	strip	1,925	14	truck	1,925		2		Ts-1841
Kimble Clay & Limestone Co.	Kimble Clay & Limestone Co.	Salem, Clay	5	36	S	strip	210,000	200	truck	210,000		19	7	Ts-K10
L & M Mineral Co.	Luikart	Mill, Warwick	4	20	S	strip	3,474	15	truck	3,474		2	1	Ts-1914
Oxford Resource Partners, LP	Hunt	Washington	6	38	S	strip	108,947	227	truck	272,646		24	2	Ts-K8
						highwall	163,699							
						Total	*272,646*							
	Stillwater Page	Rush	7	28	S	strip	84,843	253	truck	111,381		16	2	Ts-06
						auger	26,538							
						Total	*111,381*							
	Stone Creek-Kaiser/Mathais	York	5	27	S	strip	114,574	131	truck	117,045		12	2	Ts-09
			6	34		auger	2,471							
						Total	*117,045*							
	Stone Creek Kopka	York	5	32	S	strip	50,489	253	truck	67,514		5	1	Ts-0X1
			6			auger	17,025							
						Total	*67,514*							
	Strasburg Slurry	Lawrence, Franklin	4	18	S	strip	6,475	16	truck	6,475		4	1	Ts-HC
	West	Rush	7	28	S	strip	75,046	253	truck	80,540		11	1	Ts-0X
						auger	5,494							
						Total	*80,540*							
Oxford Mining Co., LLC	Keener	York, Jefferson	5	27	S	strip	47,889	114	truck	61,811		9	1	Ts-0X2
			6	32		auger	13,922							
						Total	*61,811*							

Rosebud Mining Company	Tusky Mine	Mill	6		UG	cont. miner	211,509	252	rail truck *Total*	100,000 111,509 *211,509*	32		9	Ts-TR
VINTON COUNTY—Total production = 350,114														
Sands Hill Mining, LLC	Big Rock	Clinton	W 4a 5	47 42 29	S	strip	83,868	203	truck water *Total*	61,934 28,692 *90,626*		22[1]	35	Vn-S7
	Big Valley	Wilkesville, Vinton	WI	4	S	strip	8,626		truck water *Total*	6,370 2,951 *9,321*				Vn-S4
Waterloo Coal Co., Inc.	Dundas-Oreton	Clinton, Vinton	4 5 6 7		S	strip	257,620	246	truck	257,620		32		Vn-191
WASHINGTON COUNTY—Total production = 123,240														
B & N Coal, Inc.	Mantel Mine	Salem	9	36	S	strip	123,240	252	truck	123,240	11	1		Ne-BN7

[1]Includes employment for Vn-S4 and Jkn-S2

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS

For those mines that have not been assigned a state mine number, a letter designation is used (example: Ts-A).
If there are no sales or production figures given for an operation, that operation reported no sales or production in 2013.[1]
To convert short tons to metric tons, multiply the given tonnage by 0.907185.

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
A. P. Green Refractories, Inc. 400 Fairway Dr., Bldg. 400 Moon Township, PA 15108 (412) 375-6600 Stephen M. Delo, pres.	Poetker	Jackson	clay	7,086	7,086	Jkn-G	IM-2353
Agg Rok Materials 711 Frank Rd. Columbus, OH 43223 (614) 875-5500 William G. Heffner, pres.	Agg Rok	Franklin	sand & gravel	6,000	6,000	Fn-36	IM-302
Alden Excavating 2504 Northampton Rd. Cuyahoga Falls, OH 44223 (330) 928-3249 Connie Ensign, pres.	Alden Excavating	Summit	sand & gravel			St-55	IM-589
Allgeier & Son, Inc. 6386 Bridgetown Rd. Cincinnati, OH 45248 (513) 574-3735 Michael E. Allgeier, pres.	Allgeier & Son, Inc., Pit 1 Allgeier & Son, Inc., Pit 2	Hamilton Hamilton	sand & gravel sand & gravel	 35,000	 35,000	Hmn-AS1 Hmn-AS	IM-797 IM-1106
Alvis Landscape/Golf Course P.O. Box 253 Miamitown, OH 45401 (513) 353-3333 James H. Alvis, pres.	Ross	Butler	sand & gravel			Br-A	IM-2246
American Sand & Gravel, Inc. 9500 Forty Corners Rd. NW Massillon, OH 44647 (330) 762-9373 Christopher A. Scala, pres.	Plant #4 Plant #6	Stark Stark	sand & gravel sand & gravel	533,698 312	533,698 312	Sk-243 Sk-RO	IM-908 IM-2084
Anthony Mining Co., Inc. P.O. Box 1298 Steubenville, OH 43952 (740) 268-8100 Albert Carapellotti, pres.	Carson-Harrah Patton-Mader	Harrison Harrison	limestone limestone	167,161 589	167,161 589	Hn-766 Hn-A	D-1041 IM-2247
Apex Environmental, LLC 11 County Rd. 78 P.O. Box 151 Amsterdam, OH 43903 (412) 562-1700 Anthony Rizzo, pres.	Apex	Jefferson	limestone			Jfn-K	IM-1164
Arch Materials, LLC P.O. Box 861 Owensville, OH 45160 (513) 724-7625 Ben L. Rechter, pres.	Batavia Mine	Clermont	limestone sand & gravel	1,535,219 47,579	1,403,518 47,579	Ct-A	
Area Aggregates, LLC 4755 S. High St. Columbus, OH 43207 (614) 491-1515 Kenneth Holland, pres.	Area Aggregates, LLC	Sandusky	limestone	757,166	1,088,121	Sy-A	IM-2227

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Ashcraft Sand & Gravel, Inc. 5850 Dry Fork Rd. Cleves, OH 45002 (513) 367-5700 Rick Ashcraft, owner	Ashcraft Sand & Gravel, Inc.	Hamilton	sand & gravel	24,405	24,405	Hmn-54	IM-710
Athens Hocking Reclamation Center Athens Hocking Reclamation Clay Mine 450 Gallagher Ave. P.O. Box 946 Logan, OH 43138 (740) 385-6019 Edward F. Kilbarger, mgr.	Athens-Hocking Clay Mine	Athens	clay shale	21 75	24 80	As-594	
Atlas Towing Co. P.O. Box 1632 Parkersburg, WV 26101 (304) 428-0341 Christopher V. Criss, pres.	Belpre Bank Run	Washington	sand & gravel	10,029	10,029	Wn-54	IM-383
Baker Sand, Inc. P.O. Box 142 Westfield Center, OH 44251 (330) 948-1448 John E. Baker, owner	Baker Sand, Inc.	Medina	sand & gravel	134,000	134,000	Ma-20	IM-448
Ballentine Sand & Gravel, LLC 7854 Cooley Rd. Ravenna, OH 44266 (330) 297-6712 Daniel H. Ballentine, owner	Ballentine Lake	Portage	sand & gravel	64,647	64,647	Pe-BA	IM-1327
Barrett Paving Materials, Inc. 10400 Haddix Rd. P.O. Box 13671 Fairborn, OH 45324 (937) 424-9104 Marc Zehnder, plant mgr.	Haddix Road Aggregates Plant #341 Hardin Sand & Gravel Jones Deposit Pence Deposit Schmidt Deposit	Greene Shelby Shelby Shelby Shelby	sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel	425,534 177,376 0 0 0	434,353 155,971 155,712 122 137	Ck-28 Shy-SC Shy-18 Shy-11 Shy-SC1	IM-1100, IM-2120 IM-1018 IM-388 IM-743 IM-2017
Barrett Paving Materials, Inc. 5325 Medway Rd. Fairborn, OH 45324 (937) 878-8631 Steve Hurley, plant mgr.	Fairborn Aggregate Plant	Greene	sand & gravel			Ge-4 Ge	IM-394
Barrett Paving Materials, Inc. 4710 Soldiers Home-WC Rd. Miamisburg, OH 45342 (937) 424-9100 Mike Oliver, plant super.	West Carrollton Aggregate Plant	Montgomery	sand & gravel	466,788	410,248	My-19	IM-401,IM-916
Barrett Paving Materials, Inc. Mid-Ohio 1556 Miami River Rd. Sidney, OH 45365 (937) 492-5412 Jim Meckstroth, reg. mgr.	Barrett Paving Materials, Inc., #231 Bed Rock Properties Miami River Quarry Rock Run Staley Pit Vandemark Quarry #221	Miami Miami Shelby Shelby Shelby Shelby	limestone limestone limestone limestone sand & gravel limestone	278,929 533,237 151 4,108	275,238 468,352 0 0	Mi-BPM Mi-502 Shy-17 Shy-16 Shy-SS Shy-15	IM-1169 IM-414 IM-389 IM-411 IM-438 IM-387
Bartley & Bolin Excavating 1242 County Rd. 1475 Ashland, OH 44805-9277 (419) 289-1507 Mitchell W. Bolin, owner	Bartley & Bolin, Inc., James Plant McNaul Road Plant	Ashland Richland	sand & gravel sand & gravel			Ald-B Rd-20	IM-2141 IM-617

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
BCE Materials, Inc. 1059 State Route 522 Wheelersburg, OH 45694 (740) 574-2343 Edwin Blair, pres.	Cab Pit E. E. Blair	Scioto Scioto	sand & gravel sand & gravel	18,000	18,000	So-98 So-BL	IM-474 IM-2220
Beaver Excavating, Inc. 2000 Beaver Place Ave. SW P.O. Box 6059 Canton, OH 44706 (330) 478-2151 W. Mark Sterling, pres.	Stone Products	Stark	sand & gravel	6,000	6,000	Sk-BE	IM-1202
Beck Sand & Gravel, Inc. 2820 Webb Rd. Ravenna, OH 44266 (330) 626-3863 Rodney Wenrich, owner	Beck Sand & Gravel, Inc.	Portage	sand & gravel	201,416	201,416	Pe-50	IM-96
Belden Brick Co. P.O. Box 20910 Canton, OH 44701 (330) 852-2424 Robert F. Belden, pres.	Beagle Pit Belden Pit Dundee Pit Moomaw Pit Plotner Pit Wallick Pit Shanesville Pit	Tuscarawas Tuscarawas Tuscarawas Tuscarawas Tuscarawas Tuscarawas Tuscarawas	clay clay shale clay clay limestone shale clay shale clay limestone shale	 231 15,667 32,301 46,258 22,736 50,857 168 20,369 6,073 39,112	 231 15,667 32,301 46,258 22,736 50,857 168 20,369 6,073 39,112	Ts-1960 Ts-1646 Ts-BB Ts-1517 Ts-B Ts-1841 Ts-1939	IM-48 IM-44 IM-1221 IM-46 IM-49 IM-45 IM-47
Benjamin's Farm, Inc. 2787 Mennonite Rd. Mantua, OH 44255 (330) 274-3293 John R. Benjamin, pres.	Benjamin's Farm, Inc.	Portage	sand & gravel			Pe-BF	IM-2163
Best Sand Corp. 11830 Ravenna Rd. Chardon, OH 44024 (440) 285-3132 Jennifer Deckard, pres.	Best Sand Corp. Best - Southern Division	Geauga Pike	sandstone sandstone	635,058 53,768	635,058 53,768	Gea-3 Pke-31	IM-89 IM-835
Black Top Contracting, Inc. P.O. Box 426 Nelsonville, OH 45764 (740) 753-1181 Tim Maiden, pres.	York Twp. Trustees	Athens	sand & gravel			As-BT	IM-1350
Bluffton Stone Co. P.O. Box 26 Bluffton, OH 45817-0026 (419) 358-6941 Michael J. Gerken, pres.	Bluffton Stone Co.	Allen	limestone	366,950	386,279	An-1	IM-485
Bontrager Excavating Co. 11087 Clevland Ave. NW Uniontown, OH 44685 (330) 499-8775 Harry Gilbert, pres.	Gilbert	Summit	sand & gravel	20,858	20,858	St-B	IM-2303

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Boone Coleman Construction, Inc. 32 State Route 239 West Portsmouth, OH 45663 (740) 858-6661 Timothy Coleman, pres.	Boone Coleman Construction, Inc. Coleman Pit	Scioto Scioto	sand & gravel sand & gravel			So-BC So-B	IM-1252 IM-705
Bowerston Shale Co. 1329 Seven Hills Rd. NE P.O. Box 199 Newark, OH 43055 (740) 269-3921 Mark Willard, pres.	Bowerston (Calwell) Scott Farm Hanover Pit Frazeysburg	Harrison Harrison Licking Muskingum	shale clay shale clay	31,701 28,815 9,971	31,701 28,815 9,971	Hn-152 Hn-B Lg-501 Mum-776	IM-42 IM-1020 IM-257 IM-256
Boyas Excavating, Inc. 11311 Rockside Rd. Cleveland, OH 44125-4247 (216) 524-3620 Michael Boyas, pres.	Boyas Excavating, Inc.	Cuyahoga	clay sand & gravel	1,444 84,563	1,444 84,563	Cya-42	IM-686
Boyd Excavating 9553 County Rd. 28 Zanesfield, OH 43360 (937) 465-3290 Jeff Boyd, owner	Boyd Excavating	Logan	sand & gravel			Lgn-B	IM-1309
Briar Hill Stone Co. P.O. Box 157 McDermott, OH 45652 (740) 259-2356 Frank L. Waller, pres.	Quarry #18 Quarry #24 Quarry #26 Quarry #3 Quarry #32 Quarry #54 Quarry #55 Quarry #56 Quarry #31 Quarry #6	Coshocton Coshocton Coshocton Coshocton Coshocton Coshocton Coshocton Coshocton Holmes Knox	sandstone sandstone sandstone sandstone sandstone sandstone sandstone sandstone sandstone sandstone	 318 711 2,516 7,400 140	 318 711 2,516 7,400 140	Cn-695 Cn-692 Cn-13 Cn-659 Cn-686 Cn-809 Cn-815 Cn-BH Hs-49 Kx-12	IM-402 IM-294 IM-397 IM-232 IM-504 IM-909 IM-939 IM-2147 IM-418 IM-445
Brier Hill Slag Company 18 Hogue St. Youngstown, OH 44502 (330) 743-8170 Tim Morucci, pres.	Brier Hill Slag Company	Mahoning	sandstone	18,900	20,000	Mg-B	IM-2388
Briggs Sand & Gravel, Inc. County Rd. 10 1905 Blue Knob Rd. Marietta, OH 45750 (740) 373-3363 James A. Briggs, pres.	Briggs Sand & Gravel, Inc.	Washington	sand & gravel	5,265	5,265	Wn-508	IM-57
Brookside Materials, LLC 2850 Rohr Rd. Groveport, OH 43215 (614) 915-5724 Gerald E. Bennett, pres.	Brookside Materials, LLC	Licking	sand & gravel	170,000	210,000	Lg-B	IM-2273
Broshear Contractors, Inc. 2520 Millville-Ross Rd. Hamilton, OH 45013 (513) 863-3388 Gerald Broshear, pres.	Green Heron Ross Twp. Gravel	Butler Butler	sand & gravel sand & gravel	 18,192	 18,192	Br-B Br-48	IM-2029 IM-562

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Buck Run Aggregates, LLC 11640 S. State Line Rd. Petersburg, OH 44454 (330) 426-2151 Shawn Sugar, plant mgr.	Krcich	Columbiana	sand & gravel	58,948	65,366	Ca-351	IM-634
Marilyn J. Burkholder, Trust 1655 Fairview Rd. Galion, OH 44833 (419) 468-1361 Marilyn J. Burkholder, owner	Burkholder	Crawford	sand & gravel			Cd-B	IM-2204
Burlington Sand & Gravel Co. P.O. Box 399 Chesapeake, OH 45619 (740) 894-5978 Vernon E. Collier, owner	Burlington Sand & Gravel Co.	Lawrence	sand & gravel			Le-426	IM-856
Richard & Kathy Burwinkel 5915 Dry Ridge Rd. Cincinnati, OH 45252 (513) 385-7131 Richard & Kathy Burwinkel, owners	Burwinkel	Hamilton	sand & gravel			Hmn-RB	IM-2333
C & S Contractors, Inc. P.O. Box 498457 Cincinnati, OH 45249 (513) 530-9844 Raymond A. Conn, pres.	C & S Contractors, Inc.	Warren	sand & gravel			Wan-47	IM-846
C. F. Poeppelman, Inc. 4755 N. State Route 721 Bradford, OH 45308 (937) 448-2191 James C. Poeppelman, pres.	C. F. Poeppelman, Inc.	Miami	limestone	296,671	301,200	Mi-10	IM-335
Calvin's Hauling, Inc. 1205 S. Johnson Ave. Bartow, FL 33830 (740) 998-4647 Calvin Cochenour, pres.	Calvin's Hauling, Inc.	Ross	sand & gravel	1,349	1,349	Rs-C	IM-2349
Cardinal Aggregates, Inc. 8026 Fremont Pike Perrysburg, OH 43551 (419) 872-4380 Mark Murray, pres.	Cardinal Aggregates, LLC	Wood	limestone	582,835	530,000	Wd-C	IM-2231
Cargill, Incorporated Cargill Deicing Technology 2400 Ships Channel P.O. Box 6920 Cleveland, OH 44101 (216) 357-4600 Richard Maxfield, pres.	Cargill Deicing Technology	Cuyahoga	salt	2,856,253	2,830,187	Cya-30	
Cargill Salt 2065 Manchester Rd. Akron, OH 44314 (330) 848-6912 Dan Pulis, plant mgr.	Cargil Salt	Summit	salt	309,647	320,603	St-9127	

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Carl E. Oeder and Sons Sand & Gravel 1000 W. Mason Morrow Millgrove Lebanon, OH 45036 (513) 494-1555 Carl E. Oeder, pres.	Carl E. Oeder and Sons Sand & Gravel	Warren	sand & gravel	365,731	365,731	Wan-41	IM-629
Carmeuse Lime, Inc. 1967 County Rd. 42 Bettsville, OH 44815 (419) 986-2016 Yves Williams, pres.	Millersville Plant Maple Grove	Sandusky Seneca	limestone limestone	394,111 1,800,449	394,849 1,800,449	Sy-4 Sa-2	IM-381 IM-352
Carter & Carter, Inc. P.O. Box 266 Miamisburg, OH 45343-0266 (937) 859-5414 Charles V. Carter, pres.	Carter & Carter, Inc.	Montgomery	sand & gravel	500	500	My-CW	IM-878
Joe E. Carter 21399 State Line Rd. Lawrenceburg, IN 47025 (812) 537-3970 Joe E. Carter, owner	Lost Bridge	Hamilton	sand & gravel	1,650	1,650	Hmn-JC	IM-1267
CCR Sand & Gravel, LLC 8215 Seville Rd. Lodi, OH 44254 (330) 948-0168 Ronald M. Condren, pres.	CCR Sand & Gravel, LLC	Medina	sand & gravel	106,205	106,205	Ma-22	IM-425, IM-442, IM-650, IM-651
Cedar Heights Clay Co. P.O. Box 295 Oak Hill, OH 45656-0295 (740) 682-7794 John Midea, pres.	Harrison Phillips	Jackson Jackson	clay clay	 11,634	 11,634	Jkn-CH2 Jkn-CH3	IM-1302 IM-2035
CEMEX, Inc. 3250 Linebaugh Rd. Xenia, OH 45385 (937) 878-8393 Bernard P. McCormick, plant mgr.	Miller, Schieder, Batdorf, Stewart G-Tract	Greene Montgomery	limestone shale limestone	791,779 44,241 307,658	630,800 44,241 307,659	Ge-8 My-58	IM-364 IM-330
Central-Allied Enterprises, Inc. P.O. Box 80449 Canton, OH 44708-0449 (330) 477-6751 Gerald S. Orn, pres.	Canton Aggregate Div. Central Sand & Gravel Div. Massillon Washed Gravel Div. Massillon Washed Gravel Div.	Stark Stark Stark Stark	sand & gravel sand & gravel sand & gravel sand & gravel	571,038 1,327 134,096 225	570,038 1,327 134,096 225	Sk-681 Sk-CA1 Sk-MW Sk-607	IM-164 IM-2140 IM-1171 IM-102
Central Ready Mix, LLC P.O. Box 70 Monroe, OH 45050 (513) 402-5001 Todd Dragna, pres.	Middletown Plant #22 Germantown Plant #21 Carlisle Plant #27	Butler Montgomery Warren	sand & gravel sand & gravel sand & gravel	 194,000 200,000	 194,000 200,000	Br-6 My-41 Wan-7	IM-177 IM-360 IM-151
Christman Quarries 47278 Swazey Rd. Lewisville, OH 43754 (740) 838-2475 Kathy L. Dimmerling, owner	Christman Quarry	Monroe	limestone	101,233	101,233	Me-C	IM-1088

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
City Stone, LLC 8063 Southern Blvd. Boardman, OH 44512 (800) 262-9365 Ronald R. Carrocce, pres.	City Stone, LLC City Stone, LLC	Mahoning Trumbull	sandstone sandstone	75,502	75,502	Mg-62 Tl-CA	IM-599 IM-2085
Harlen D. & Barbara L. Clark 11535 County Rd. 16 Wauseon, OH 43567 (419) 812-6696 Harlen D. Clark, farmer	Clark	Fulton	sand & gravel	13,350	13,350	Ftn-C	IM-2274
Clemson Excavating, Inc. 9954 Old State Rd. Chardon, OH 44024 (440) 286-4757 Bill Clemson, pres.	Clemson Excavating Sand & Gravel	Ashtabula	sand & gravel			Asa-C	IM-1278
Clinton Stone, LLC P.O. Box 650 Hamden, OH 45634-0650 (740) 384-4211 David G. Zatezalo, pres.	Clinton Stone, LLC	Jackson	limestone	466,725	488,619	Jkn-S2	D-1087
Cochran Transportation Services, Inc. P.O. Box 578 Athens, OH 45701 (740) 797-7108 Charles W. Cochran, pres.	Circle Hill	Athens	sand & gravel	28,051	28,051	As-595	IM-1083
Bill D. Colwell 2530 Regina Pl. Hamilton, OH 45013 (513) 895-1475 Bill D. Colwell, owner	Bill D. Colwell Gravel	Butler	sand & gravel	604	604	Br-36	IM-649
Con-Ag, Inc. 16672 County Rd. 66A N St. Marys, OH 45885 (419) 394-8870 John R. Hirschfeld, pres.	Con-Ag, Inc.	Auglaize	limestone	261,955	261,955	Ae-31	IM-744
Cremeans Concrete & Supply P.O. Box 475 Gallipolis, OH 45631 (740) 446-1142 John Cremeans, pres.	Cremeans Concrete & Supply Co., Inc.	Gallia	sand & gravel			Ga-626	IM-1046
Crushers Stone Products, LLC 7000 Columbus Rd. Shreve, OH 44676 (330) 465-6266 Dan Stauffer, Sr., pres.	Crushers Stone Products, LLC	Wayne	shale	1,578	1,578	We-25	IM-1209
Cumberland Limestone, LLC 53681 Spencer Rd. Cumberland, OH 43732 (740) 638-3942 Chris D. Sidwell, pres.	Cumberland Limestone, LLC	Guernsey	limestone	426,467	426,467	Gy-309	IM-1030

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Custar Stone Co., Inc. 9072 County Road 424 Napoleon, OH 43545 (419) 533-8831 Brent Gerken, pres.	Custar Stone Co., Inc.	Wood	limestone	424,134	363,192	Wd-5	IM-473
D. & D. Mining Co. 3379 East Garfield Rd. New Springfield, OH 44443 (330) 549-3127 Donald Thompson, pres.	D. & D. Strip D. & D. Strip D. & D. Strip	Columbiana Columbiana Mahoning	clay clay clay			Ca-348 Ca-888 Mg-D	IM-976 IM-1181 D-2164
D & K Materials, Inc. 3072 Congress Lake Rd. Mogadore, OH 44260 (330) 678-2411 Kimberly S. Ebie, pres.	D & K Materials, Inc.	Portage	clay sand & gravel	362 110,279	0 110,279	Pe-101	IM-1154
D. H. Bowman & Sons, Inc. 14220 Parrott St. P.O. Box 750 Mt. Vernon, OH 43050 (740) 397-0000 Jeff Ellis, pres.	D. H. Bowman & Sons, Inc.	Richland	sand & gravel			Rd-4	IM-279, IM-1255
D. M. Mining, Inc. P.O. Box 4288 Ironton, OH 45638 (740) 534-4111 Cheryl Bolender, pres.	Ice Creek Land Co.	Lawrence	shale	9,600	9,600	Le-D	IM-2390
Darby Creek Excavating, Inc. 6790 Brooksmiller Rd. Circleville, OH 43113 (740) 477-8600 Kevin R. Steward, pres.	Darby Creek	Pickaway	sand & gravel			Pky-DC	IM-1316
D.B.M. Materials, LLC 2040 Alum Creek Dr. Columbus, OH 43207 (614) 445-8421 John B. Igel, pres.	D.B.M. Materials, LLC	Franklin	sand & gravel			Fn-14	IM-832
D.C. Engineering and Development, Ltd. 329 Mabel Ct. London, OH 43140 (614) 270-8785 Charles W. Duvall, pres.	D.C. Engineering	Madison	sand & gravel			Mdn-D	IM-2338
De Milta Sand & Gravel, Inc. 921 Erie Rd. Eastlake, OH 44095 (440) 942-2015 Nick De Milta, pres.	De Milta Sand & Gravel, Inc.	Lake	sand & gravel			Lke-D	IM-1187
Demmy Construction, Inc. 4324 Fairfield Pike Springfield, OH 45502 (937) 323-4079 Daniel E. Demmy, pres.	Demmy Constuction, Inc.	Clark	sand & gravel			Ck-501	IM-340

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Demmy Sand & Gravel 4324 Fairfield Pike Springfield, OH 45502 (937) 323-4079 Daniel Demmy, pres.	Deam	Clark	sand & gravel			Ck-LG	IM-2073
Dennis Topsoil & Landscaping, Inc. 6340 Dorr St. Toledo, OH 43615 (419) 865-5656 Robert T. Dennis, Sr., owner	Dennis Topsoil & Landscaping, Inc.	Lucas	sand & gravel	1,200	1,200	Ls-D1	IM-2407
D.G.M., Inc. 1881 Adams Rd. P.O. Box 207 Beaver, OH 45613 (740) 226-1950 Mark A. Salisbury, pres.	Towpath-Warwick Tow Path Ready Mix	Ross Scioto	sand & gravel sand & gravel	45,106 54,941	45,106 54,941	Rs-D So-DGM	IM-2176 IM-1280
Diamond Stone Quarries P.O. Box 315 McArthur, OH 45651 (740) 596-5226 W. E. Engle, pres.	Diamond Stone	Athens	limestone	237,278	10,000	As-533	IM-17
DiGeronimo Aggregates, LLC 5531 Canal Rd. Valley View, OH 44125 (216) 524-2950 Victor DiGeronimo, Jr., pres.	DiGeronimo Aggregates, LLC	Cuyahoga	shale	154,470	168,627	Cya-19	IM-95
Dingledine Basic Materials, Inc. 2304 Somerville Rd. P.O. Box 262 Somerville, OH 45064 (513) 726-5258 Gerald Dingledine, pres.	Dingledine Basic Materials, Inc.	Butler	sand & gravel	27,408	35,000	Br-50	IM-739
John R. Doherty 2229 Walnut Blvd. Ashtabula, OH 44004 (440) 964-8431 John R. Doherty, pres.	Doherty	Ashtabula	sand & gravel			Asa-JD	IM-2250
James E. Downard 1185 Mount Zwingli Rd. Bremen, OH 43107 (740) 569-7849 James E. Downard, owner	Downard Pit	Fairfield	sand & gravel	3,259	3,259	Fd-16	IM-1156
Duff Quarry, Inc. 9042 State Route 117 P.O. Box 305 Huntsville, OH 43324-0305 (937) 686-2488 James E. Duff, pres.	Duff Quarry, Inc. Duff Quarry, Inc. Duff Quarry, Inc. Duff Quarry, Inc. Duff Sand Co.	Logan Logan Logan Logan Logan	sand & gravel sand & gravel limestone sand & gravel sand & gravel	 370,299 140 4,630	 370,299 140 4,630	Lgn-12 Lgn-39 Lgn-15 Lgn-36 Lgn-31	IM-1071 IM-887 IM-453 IM-1007 IM-454
East Clayton Asphalt, Inc. P.O. Box 543 Nelsonville, OH 45764 (740) 590-7367 Dan L. Simms, pres.	East Clayton Asphalt, Inc.	Athens	sand & gravel			As-1161	IM-97

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
East Fairfield Coal Co. 10900 South Ave. P.O. Box 217 North Lima, OH 44452 (330) 549-2165 W. Thomas Mackall, pres.	Withers Petersburg - Surface Withers-Petersburg	Mahoning Mahoning	 limestone	 377,066	 321,027	Mg-EF Mg-631	IM-2101 IM-1103
David E. Edgington P.O. Box 282 Frankfort, OH 45628 (740) 998-5328 David E. Edgington, owner	Edgington Pit	Ross	sand & gravel	7,735	7,735	Rs-E	IM-1168
Egypt Valley Stone, LLC P.O. Box 188 Morristown, OH 43759 (740) 782-0042 Richard Petrozzi, pres.	Shugert	Belmont	limestone	414,371	414,371	Bt-E	IM-2299
Enon Sand & Gravel, LLC 11641 Mosteller Rd. Cincinnati, OH 45241 (513) 771-0820 James P. Jurgensen, pres.	Enon Sand & Gravel, LLC	Clark	sand & gravel	365,800	365,800	Ck-3	IM-463, IM-1359, IM-2026
Envirosafe Services of Ohio, Inc. 876 Otter Creek Rd. Oregon, OH 43616 (419) 698-3500 Douglas E. Roberts, pres.	Johlin Property Clay Mine	Lucas	clay	44,300	0	Ls-E	IM-1075, IM-2116
Erie Blacktop, Inc. 4507 Tiffin Ave. P.O. Box 2308 Sandusky, OH 44870 (419) 625-7374 Dean Wikel, pres.	Erie Blacktop Quarry	Erie	limestone	299,057	299,057	Ee-27	IM-608
Erie Materials, Inc. 4507 Tiffin Ave. Sandusky, OH 44870 (419) 625-7374 Dean Wikel, pres.	Borchardt	Erie	sand & gravel	20	20	Ee-18	IM-676
Ervin Hill Enterprises, Inc. P.O. Box 559 Hillsboro, OH 45133 (937) 393-4120 Mark Edenfield, pres.	Ervin Hill Enterprises, Inc.	Highland	sand & gravel	95,634	95,634	Hd-L	IM-1297
ESSROC Cement Corp. P.O. Box 779 Bessemer, PA 16112 (610) 837-4301 Derek Nicholls, v. pres.	Bessemer Quarry Carbon Quarry	Mahoning Mahoning	limestone limestone			Mg-608 Mg-EM	IM-4 IM-1056
Evans Gravel, Inc. 4229 Round Bottom Rd. Cincinnati, OH 45244 (513) 271-1119 Douglas L. Evans, pres.	Evans Gravel, Inc. Evans Gravel, Inc.	Clermont Hamilton	sand & gravel sand & gravel	 117,325	 122,811	Ct-9 Hmn-E	IM-526 IM-2181

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Feikert Sand & Gravel, Inc. 6871 Twp. Rd. 605 Millersburg, OH 44654 (330) 674-7245 Lynn O. Feikert, pres.	Feikert Sand & Gravel, Inc.	Holmes	sand & gravel	218,613	218,613	Hs-511	IM-1048, IM-1240
Fleming Construction Co., Inc. dba Scioto S & G P.O. Box 31 Marion, OH 43301-0031 (740) 494-2177 Sonja E. Fleming, pres.	Pit #1 Pit #2	Marion Marion	sand & gravel sand & gravel	8,220 14,483	8,220 14,483	Mn-16 Mn-19	IM-171 IM-990
Foureman's Sand & Gravel, Inc. 2791 Wildcat Rd. Greenville, OH 45331 (937) 548-1718 Gary B. Foureman, pres.	Foureman's Sand & Gravel, Inc.	Darke	limestone sand & gravel	2,500 31,000	2,500 31,000	Dke-4	IM-433
Friendsville Sand, LP 9601 Avon Lake Rd. Lodi, OH 44254 (336) 948-4338 Richard L. Rothel, pres.	Friendsville Sand	Medina	sand & gravel	38,271	42,000	Ma-F	IM-2348
Lloyd B. Fry 10328 Hardin Rd. Piqua, OH 45356 (937) 773-3613 Lloyd B. Fry, owner	Ticon	Miami	sand & gravel	283	283	Mi-T	IM-696
Frye Sand & Gravel, Inc. P.O. Box 3 Dorset, OH 44032-0003 (440) 858-2627 David Frye, owner	Frye Sand & Gravel, Inc.	Ashtabula	sand & gravel			Asa-10	IM-198
G. E. Baker Construction, Inc. 6555 Wharton Rd. Shreve, OH 44676 (330) 264-6626 Glenn E. Baker, pres.	Humphrey	Ashland	sand & gravel			Ald-GB	IM-2298
GANS, Ltd. 800 West Maple St. Hartville, OH 44632 (330) 877-2525 Ellis Erb, pres.	GANS, Ltd., dba Brimfield Sand & Soils	Portage	sand & gravel			Pe-102	IM-1184
Gaston Bowling, Inc. P.O. Box 330 Oxford, OH 45056 (513) 892-7259 Gaston Bowling, pres.	Indian Creek Sand & Gravel	Butler	sand & gravel			Br-40	IM-493
General Motors, LLC 26427 State Route 281 E Defiance, OH 43512 (419) 782-7010 Richard Sutton, plant mgr.	General Motors, LLC Clay Borrow Area	Defiance	clay			De-3	IM-1351

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
George J. Igel & Co., Inc. 2040 Alum Creek Dr. Columbus, OH 43207 (614) 445-8421 John B. Igel, pres.	George J. Igel & Co., Inc.	Pickaway	sand & gravel	0	128	Pky-C	IM-1223
Gerken Materials, Inc. P.O. Box 607 Napoleon, OH 43545 (419) 533-7701 Brent Gerken, pres.	Gerken Materials, Inc.	Wood	limestone	179,589	195,582	Wd-1	IM-548
Glen-Gery Corp. P.O. Box 207 Iberia, OH 43325 (610) 374-4011 Steve Matsick, pres.	Iberia Quarry Glen-Gery Corp.	Marion Morrow	shale clay	83,889	83,889	Mn-7 Mw-G	IM-309 IM-2378
Gray Road Fill, Inc. 700 W. Pete Rose Way Cincinnati, OH 45203 (513) 721-6000 Roy B. Schweitzer, pres.	Gray Road Fill, Inc.	Hamilton	limestone			Hmn-GR	IM-1363
Graymont Dolime (OH), Inc. P.O. Box 158 Genoa, OH 43430 (419) 855-8336 Stephanie Godin, pres.	Graymont Dolime (OH), Inc.	Ottawa	limestone	680,797	380,667	Oa-1	IM-292
Grimes Excavating 165 Holdren Ln. New Matamoras, OH 45767 (740) 865-3990 Lewis Grimes, owner	Grimes Sand and Gravel	Washington	sand & gravel	20,052	20,052	Wn-1008	IM-1111
Hanson Aggregates, LLC 1136 Morgantown Rd. Russellville, KY 42276 (270) 726-4936 Dan Harrington, v. pres.	Plum Run Quarry Eagle Crushed Stone Dry Fork Sand & Gravel Highland Stone Piketon Sand & Gravel	Adams Brown Hamilton Highland Pike	limestone limestone sand & gravel limestone sand & gravel	762,480 1,254,826 488,892 187,917	789,395 1,306,902 424,212 225,459	Ads-1 Bn-EC Hmn-50 Hd-2 Pke-24	IM-237 IM-1195 IM-205, IM-1139 IM-230 IM-222
Hanson Aggregates Midwest, Inc. Heidelberg Cement Group 9220 Portland Rd. Castalia, OH 44824 (419) 483-4390 Ron Tipton, v. pres./gen. mgr.	Sandusky Crushed Stone Sylvania Waterville Paulding Bloomville Flat Rock North Baltimore Quarry	Erie Lucas Lucas Paulding Seneca Seneca Wood	limestone limestone limestone limestone limestone limestone limestone	2,220,438 833,515 231,472 101,264 227,342 3,061 0	2,398,331 858,048 224,832 134,960 204,218 0 5,000	Ee-11 Ls-3 Ls-1 Pg-7 Sa-3 Sa-1 Wd-H	IM-263 IM-580 IM-575 IM-349 IM-347 IM-2341
Hanson Aggregates Midwest, Inc. dba Wagner Quarries Co. 4203 Milan Rd. Sandusky, OH 44870 (419) 625-8141 Mike Stanczak, v. pres.	Wagner Quarry	Erie	limestone	1,351,573	1,305,239	Ee-1A	IM-310
Norman Harpster 16069 State Route 235 Belle Center, OH 43310 (937) 464-5623 Norman Harpster, owner	Harpster Pit	Hardin	sand & gravel			Hdn-H	IM-864

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Harrison Sand & Gravel Co. 10980 Campbell Rd. Harrison, OH 45030 (513) 367-5174 Donald L. Gauck, v. pres.	Harrison Sand & Gravel Co.	Hamilton	limestone sand & gravel	14,252 2,231	14,252 0	Hmn-17	IM-295
Hartley Gravel 22941 Hartley Rd. Alliance, OH 44601 (330) 823-0003 Jacob Maendel, pres.	Hartley Gravel	Columbiana	sand & gravel	991	991	Ca-H1	IM-2033
Harvest Sand & Gravel, Inc. 522 Perkins Jones Rd. Warren, OH 44483 (330) 372-4408 David A. Grayson, pres.	Eberly Harvest Sand & Gravel, Inc.	Columbiana Columbiana	sand & gravel sand & gravel	12,074	12,074	Ca-H2 Ca-H	IM-2174 IM-2027
Haueter Sand & Gravel, Inc. P.O. Box 206 Chardon, OH 44024 (440) 286-9482 Donald H. Haueter, pres.	Haueter Sand & Gravel, Inc.	Geauga	sand & gravel	70,000	70,000	Gea-29	IM-215
Heiser Sand & Gravel Corp. 4833 Applegrove St. NW North Canton, OH 44720 (330) 499-8201 Richard L. Heiser, pres.	Heiser Sand & Gravel Corp.	Stark	sand & gravel			Sk-HS1	IM-1203
Hidden Ranch, Ltd. 9874 Winesburg Rd. Dundee, OH 44624 (330) 359-6126 Willis Miller, pres.	Schmid	Stark	sandstone			Sk-HR	IM-2282
Hocking Valley Concrete, Inc. 35255 Hocking Dr. Logan, OH 43138 (740) 385-2165 Mark Vaughn, v. pres.	Hocking Valley Concrete, Inc.	Hocking	sand & gravel	40,440	49,500	Hg-262	IM-41
William A. Hoffman, Jr. 25043 State Route 104 Circleville, OH 43113 (740) 207-1029 William A. Hoffman, Jr., owner	Hoffman Pit	Pickaway	sand & gravel	1,503	1,503	Pky-H	IM-1039
Holmes Redimix, Inc. 5420 County Rd. 349 Millersburg, OH 44654 (330) 674-0370 Steve Schlabach, pres.	Holmes Redimix, Inc.	Holmes	sand & gravel	164,758	164,758	Hs-82	IM-707
Holmes Supply Corp. 7571 State Route 83 Holmesville, OH 44633 (330) 279-9000 Steve Schlabach, pres.	Holmes Supply Corp. Schlabach	Holmes Holmes	sand & gravel sand & gravel	168,326 147,519	168,326 147,519	Hs-J Hs-H1	IM-1043 IM-2310

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Home Road Ridge Co., LLC P.O. Box 629 Springfield, OH 45501 (937) 324-0134 Gerald E. Schmenk, pres.	Home Road Ridge Co., LLC	Clark	sand & gravel			Ck-TH	IM-2133
Honey Creek Stone Co. P.O. Box 422 Edinburg, PA 16116 (724) 654-5537 Carmen W. Shick, pres.	Honey Creek Stone Co.	Mahoning	limestone			Mg-54	IM-93
Robin L. Houlette 7225 Houlette's Mountain Rd. Lisbon, OH 44432 (330) 853-6381 Robin L. Houlette, pres.	Houlette	Columbiana	sandstone sand & gravel			Ca-R	IM-2395
IRG Amherst, LLC 3623 Brecksville Rd., Suite A Richfield, OH 44286 (440) 963-4008 Stuart Kichter, owner	Amherst Quarries	Lorain	sandstone			Ln-3	IM-415
IRG Operating, LLC dba Cleveland Quarries 5270 Devon Dr. Vermilion, OH 44089 (440) 963-4008 Zachary Carpenter, pres.	IRG Operating, LLC	Erie	sandstone	10,001	19,122	Ee-21	IM-416
J. E. Nicolozakes Co. 62920 Georgetown Rd. Cambridge, OH 43725 (740) 435-3222 John E. Nicolozakes, pres.	Bank One	Tuscarawas	sand & gravel			Ts-N	IM-2032
Jaclib Enterprises, Inc. 560 State Route 554 Cheshire, OH 45620 (740) 367-0602 Jason C. Leach, pres.	Cheshire Pit	Gallia	sand & gravel	224	224	Ga-JE	IM-2034
JALIP, Ltd. 16303 Twp. Rd. 124 Harpster, OH 43323 (740) 496-2008 Philip Herring, owner	JALIP, Ltd.	Wyandot	sand & gravel	4,089	4,089	Wt-J	IM-2119
James Bros. Sand & Gravel, Ltd. 3000 Dillon School Dr. P.O. Box 1420 Zanesville, OH 43702 (740) 454-1522 Daniel G. James, owner	James Brothers Sand & Gravel, Ltd.	Muskingum	sand & gravel			Mum-J1	IM-2251
Jaymar, Inc. 8751 N. State Route 7 Cheshire, OH 45620 (740) 992-6637 Jay Hall, Jr., pres.	Plant #4	Meigs	sand & gravel	522,949	522,949	Ms-308	IM-1174

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
JBM, Ltd. dba State Route 416 Sand & Gravel 764 State Route 416 SE New Philadelphia, OH 44663 (330) 339-4313 William P. Marino, Jr., pres.	State Route 416 Sand & Gravel	Tuscarawas	sand & gravel	124,968	124,968	Ts-2018	IM-1076
J.J.J. Properties, LLC 5585 Canal Rd. Valley View, OH 44125 (216) 447-0814 John Allega, member	J.J.J. Properties, LLC	Lake	sand & gravel	15,503	15,503	Lke-P	IM-2258
J. McCoy Lumber Co., Ltd. 6 N. Main St. Peebles, OH 45660 (937) 587-2555 Jack McCoy, pres.	Adams County Quarry	Adams	limestone			Ads-H	IM-805
Joe Simak & Sons Trucking, Inc. 3052 E. Center St. P.O. Box 599 North Kingsville, OH 44068 (440) 224-1992 Joseph E. Simak, pres.	Amboy Pit North Ridge Pit	Ashtabula Ashtabula	sand & gravel clay sand & gravel	 1,704 12,177	 1,704 12,177	Asa-ST Asa-18	IM-1349 IM-949
Joe Yochman Excavating, Inc. 610 S. Newton Falls Rd. Diamond, OH 44412 (330) 538-0014 Joe Yochman, v. pres.	Yochman	Mahoning	sand & gravel			Mg-Y	IM-2192
John L. Garber Materials, Inc. 2745 Gass Rd. - Route 8 Lexington, OH 44904 (419) 884-1567 John L. Garber, pres.	John L. Garber Materials, Inc. John L. Garber Materials, Inc.	Richland Richland	sand & gravel sand & gravel	0 131,431	132,890 0	Rd-G Rd-14	IM-2152 IM-436
Betty & Rebecca Johnson 3403 U.S. Route 68 S Bellefontaine, OH 43311 (937) 593-5602 Betty and Rebecca Johnson, owners	Johnson Gravel Pit	Logan	sand & gravel			Lgn-J	IM-2053
Johnson Stone Products, Inc. 4018 Cleveland Rd. E Huron, OH 44839 (440) 315-3699 Terry A. Johnson, pres.	Johnson Stone Products	Lorain	sandstone	2,285	9,820	Ln-J	IM-1300
KCI Sand & Gravel P.O. Box 946 Logan, OH 43138 (740) 385-6019 Edward Kilbarger, pres.	KCI Sand & Gravel	Hocking	sand & gravel	34,281	129,125	Hg-HA	IM-1320
KDA, Inc. 103 W. Market St. Warren, OH 44481 (330) 392-7899 Robert S. Kleese, pres.	Kleese Development Associates	Trumbull	sand & gravel			Tl-K	IM-1101

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Keeney Sand & Stone, Inc. 13320 Girdled Rd. Painesville, OH 44077 (440) 254-4582 Dennis J. Keeney, pres.	Keeney Sand & Stone, Inc.	Lake	sandstone	34,548	34,548	Lke-K	IM-859
Ken Strahler Masonry, Inc. 116 Alta St. Marietta, OH 45750 (740) 373-4529 Kenneth E. Strahler, pres.	Duck Creek #1	Washington	clay			Wn-St	IM-2224
Kimble Clay & Limestone Co. 3596 State Route 39 NW Dover, OH 44622-9801 (330) 343-1226 Keith B. Kimble, pres.	Kimble Clay & Limestone Co.	Tuscarawas	clay	200,000	200,000	Ts-1818	IM-9
			limestone	160,000	160,000		
			sandstone	30,000	30,000		
			sand & gravel	50,000	50,000		
			shale	200,000	200,000		
	Kimble Clay & Limestone Co.	Tuscarawas	shale	90,000	90,000	Ts-K1	IM-2170
	Penn-Ohio Coal Co.	Tuscarawas	clay			Ts-K2	IM-2412
			limestone				
King Quarries, Inc. 41820 Parrish Ridge Caldwell, OH 43724 (740) 732-2923 David King, Jr., pres.	King Quarries, Inc.	Noble	limestone	145,615	145,615	Ne-K1	IM-1292
	King Quarries, Inc.	Noble	limestone			Ne-K	IM-1254
Kinsman Materials, Ltd. P.O. Box 76 Chardon, OH 44024 (440) 286-4757 Bill Clemson, pres.	Kinsman Materials, Ltd.	Ashtabula	sand & gravel			Asa-20	IM-1198
Kipp's Gravel Co., Inc. 4987 State Route 222 Batavia, OH 45102 (513) 732-1024 Melvin M. Kipp, pres.	Kipp's Gravel Co., Inc.	Clermont	sand & gravel			Ct-7	IM-432
Kirby's Sand & Gravel, Inc. 4876 County Hwy. 43 Upper Sandusky, OH 43351-9155 (419) 927-2260 Minor E. Kirby, owner	Kirby's Sand & Gravel, Inc.	Wyandot	sand & gravel			Wt-17	IM-604
	Kirby's Sand & Gravel, Inc.	Wyandot	sand & gravel	253,846	253,846	Wt-K	IM-943
Knox County Board of Commissioners 117 E. High St. Mt. Vernon, OH 43050 (740) 397-1590 James L. Henry, county engineer	Apple Valley	Knox	shale	914	914	Kx-K	IM-870
L & I Natural Resources, Inc. 10369 Cones Rd. Loveland, OH 45140 (513) 459-7716 Jerry Walker, pres.	L & I Pit & Mill	Warren	sand & gravel	70,720	70,720	Wan-50	IM-1006
L & M Mineral Co. 2010 County Rd. 144 Sugarcreek, OH 44681 (330) 852-3696 John E. Ling, Jr., pres.	Barr Farm	Stark	clay	11,120	11,120	Sk-LM	IM-2270
	Heil	Tuscarawas	shale	21,861	21,861	Ts-1884	IM-6
	Luikart	Tuscarawas	clay			Ts-1914	D-0701
	Spring Industries	Tuscarawas	sand & gravel	18,890	18,890	Ts-SI	IM-569
	Spring	Tuscarawas	clay	1,334	1,334	Ts-1982	IM-621

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
L. A. Horn Excavating/Constr., Inc. 35380 Hocking Dr. Logan, OH 43138 (740) 385-2625 Lucas A. Horn, pres.	L. A. Horn Excavating/Constr., Inc.	Hocking	sand & gravel			Hg-L	IM-2117
Lacuna Sand & Gravel, LLC 18664 County Road H Holgate, OH 43527 (419) 438-1138 Scott A. Sidle, pres.	Lacuna Sand & Gravel, LLC	Defiance	sand & gravel			De-K	IM-2308
Lafarge Corp. Great Lakes Region 11435 Road 176 Paulding, OH 45879 (419) 463-1227 Bruno Lafont, pres.	Paulding Quarry	Paulding	limestone shale	532,758 75,106	532,758 75,106	Pg-1	IM-513
Lafarge Marblehead 831 S. Quarry Rd. Marblehead, OH 43440 (419) 798-4486 Jeff Grashel, plant mgr.	Lafarge Marblehead	Ottawa	limestone	3,499,496	3,630,312	Oa-7	IM-440
Lakeside Sand & Gravel Co. 3498 Frost Rd. Mantua, OH 44255 (330) 274-2569 Larry Kotkowski, pres.	Lakeside Sand & Gravel Co. Plant 1 Solak	Portage Portage	sand & gravel sand & gravel	428,367 2,338	428,367 2,338	Pe-LS Pe-A	IM-1293 IM-1362
Latham Limestone, LLC 11641 Mosteller Rd. Cincinnati, OH 45241 (740) 493-2677 Dennis Garrison, pres.	Latham Limestone	Pike	limestone	467,880	467,880	Pke-13	IM-213
Link Trucking Co., Inc. 7305 State Route 669 N McConnelsville, OH 43756 (740) 962-4480 Glen Kussmaul, pres.	Matthew	Morgan	sand & gravel			Mon-L	IM-1266
Little Miami Sand & Gravel P.O. Box 36 Lebanon, OH 45036 (513) 932-3221 Jillora Summers, pres.	Little Miami Sand & Gravel Plant #1 Little Miami Sand & Gravel Plant #2	Warren Warren	sand & gravel sand & gravel	0 0	500 350	Wan-B Wan-46	IM-679 IM-842
The Logan Clay Products Co. P.O. Box 698 Logan, OH 43138 (740) 385-2184 Richard H. Brandt, pres.	Webb Summit	Perry	shale	12,994	16,503	Py-L	IM-2367
Loxley Aggregates, Inc. 4277 Falls Rd. Lewisburg, OH 45338 (937) 839-5488 Matthew L. Loxley, pres.	Loxley Aggregates, Inc.	Preble	clay sand & gravel	283 450	283 450	Pre-9	IM-1095

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
LUB, Inc. 4174 East Pike Zanesville, OH 43701 (740) 452-3668 Otto Luburgh, pres.	LUB, Inc.	Muskingum	sand & gravel	16,395	16,395	Mum-LB	IM-2106
Luburgh, Inc. 4174 East Pike Zanesville, OH 43701 (740) 452-3668 Otto Luburgh, pres.	Luburg-Cameron Brothers	Muskingum	clay			Mum-L2	IM-2200
	Yeary	Muskingum	clay			Mum-L3	IM-2342
M. J. Coates Construction Co., Inc. P.O. Box 41231 Dayton, OH 45441 (937) 886-9546 Martin J. Coates, owner	M. J. Coates Construction Co., Inc.	Greene	sand & gravel			Ge-G	IM-655
	M. J. Coates Construction Co., Inc.	Greene	sand & gravel	74,000	74,000	Ge-47	IM-751
MAR-DEL Enterprises, Inc. P.O. Box 6156 Chillicothe, OH 45601 (740) 775-3098 Marvin E. Riley, pres.	MAR-DEL Enterprises, Inc.	Jackson	sand & gravel			Jkn-M	IM-2209
Marshall Quarry, Inc. 10460 State Route 124 Hillsboro, OH 45133 (937) 466-2855 Troy A. Main, v. pres.	Marshall Quarry, Inc.	Highland	limestone	24,567	24,567	Hd-4	IM-406
Martin Marietta Aggregates 9277 Centre Point Dr., Suite 250 West Chester, OH 45069 (304) 485-7341 Dan Goethel, gen. mgr.	Apple Grove Plant	Meigs	sand & gravel	377,804	395,637	Ms-205	IM-30
Martin Marietta Aggregates 9277 Centre Pointe Dr., Suite 250 West Chester, OH 45069 (513) 492-5638 Steve Raffensperger, v. pres.	Fairfield II Gravel	Butler	sand & gravel			Br-14	IM-147
	Fairfield Sand & Gravel	Butler	limestone	17,868	13,242	Br-35	IM-200
			sand & gravel	977,837	847,664		
	Hamilton Gravel	Butler	sand & gravel	5,015	0	Br-5	IM-153
	Ross Sand & Gravel	Butler	sand & gravel	1,067	10,199	Br-29	IM-149
	Fairborn Gravel	Clark	limestone	7,348	377	Ck-13	IM-366
			sand & gravel	218,808	191,681		
	Clinton Limestone	Clinton	limestone	181,898	160,434	Cln-W	IM-2160
			sand & gravel	65	613		
	Blue Rock Limestone	Fayette	limestone			Fe-2	IM-169
	Cedarville	Greene	limestone	356,836	347,917	Ge-17	IM-435
			sand & gravel	9,743	6,000		
	Cook Rd.	Greene	limestone	8,768	0	Ge-MM	IM-2123
			sand & gravel	432,565	485,326		
	Haines Rd.	Greene	sand & gravel			Ge-32	IM-400
	Spring Valley S & G	Greene	sand & gravel			Ge-42	IM-954, IM-2123
	Xenia S & G	Greene	sand & gravel	1,747	0	Ge-33	IM-379
	E-town Sand & Gravel	Hamilton	limestone	15,953	453	Hmn-71	IM-771
			sand & gravel	734,866	531,446		
	Harrison Sand & Gravel	Hamilton	limestone			Hmn-37	IM-170
	Kilby Rd. #713	Hamilton	sand & gravel			Hmn-AAC	IM-716
	Miamitown	Hamilton	sand & gravel			Hmn-D	IM-1079
	Stuart Pit	Hamilton	sand & gravel			Hmn-P	IM-1333

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
	Lynchburg Quarry	Highland	limestone	3,298	0	Hd-M	IM-1170
	Troy Sand & Gravel	Miami	sand & gravel	333,673	370,636	Mi-3	IM-462, IM-658
	Phillipsburg	Montgomery	sand & gravel	15,102	23,412	My-1	IM-374
			limestone	415,668	392,267		
	Rip Rap Rd.	Montgomery	sand & gravel			My-66	IM-677
	Franklin Gravel	Warren	sand & gravel	45,523	0	Wan-38	IM-615
Martin Marietta Magnesia Specialties, Inc. 755 Lime Rd. Woodville, OH 43469 (419) 849-4200 Tim Tawney, oper. mgr.	Woodville Quarry	Sandusky	limestone	2,313,061	2,332,514	Sy-1	IM-537
MAR-ZANE Materials, Inc. P.O. Box 1585 Zanesville, OH 43702-1585 (740) 453-0721 Nick Little, pres.	Enterprise Pit	Hocking	sand & gravel	322,228	332,072	Hg-HV	IM-1284
Mason's Sand & Gravel Co. 2385 Rathmell Rd. Obetz, OH 43207 (614) 491-3611 George C. Smith, pres.	Mason's Sand & Gravel Co.	Franklin	sand & gravel	24,637	24,637	Fn-11	IM-234
Massillon Materials, Inc. P.O. Box 499 Dalton, OH 44618 (330) 837-4767 Howard J. Wenger, pres.	Massillon Materials, Inc.	Stark	sand & gravel	443,168	443,168	Sk-M	IM-1031
	MMI Warmington Plant	Stark	sand & gravel	116,800	116,800	Sk-M1	IM-1332
	MMI Sandyville Plant	Tuscarawas	sand & gravel			Ts-MM	IM-1324
Mathews Sand & Gravel 5061 Monroe Center Conneaut, OH 44030 (440) 594-1130 Edward G. Mathews, owner	Mathews Sand & Gravel	Ashtabula	sand & gravel	200	200	Asa-M	IM-1301
Maysville Materials, LLC 3499 Foxfire Dr. Zanesville, OH 45701 (740) 638-3942 Chris D. Sidwell, pres.	Maysville Materials, LLC	Belmont	limestone			Bt-M	IM-2392
	Maysville Materials, LLC	Muskingum	limestone	212,788	212,788	Mum-M	IM-2371
	Smith	Muskingum	limestone			Mum-M1	IM-2372
James L. Meade 2151 State Route 46 N Jefferson, OH 44047 (440) 593-6902 James L. Meade, pres.	Meade	Ashtabula	sand & gravel	11,000	11,000	Asa-JM	IM-2242
Mechanicsburg Sand & Gravel, Inc. 5734 State Route 4 Mechanicsburg, OH 43044 (937) 834-2606 James G. Cushman, pres.	Mechanicsburg Sand & Gravel, Inc.	Champaign	sand & gravel	85,942	85,942	Cpn-22	IM-889
The Melvin Stone Co., LLC P.O. Box 158 Sabina, OH 45169 (740) 998-5016 Dennis J. Garrison, pres.	The Melvin Stone Co., LLC	Clinton	limestone	1,011,290	1,011,290	Cln-1	IM-241
	Bowersville	Greene	limestone	292,980	292,980	Ge-M	IM-2052
	Circleville	Pickaway	sand & gravel	275,400	275,400	Pky-R	IM-993
	Williamsport	Pickaway	limestone	214,000	214,000	Pky-4	IM-209
	Plano Road	Ross	limestone	210,000	210,000	Rs-MC1	IM-1298

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Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Mesenburg Bros., Inc. 2366 Wells Rd. Collins, OH 44826 (419) 668-5691 William Mesenburg, pres.	Mesenburg Bros., Inc.	Huron	sandstone	7,865	7,865	Hrn-8	IM-268
MGQ, Inc. P.O. Box 130 Old Fort, OH 44861 (419) 992-4235 Lyn O. Radabaugh, pres.	Liberty Quarry	Seneca	limestone			Sa-M	IM-2239
Miami View Mining Co., Ltd. 998-B E. Ridge Dr. Lebanon, OH 45036 (513) 932-6481 James P. Jurgensen, managing mbr.	Miami View	Warren	sand & gravel	152,163	152,163	Wan-MV	IM-1329
Mid Ohio Resources 459 State Route 97 W Bellville, OH 44813 (352) 369-8600 Darryl C. Lanker, pres.	Bellville West	Richland	sand & gravel	4,700	0	Rd-M1	IM-2191
Ed Miller 6640 Twp. Rd. 348 Millersburg, OH 44654 (330) 674-1157 Ed Miller, owner	E. Miller Mine	Holmes	limestone			Hs-M	IM-2352
Miller's Sand & Gravel, Inc. 10228 State Route 82 Windham, OH 44288 (330) 326-3157 Brian K. Miller, pres.	Miller Sand & Gravel, Inc.	Portage	sand & gravel	108	0	Pe-39	IM-1078
Milligan Materials P.O. Box 419 Sidney, OH 45365 (937) 492-4722 Thomas P. Milligan, pres.	Washington Twp. Pit	Shelby	sand & gravel			Shy-13	IM-412
Milton Materials, LLC 7131 W. Fenner Rd. Ludlow Falls, OH 45339 (937) 698-7048 Tom Wagner, pres.	Milton Materials Fenner Pit	Miami	sand & gravel	95,000	76,000	Mi-4	IM-472
Morrow Gravel Co. 11641 Mosteller Rd. Cincinnati, OH 45241 (740) 998-5016 Dennis Garrison, pres.	Urbana Pike County Morrow Gravel Co.	Champaign Pike Warren	sand & gravel sand & gravel sand & gravel	100,000 43,397	100,000 0	Cpn-1 Pke-M Wan-M	IM-371 IM-1325 IM-728, IM-1065
Morton International, Inc. Morton Salt Division P.O. Box 428 Grand River, OH 44045-0428 (440) 354-9901 Mark Mitchell, facility mgr.	Fairport Mine	Lake	salt	613,463	511,839	Lke-6	

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Morton International, Inc. Morton Salt Division 151 Industrial St. P.O. Box 337 Rittman, OH 44270-0337 (330) 925-3015 Christian Herrmann, CEO	Morton Salt Well Field 9129	Wayne	salt	301,499	301,499	We-9129	
Mt. Eaton Reclamation, Inc. P.O. Box 256 Mt. Eaton, OH 44659 (330) 465-7162 Freeman Mullet, pres.	Mt. Eaton Reclamation, Inc.	Wayne	sandstone			We-M	IM-2394
Muskingum River Gravel Co. P.O. Box 1585 Zanesville, OH 43702-1585 (740) 453-0721 Nick Little, pres.	S & S Aggregate #8	Hocking	sand & gravel	71,224	71,224	Hg-301	IM-458
	S & S Aggregate	Morgan	sand & gravel			Mon-M	IM-0718
	S & S Aggregate #1	Muskingum	sand & gravel	202,882	202,413	Mum-228	IM-421
	S & S Aggregate Plant #7	Ross	sand & gravel	84,470	83,147	Rs-M	IM-114
	Plant #2	Washington	sand & gravel			Wn-38	IM-701
National Aggregates, Inc. P.O. Box 340 Malvern, OH 44644 (330) 866-1999 Sheryl Sheckler, owner	National Aggregates, Inc.	Stark	sand & gravel			Sk-1017	IM-1186
National Lime & Stone Co. P.O. Box 120 Findlay, OH 45839-0120 (419) 422-4341 C. Paul Palmer, pres.	Bloomlock Quarry	Allen	limestone			An-4	IM-491
	Lima Plant	Allen	limestone	705,000	705,000	An-3	IM-484
	Buckland Plant	Auglaize	limestone	357,000	357,000	Ae-10	IM-486
	Bucyrus Plant	Crawford	limestone	1,084,000	1,084,000	Cd-1	IM-404
	Delaware Plant	Delaware	limestone	2,990,000	2,990,000	Del-5	IM-207
	Meredith Quarry	Delaware	limestone			Del-2	IM-299
	Warrensburg	Delaware	limestone			Del-3	IM-327
	South Columbus	Franklin	sand & gravel	328,000	328,000	Fn-52	IM-191, IM-2193
	Findlay Plant	Hancock	limestone	354,000	354,000	Hk-7	IM-1002
	Ridge Quarry	Hancock	limestone			Hk-A	IM-1299
	County Line Quarry	Hardin	limestone			Hdn-N	IM-2072
	Hamilton Quarry	Marion	limestone			Mn-2	IM-423
	Marion Plant	Marion	limestone	589,000	589,000	Mn-3	IM-168
	Chesterville Plant	Morrow	sand & gravel	365,000	365,000	Mw-10	IM-258
	Rimer Plant	Putnam	limestone	405,000	405,000	Pm-N	IM-0479
	Delphos Quarry	Van Wert	limestone	90,000	90,000	Vt-1	IM-500
	Carey Plant	Wyandot	limestone	4,112,000	4,112,000	Wt-1	IM-405
	Upper Sandusky Plant	Wyandot	sand & gravel	160,000	160,000	Wt-N	IM-2132
Neer's Sand & Gravel 4859 Twp. Rd. 45 Bellefontaine, OH 43311 (937) 585-6733 Arden J. Neer, Sr., owner	Neer's Sand & Gravel	Logan	sand & gravel	106,645	106,645	Lgn-6	IM-459
Nelson Sand & Gravel, Inc. P.O. Box 466 Kingsville, OH 44048 (440) 224-0198 Thomas H. Nelson, pres.	Nelson Sand & Gravel, Inc.	Ashtabula	sand & gravel	36,830	36,830	Asa-N1	IM-2102

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Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
New Carlisle Sand & Gravel Co. 6090 S. Scarff Rd. New Carlisle, OH 45344 (937) 845-8434 James R. Upton, owner	New Carlisle Sand & Gravel Co.	Miami	sand & gravel			Mi-501	
Newark Materials, LLC 2232 Sleepy Hollow Rd. Newark, OH 43055 (740) 652-4565 Carl W. Hains, owner	Newark Materials	Licking	sand & gravel	10,457	18,295	Lg-504	IM-991
Newbury Sand & Gravel, Inc. 5197 Chillicothe Rd. Chagrin Falls, OH 44022-4171 (440) 338-1536 Bruce Thomas, pres.	Newbury Sand & Gravel, Inc.	Geauga	sand & gravel			Gea-N	IM-1123
Newton Asphalt Paving, Inc. P.O. Box 86 Strasburg, OH 44680 (330) 878-5648 George A. Gessner, pres.	516	Tuscarawas	sand & gravel	100,537	100,537	Ts-2001	IM-1004
North Shore Stone Quarries, Inc. 72 Fernhill Ave. Columbus, OH 43228 (614) 878-0620 Clifford Hammond, pres.	North Shore Stone Quarries, Inc.	Seneca	limestone	526	526	Sa-8	IM-313
Northwest Ohio Property Developments, Ltd. P.O. Box 23242 Toledo, OH 43623 (419) 260-4406 Gene W. Borton, pres.	NOPD, Ltd.	Fulton	sand & gravel	6,030	6,030	Ftn-NW	IM-2138
Nuway Services 3441 Sportsman Club Rd. Johnstown, OH 43031 (740) 587-2451 Wilda McInturff, pres.	Hopewell	Licking	clay	13,058	13,058	Lg-NU	IM-2046
Ohio Asphaltic Limestone Corp. 8591 Mad River Rd. Hillsboro, OH 45133 (937) 364-2191 Diana M. Jones, pres.	Ohio Asphaltic Limestone Corp.	Highland	limestone	282,776	282,776	Hd-3	IM-253
Ohio Basic Minerals, LLC 15317 Beaver Pike Jackson, OH 45640 (740) 286-0258 Patrick McDonald, pres.	Scioto Mine	Pike	sandstone	45,643	59,336	Pke-O	IM-2370
Olen Corp. 4755 S. High St. Columbus, OH 43207-4028 (614) 491-1515 Kenneth W. Holland, pres.	Columbus Plant #3	Franklin	limestone	211,151	300,884	Fn-58	IM-1023
			sand & gravel	1,882,232	1,300,331		
	Fredericktown Plant #2	Knox	sand & gravel	495,943	316,295	Kx-O	IM-2159
	St. Louisville Plant #5	Licking	sand & gravel	336,941	349,319	Lg-31	IM-246
	Lucky Sand & Gravel Co.	Portage	sand & gravel	16,884	0	Pe-L	IM-154
	The Olen Corp. - Wooster	Wayne	sand & gravel	261,715	233,093	We-11	IM-547
	Upper Sandusky	Wyandot	limestone	585,885	509,646	Wt-3	IM-298

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Orrville Trucking P.O. Box 220 Orrville, OH 44667 (330) 682-4010 David A. Renner, pres.	Orrville Trucking	Ashland	sand & gravel			Ald-G	IM-1121
Oscar Brugmann Sand & Gravel, Inc. 3828 Dudley Rd. Mantua, OH 44255 (330) 274-8224 Alan R. Brugmann, pres.	Oscar Brugmann Sand & Gravel, Inc. Oscar Brugmann Sand & Gravel, Inc. Oscar Brugmann Sand & Gravel, Inc.	Portage Portage Portage	sand & gravel sand & gravel sandstone sand & gravel	 18,362 593,023	 18,362 593,023	Pe-OB1 Pe-OB Pe-9	IM-2300 IM-1241 IM-119
Oster Sand & Gravel, Inc. 5947 Whipple Ave. NW North Canton, OH 44720-7692 (330) 494-5472 Marlene K. Oster, pres.	Massillon Plant Oster Sand & Gravel, Inc. - Bolivar	Stark Tuscarawas	sand & gravel sand & gravel	466,337 123,584	466,337 123,584	Sk-165 Ts-2036	IM-192 IM-1155
Ours Sand & Gravel 20444 State Route 7 S Crown City, OH 45623 (740) 256-1378 Donald A. Ours, owner	Ours Sand & Gravel	Gallia	sand & gravel	2,998	2,998	Ga-O	IM-1028
Oxford Resource Partners, LP P.O. Box 427 Coshocton, OH 43812 (740) 622-6302 Charles C. Ungurean, pres.	Pickens Standingstone Mine New Lex-North 2 Strasburg Slurry	Harrison Harrison Perry Tuscarawas	limestone limestone clay limestone	12,505 1,110,551 74,420	12,505 1,110,551 74,420	Hn-V Hn-02 Py-02 Ts-HC	D-2282 D-2277 D-2318 D-0981
The Parry Company, Inc. 33630 Old U.S. Route 35 Chillicothe, OH 45601 (740) 884-4893 David Meredith, pres.	Jackson Grandview Builders	Pike	sandstone	10,000	10,000	Pke-P	IM-2337
Patrick Excavating, Inc. 5839 State Route 5 P.O. Box 387 Ravenna, OH 44266 (330) 296-7706 Tim Patrick, pres.	Patrick	Portage	clay	637	637	Pe-P	IM-1322
Paul D. Beery Trucking Co. 4770 Cincinnati-Zanesville Rd. NE Lancaster, OH 43130 (740) 653-5061 Paul D. Beery, pres.	Paul D. Beery Trucking Co.	Fairfield	sand & gravel	1,349	1,583	Fd-14	IM-933
Phillips Companies, LLC 620 Phillips Dr. Beavercreek, OH 45435 (937) 426-5461 Dennis K. Phillips, pres.	Phillips Companies, LLC Phillips Sand and Gravel	Greene Montgomery	sand & gravel sand & gravel	206,000 180,093	318,000 225,985	Ge-36 My-52	IM-305 IM-348
Phoenix Ashphalt Company, Inc. 3497 University Dr. NE New Philadelphia, OH 44663 (330) 339-4935 James R. Demuth, pres.	Smith #2 Smith Sand & Gravel #1	Carroll Carroll	sand & gravel sand & gravel	21,986 65,520	21,986 65,520	Cl-P Cl-P1	IM-2322 IM-2354

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Piqua Materials, Inc. Piqua Minerals Division 1750 W. Statler Rd. Piqua, OH 45356 (800) 338-2962 Dennis Garrison, pres.	Piqua Minerals Division	Miami	limestone	603,752	603,752	Mi-1	IM-382
Portage Aggregate & Supply, LLC 10155 Royalton Rd. North Royalton, OH 44133 (330) 297-6800 Anthony J. Farinacci, pres.	Portage Aggregate & Supply, LLC	Portage	sand & gravel	77,459	77,459	Pe-M	IM-1312
Power Development Corp. P.O. Box 936 Malvern, OH 44644 (330) 863-0603 Paul W. Robertson, pres.	Power Development/Robertson	Carroll	sand & gravel			Cl-PD	IM-1352
Precision Aggregates I, LLC 4843 County Rd. 43 Upper Sandusky, OH 43351 (419) 352-4681 Randolph Schmeltz, pres.	Precision Aggregates I, LLC	Wyandot	limestone sand & gravel			Wt-4	IM-520
Precision Aggregates II, LLC 12205 E. Gypsy Ln. Bowling Green, OH 43402 (419) 352-4681 Randolph G. Schmeltz, pres.	Precision Aggregates II, LLC Precision Aggregates III, LLC	Wood Sandusky	limestone sand & gravel limestone sand & gravel	114,891 15,540 91,101 46,059	114,891 15,540 91,101 46,059	Wd-14 Sy-5-1	IM-1157 IM-0259
Premier Silica, LLC 26900 Coshocton Rd. Howard, OH 43028 (740) 599-7773 Denny Bullard, pres.	Millwood Plant Glass Rock Glass Rock Plant	Knox Perry Perry	sandstone sandstone sandstone	78,034 20,035	87,124 20,035	Kx-1 Py-C Py-344	IM-269 IM-2365 IM-1014
Putnam Aggregates Company, LLC 7053 Road M Ottawa, OH 45875-9754 (419) 523-6004 Stephen S. Benson, manager/trustee	Putnam Aggreagtes Company, LLC	Putnam	limestone sand & gravel	218,934 10,470	218,934 10,470	Pm-2	IM-570
Quality Ready Mix, Inc. 16672 County Rd. 66A N St. Marys, OH 45885 (419) 738-2817 John Hirschfield, pres.	Quality Pit	Auglaize	sand & gravel	10,265	10,265	Ae-16	IM-595
R. A. Cruise Sand & Gravel, Inc. 2568 Lake Rockwell Rd. Ravenna, OH 44266 (330) 296-4087 Larry A. Cruise, pres.	R. A. Cruise Sand & Gravel, Inc.	Portage	sand & gravel			Pe-45	IM-139
R. H. Penick Co., Ltd. 1504 Blue Jay Rd. Heath, OH 43056-1767 (740) 323-3040 Suzanne R. Neumeyer, owner	R. H. Penick Co.	Licking	salt	330	330	Lg-45	

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
R. J. Martin Service & Excavating 1875 Roxanna-New Burlington Rd. Waynesville, OH 45068 (937) 862-4182 Roger J. Martin, pres.	Horseshoe Bend Sand & Gravel, Inc.	Greene	sand & gravel			Ge-40	IM-923
R. L., Ltd. 5850 Dryfork Rd. Cleves, OH 45002 (513) 367-5700 Rick Ashcraft, pres.	R. L., Ltd.	Hamilton	sand & gravel	1,820	1,820	Hmn-67	IM-529
R. W. Sidley, Inc. 436 Casement Ave. Painesville, OH 44077 (440) 298-3232 Robert Buescher, pres.	Sidley-Kingsville Plant	Ashtabula	sand & gravel	37,607	43,600	Asa-15	IM-783
R. W. Sidley, Inc. 7123 Madison Rd. Thompson, OH 44086 (440) 298-3232 Robert Buescher, pres.	Thompson Pit Sidley - Painesville Plant	Geauga Lake	sandstone sand & gravel	130,781 225	125,000 225	Gea-1 Lke-7	IM-163 IM-162
RAK, Inc. dba Rainbow Sand & Gravel, Inc. P.O. Box 240 Bristol, OH 44402 (330) 389-3451 Rex King, pres.	Rainbow Sand & Gravel, Inc.	Portage	sand & gravel			Pe-64	IM-1017
Ralph C. Wagner & Sons 7317 Brinker St. Navarre, OH 44662 (330) 879-5788 Michael Wagner, owner	Wagner & Sons	Stark	sand & gravel			Sk-W	IM-867
Razor Lake S. & G., LLC 59894 County Rd. 9 Newcomerstown, OH 43832 (740) 294-1370 Terry L. Jurin, owner	Razor Lake S. & G., LLC	Coshocton	sand & gravel	98,915	98,915	Cn-R	IM-2175
Regeneration Materials P.O. Box 146 Dundee, OH 44624 (330) 852-2012 Matthew Maendel, pres.	Dundee Mine	Tuscarawas	sandstone sand & gravel	3,668	3,940	Ts-1660	IM-68
Ridge Township Quarry 16905 Middlepoint Rd. Van Wert, OH 45891 (419) 238-2533 Nancy Agler, office mgr.	Ridge Township Quarry	Van Wert	limestone	132,478	132,478	Vt-7	IM-642
Riverside Sand & Gravel Co., Inc. P.O. Box 324 Tallmadge, OH 44278-0324 (330) 673-2021 Albert H. Acken, Jr., pres.	Riverside Sand & Gravel Co., Inc.	Summit	sandstone	345	345	St-24	IM-239

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Rockwell Sand & Gravel, Inc. 1022 State Route 43 Mogadore, OH 44260 (330) 628-3231 Lana Rufener, pres.	Suffield Aggregate, LLC	Portage	sand & gravel	34,000	34,000	Pe-R	IM-2037
Rocky Enterprise 53557 Mud Run Rd. Senecaville, OH 43780 (740) 391-2035 Tim Hall, Owner	Rocky Enterprise - Robins Ridge	Guernsey	sandstone	57,240	57,240	Gy-R	IM-2375
Rohr Excavating, Ltd. 5028 Twp. Rd. 339 Millersburg, OH 44654 (330) 763-1124 Montell J. Rohr, pres.	Miller Rohr Rohr	Coshocton Holmes Holmes	limestone clay limestone limestone	6,063 45,427	6,063 45,427	Cn-R1 Hs-R Hs-R1	IM-2409 IM-2345 IM-2368
Romig Excavating P.O. Box 260 Sherrodsville, OH 44675 (740) 269-1225 James D. Romig, owner	Romig Excavating	Carroll	sandstone	3,570	3,570	Cl-R	IM-2296
Roy M. Roush 11278 Darby Creek Rd. Orient, OH 43146 (614) 877-4792 Roy M. Roush, owner	R Farm S & G	Pickaway	sand & gravel	3,556	3,556	Pky-RR	IM-2040
Royalty Enterprises, Inc. P.O. Box 8680 Newark, OH 43058 (740) 323-3333 Clayton King, pres.	King #1	Licking	salt	299	299	Lg-4484	
Rupp Construction, Inc. 18228 Fulton Rd. Marshallville, OH 44645 (330) 855-2781 Gary D. Radabaugh, pres.	Rupp Construction, Inc.	Wayne	sand & gravel	96,010	96,010	We-7	IM-471
S & S Aggregate, Inc. P.O. Box 1585 Zanesville, OH 43702-1585 (740) 453-0721 Nick Little, v. pres.	Lockbourne Rd. S & S Aggregate #16 Twin Lakes - S & S Aggregate #10 S & S Aggregate #14 Twin Lakes - S & S Aggregate #9	Franklin Portage Portage Richland Summit	sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel	 461,131 168,613 8,993	 512,052 157,254 7,996	Fn-24 Pe-15 Pe-67 Rd-5 St-44	IM-266 IM-104 IM-202 IM-470 IM-178
Sam's Excavating Unlimited, Inc. 4324 St. Paul Rd. Ashville, OH 43103 (740) 983-6589 Samuel Hall, pres.	Scioto Aggregates - Sam's Excavating Unlimited	Pickaway	sand & gravel	4,600	4,600	Pky-S	IM-2328
Sandkuhl Clay Works, Inc. 05536 Kossuth-Amanda Rd. Spencerville, OH 45887 (419) 657-2905 Ann L. Engh, pres.	Sandkuhl Clay Works, Inc.	Auglaize	clay	1,624	1,624	Ae-7	

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Scassa Asphalt, Inc. 4167 Beaumont Ave. NW Massillon, OH 44647 (330) 830-2039 Ettore Scassa, owner	Roio Sand & Gravel	Stark	sand & gravel	15,000	28,640	Sk-S	IM-2326
Guy Schieve 52943 State Route 113 Wakeman, OH 44889 (440) 965-8792 Guy Schieve, owner	Schieve Pit	Lorain	sand & gravel	5,186	5,186	Ln-12	IM-731
Roy B. Schweitzer dba The Gravel Co. 700 W. Pete Rose Way Cincinnati, OH 45203 (513) 721-6000 Roy B. Schweitzer, pres.	New Miami Pit Cleves	Butler Hamilton	sand & gravel sand & gravel			Br-3 Hmn-28	IM-719 IM-353
Mark E. Scott P.O. Box 6112 Chillicothe, OH 45601 (740) 772-4990 Mark E. Scott, owner	Scott Pit	Ross	sand & gravel			Rs-P	IM-122
Sereday Trucking, Inc. 7591 Warren Sharon Rd. Brookfield, OH 44403 (330) 448-4000 Richard Sereday, owner	Sereday	Trumbull	clay			Tl-SE	IM-2351
Shamrock Materials, Inc. 11641 Mosteller Rd. Cincinnati, OH 45241 (800) 338-2962 Dennis Garrison, pres.	Shamrock Materials Walls Material	Butler Darke	sand & gravel limestone	193,700 179,310	193,700 179,310	Br-52 Dke-1	IM-814 IM-362
Sharon Stone Co. P.O. Box 100 Dexter City, OH 45727 (740) 783-3575 John P. McCort, pres.	Sharon Stone Co. Belpre Sand & Gravel	Noble Washington	limestone sand & gravel	120,572 447,223	120,572 447,223	Ne-S Wn-SS	IM-913 IM-2006
Shelly Materials, Inc. 80 Park Dr. Thornville, OH 43076 (740) 246-6315 Ty Nofziger, pres	Coshocton Apache #2	Coshocton	sand & gravel			Cn-718	IM-227
	Shelly Materials, Inc., Plant #1305	Coshocton	sand & gravel	192,310	15,081	Cn-694	IM-293
	Shelly Materials, Inc., Plant #1314	Fairfield	sand & gravel			Fd-13	IM-848, IM-1331
	Columbus Limestone #331	Franklin	limestone	3,364,140	3,366,710	Fn-53	IM-185
	Marble Cliff Plant #0332	Franklin	limestone	143,388	73,386	Fn-2	IM-261
	Shelly Materials Plant #1312	Licking	sand & gravel			Lg-W	IM-1213
	St. Louisville	Licking	sand & gravel	370,863	350,672	Lg-10	IM-217
	Portland Plant	Meigs	sand & gravel	218,635	172,841	Ms-S	IM-1326
	Shelly Materials, Inc. - Racine	Meigs	sand & gravel			Ms-298	IM-32
	East Fultonham	Muskingum	limestone	1,130,541	957,211	Mum-106	IM-297
	Shelly Materials, Inc. - Dresden	Muskingum	sand & gravel			Mum-799	IM-317, IM-264
	Shalersville South	Portage	sand & gravel			Pe-68	IM-1107, IM-660
	Chillicothe Route 35 Plant	Ross	sand & gravel			Rs-G	IM-2099
	Shelly Materials, Inc. - Chillicothe	Ross	sand & gravel	93,323	130,256	Rs-27	IM-1098
	Cunningham Pit	Scioto	sand & gravel			So-83	IM-211
	Haverhill	Scioto	sand & gravel			So-79	IM-221

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	Allied Corp., Inc., #1301	Stark	sand & gravel			Sk-N	IM-156
	Navarre	Stark	sand & gravel			Sk-241	IM-582
	Ostrander Quarry	Union	limestone	1,256,078	1,213,372	Un-2	IM-236
	Reno	Washington	sand & gravel	90,937	149,331	Wn-SM	IM-2339
	Willow Island	Washington	sand & gravel	492,463	453,698	Wn-C	IM-1315
Shelly Materials, Inc.	Mechanicsburg	Champaign	sand & gravel			Cpn-21	IM-616
P.O. Box 3100	Forest Quarry	Hardin	limestone	162,497	190,585	Hdn-S	IM-1034
Findlay, OH 45840	Hardin Quarry	Hardin	limestone			Hdn-2	IM-443
(419) 422-8854	Belle Center	Logan	limestone	183,664	141,037	Lgn-2	IM-494
Ty Nofziger, pres.	East Liberty Quarry	Logan	limestone			Lgn-1	IM-574
	Tri-County Limestone Co.	Marion	limestone			Mn-1	IM-250
	Rockford Quarry	Mercer	limestone			Mr-2	IM-430
	York Center Quarry	Union	limestone	488,671	372,957	Un-1	IM-208
Shelly Materials, Inc.	Shelly Materials, Inc. - Lockbourne #1344	Franklin	sand & gravel			Fn-23	IM-183
8920 Canyon Falls Blvd., Suite 120	Petersburg	Mahoning	limestone	531,686	537,514	Mg-L	IM-1353
Twinsburg, OH 44087	Jefferson Materials	Portage	sand & gravel	283,082	361,664	Pe-63	IM-82
(330) 405-4163	Shalersville North	Portage	sand & gravel	534,223	511,892	Pe-La	IM-1047
Douglas Rauh, pres.	Allied Corp.	Stark	sand & gravel			Sk-CA	IM-1234
	Massillon Aggregates	Stark	sand & gravel	573,796	544,141	Sk-173	IM-879
Sidco Development, Inc.	Columbia Cement	Muskingum	limestone			Mum-SD	IM-1313
4620 Limestone Valley Rd.	Midvale Sand & Gravel	Tuscarawas	sand & gravel	187,947	187,947	Ts-S2	IM-1356
Zanesville, OH 43701							
(740) 849-2422							
Jeffrey R. Sidwell, pres.							
Sidwell Materials, Inc.	Bellaire Stone	Belmont	sandstone			Bt-1190	IM-1089, IM-2256
4620 Limestone Valley Rd.	Uniontown Stone	Belmont	limestone	422,019	480,081	Bt-N	IM-1283
Zanesville, OH 43701	Dupler/Ford	Muskingum	limestone			Mum-SB	IM-1212 ,IM-1269
(740) 849-2422	Sidwell Materials, Inc.	Muskingum	limestone			Mum-SW	IM-2092
Jeffrey R. Sidwell, pres.			sand & gravel				
	White Cottage	Muskingum	limestone			Mum-104	IM-277
Small's Sand & Gravel, Inc.	Small's Sand & Gravel, Inc.	Knox	sand & gravel	11,485	11,485	Kx-S	IM-2000
P.O. Box 617	Small's Sand & Gravel, Inc.	Knox	sand & gravel	193,672	193,672	Kx-15	IM-967
Gambier, OH 43022	Small's Sand & Gravel, Inc.	Knox	sand & gravel	352	352	Kx-17	IM-968
(740) 427-3677							
Michael W. Small, pres.							
Sober Sand & Gravel Co.	Sober Sand & Gravel Co.	Portage	clay	14,767	14,767	Pe-18	IM-193
2898 Tallmadge Rd.			sand & gravel	164,002	164,002		
Ravenna, OH 44266							
(330) 867-0666							
Joseph F. Bertolini, pres							
Soehnlen Bros. Sand & Gravel, Inc.	Soehnlen Bros. Sand & Gravel, Inc.	Tuscarawas	sand & gravel	311,097	311,097	Ts-1826	IM-88
10449 Soehnlen Rd. NW							
Beach City, OH 44608							
(330) 756-2244							
Francis L. Soehnlen, pres.							
Solomon's Mines, Inc.	Solomon's Mines, Inc.	Columbiana	sandstone	13,279	13,279	Ca-S	IM-1258
7732 Salem-Unity Rd.			sand & gravel	41,322	41,322		
Salem, OH 44460	Solomon's Mines, Inc.	Mahoning	sand & gravel			Mg-632	IM-808
(330) 337-0123							
Jack Solomon, owner							

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Soltis Sand & Gravel 19102 Nelson Ledges Rd. P.O. Box 452 Garrettsville, OH 44231 (440) 548-5813 James Soltis, owner	Soltis Sand & Gravel	Geauga	sand & gravel	253	260	Gea-9	IM-132
South Central Sand & Gravel 340 Bailey Chapel Rd. Piketon, OH 45661 (740) 289-2629 James A. Nier, owner	South Central Sand & Gravel	Pike	sand & gravel	5,000	5,000	Pke-30	IM-786
Southern Ohio Aggregates, Inc. 11641 Mosteller Rd. Cincinnati, OH 45241 (513) 771-0820 James P. Jurgensen, pres.	New Miami Plant Cleves Pit Kilby Road Gratis Plant	Butler Hamilton Hamilton Preble	sand & gravel sand & gravel sand & gravel sand & gravel			Br-S Hmn-S Hmn-SO Pre-7	IM-1053 IM-746 IM-720 IM-306
Southern Ohio Sand, LLC P.O. Box 748 Willoughby, OH 44094 (440) 946-7478 Roy Vaughn, pres.	Southern Ohio Sand, LLC	Pike	sandstone	47,000	47,000	Pke-S	IM-1348
City of Springfield 201 Eagle City Rd. Springfield, OH 45502 (937) 525-5880 Allen Jones, super.	City of Springfield	Clark	sand & gravel			Ck-7	IM-449
S.R.I., Inc. 1550 Soldiers Home-West Carrollton Dayton, OH 45418 (937) 268-8991 Steve Rauch, pres.	S.R.I., Inc.	Montgomery	sand & gravel			My-R	IM-539
St. Joe Sand & Gravel, LLC 13307 County Rd. J35 Montpelier, OH 43543 (419) 392-6749 David A. Nixon, pres.	St. Joe Sand & Gravel, LLC (STSG) St. Joe Sand & Gravel, LLC (STSG)	Williams Williams	sand & gravel sand & gravel	36,192	17,975	Ws-S1 Ws-S	IM-2343 IM-2243
Stafford Gravel, Inc. 4225 County Rd. 79 Butler, OH 46721 (800) 354-5435	Washer Family Farms	Defiance	clay sand & gravel			De-S	IM-2410
Stansley Mineral Resources, Inc. 5679 North Main St. Sylvania, OH 43560 (419) 843-2813 Jeffrey Stansley, pres.	Stansley Mineral Resources, Inc., Plant	Ottawa	limestone	409,000	500,000	Oa-1A	IM-292
State Line Resources, Inc. P.O. Box 419 Negley, OH 44441 (330) 426-9611 James Muse, pres.	State Line Resources, Inc.	Columbiana	clay			Ca-505	IM-13, IM-936

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Stocker Sand & Gravel Co. P.O. Box 176 Gnadenhutten, OH 44629 (740) 254-4635 William E. Stocker, pres.	Stocker Sand & Gravel Co. - Gnaden Stocker Sand & Gravel Co. - Island Stocker Sand & Gravel Co. Stocker Sand & Gravel Co.	Tuscarawas Tuscarawas Tuscarawas Tuscarawas	sand & gravel sand & gravel sand & gravel sand & gravel	295,092 437,554	295,092 437,014	Ts-69 Ts-125 Ts-ST Ts-S3	IM-51 IM-50 IM-2125 IM-2232
Stoneco, Inc. P.O. Box 3100 Findlay, OH 45840 (419) 422-8854 Ty Nofziger, pres.	Maumee Quarry Celina Quarry Rocky Ridge Quarry White Rock Quarry Auglaize Quarry Scott Quarry Lime City Quarry Portage Quarry Carey Quarry	Lucas Mercer Ottawa Ottawa Paulding Van Wert Wood Wood Wyandot	limestone limestone limestone limestone limestone limestone limestone limestone limestone	717,697 478,041 834,308 528,389 282,148 119,608 1,460,971	732,364 615,750 874,766 531,890 275,677 100,418 1,578,161	Ls-2 Mr-1 Oa-14 Oa-6 Pg-2 Vt-3 Wd-6 Wd-11 Wt-8	IM-503 IM-592 IM-320 IM-296 IM-481 IM-495 IM-480 IM-475 IM-273
Subtropolis Mining 10900 South Ave. P.O. Box 217 North Lima, OH 44452 (330) 549-2165 W. Thomas Mackall, pres.	Kemp Mine	Mahoning	limestone	1,369,347	1,388,445	Mg-EF1	IM-2093
Sugarcreek Clay & Limestone P.O. Box 402 Sugarcreek, OH 44681 (330) 852-4440 David K. Longfellow, pres.	Sugarcreek Clay & Limestone	Coshocton	sand & gravel			Cn-624	IM-243
Summitville Tiles, Inc. P.O. Box 173 Summitville, OH 43962 (330) 223-1511 David Johnson, pres.	Summitcrest, Inc. Summitville Tiles, Inc.	Columbiana Columbiana	shale clay	19,270	19,270	Ca-SU Ca-205	IM-2186 IM-74
Sunrise Sand & Gravel 1716 Mill Creek Rd. Jefferson, OH 44047 (440) 576-9693 Kenneth, Robert, & Richard McElroy, partners	Sunrise Sand & Gravel	Ashtabula	sand & gravel			Asa-21	IM-1239
Sunshine Sand Co. 30799 Pinetree Rd., PMB 410 Cleveland, OH 44124 (216) 587-2700 Dorothy M. Strohm, pres.	Sunshine Sand Co.	Portage	sand & gravel			Pe-SSC	IM-318
Joseph N. Sypniewski 3780 Mechanicsville Rd. Rock Creek, OH 44084 (440) 563-5644 Joseph N. Sypniewski, owner	Sypniewski	Ashtabula	clay sand & gravel	135 48	135 48	Asa-SY	IM-2222
T & K Kuhnle Co. P.O. Box 375 Newbury, OH 44065 (440) 626-4400 Bob Russell, owner	Munn Materials	Geauga	sand & gravel	20,000	20,000	Gea-TK	IM-902

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Tackett Builders 906 Charleston Pike Chillicothe, OH 45601-9312 (740) 772-5431 Carmel G. Tackett, owner	Tackett's Pit	Ross	sand & gravel			Rs-T	IM-1189
The Terry Byrne Mining Co. 4775 Mill Run Rd. Lexington, OH 44904 (419) 564-9809 Terrance K. Byrne, owner	The Terry Byrne Mining Co.	Richland	sand & gravel			Rd-TB	IM-1343
Thiel Construction Co. P.O. Box 225 Blakeslee, OH 43505 (419) 272-2712 Robert L. Thiel, pres.	Thiel Construction Co.	Williams	sand & gravel	1,748	1,748	Ws-21	IM-1225
Thomas Sand & Gravel 5801 Enterprise Rd. West Alexandria, OH 45381 (937) 787-4677 Estelle Thomas, owner	Howard Thomas	Preble	sand & gravel	50	50	Pre-T	IM-2036
Thompson Mining Co. 12321 Ideal Rd. Byesville, OH 43723 (740) 260-2252 George V. Thompson, pres.	Pleasant Valley Limestone	Muskingum	limestone clay	126,036 291	126,036 291	Mum-907	IM-1200
Tiger Sand & Gravel, LLC 4141 Southway St. SW Canton, OH 44706 (330) 477-9653 Pete Bitzel, Jr., partner	Tiger Sand & Gravel, LLC	Stark	sand & gravel	147,747	160,000	Sk-T	IM-2279
Tipp Stone Co., Inc. P.O. Box 367 Troy, OH 45373 (937) 890-4051 Michael Eidemiller, pres.	Tipp Stone Co., Inc. Tipp Stone Co., Inc.	Miami Montgomery	sand & gravel sand & gravel	 8,839	 8,839	Mi-12 My-61	IM-467 IM-468
TOM, LLC 4757 Tile Plant Rd. New Lexington, OH 43764 (740) 342-1995 Antonin Margerie, mgr.	Saltillo	Perry	clay			Py-D1	IM-1304
Top Dog Service Company 660 Lunken Park Dr. Cincinnati, OH 45226 (513) 353-2555 Michael P. O'Rourke, pres.	Whitewater Reclamation Company	Hamilton	sand & gravel	950	950	Hmn-G	IM-1270
Total Waste Logistics, LLC 7131 Akron-Canfield Rd. Canfield, OH 44405 (330) 702-0702 Guy F. Fragle, dir.	Penn Ohio Mine	Columbiana	clay			Ca-TW	IM-2336

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Triple B of Lakeville, Ltd. 13739 State Route 226 Lakeville, OH 44638 (419) 496-2646 Mitchell W. Bolin, pres.	Lakeville Sand & Gravel, Ltd.	Holmes	sand & gravel	100,000	100,000	Hs-C	IM-1303
Trout Sand & Gravel Co. 347 Gravel Bank Rd. Marietta, OH 45750 (740) 373-7471 Henry C. Trout, Jr., owner	Trout Sand & Gravel Co.	Washington	sand & gravel			Wn-510	IM-25
Tuffco Sand & Gravel, Inc. P.O. Box 399 Marysville, OH 43040 (614) 873-3977 Charles Lewis, pres.	Tuffco Sand & Gravel, Inc.	Madison	sand & gravel	47,192	47,192	Mdn-11	IM-1063
Twinsburg Development Corp. P.O. Box 248 Grand River, OH 44045 (440) 357-5562 Jerome T. Osborne, pres.	Twinsburg Development Corp.	Portage	sand & gravel			Pe-84	IM-868
Ty, Inc. 7603 Old Rockside Rd. Independence, OH 44131 (216) 328-9278 Tom Simich, pres.	Bradley Rd.	Cuyahoga	sand & gravel			Cya-T	IM-2356
U.S. Aggregates, Inc. 5400 W. 86th St. P.O. Box 68123 Indianapolis, IN 46268 (317) 228-2003 James Fehsenfeld, pres.	U.S. Aggregates - Richmond Plant	Preble	sand & gravel	113,200	180,902	Pre-AAC	IM-779
United Aggregates, Inc. P.O. Box 750 Mt. Vernon, OH 43050 (740) 397-0000 Jeff C. Ellis, pres.	United Aggregates, Inc. United Aggregates, Inc.	Knox Knox	sand & gravel sand & gravel	134,203 28,242	102,916 25,541	Kx-3 Kx-5	IM-300 IM-884, IM-1307
Valley Clay Mining Co. 451 Gordon St. Roseville, OH 43777 (740) 697-2005 Peter Petratsas, pres.	Spring Pit	Muskingum	clay shale	8,161 16,140	8,161 16,140	Mum-904	IM-1127
Valley Materials Co. 4947 U.S. Route 23 S P.O. Box 400 Piketon, OH 45661 (740) 289-4400 Ralph McFann, pres.	Valley Materials #2	Pike	sand & gravel			Pke-V	IM-1330
Walhonding Sand & Gravel 27679 State Route 206 Walhonding, OH 43843 (740) 824-5251 Ezra Helmick, v. pres.	Walhonding Valley Sand & Gravel	Coshocton	clay sand & gravel	2,669 55,990	2,669 55,990	Cn-WL	IM-2127

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Waller Bros. Stone Co. P.O. Box 157 McDermott, OH 45652 (740) 259-2356 Frank L. Waller, pres.	Crabtree Quarry Inskeep Quarry 1 & 2 Miller Quarry New Inskeep Quarry	Scioto Scioto Scioto Scioto	sandstone sandstone sandstone sandstone			So-76 So-48 So-82 So-W	IM-141 IM-140 IM-158 IM-2111
Ward Materials, Inc. 385 Oak St. Leipsic, OH 45856 (419) 943-2450 Arnold W. Rosebrock, pres.	Ward Materials, Inc.	Allen	sand & gravel			An-W	IM-2069
Waterloo Coal Co., Inc. P.O. Box 626 Jackson, OH 45640 (740) 286-5633 Denton H. Bowman, pres.	Waterloo Coal Stone Plant	Jackson	limestone	144,310	144,310	Jkn-367	D-594, 968, 1083
Watson Gravel, Inc. 2728 Hamilton-Cleves Rd. P.O. Box 277 Ross, OH 45061 (513) 863-0070 Ronald E. Watson, pres.	Mecco, Inc. Ongais Plant #1 Watson Pit Dry Fork Harrison #2 Minges-Getz	Butler Butler Butler Hamilton Hamilton Hamilton	sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel	349,030 0 468,134 684,509 197,382	271,774 77,256 468,134 684,509 197,382	Br-15 Br-0 Br-47 Hmn-68 Hmn-ARH Hmn-64	IM-316 IM-2143 IM-111 IM-747 IM-1273 IM-137
Weber Sand & Gravel, Inc. 14586 U.S. Route 127 EW Bryan, OH 43506 (419) 636-4238 Thomas G. Weber, pres.	Weber Sand & Gravel, Inc.	Defiance	sand & gravel	159,764	159,764	Ws-11 De	IM-0661
Weidle Sand & Gravel, Inc. 9330 Eckhart Rd. Germantown, OH 45327 (937) 855-2227 D. Scott Weidle, pres.	Weidle Sand & Gravel	Montgomery	sand & gravel	163,950	163,950	My-W1	IM-2203
Welch Sand & Gravel, Inc. 10217 Columbia St. Harrison, OH 45030-9751 (513) 353-3220 Charles H. Welch, pres.	Schlichter Pit East Miami Pit Fernald Pit	Butler Hamilton Hamilton	sand & gravel sand & gravel sand & gravel	14,371 143,732 711,853	0 0 711,853	Br-38 Hmn-48 Hmn-42	IM-218 IM-220 IM-823
Westfall Aggregate & Materials, Inc. 6790 Brooks-Miller Rd. Circleville, OH 43113 (740) 477-8600 Kevin R. Steward, pres.	Hill Road Pit	Pickaway	sand & gravel	85,494	85,494	Pky-WA	IM-2217
William Albert, Inc. 1300 Cassingham Hollow Rd. Coshocton, OH 43812 (740) 622-3045 William Albert, pres.	William Albert, Inc., Pit 1 William Albert, Inc., Pit 2	Coshocton Coshocton	sand & gravel sand & gravel	 30,803	 34,303	Cn-828 Cn-WA	IM-1026 IM-2036
Willowbrook Sand & Gravel, LLC 39130 Brookfield St. P.O. Box 304 Lisbon, OH 44432 (330) 424-0742 Ray Perrino, owner	Willowbrook Sand & Gravel	Columbiana	sand & gravel	47,579	47,579	Ca-993	IM-1180

2013 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS (cont.)

Name, address, telephone number, and president/owner/manager of company	Name of mine	County	Commodity	2013 sales (tons)	2013 production (tons)	State mine number	Mineral Resources Management permit number
Wysong Gravel Co. P.O. Box 5 Lewisburg, OH 45338 (937) 456-4539 John D. Wysong, pres.	Wysong Gravel Co. - Trotwood Plant Wysong Gravel Co. - West Alexandria Plant Wysong Gravel Co.	Montgomery Preble Preble	sand & gravel sand & gravel sand & gravel	 82,689 104,691	 82,288 104,498	My-Wy Pre-6 Pre-4	IM-2194 IM-478 IM-477
Wysong Stone Co. 5897 State Route 503 N P.O. Box 159 Lewisburg, OH 45338 (937) 962-2559 Carroll E. Wysong, v. pres.	Wysong Stone Co.	Preble	limestone	40,000	40,000	Pre-5	IM-447
X. L. Sand & Gravel Co., Inc. P.O. Box 255 Negley, OH 44441 (330) 426-9876 Kristen Kalis, owner	X. L. Sand & Gravel Co., Inc. X. L. Sand & Gravel Co., Inc.	Columbiana Columbiana	sand & gravel sand & gravel	 10,000	 10,000	Ca-XL Ca-881	IM-1347 IM-611
Xenia Sand & Gravel, Inc. 610 Dayton-Xenia Rd. Xenia, OH 45385 (937) 372-2978 Scott A. Filson, pres.	Xenia Sand & Gravel, Inc.	Greene	sand & gravel	4,849	4,849	Ge-10	IM-518
Youngs Sand and Gravel 987 Hiles Rd. Lucasville, OH 45648 (740) 259-3029 Douglas N. Young, pres.	Young	Scioto	sand & gravel	390	390	So-Y	IM-2380
Young's Sand & Gravel Co. P.O. Box 117 Loudonville, OH 44842 (419) 994-3040 Myron Oswalt, owner	Sprang & Youngs Ayers Spreng	Ashland Ashland Ashland	sand & gravel sand & gravel sand & gravel	22,325 190,068	22,325 190,068	Ald-7 Ald-15 Ald-Y	IM-392 IM-944 IM-1216
Yuhasz Bros. Sand & Gravel, Inc. 8549 State Route 46 Orwell, OH 44076 (440) 422-3353 Thomas R. Yuhasz, pres.	TJPK Corp.	Trumbull	sand & gravel			Tl-Y	IM-2374
Zemba Farms, Ltd. 3401 East Pike Zanesville, OH 43701 (740) 452-1880 Scott Zemba, pres.	Zemba Brothers, Inc.	Muskingum	sand & gravel			Mum-Z	IM-2173
Zollinger Sand & Gravel Co. 11899 Easton Rd. Rittman, OH 44270 (330) 855-2464 Carl Zollinger, pres.	Zollinger Sand & Gravel Co.	Wayne	clay sandstone shale	407 1,706 554	407 1,706 554	We-15	IM-398

[1]Commodity sales and production were estimated using quarterly data submitted to the Mines Safety and Health Administration for active operations that failed to report.

2013 LIMESTONE/DOLOMITE COMPANIES WITH SALES OR PRODUCTION

Company	Number of operations	Sales (tons)	Production (tons)
Anthony Mining Co., Inc.	2	167,750	167,750
Arch Materials, LLC	1	1,535,219	1,403,518
Area Aggregates, LLC	1	757,166	1,088,121
Barrett Paving Materials, Inc.	3	816,274	743,590
Belden Brick Co.	2	52,331	52,331
Bluffton Stone Co.	1	366,950	386,279
C. F. Poeppelman, Inc.	1	296,671	301,200
Cardinal Aggregates, Inc.	1	582,835	530,000
Carmeuse Lime, Inc.	2	2,194,560	2,195,298
CEMEX, Inc.	2	1,099,437	938,459
Christman Quarries	1	101,233	101,233
Clinton Stone, LLC	1	466,725	488,619
Con-Ag, Inc.	1	261,955	261,955
Cumberland Limestone, LLC	1	426,467	426,467
Custar Stone Co., Inc.	1	424,134	363,192
Diamond Stone Quarries	1	237,278	10,000
Duff Quarry, Inc.	1	370,299	370,299
East Fairfield Coal Co.	1	377,066	321,027
Egypt Valley Stone, LLC	1	414,371	414,371
Erie Blacktop, Inc.	1	299,057	299,057
Foureman's Sand & Gravel, Inc.	1	2,500	2,500
Gerken Materials, Inc.	1	179,589	195,582
Graymont Dolime (OH), Inc.	1	680,797	380,667
Hanson Aggregates, LLC	2	2,017,306	2,096,297
Hanson Aggregates Midwest, Inc.	8	4,968,665	5,130,628
Harrison Sand & Gravel Co.	1	14,252	14,252
Kimble Clay & Limestone Co.	1	160,000	160,000
King Quarries, Inc.	1	145,615	145,615
Lafarge Corp.	1	532,758	532,758
Lafarge Marblehead	1	3,499,496	3,630,312
Latham Limestone, LLC	1	467,880	467,880
Marshall Quarry, Inc.	1	24,567	24,567
Martin Marietta Aggregates	8	1,007,637	914,690
Martin Marietta Magnesia Specialties, Inc.	1	2,313,061	2,332,514
Maysville Materials, LLC	1	212,788	212,788
The Melvin Stone Co., LLC	4	1,728,270	1,728,270
National Lime & Stone Co.	9	10,686,000	10,686,000
North Shore Stone Quarries, Inc.	1	526	526
Ohio Asphaltic Limestone Corp.	1	282,776	282,776
Olen Corp.	2	797,036	810,530
Oxford Resource Partners, LP	3	1,197,476	1,197,476
Piqua Materials, Inc.	1	603,752	603,752
Precision Aggregates II, LLC	1	114,891	114,891
Precision Aggregates III, LLC	1	91,101	91,101
Putnam Aggregates Company, LLC	1	218,934	218,934
Ridge Township Quarry	1	132,478	132,478
Rohr Excavating Ltd.	2	51,490	51,490
Shamrock Materials, Inc.	1	179,310	179,310
Sharon Stone Co.	1	120,572	120,572
Shelly Materials, Inc.	8	7,260,665	6,852,772
Sidwell Materials, Inc.	1	422,019	480,081
Stansley Mineral Resources, Inc.	1	409,000	500,000
Stoneco, Inc.	7	4,421,162	4,709,026
Subtropolis Mining	1	1,369,347	1,388,445
Thompson Mining Co.	1	126,036	126,036
Waterloo Coal Co., Inc.	1	144,310	144,310
Wysong Stone Co.	1	40,000	40,000
TOTAL: 57 companies	106	57,871,840	57,562,592

2013 OHIO DIRECTORY OF LIMESTONE/DOLOMITE MINE OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY

For those mines for which a state mine number has not been assigned, a letter designation is used (example: Cn-A).

County	Name of operator	Name of mine or quarry	Township	Geological unit (age)	Type and principal use	State mine number
Adams	Hanson Aggregates, LLC	Plum Run Quarry	Meigs	Peebles, Greenfield, and Tymochtee Dolomites (Silurian)	Crushed stone—road construction/resurfacing, commercial building, unspecified	Ads-1
Allen	Bluffton Stone Co.	Bluffton Stone Co.	Richland	Tymochtee Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, railroad ballast, asphalt, commercial building, extenders/fillers, unspecified, aglime	An-1
	National Lime & Stone Co.	Lima Plant	Bath	Greenfield Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, railroad ballast, asphalt, aglime	An-3
Athens	Diamond Stone Quarries	Diamond Stone	Lee	Brush Creek limestone (Pennsylvanian)	Crushed stone—riprap, road construction/resurfacing	As-533
Auglaize	Con-Ag, Inc.	Con-Ag, Inc.	Noble	Cedarville Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, aglime	Ae-31
	National Lime & Stone Co.	Buckland Plant	Moulton	Unidentified limestone (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt	Ae-10
Belmont	Egypt Valley Stone, LLC	Shugert	Kirkwood, Union	Fishpot limestone (Pennsylvanian)	Crushed stone—riprap, road construction/resurfacing, commercial building, unspecified	Bt-E
	Sidwell Materials, Inc.	Uniontown Stone	Wheeling	Fishpot limestone (Pennsylvanian)	Crushed stone—road construction/resurfacing	Bt-N
Brown	Hanson Aggregates, LLC	Eagle Crushed Stone	Eagle	Brassfield Limestone (Silurian)	Crushed stone—road construction/resurfacing, commercial building, unspecified	Bn-EC
Butler	Martin Marietta Aggregates	Fairfield Sand & Gravel	Fairfield, Ross	Unidentified	Crushed stone—unspecified	Br-35
Clark	Martin Marietta Aggregates	Fairborn Gravel	Bethel	Unidentified	Crushed stone—unspecified	Ck-13
Clermont	Arch Materials, LLC	Batavia Mine	Jackson, Camp Nelson	Black River Group (Ordovician)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt, commercial building, aglime	Ct-A
Clinton	Martin Marietta Aggregates	Clinton Limestone	Wilson	Cedarville Dolomite (Silurian)	Crushed stone—road construction/resurfacing, commercial building, unspecified	Cln-W
	The Melvin Stone Co., LLC	The Melvin Stone Co., LLC	Richland	Cedarville Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, railroad ballast, asphalt, commercial building, aglime	Cln-1
Coshocton	Rohr Excavating, Ltd.	Miller	New Castle	Unidentified	Crushed stone—dimension stone	Cn-R1
Crawford	National Lime & Stone Co.	Bucyrus Plant	Holmes	Columbus and Delaware Limestones (Devonian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt, extenders/fillers, aglime	Cd-1
Darke	Foureman's Sand & Gravel, Inc.	Foureman's Sand & Gravel, Inc.	Greenville	Unidentified (Silurian)	Crushed stone—extenders/fillers	Dke-4
	Shamrock Materials, Inc.	Walls Material	Butler	Cedarville Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt, commercial building	Dke-1
Delaware	National Lime & Stone Co.	Delaware Plant	Scioto	Columbus and Delaware Limestones (Devonian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt, commercial building, aglime	Del-5
Erie	Erie Blacktop, Inc.	Erie Blacktop Quarry	Margaretta	Unidentified	Crushed stone—Portland cement concrete, road construction/resurfacing, asphalt	Ee-27

	Hanson Aggregates Midwest, Inc.	Sandusky Crushed Stone	Groton	Columbus and Delaware Limestones (Devonian) Detroit River Group (Devonian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt, commercial building, unspecified, aglime	Ee-11
		Wagner Quarry	Perkins	Columbus and Delaware Limestones (Devonian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt, commercial building, unspecified	Ee-1A
Franklin	Olen Corp.	Columbus Plant #3	Hamilton	Columbus Limestone (Devonian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt, commercial building	Fn-58
	Shelly Materials, Inc.	Columbus Limestone #331	Franklin, Jackson, Marion	Columbus Limestone (Devonian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt, commercial building, unspecified	Fn-53
		Marble Cliff Plant #0332	Norwich	Columbus Limestone (Devonian) Salina Dolomite (Silurian)	Crushed stone—road construction/resurfacing, commercial building, unspecified	Fn-2
Greene	CEMEX, Inc.	Miller, Schieder, Batdorf, Stewart	Bath	Brassfield Limestone (Silurian)	Crushed stone—Portland cement concrete	Ge-8
	Martin Marietta Aggregates	Cedarville	Cedarville	Cedarville Dolomite (Silurian)	Crushed stone—road construction/resurfacing, commercial building, unspecified	Ge-17
		Cook Rd.	Spring Valley	Unidentified	Crushed stone—unspecified	Ge-MM
	The Melvin Stone Co., LLC	Bowersville	Jefferson	Cedarville Dolomite (Silurian)	Crushed stone—Portland cement concrete, road construction/resurfacing, asphalt, commercial building	Ge-M
Guernsey	Cumberland Limestone, LLC	Cumberland Limestone, LLC	Spencer	Fishpot limestone (Pennsylvanian)	Crushed stone—road construction/resurfacing	Gy-309
Hamilton	Harrison Sand & Gravel Co.	Harrison Sand & Gravel Co.	Harrison	Unidentified	Crushed stone—asphalt	Hmn-17
	Martin Marietta Aggregates	E-town Sand & Gravel	Whitewater	Unidentified	Crushed stone—unspecified	Hmn-71
Hancock	National Lime & Stone Co.	Findlay Plant	Liberty	Greenfield Dolomite (Silurian) Salina Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt	Hk-7
Hardin	Shelly Materials, Inc.	Forest Quarry	Jackson	Tymochtee Dolomite (Silurian)	Crushed stone—road construction/resurfacing, commercial building, unspecified	Hdn-S
Harrison	Anthony Mining Co., Inc.	Carson-Harrah	Green	Redstone limestone (Pennsylvanian)	Crushed stone—riprap, road construction/resurfacing, commercial building	Hn-766
		Patton-Mader	German	Ames limestone (Pennsylvanian)	Crushed stone—aglime	Hn-A
	Oxford Resource Partners, LP	Pickens	Athens	Unidentified	Crushed stone—road construction/resurfacing	Hn-V
		Standingstone Mine	Cadiz	Redstone limestone (Pennsylvanian)	Crushed stone—road construction/resurfacing	Hn-02
Highland	Marshall Quarry, Inc.	Marshall Quarry, Inc.	Marshall	Peebles Dolomite (Silurian)	Crushed stone—riprap, commercial building	Hd-4
	Martin Marietta Aggregates	Lynchburg Quarry	Union	Brassfield Limestone (Silurian)	Crushed stone—road construction/resurfacing	Hd-M
	Ohio Asphaltic Limestone Corp.	Ohio Asphaltic Limestone Corp.	Union	Peebles Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt, aglime	Hd-3
Holmes	Rohr Excavating, Ltd.	Rohr	Hardy	Putnam Hill limestone (Pennsylvanian)	Crushed stone—riprap, extenders/fillers, dimension stone	Hs-R1
Jackson	Clinton Stone, LLC	Clinton Stone, LLC	Milton	Vanport Limestone (Pennsylvanian)	Crushed stone—riprap, road construction/resurfacing, commercial building, unspecified	Jkn-S2
	Waterloo Coal Co., Inc.	Waterloo Coal Stone Plant	Madison	Vanport limestone (Pennsylvanian)	Crushed stone—unspecified	Jkn-367
Logan	Duff Quarry, Inc.	Duff Quarry, Inc.	Richland	Lockport Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, commercial building	Lgn-15

2013 OHIO DIRECTORY OF LIMESTONE/DOLOMITE MINE OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY (cont.)

County	Name of operator	Name of mine or quarry	Township	Geological unit (age)	Type and principal use	State mine number
Logan (cont.)	Shelly Materials, Inc.	Belle Center	McArthur, Richland	Lockport Dolomite (Silurian) Tymochtee Dolomite (Silurian)	Crushed stone—road construction/resurfacing, commercial building, unspecified	Lgn-2
Lucas	Hanson Aggregates Midwest, Inc.	Sylvania	Sylvania	Detroit River and upper Dundee (Devonian)	Crushed stone—road construction/resurfacing	Ls-3
		Waterville	Waterville	Greenfield Dolomite (Silurian) Tymochtee Dolomite (Silurian)	Crushed stone—road construction/resurfacing	Ls-1
	Stoneco, Inc.	Maumee Quarry	Waynesfield	Tymochtee Dolomite (Silurian)	Crushed stone—riprap, road construction/resurfacing, commercial building, unspecified	Ls-2
Mahoning	East Fairfield Coal Co.	Withers-Petersburg	Springfield	Vanport limestone (Pennsylvanian)	Crushed stone—Portland cement concrete, road construction/resurfacing, unspecified	Mg-631
	Shelly Materials, Inc.	Petersburg	Springfield	Vanport limestone (Pennsylvanian)	Crushed stone—riprap, road construction/resurfacing	Mg-L
	Subtropolis Mining	Kemp Mine	Springfield	Vanport limestone (Pennsylvanian)	Crushed stone—Portland cement concrete, road construction/resurfacing, commercial building, unspecified	Mg-EF1
Marion	National Lime & Stone Co.	Marion Plant	Grand Prairie, Marion	Columbus and Delaware Limestones (Devonian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt, aglime	Mn-3
Mercer	Stoneco, Inc.	Celina Quarry	Jefferson	Lockport Dolomite (Silurian)	Crushed stone—riprap, road construction/resurfacing, commercial building, unspecified	Mr-1
Miami	Barrett Paving Materials, Inc.	Barrett Paving Materials, Inc., #231	Union	Brassfield Limestone (Silurian)	Crushed stone—riprap, road construction/resurfacing	Mi-BPM
	C. F. Poeppelman, Inc.	C. F. Poeppelman, Inc.	Newberry	Cedarville Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, commercial building, aglime	Mi-10
	Piqua Materials, Inc.	Piqua Minerals Division	Springcreek, Staunton	Brassfield Limestone, Dayton and Laurel Dolomites (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, flux, asphalt, commercial building, extenders/fillers, aglime	Mi-1
Monroe	Christman Quarries	Christman Quarry	Franklin, Seneca	Fishpot limestone (Pennsylvanian)	Crushed stone—road construction/resurfacing	Me-C
Montgomery	CEMEX, Inc.	G-Tract	Wayne	Brassfield Limestone (Silurian)	Crushed stone—road construction/resurfacing, Portland cement concrete	My-58
	Martin Marietta Aggregates	Phillipsburg	Clay	Cedarville Dolomite (Silurian)	Crushed stone—road construction/resurfacing, commercial building, unspecified	My-1
Muskingum	Maysville Materials, LLC	Maysville Matrerials, LLC	Newton	Maxville Limestone (Mississippian)	Crushed stone—road construction/resurfacing	Mum-M
	Shelly Materials, Inc.	East Fultonham	Newton	Maxville Limestone (Mississippian)	Crushed stone—road construction/resurfacing, asphalt, unspecified	Mum-106
	Thompson Mining Co.	Pleasant Valley Limestone	Hopewell	Maxville Limestone (Mississippian)	Crushed stone—riprap, road construction/resurfacing, commercial building, unspecified	Mum-907
Noble	King Quarries, Inc.	King Quarries, Inc.	Olive	Fishpot limestone (Pennsylvanian)	Crushed stone—road construction/resurfacing, unspecified	Ne-K1
	Sharon Stone Co.	Sharon Stone Co.	Noble	Fishpot limestone (Pennsylvanian)	Crushed stone—riprap, road construction/resurfacing	Ne-S
Ottawa	Graymont Dolime (OH), Inc.	Graymont Dolime (OH), Inc.	Clay	Lockport Dolomite (Silurian)	Crushed stone—road construction/resurfacing	Oa-1
	Lafarge Marblehead	Lafarge Marblehead	Danbury	Columbus Limestone (Devonian) Detroit River Group (Devonian)	Crushed stone—road construction/resurfacing	Oa-7
	Stansley Mineral Resources, Inc.	Stansley Mineral Resources, Inc., Plant 301	Clay	Lockport Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt, commercial building	Oa-1A

	Stoneco, Inc.	White Rock Quarry	Allen	Lockport Dolomite (Silurian)	Crushed stone—riprap, road construction/resurfacing, commercial building, unspecified	Oa-6
Paulding	Hanson Aggregates Midwest, Inc.	Paulding	Crane	Ten Mile Creek Dolomite (Devonian)	Crushed stone—road construction/resurfacing	Pg-7
	Lafarge Corp.	Paulding Quarry	Crane	Dundee Limestone (Devonian) Ten Mile Creek Dolomite (Devonian)	Crushed stone—Portland cement	Pg-1
	Stoneco, Inc.	Auglaize Quarry	Auglaize	Detroit River Group and Dundee Limestone (Devonian)	Crushed stone—riprap, road construction/resurfacing, commercial building, unspecified	Pg-2
Pickaway	The Melvin Stone Co., LLC	Williamsport	Perry	Columbus Limestone (Devonian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, railroad ballast, asphalt, commercial building	Pky-4
Pike	Latham Limestone, LLC	Latham Limestone	Mifflin	Greenfield Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, railroad ballast, asphalt, commercial building, unspecified	Pke-13
Preble	Wysong Stone Co.	Wysong Stone Co.	Twin	Brassfield Limestone (Silurian)	Crushed stone—riprap, road construction/resurfacing	Pre-5
Putnam	National Lime & Stone Co.	Rimer Plant	Sugar Creek	Greenfield Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt	Pm-N
	Putnam Aggregates Company, LLC	Putnam Aggreagtes Company, LLC	Pleasant, Riley	Greenfield Dolomite (Silurian)	Crushed stone—Portland cement concrete, road construction/ resurfacing, commercial building, unspecified	Pm-2
Ross	The Melvin Stone Co., LLC	Plano Road	Concord	Salina Dolomite (Silurian)	Crushed stone—road construction/resurfacing, commercial building	Rs-MC1
Sandusky	Area Aggregates, LLC	Area Aggregates, LLC	Woodville	Lockport Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/ resurfacing, asphalt, commercial building, aglime	Sy-A
	Carmeuse Lime, Inc.	Millersville Plant	Jackson	Lockport Dolomite (Silurian)	Crushed stone—aglime	Sy-4
	Martin Marietta Magnesia Specialties, Inc.	Woodville Quarry	Woodville	Lockport Dolomite (Silurian)	Crushed stone—road construction/resurfacing	Sy-1
	Precision Aggregates III, LLC	Precision Aggregates III, LLC	Sandusky	Lockport Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete	Sy-5-1
Seneca	Carmeuse Lime, Inc.	Maple Grove	Liberty	Lockport Dolomite (Silurian)	Crushed stone—road construction/resurfacing, asphalt, extenders/fillers, unspecified	Sa-2
	Hanson Aggregates Midwest, Inc.	Bloomville	Bloom	Columbus and Delaware Limestones (Devonian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, commercial building, extenders/fillers, unspecified, aglime	Sa-3
		Flat Rock	Thompson	Columbus and Delaware Limestones (Devonian)	Crushed stone—riprap, dimension stone	Sa-1
	North Shore Stone Quarries, Inc.	North Shore Stone Quarries, Inc.	Thompson	Greenfield Dolomite (Silurian)	Crushed stone—riprap, dimension stone	Sa-8
Shelby	Barrett Paving Materials, Inc.	Miami River Quarry	Orange	Lockport Dolomite (Silurian)	Crushed stone—riprap, road construction/resurfacing	Shy-17
		Vandemark Quarry #221	Clinton	Lockport Dolomite (Silurian)	Crushed stone—road construction/resurfacing	Shy-15
Tuscarawas	Belden Brick Co.	Moomaw Pit	Sugar Creek	Vanport limestone (Pennsylvanian)	Crushed stone—unspecified	Ts-1517
		Shanesville Pit	Sugarcreek	Brookville limestone (Pennsylvanian)	Crushed stone—unspecified	Ts-1939
	Kimble Clay & Limestone Co.	Kimble Clay & Limestone Co.	Dover	Unidentified (Pennsylvanian)	Crushed stone—road construction/resurfacing	Ts-1818
	Oxford Resource Partners, LP	Strasburg Slurry	Franklin, Lawrence	Unidentified (Pennsylvanian)	Crushed stone—road construction/resurfacing	Ts-HC

2013 OHIO DIRECTORY OF LIMESTONE/DOLOMITE MINE OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY (cont.)

County	Name of operator	Name of mine or quarry	Township	Geological unit (age)	Type and principal use	State mine number
Union	Shelly Materials, Inc.	Ostrander Quarry	Mill Creek	Columbus Limestone (Devonian)	Crushed stone—road construction/resurfacing, asphalt, commercial building, unspecified	Un-2
		York Center Quarry	York	Salina Dolomite (Silurian)	Crushed stone—road construction/resurfacing, asphalt, commercial building, unspecified	Un-1
Van Wert	National Lime & Stone Co.	Delphos Quarry	Washington	Tymochtee Dolomite (Silurian)	Crushed stone—Portland cement concrete, road construction/ resurfacing	Vt-1
	Ridge Township Quarry	Ridge Township Quarry	Ridge	Tymochtee Dolomite (Silurian)	Crushed stone—road construction/resurfacing	Vt-7
	Stoneco, Inc.	Scott Quarry	Union	Salina Dolomite (Silurian)	Crushed stone—riprap, road construction/resurfacing, commercial building, unspecified	Vt-3
Wood	Cardinal Aggregates, Inc.	Cardinal Aggregates, LLC	Perrysburg	Lockport Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/ resurfacing, asphalt, commercial building	Wd-C
	Custar Stone Co., Inc.	Custar Stone Co., Inc.	Milton	Detroit River Group (Devonian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt, extenders/fillers	Wd-5
	Gerken Materials, Inc.	Gerken Materials, Inc.	Perry	Lockport and Salina Dolomites (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt, extenders/fillers	Wd-1
	Hanson Aggregates Midwest, Inc.	North Baltimore Quarry	Henry	Lockport and Tymochtee Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, asphalt, extenders/fillers	Wd-H
	Precision Aggregates II, LLC	Precision Aggregates II, LLC	Portage	Lockport Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete	Wd-14
	Stoneco, Inc.	Portage Quarry	Portage	Greenfield and Lockport Dolomites (Silurian)	Crushed stone—road construction/resurfacing, commercial building, unspecified	Wd-11
Wyandot	National Lime & Stone Co.	Carey Plant	Crawford	Lockport Dolomite (Silurian)	Crushed stone—riprap, Portland cement concrete, road construction/resurfacing, railroad ballast, flux, asphalt, commercial building, extenders/fillers, aglime	Wt-1
	Olen Corp.	Upper Sandusky	Pitt	Salina Group (Silurian) Tymochtee Dolomite (Silurian)	Crushed stone—Portland cement concrete, road construction/ resurfacing, asphalt, commercial building	Wt-3
	Stoneco, Inc.	Carey Quarry	Crawford	Greenfield and Lockport Dolomites (Silurian)	Crushed stone—riprap, road construction/resurfacing, commercial building, unspecified	Wt-8

2013 SAND AND GRAVEL COMPANIES WITH SALES OR PRODUCTION

Company	Number of operations	Sales (tons)	Production (tons)
Agg Rok Materials	1	6,000	6,000
Allgeier & Son, Inc.	1	35,000	35,000
American Sand & Gravel, Inc.	2	534,010	534,010
Arch Materials, LLC	1	47,579	47,579
Ashcraft Sand & Gravel, Inc.	1	24,405	24,405
Atlas Towing Co.	1	10,029	10,029
Baker Sand, Inc.	1	134,000	134,000
Ballentine Sand & Gravel, LLC	1	64,647	64,647
Barrett Paving Materials, Inc.	4	1,069,849	1,156,543
BCE Materials, Inc.	1	18,000	18,000
Beaver Excavating, Inc.	1	6,000	6,000
Beck Sand & Gravel, Inc.	1	201,416	201,416
Bontrager Excavating Co.	1	20,858	20,858
Boyas Excavating, Inc.	1	84,563	84,563
Briggs Sand & Gravel, Inc.	1	5,265	5,265
Brookside Materials, LLC	1	170,000	210,000
Broshear Contractors, Inc.	1	18,192	18,192
Buck Run Aggregates, LLC	1	58,948	65,366
Calvin's Hauling, Inc.	1	1,349	1,349
Carl E. Oeder and Sons Sand & Gravel	1	365,731	365,731
Carter & Carter, Inc.	1	500	500
Joe E. Carter	1	1,650	1,650
CCR Sand & Gravel, LLC	1	106,205	106,205
Central-Allied Enterprises, Inc.	4	706,686	705,686
Central Ready Mix, LLC	2	394,000	394,000
Harlen D. & Barbara L. Clark	1	13,350	13,350
Cochran Transportation Services, Inc.	1	28,051	28,051
Bill D. Colwell	1	604	604
D & K Materials, Inc.	1	110,279	110,279
Dennis Topsoil & Landscaping, Inc.	1	1,200	1,200
D.G.M., Inc.	2	100,047	100,047
Dingledine Basic Materials, Inc.	1	27,408	35,000
James E. Downard	1	3,259	3,259
Duff Quarry, Inc.	2	4,770	4,770
David E. Edgington	1	7,735	7,735
Enon Sand & Gravel, LLC	1	365,800	365,800
Erie Materials, Inc.	1	20	20
Ervin Hill Enterprises, Inc.	1	95,634	95,634
Evans Gravel, Inc.	1	117,325	122,811
Feikert Sand & Gravel, Inc.	1	218,613	218,613
Fleming Construction Co., Inc.	2	22,703	22,703
Foureman's Sand & Gravel, Inc.	1	31,000	31,000
Friendsville Sand, LP	1	38,271	42,000
Lloyd B. Fry	1	283	283
George J. Igel & Co., Inc.	1	0	128
Grimes Excavating	1	20,052	20,052
Hanson Aggregates, LLC	2	676,809	649,671
Harrison Sand & Gravel Co.	1	2,231	0
Hartley Gravel	1	991	991
Harvest Sand & Gravel, Inc.	1	12,074	12,074
Haueter Sand & Gravel, Inc.	1	70,000	70,000
Hocking Valley Concrete, Inc.	1	40,440	49,500
William A. Hoffman, Jr.	1	1,503	1,503
Holmes Redimix, Inc.	1	164,758	164,758
Holmes Supply Corp.	2	315,845	315,845
Jaclib Enterprises, Inc.	1	224	224
JALIP, Ltd.	1	4,089	4,089
Jaymar, Inc.	1	522,949	522,949
JBM, Ltd.	1	124,968	124,968
J.J.J. Properties, LLC	1	15,503	15,503
Joe Simak & Sons Trucking, Inc.	1	12,177	12,177
John L. Garber Materials, Inc.	2	131,431	132,890
KCI Sand & Gravel	1	34,281	129,125
Kimble Clay & Limestone Co.	1	50,000	50,000
Kirby's Sand & Gravel, Inc.	1	253,846	253,846
L & I Natural Resources, Inc.	1	70,720	70,720
L & M Mineral Co.	1	18,890	18,890
Lakeside Sand & Gravel Co.	2	430,705	430,705
Little Miami Sand & Gravel	2	0	850
Loxley Aggregates, Inc.	1	450	450
LUB, Inc.	1	16,395	16,395
M. J. Coates Construction Co., Inc.	1	74,000	74,000
Martin Marietta Aggregates	13	3,153,815	2,862,614
MAR-ZANE Materials, Inc.	1	322,228	332,072
Mason's Sand & Gravel Co.	1	24,637	24,637
Massillon Materials, Inc.	2	559,968	559,968
Mathews Sand & Gravel	1	200	200
James L. Meade	1	11,000	11,000
Mechanicsburg Sand & Gravel, Inc.	1	85,942	85,942
The Melvin Stone Co., LLC	1	275,400	275,400
Miami View Mining Co., Ltd.	1	152,163	152,163
Mid Ohio Resources	1	4,700	0
Miller's Sand & Gravel, Inc.	1	108	0
Milton Materials, LLC	1	95,000	76,000
Morrow Gravel Co.	2	143,397	100,000
Muskingum River Gravel Co.	3	358,576	356,784
National Lime & Stone Co.	3	853,000	853,000
Neer's Sand & Gravel	1	106,645	106,645
Nelson Sand & Gravel, Inc.	1	36,830	36,830
Newark Materials, LLC	1	10,457	18,295
Newton Asphalt Paving, Inc.	1	100,537	100,537
Northwest Ohio Property Developments, Ltd.	1	6,030	6,030
Olen Corp.	5	2,993,715	2,199,038
Oscar Brugmann Sand & Gravel, Inc.	1	593,023	593,023
Oster Sand & Gravel, Inc.	2	589,921	589,921
Ours Sand & Gravel	1	2,998	2,998
Paul D. Beery Trucking Co.	1	1,349	1,583
Phillips Companies, LLC	2	386,093	543,985
Phoenix Ashphalt Company, Inc.	2	87,506	87,506
Portage Aggregate & Supply, LLC	1	77,459	77,459

2013 SAND AND GRAVEL COMPANIES WITH SALES OR PRODUCTION (cont.)

Company	Number of operations	Sales (tons)	Production (tons)
Precision Aggregates II, LLC	1	15,540	15,540
Precision Aggregates III, LLC	1	46,059	46,059
Putnam Aggregates Company, LLC	1	10,470	10,470
Quality Ready Mix, Inc.	1	10,265	10,265
R. L., Ltd.	1	1,820	1,820
R. W. Sidley, Inc.	2	37,832	43,825
Razor Lake S. & G., LLC	1	98,915	98,915
Rockwell Sand & Gravel, Inc.	1	34,000	34,000
Roy M. Roush	1	3,556	3,556
Rupp Construction, Inc.	1	96,010	96,010
S & S Aggregate, Inc.	3	638,737	677,302
Sam's Excavating Unlimited, Inc.	1	4,600	4,600
Scassa Asphalt, Inc.	1	15,000	28,640
Guy Schieve	1	5,186	5,186
Shamrock Materials, Inc.	1	193,700	193,700
Sharon Stone Co.	1	447,223	447,223
Shelly Materials, Inc.	9	2,849,632	2,689,576
Sidco Development, Inc.	1	187,947	187,947
Small's Sand & Gravel, Inc.	3	205,509	205,509
Sober Sand & Gravel Co.	1	164,002	164,002
Soehnlen Bros. Sand & Gravel, Inc.	1	311,097	311,097
Solomon's Mines, Inc.	1	41,322	41,322
Soltis Sand & Gravel	1	253	260
South Central Sand & Gravel	1	5,000	5,000
St. Joe Sand & Gravel, LLC	1	36,192	17,975
Stocker Sand & Gravel Co.	2	732,646	732,106
Joseph N. Sypniewski	1	48	48
T & K Kuhnle Co.	1	20,000	20,000
Thiel Construction Co.	1	1,748	1,748
Thomas Sand & Gravel	1	50	50
Tiger Sand & Gravel, LLC	1	147,747	160,000
Tipp Stone Co., Inc.	1	8,839	8,839
Top Dog Service Company	1	950	950
Triple B of Lakeville, Ltd.	1	100,000	100,000
Tuffco Sand & Gravel, Inc.	1	47,192	47,192
U.S. Aggregates, Inc.	1	113,200	180,902
United Aggregates, Inc.	2	162,445	128,457
Walhonding Sand & Gravel	1	55,990	55,990
Watson Gravel, Inc.	5	1,699,055	1,699,055
Weber Sand & Gravel, Inc.	1	159,764	159,764
Weidle Sand & Gravel, Inc.	1	163,950	163,950
Welch Sand & Gravel, Inc.	3	869,956	711,853
Westfall Aggregate & Materials, Inc.	1	85,494	85,494
William Albert, Inc.	1	30,803	34,303
Willowbrook Sand & Gravel, LLC	1	47,579	47,579
Wysong Gravel Co.	2	187,380	186,786
X. L. Sand & Gravel Co., Inc.	1	10,000	10,000
Xenia Sand & Gravel, Inc.	1	4,849	4,849
Youngs Sand and Gravel	1	390	390
Young's Sand & Gravel Co.	2	212,393	212,393
TOTAL: 150 companies	214	29,691,597	28,708,583

2013 OHIO DIRECTORY OF SAND AND GRAVEL MINING OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY

For those mines for which a state mine number has not been assigned, a letter designation is used (example: Ald-G).

County	Name of operator	Name of pit	Township	Type and principal use	State mine number
Ashland	Young's Sand & Gravel Co.	Sprang & Youngs	Green	Sand—building, road construction/resurfacing Gravel—building, road construction/resurfacing	Ald-7
		Spreng	Green	Sand—building, road construction/resurfacing Gravel—building, road construction/resurfacing	Ald-Y
Ashtabula	James L. Meade	Meade	N. Kingsville	Sand—building Gravel—building	Asa-JM
	Joe Simak & Sons Trucking, Inc.	North Ridge Pit	Kingsville	Gravel—building, filtration	Asa-18
	Mathews Sand & Gravel	Mathews Sand & Gravel	N. Kingsville	Sand—building	Asa-M
	Nelson Sand & Gravel, Inc.	Nelson Sand & Gravel, Inc.	Kingsville	Sand—building Gravel—building	Asa-N1
	R. W. Sidley, Inc.	Sidley-Kingsville Plant	Kingsville	Sand—building, Portland cement concrete Gravel—unspecified	Asa-15
	Joseph N. Sypniewski	Sypniewski	Trumbull	Gravel—unspecified	Asa-SY
Athens	Cochran Transportation Services, Inc.	Circle Hill	Dover	Sand—building Gravel—building	As-595
Auglaize	Quality Ready Mix, Inc.	Quality Pit	Pusheta	Sand—building, Portland cement concrete Gravel—building, Portland cement concrete	Ae-16
Butler	Bill D. Colwell	Bill D. Colwell Gravel	St. Clair	Gravel—building	Br-36
	Broshear Contractors, Inc.	Ross Twp. Gravel	Ross	Sand—building	Br-48
	Dingledine Basic Materials, Inc.	Dingledine Basic Materials, Inc.	Milford	Sand—building Gravel—building, unspecified	Br-50
	Martin Marietta Aggregates	Fairfield Sand & Gravel	Fairfield Ross	Sand—unspecified Gravel—unspecified	Br-35
		Hamilton Gravel	St. Clair	Sand—unspecified	Br-5
		Ross Sand & Gravel	Fairfield, Ross	Sand—unspecified Gravel—unspecified	Br-29
	Shamrock Materials, Inc.	Shamrock Materials	Madison	Sand—building, Portland cement concrete, asphaltic concrete Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing	Br-52
	Watson Gravel, Inc.	Mecco, Inc.	Lemon	Sand—building, road construction/resurfacing Gravel—building, road construction/resurfacing	Br-15
		Ongais Plant #1	Madison	Sand—unspecified Gravel—unspecified	Br-0
		Watson Pit	Fairfield, Ross	Sand—building, road construction/resurfacing Gravel—building, road construction/resurfacing	Br-47
	Welch Sand & Gravel, Inc.	Schlichter Pit	Fairfield	Sand—building Gravel—building	Br-38
Carroll	Phoenix Ashphalt Company, Inc.	Smith #2	Rose	Sand—asphaltic concrete Gravel—road construction/resurfacing, filtration	Cl-P
		Smith Sand & Gravel #1	Rose, Sandy	Sand—asphaltic concrete Gravel—road construction/resurfacing, filtration	Cl-P1

2013 OHIO DIRECTORY OF SAND AND GRAVEL MINING OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY (cont.)

County	Name of operator	Name of pit	Township	Type and principal use	State mine number
Champaign	Mechanicsburg Sand & Gravel, Inc.	Mechanicsburg Sand & Gravel, Inc.	Union	Sand—building, road construction/resurfacing Gravel—building, road construction/resurfacing	Cpn-22
	Morrow Gravel Co.	Urbana	Urbana	Sand—building, Portland cement concrete, asphaltic concrete Gravel—building, asphaltic concrete, road construction/resurfacing	Cpn-1
Clark	Enon Sand & Gravel, LLC	Enon Sand & Gravel, LLC	Bethel, Mad River	Sand—building, Portland cement concrete, asphaltic concrete Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing	Ck-3
	Martin Marietta Aggregates	Fairborn Gravel	Bethel	Sand—unspecified Gravel—unspecified	Ck-13
Clermont	Arch Materials, LLC	Batavia Mine	Jackson	Sand—Portland cement concrete, filtration	Ct-A
Clinton	Martin Marietta Aggregates	Clinton Limestone	Wilson	Sand—unspecified	Cln-W
Columbiana	Buck Run Aggregates, LLC	Krcich	Middleton	Sand—filtration Gravel—filtration	Ca-351
	Hartley Gravel	Hartley Gravel	Knox	Sand—building Gravel—building	Ca-H1
	Harvest Sand & Gravel, Inc.	Eberly	Salem	Sand—asphaltic concrete, fill Gravel—fill, rockfill	Ca-H2
	Solomon's Mines, Inc.	Solomon's Mines, Inc.	Salem	Sand—road construction/resurfacing, fill, bedding Gravel—building, road construction/resurfacing, filtration	Ca-S
	Willowbrook Sand & Gravel, LLC	Willowbrook Sand & Gravel	Elk Run	Sand—unspecified Gravel—unspecified	Ca-993
	X. L. Sand & Gravel Co., Inc.	X. L. Sand & Gravel Co., Inc.	Middleton	Sand—building Gravel—building	Ca-881
Coshocton	Razor Lake S. & G., LLC	Razor Lake S. & G., LLC	Oxford	Sand—asphaltic concrete Gravel—building, asphaltic concrete	Cn-R
	Shelly Materials, Inc.	Shelly Materials, Inc., Plant #1305	Bethlehem	Sand—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing, unspecified Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing, unspecified	Cn-694
	Walhonding Sand & Gravel	Walhonding Valley Sand & Gravel	New Castle	Sand—fill Gravel—road construction/resurfacing	Cn-WL
	William Albert, Inc.	William Albert, Inc., Pit 2	Lafayette	Sand—building, fill, unspecified Gravel—building, road construction/resurfacing, unspecified	Cn-WA
Cuyahoga	Boyas Excavating, Inc.	Boyas Excavating, Inc.	Independence	Sand—unscreened fill sand	Cya-42
Darke	Foureman's Sand & Gravel, Inc.	Foureman's Sand & Gravel, Inc.	Greenville	Sand—unspecified Gravel—unspecified	Dke-4
Defiance	Weber Sand & Gravel, Inc.	Weber Sand & Gravel, Inc.	Milford	Sand—building, Portland cement concrete Gravel—building, decorative	Ws-11 De
Erie	Erie Materials, Inc.	Borchardt	Groton, Margaretta	Gravel—construction fill material	Ee-18
Fairfield	James E. Downard	Downard Pit	Rush Creek	Sand—granular backfill	Fd-16
	Paul D. Beery Trucking Co.	Paul D. Beery Trucking Co.	Berne	Sand—unspecified Gravel—unspecified	Fd-14

Franklin	Agg Rok Materials	Agg Rok	Franklin	Sand—bank run Gravel—bank run	Fn-36
	Mason's Sand & Gravel Co.	Mason's Sand & Gravel Co.	Hamilton	Sand—building Gravel—building	Fn-11
	National Lime & Stone Co.	South Columbus	Hamilton	Sand—Portland cement concrete Gravel—Portland cement concrete, road construction/resurfacing	Fn-52
	Olen Corp.	Columbus Plant #3	Hamilton	Sand—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing	Fn-58
Fulton	Harlen D. & Barbara L. Clark	Clark	Chesterfield	Sand—building	Ftn-C
	Northwest Ohio Property Developments, Ltd.	NOPD, Ltd.	Dover	Sand—building	Ftn-NW
Gallia	Jaclib Enterprises, Inc.	Cheshire Pit	Cheshire	Sand—fill Gravel—filtration	Ga-JE
	Ours Sand & Gravel	Ours Sand & Gravel	Ohio	Sand—unspecified	Ga-O
Geauga	Haueter Sand & Gravel, Inc.	Haueter Sand & Gravel, Inc.	Burton, Newbury	Sand—building Gravel—building	Gea-29
	Soltis Sand & Gravel	Soltis Sand & Gravel	Parkman	Sand—fill sand	Gea-9
	T & K Kuhnle Co.	Munn Materials	Auburn	Sand—building Gravel—building	Gea-TK
Greene	Barrett Paving Materials, Inc.	Haddix Road Aggregates Plant #341	Mad River	Sand—Portland cement concrete, asphaltic concrete, unspecified Gravel—Portland cement concrete, asphaltic concrete, unspecified	Ck-28
	M. J. Coates Construction Co., Inc.	M. J. Coates Construction Co., Inc.	Spring Valley	Sand—road construction/resurfacing Gravel—road construction/resurfacing	Ge-47
	Martin Marietta Aggregates	Cedarville	Cedarville	Sand—unspecified Gravel—unspecified	Ge-17
		Cook Rd.	Spring Valley	Sand—unspecified Gravel—unspecified	Ge-MM
		Xenia S & G	Beaver Creek, Xenia	Sand—unspecified Gravel—unspecified	Ge-33
	Phillips Companies, LLC	Phillips Companies, LLC	Beaver Creek	Sand—building, Portland cement concrete, road construction/resurfacing, fill Gravel—building, Portland cement concrete, road construction/resurfacing	Ge-36
	Xenia Sand & Gravel, Inc.	Xenia Sand & Gravel, Inc.	Xenia	Sand—building Gravel—building	Ge-10
Hamilton	Allgeier & Son, Inc.	Allgeier & Son, Inc., Pit 2	Whitewater	Sand—fill sand Gravel—filtration, pea grits	Hmn-AS
	Ashcraft Sand & Gravel, Inc.	Ashcraft Sand & Gravel, Inc.	Whitewater	Sand—building Gravel—building	Hmn-54
	Joe E. Carter	Lost Bridge	Whitewater	Sand—unspecified Gravel—unspecified	Hmn-JC
	Evans Gravel, Inc.	Evans Gravel, Inc.	Anderson	Sand—asphaltic concrete Gravel—asphaltic concrete	Hmn-E
	Hanson Aggregates, LLC	Dry Fork Sand & Gravel	Harrison, Whitewater	Sand—building, road construction/resurfacing Gravel—building	Hmn-50
	Harrison Sand & Gravel Co.	Harrison Sand & Gravel Co.	Harrison	Sand—asphaltic concrete Gravel—building	Hmn-17

2013 OHIO DIRECTORY OF SAND AND GRAVEL MINING OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY (cont.)

County	Name of operator	Name of pit	Township	Type and principal use	State mine number
Hamilton (cont.)	Martin Marietta Aggregates	E-town Sand & Gravel	Whitewater	Sand—unspecified Gravel—unspecified	Hmn-71
	R. L., Ltd.	R. L., Ltd.	Crosby	Sand—building	Hmn-67
	Top Dog Service Company	Whitewater Reclamation Company	Whitewater	Gravel—unspecified	Hmn-G
	Watson Gravel, Inc.	Harrison #2	Whitewater	Sand—building, road construction/resurfacing Gravel—building, road construction/resurfacing	Hmn-ARH
		Minges-Getz	Miami	Sand—building, road construction/resurfacing Gravel—building, road construction/resurfacing	Hmn-64
	Welch Sand & Gravel, Inc.	East Miami Pit	Colerain	Sand—building Gravel—building	Hmn-48
		Fernald Pit	Crosby	Sand—building Gravel—building	Hmn-42
Highland	Ervin Hill Enterprises, Inc.	Ervin Hill Enterprises, Inc.	New Market	Sand—Portland cement concrete, fill Gravel—building, asphaltic concrete, road construction/resurfacing, filtration	Hd-L
Hocking	Hocking Valley Concrete, Inc.	Hocking Valley Concrete, Inc.	Green	Sand—building, Portland cement concrete	Hg-262
	KCI Sand & Gravel	KCI Sand & Gravel	Green	Sand—Portland cement concrete, road construction/resurfacing, fill Gravel—building, Portland cement concrete, road construction/resurfacing, filtration	Hg-HA
	MAR-ZANE Materials, Inc.	Enterprise Pit	Falls	Sand—asphaltic concrete, customer sales Gravel—asphaltic concrete, customer sales	Hg-HV
	Muskingum River Gravel Co.	S & S Aggregate #8	Green, Starr	Sand—asphaltic concrete, road construction/resurfacing, customer sales	Hg-301
Holmes	Feikert Sand & Gravel, Inc.	Feikert Sand & Gravel, Inc.	Salt Creek	Sand—building, road construction/resurfacing Gravel—building, road construction/resurfacing	Hs-511
	Holmes Redimix, Inc.	Holmes Redimix, Inc.	Hardy	Sand—unspecified Gravel—unspecified	Hs-82
	Holmes Supply Corp.	Holmes Supply Corp.	Prairie	Sand—building, Portland cement concrete, asphaltic concrete, fill Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing, filtration	Hs-J
		Schlabach	Killbuck	Sand—building, road construction/resurfacing Gravel—building, road construction/resurfacing	Hs-H1
	Triple B of Lakeville, Ltd.	Lakeville Sand & Gravel, Ltd.	Washington	Sand—building Gravel—building	Hs-C
Knox	Olen Corp.	Fredericktown Plant #2	Morris	Sand—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing	Kx-O
	Small's Sand & Gravel, Inc.	Small's Sand & Gravel, Inc.	Howard	Sand—building Gravel—building	Kx-S
		Small's Sand & Gravel, Inc.	Harrison	Sand—unspecified Gravel—unspecified	Kx-15
		Small's Sand & Gravel, Inc.	Harrison	Gravel—unspecified	Kx-17
	United Aggregates, Inc.	United Aggregates, Inc.	Clinton	Sand—Portland cement concrete Gravel—building, road construction/resurfacing, filtration	Kx-3
		United Aggregates, Inc.	Union	Sand—Portland cement concrete Gravel—building, road construction/resurfacing, filtration	Kx-5

Lake	J.J.J. Properties, LLC	J.J.J. Properties, LLC	Painesville	Sand—backfill material	Lke-P
	R. W. Sidley, Inc.	Sidley - Painesville Plant	Painesville	Sand—fill	Lke-7
Licking	Brookside Materials, LLC	Brookside Materials, LLC	St. Albans	Sand—building Gravel—building, road construction/resurfacing	Lg-B
	Newark Materials, LLC	Newark Materials	Madison	Sand—Portland cement concrete Gravel—building	Lg-504
	Olen Corp.	St. Louisville Plant #5	Washington	Sand—building, Portland cement concrete, asphaltic concrete Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing	Lg-31
	Shelly Materials, Inc.	St. Louisville	Newton	Sand—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing, unspecified Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing, unspecified	Lg-10
Logan	Duff Quarry, Inc.	Duff Quarry, Inc.	Lake	Sand—fill	Lgn-36
		Duff Sand Co.	Washington	Sand—building, Portland cement concrete	Lgn-31
	Neer's Sand & Gravel	Neer's Sand & Gravel	Union	Sand—unspecified Gravel—unspecified	Lgn-6
Lorain	Guy Schieve	Schieve Pit	Henrietta	Sand—building	Ln-12
Lucas	Dennis Topsoil & Landscaping, Inc.	Dennis Topsoil & Landscaping, Inc.	Adams	Sand—building, filtration	Ls-D1
Madison	Tuffco Sand & Gravel, Inc.	Tuffco Sand & Gravel, Inc.	Darby	Sand—building, road construction/resurfacing Gravel—building	Mdn-11
Marion	Fleming Construction Co., Inc.	Pit #1	Prospect	Sand—building, Portland cement concrete, fill Gravel—filtration, drives, decorative	Mn-16
		Pit #2	Prospect	Sand—Portland cement concrete	Mn-19
Medina	Baker Sand, Inc.	Baker Sand, Inc.	Harrisville, Westfield	Sand—Portland cement concrete, Mason Gravel—building	Ma-20
	CCR Sand & Gravel, LLC	CCR Sand & Gravel, LLC	Harrisville, Westfield	Sand—building Gravel—building	Ma-22
	Friendsville Sand, LP	Friendsville Sand, LP	Harrisville	Sand—building Gravel—building	Ma-F
Meigs	Jaymar, Inc.	Plant #4	Olive	Sand—unspecified Gravel—unspecified	Ms-308
	Martin Marietta Aggregates	Apple Grove Plant	Letart	Sand—unspecified Gravel—unspecified	Ms-205
	Shelly Materials, Inc.	Portland Plant	Lebanon	Sand—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing, unspecified	Ms-S
Miami	Lloyd B. Fry	Ticon	Washington	Sand—unspecified Gravel—unspecified	Mi-T
	Martin Marietta Aggregates	Troy Sand & Gravel	Concord	Sand—unspecified Gravel—unspecified	Mi-3
	Milton Materials, LLC	Milton Materials Fenner Pit	Newton	Sand—Portland cement concrete Gravel—building	Mi-4
Montgomery	Barrett Paving Materials, Inc.	West Carrollton Aggregate Plant	Jefferson, Miami	Sand—unspecified Gravel—unspecified	My-19
	Carter & Carter, Inc.	Carter & Carter, Inc.	Miami	Gravel—road construction/resurfacing	My-CW

2013 OHIO DIRECTORY OF SAND AND GRAVEL MINING OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY (cont.)

County	Name of operator	Name of pit	Township	Type and principal use	State mine number
Montgomery (cont.)	Central Ready Mix, LLC	Germantown Plant #21	German	Sand—building Gravel—building	My-41
	Martin Marietta Aggregates	Phillipsburg	Clay	Sand—unspecified	My-1
	Phillips Companies, LLC	Phillips Sand and Gravel	Butler, Union	Sand—building, Portland cement concrete, industrial sand Gravel—building, Portland cement concrete	My-52
	Tipp Stone Co., Inc.	Tipp Stone Co., Inc.	Butler	Gravel—fill	My-61
	Weidle Sand & Gravel, Inc.	Weidle Sand & Gravel	German	Sand—building Gravel—building	My-W1
Morrow	National Lime & Stone Co.	Chesterville Plant	Chester	Sand—building, fill Gravel—building, road construction/resurfacing, filtration, ice grits, topsoil, landscaping	Mw-10
Muskingum	LUB, Inc.	LUB, Inc.	Muskingum	Sand—building Gravel—building	Mum-LB
	Muskingum River Gravel Co.	S & S Aggregate #1	Wayne	Sand—asphaltic concrete, road construction/resurfacing, customer sales Gravel—asphaltic concrete, road construction/resurfacing, customer sales	Mum-228
Pickaway	George J. Igel & Co., Inc.	George J. Igel & Co., Inc.	Darby	Gravel—unspecified	Pky-C
	William A. Hoffman, Jr.	Hoffman Pit	Wayne	Sand—unspecified Gravel—unspecified	Pky-H
	The Melvin Stone Co., LLC	Circleville	Wayne	Sand—building, Portland cement concrete, asphaltic concrete, farm/residential Gravel—building, asphaltic concrete, road construction/resurfacing, farm/residential	Pky-R
	Roy M. Roush	R Farm S & G	Darby	Sand—road construction/resurfacing Gravel—road construction/resurfacing	Pky-RR
	Sam's Excavating Unlimited, Inc.	Scioto Aggregates - Sam's Excavating Unlimited	South Bloomfield	Sand—building Gravel—building	Pky-S
	Westfall Aggregate & Materials, Inc.	Hill Road Pit	Jackson	Sand—building Gravel—building	Pky-WA
Pike	Hanson Aggregates, LLC	Piketon Sand & Gravel	Scioto	Sand—building Gravel—building	Pke-24
	South Central Sand & Gravel	South Central Sand & Gravel	Scioto	Sand—Portland cement concrete Gravel—road construction/resurfacing	Pke-30
Portage	Ballentine Sand & Gravel, LLC	Ballentine Lake	Shalersville	Sand—Portland cement concrete Gravel—building	Pe-BA
	Beck Sand & Gravel, Inc.	Beck Sand & Gravel, Inc.	Portage, Shalersville	Sand—building, Portland cement concrete, landscape Gravel—building, asphaltic concrete, road construction/resurfacing, filtration, landscaping, ice control	Pe-50
	D & K Materials, Inc.	D & K Materials, Inc.	Brimfield	Sand—building, Portland cement concrete, asphaltic concrete Gravel—road construction/resurfacing, filtration, #4 gravel	Pe-101
	Lakeside Sand & Gravel Co.	Lakeside Sand & Gravel Co. Plant 1	Shalersville	Sand—building, road construction/resurfacing Gravel—building, road construction/resurfacing	Pe-LS
		Solak	Shalersville	Sand—building Gravel—building	Pe-A
	Miller's Sand & Gravel, Inc.	Miller Sand & Gravel, Inc.	Windham	Sand—fill sand	Pe-39
	Olen Corp.	Lucky Sand & Gravel Co.	Mantua	Sand—building Gravel—building, asphaltic concrete	Pe-L

	Oscar Brugmann Sand & Gravel, Inc.	Oscar Brugmann Sand & Gravel, Inc.	Shalersville	Sand—building, road construction/resurfacing, unspecified Gravel—building, road construction/resurfacing, unspecified	Pe-9
	Portage Aggregate & Supply, LLC	Portage Aggregate & Supply, LLC	Shalersville	Sand—building, Portland cement concrete Gravel—building	Pe-M
	Rockwell Sand & Gravel, Inc.	Suffield Aggregate, LLC	Suffield	Sand—Portland cement concrete, fill, soil blend Gravel—filtration	Pe-R
	S & S Aggregate, Inc.	S & S Aggregate #16	Ravenna	Sand—asphaltic concrete, road construction/resurfacing, customer sales Gravel—asphaltic concrete, road construction/resurfacing, customer sales	Pe-15
	Shelly Materials, Inc.	Jefferson Materials	Streetsboro	Sand—Portland cement concrete, asphaltic concrete Gravel—asphaltic concrete	Pe-63
		Shalersville North	Shalersville	Sand—Portland cement concrete, asphaltic concrete Gravel—Portland cement concrete, asphaltic concrete	Pe-La
	Sober Sand & Gravel Co.	Sober Sand & Gravel Co.	Rootstown	Sand—building, Portland cement concrete Gravel—building, asphaltic concrete	Pe-18
Preble	Loxley Aggregates, Inc.	Loxley Aggregates, Inc.	Twin	Sand—building Gravel—building	Pre-9
	Thomas Sand & Gravel	Howard Thomas	Lanier	Gravel—pipe backfill	Pre-T
	U.S. Aggregates, Inc.	U.S. Aggregates - Richmond Plant	Jefferson	Sand—building, road construction/resurfacing Gravel—building, road construction/resurfacing	Pre-AAC
	Wysong Gravel Co.	Wysong Gravel Co.	Somers	Sand—building Gravel—building	Pre-4
		Wysong Gravel Co. - West Alexandria	Twin, Plant	Sand—building Gravel—building	Pre-6
Putnam	Putnam Aggregates Company, LLC	Putnam Aggreagtes Company, LLC	Pleasant, Riley	Sand—building	Pm-2
Richland	John L. Garber Materials, Inc.	John L. Garber Materials, Inc.	Troy	Sand—building Gravel—building	Rd-14
		John L. Garber Materials, Inc.	Washington	Sand—unspecified Gravel—unspecified	Rd-G
	Mid Ohio Resources	Bellville West	Jefferson	Sand—building, Portland cement concrete Gravel—building, road construction/resurfacing, ice control	Rd-M1
	S & S Aggregate, Inc.	S & S Aggregate #14	Monroe	Sand—asphaltic concrete, customer sales Gravel—asphaltic concrete, road construction/resurfacing, customer sales	Rd-5
Ross	Calvin's Hauling, Inc.	Calvin's Hauling, Inc.	Concord	Sand—building Gravel—road construction/resurfacing	Rs-C
	D.G.M., Inc.	Towpath-Warwick	Twin	Sand—building, Portland cement concrete Gravel—building, Portland cement concrete	Rs-D
	David E. Edgington	Edgington Pit	Concord	Sand—building Gravel—building	Rs-E
	Muskingum River Gravel Co.	S & S Aggregate Plant #7	Jefferson	Sand—asphaltic concrete, road construction/resurfacing, customer sales Gravel—asphaltic concrete, road construction/resurfacing, customer sales	Rs-M
	Shelly Materials, Inc.	Shelly Materials, Inc. - Chillicothe	Springfield	Sand—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing, unspecified Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing, unspecified	Rs-27
Sandusky	Precision Aggregates III, LLC	Precision Aggregates III, LLC	Sandusky	Sand—asphaltic concrete Gravel—asphaltic concrete	Sy-5-1

2013 OHIO DIRECTORY OF SAND AND GRAVEL MINING OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY (cont.)

County	Name of operator	Name of pit	Township	Type and principal use	State mine number
Scioto	BCE Materials, Inc.	Cab Pit	Porter	Sand—building Gravel—building	So-98
	D.G.M., Inc.	Tow Path Ready Mix	Morgan	Sand—building, Portland cement concrete Gravel—building, Portland cement concrete	So-DGM
	Youngs Sand and Gravel	Young	Porter	Gravel—back fill	So-Y
Shelby	Barrett Paving Materials, Inc.	Hardin Sand & Gravel	Washington	Sand—Portland cement concrete, unspecified Gravel—Portland cement concrete, asphaltic concrete, unspecified	Shy-SC
		Jones Deposit	Washington	Sand—unspecified Gravel—unspecified	Shy-18
	Barrett Paving Materials, Inc.	Pence Deposit	Washington	Sand—unspecified Gravel—unspecified	Shy-11
		Schmidt Deposit	Washington	Sand—unspecified Gravel—unspecified	Shy-SC1
		Staley Pit	Clinton, Salem	Gravel—building	Shy-SS
Stark	American Sand & Gravel, Inc.	Plant #4	Jackson	Sand—road construction/resurfacing Gravel—road construction/resurfacing	Sk-243
		Plant #6	Jackson	Sand—road construction/resurfacing Gravel—road construction/resurfacing	Sk-RO
	Beaver Excavating, Inc.	Stone Products	Canton	Sand—unspecified Gravel—unspecified	Sk-BE
	Central-Allied Enterprises, Inc.	Canton Aggregate Div.	Plain	Sand—building, asphaltic concrete, road construction/resurfacing Gravel—building, asphaltic concrete, road construction/resurfacing	Sk-681
		Central Sand & Gravel Div.	Plain	Sand—building, road construction/resurfacing, unspecified Gravel—building, road construction/resurfacing, unspecified	Sk-CA1
		Massillon Washed Gravel Div.	Bethlehem	Sand—unspecified	Sk-607
		Massillon Washed Gravel Div.	Bethlehem	Sand—building, road construction/resurfacing Gravel—building, road construction/resurfacing	Sk-MW
	Massillon Materials, Inc.	Massillon Materials, Inc.	Perry	Sand—unspecified Gravel—unspecified	Sk-M
		MMI Warmington Plant	Perry	Sand—unspecified Gravel—unspecified	Sk-M1
	Oster Sand & Gravel, Inc.	Massillon Plant	Jackson, Perry	Sand—building, Portland cement concrete, asphaltic concrete, fill Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing, fill	Sk-165
	Scassa Asphalt, Inc.	Roio Sand & Gravel	Lawrence	Sand—building Gravel—building	Sk-S
	Shelly Materials, Inc.	Massillon Aggregates	Perry	Sand—Portland cement concrete, asphaltic concrete Gravel—asphaltic concrete	Sk-173
	Tiger Sand & Gravel, LLC	Tiger Sand & Gravel, LLC	Perry	Sand—building Gravel—building	Sk-T
Summit	Bontrager Excavating Co.	Gilbert	Green	Sand—building Gravel—building	St-B

	S & S Aggregate, Inc.	Twin Lakes - S & S Aggregate #9	Coventry	Sand—asphaltic concrete, road construction/resurfacing Gravel—road construction/resurfacing, customer sales	St-44
Tuscarawas	JBM Ltd.	State Route 416 Sand & Gravel	Goshen	Sand—building Gravel—building	Ts-2018
	Kimble Clay & Limestone Co.	Kimble Clay & Limestone Co.	Dover	Sand—building Gravel—building	Ts-1818
	L & M Mineral Co.	Spring Industries	Goshen, Warwick	Sand—fill Gravel—fill	Ts-SI
	Newton Asphalt Paving, Inc.	516	Dover	Sand—asphaltic concrete Gravel—asphaltic concrete	Ts-2001
	Oster Sand & Gravel, Inc.	Oster Sand & Gravel, Inc. - Bolivar	Sandy	Sand—building, Portland cement concrete, asphaltic concrete, fill Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing, fill	Ts-2036
	Sidco Development, Inc.	Midvale Sand & Gravel	Goshen	Sand—Portland cement concrete, asphaltic concrete Gravel—Portland cement concrete, asphaltic concrete	Ts-S2
	Soehnlen Bros. Sand & Gravel, Inc.	Soehnlen Bros. Sand & Gravel, Inc.	Wayne	Sand—Portland cement concrete, industrial sand Gravel—building, road construction/resurfacing	Ts-1826
	Stocker Sand & Gravel Co.	Stocker Sand & Gravel Co. - Gnaden	Clay	Sand—building, road construction/resurfacing Gravel—building, road construction/resurfacing	Ts-69
		Stocker Sand & Gravel Co. - Island	Clay	Sand—building, road construction/resurfacing Gravel—building, road construction/resurfacing	Ts-125
Warren	Carl E. Oeder and Sons Sand & Gravel	Carl E. Oeder and Sons Sand & Gravel	Turtle Creek	Sand—building Gravel—building	Wan-41
	Central Ready Mix, LLC	Carlisle Plant #27	Franklin	Sand—building Gravel—building	Wan-7
	L & I Natural Resources, Inc.	L & I Pit & Mill	Union	Sand—building Gravel—building	Wan-50
	Little Miami Sand & Gravel	Little Miami Sand & Gravel Plant #1	Salem	Gravel—unspecified	Wan-B
		Little Miami Sand & Gravel Plant #2	Salem	Gravel—unspecified	Wan-46
	Martin Marietta Aggregates	Franklin Gravel	Franklin	Sand—unspecified Gravel—unspecified	Wan-38
	Miami View Mining Co., Ltd.	Miami View	Union	Sand—bank run Gravel—bank run	Wan-MV
	Morrow Gravel Co.	Morrow Gravel Co.	Hamilton, Salem	Sand—building, Portland cement concrete, asphaltic concrete Gravel—building, Portland cement concrete, asphaltic concrete	Wan-M
Washington	Atlas Towing Co.	Belpre Bank Run	Belpre	Sand—bank run material	Wn-54
	Briggs Sand & Gravel, Inc.	Briggs Sand & Gravel, Inc.	Warren	Sand—building Gravel—road construction/resurfacing	Wn-508
	Grimes Excavating	Grimes Sand and Gravel	Grandview	Sand—building Gravel—building	Wn-1008
	Sharon Stone Co.	Belpre Sand & Gravel	Belpre	Sand—building, Portland cement concrete, asphaltic concrete Gravel—building, Portland cement concrete	Wn-SS
	Shelly Materials, Inc.	Reno	Newport	Sand—building, road construction/resurfacing, foundry sand Gravel—building, road construction/resurfacing	Wn-SM
		Willow Island	Newport	Sand—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing, unspecified Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing, unspecified	Wn-C

2013 OHIO DIRECTORY OF SAND AND GRAVEL MINING OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY (cont.)

County	Name of operator	Name of pit	Township	Type and principal use	State mine number
Wayne	Olen Corp.	The Olen Corp. - Wooster	Franklin, Wooster	Sand—building, Portland cement concrete, asphaltic concrete Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing	We-11
	Rupp Construction, Inc.	Rupp Construction, Inc.	Baughman	Sand—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing, fill Gravel—building, Portland cement concrete, asphaltic concrete, road construction/resurfacing, filtration	We-7
Williams	St. Joe Sand & Gravel, LLC	St. Joe Sand & Gravel, LLC (STSG)	Superior	Sand—building Gravel—building	Ws-S1
	Thiel Construction Co.	Thiel Construction Co.	Superior	Sand—building Gravel—building	Ws-21
Wood	Precision Aggregates II, LLC	Precision Aggregates II, LLC	Portage	Sand—asphaltic concrete	Wd-14
Wyandot	JALIP, Ltd.	JALIP, Ltd.	Pitt	Sand—bedding	Wt-J
	Kirby's Sand & Gravel, Inc.	Kirby's Sand & Gravel, Inc.	Eden	Sand—building, filtration Gravel—building, filtration	Wt-K
	National Lime & Stone Co.	Upper Sandusky Plant	Antrim	Sand—building, Portland cement concrete, asphaltic concrete Gravel—base and backfill	Wt-N

2013 SANDSTONE/CONGLOMERATE COMPANIES WITH SALES OR PRODUCTION

Company	Number of operations	Sales (tons)	Production (tons)
Best Sand Corp.	2	688,826	688,826
Briar Hill Stone Co.	5	11,085	11,085
Brier Hill Slag Company	1	18,900	20,000
City Stone, LLC	1	75,502	75,502
IRG Operating, LLC, dba Cleveland Quarries	1	10,001	19,122
Johnson Stone Products, Inc.	1	2,285	9,820
Keeney Sand & Stone, Inc.	1	34,548	34,548
Kimble Clay & Limestone Co.	1	30,000	30,000
Mesenburg Bros., Inc.	1	7,865	7,865
Ohio Basic Minerals, LLC	1	45,643	59,336
Oscar Brugmann Sand & Gravel, Inc.	1	18,362	18,362
The Parry Company, Inc.	1	10,000	10,000
Premier Silica, LLC	2	98,069	107,159
R. W. Sidley, Inc.	1	130,781	125,000
Regeneration Materials	1	3,668	3,940
Riverside Sand & Gravel Co., Inc.	1	345	345
Rocky Enterprise	1	57,240	57,240
Romig Excavating	1	3,570	3,570
Solomon's Mines, Inc.	1	13,279	13,279
Southern Ohio Sand, LLC	1	47,000	47,000
Zollinger Sand & Gravel Co.	1	1,706	1,706
TOTAL: 21 companies	27	1,308,675	1,343,705

2013 OHIO DIRECTORY OF SANDSTONE/CONGLOMERATE MINE OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY

For those mines for which a state mine number has not been assigned, a letter designation is used (example: Gea-N).

County	Name of operator	Name of mine or quarry	Township	Geological unit (age)	Type and principal use	State mine number
Carroll	Romig Excavating	Romig Excavating	Monroe	Unidentified (Pennsylvanian)	Crushed or broken stone—riprap	Cl-R
Columbiana	Solomon's Mines, Inc.	Solomon's Mines, Inc.	Salem	Buffalo sandstone (Pennsylvanian)	Crushed or broken stone—riprap, aggregate, construction Dimension stone—architecture	Ca-S
Coshocton	Briar Hill Stone Co.	Quarry #26	Monroe	Massillon (Pennsylvanian)	Dimension stone—rough construction	Cn-13
		Quarry #32	Jefferson	Massillon (Pennsylvanian)	Dimension stone—rough construction	Cn-686
		Quarry #54	Clark	Massillon (Pennsylvanian)	Dimension stone—rough construction	Cn-809
		Quarry #55	Clark	Massillon (Pennsylvanian)	Dimension stone—rough construction	Cn-815
Erie	IRG Operating, LLC, dba Cleveland Quarries	IRG Operating, LLC	Florence	Berea Sandstone (Devonian)	Dimension stone—rough construction, rubble, finished stone, flag	Ee-21
Geauga	Best Sand Corp.	Best Sand Corp.	Munson	Sharon conglomerate (Pennsylvanian)	Crushed or broken stone—foundry sand, glass sand, polish/grinding sand, construction, industrial	Gea-3
	R. W. Sidley, Inc.	Thompson Pit	Thompson	Sharon conglomerate (Pennsylvanian)	Crushed or broken stone—foundry sand, metallurgical pebble, aggregate, polish/grinding sand, construction, industrial	Gea-1
Guernsey	Rocky Enterprise	Rocky Enterprise - Robins Ridge	Richland	Conemaugh Group (Pennsylvanian)	Crushed or broken stone—riprap, construction	Gy-R
Huron	Mesenburg Bros., Inc.	Mesenburg Bros., Inc.	Townsend	Berea Sandstone (Devonian)	Dimension stone—rough construction	Hrn-8
Knox	Briar Hill Stone Co.	Quarry #6	Union	Massillon (Pennsylvanian)	Dimension stone—rough construction	Kx-12
	Premier Silica, LLC	Millwood Plant	Butler, Union	Black Hand Sandstone (Mississippian)	Crushed or broken stone—foundry sand, glass sand, metallurgical pebble, refractory, polish/grinding sand, construction, industrial, other	Kx-1
Lake	Keeney Sand & Stone, Inc.	Keeney Sand & Stone, Inc.	Leroy	Berea Sandstone (Devonian)	Crushed or broken stone—aggregate, construction	Lke-K
Lorain	Johnson Stone Products, Inc.	Johnson Stone Products	Camden	Berea Sandstone (Devonian)	Dimension stone—rubble, finished stone, other	Ln-J
Mahoning	Brier Hill Slag Company	Brier Hill Slag Company	Urban	Cuyahoga Formation (Mississippian)	Crushed or broken stone—construction	Mg-B
	City Stone, LLC	City Stone, LLC	Milton	Sharon sandstone (Pennsylvanian)	Crushed or broken stone—construction	Mg-62
Perry	Premier Silica, LLC	Glass Rock Plant	Hopewell	Massillon (Pennsylvanian)	Crushed or broken stone—refractory	Py-344
Pike	Best Sand Corp.	Best - Southern Division	Jackson	Sharon conglomerate (Pennsylvanian)	Crushed or broken stone—foundry sand, construction, industrial	Pke-31
	Ohio Basic Minerals, LLC	Scioto Mine	Jackson		Crushed or broken stone—industrial, other	Pke-O
	Southern Ohio Sand, LLC	Southern Ohio Sand, LLC	Beaver	Sharon conglomerate (Pennsylvanian)	Crushed or broken stone—industrial	Pke-S
	The Parry Company, Inc.	Jackson Grandview Builders	Jackson	Sharon conglomerate (Pennsylvanian)	Crushed or broken stone—other	Pke-P
Portage	Oscar Brugmann Sand & Gravel, Inc.	Oscar Brugmann Sand & Gravel, Inc.	Shalersville	Sharon conglomerate (Pennsylvanian)	Crushed or broken stone—aggregate, construction	Pe-9
Summit	Riverside Sand & Gravel Co., Inc.	Riverside Sand & Gravel Co., Inc.	Stow, Tallmadge	Sharon conglomerate (Pennsylvanian)	Dimension stone—rough construction	St-24
Tuscarawas	Kimble Clay & Limestone Co.	Kimble Clay & Limestone Co.	Dover	Unidentified (Pennsylvanian)	Crushed or broken stone—construction	Ts-1818
	Regeneration Materials	Dundee Mine	Wayne	Massillon (Pennsylvanian)	Crushed or broken stone—foundry sand, other	Ts-1660
Wayne	Zollinger Sand & Gravel Co.	Zollinger Sand & Gravel Co.	Chippewa	Black Hand Sandstone (Mississippian)	Crushed or broken stone—construction	We-15

2013 CLAY COMPANIES WITH SALES OR PRODUCTION

Company	Number of operations	Sales (tons)	Production (tons)
A. P. Green Refractories, Inc.	1	7,086	7,086
Athens Hocking Reclamation Center	1	21	24
Belden Brick Co.	4	103,758	103,758
Bowerston Shale Co.	1	9,971	9,971
Boyas Excavating, Inc.	1	1,444	1,444
Cedar Heights Clay Co.	1	11,634	11,634
D & K Materials, Inc.	1	362	0
Envirosafe Services of Ohio, Inc.	1	44,300	0
Joe Simak & Sons Trucking, Inc.	1	1,704	1,704
Kimble Clay & Limestone Co.	1	200,000	200,000
L & M Mineral Co.	2	12,454	12,454
Loxley Aggregates, Inc.	1	283	283
Nuway Services	1	13,058	13,058
Patrick Excavating, Inc.	1	637	637
Sandkuhl Clay Works, Inc.	1	1,624	1,624
Sober Sand & Gravel Co.	1	14,767	14,767
Joseph N. Sypniewski	1	135	135
Valley Clay Mining Co.	1	8,161	8,161
Walhonding Sand & Gravel	1	2,669	2,669
Zollinger Sand & Gravel Co.	1	407	407
TOTAL: 20 companies	24	434,475	389,816

2013 OHIO DIRECTORY OF CLAY MINE OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY

For those mines for which a state mine number has not been assigned, a letter designation is used (example: Cn-B).

County	Name of operator	Name of mine or quarry	Township	Geological unit (age)	Type and principal use	State mine number
Ashtabula	Joe Simak & Sons Trucking, Inc.	North Ridge Pit	Kingsville	Glacial clay (Pleistocene)	Construction	Asa-18
	Joseph N. Sypniewski	Sypniewski	Trumbull	Glacial clay (Pleistocene)	Unspecified	Asa-SY
Athens	Athens Hocking Reclamation Center	Athens-Hocking Clay Mine	York	Conemaugh Group (Pennsylvanian)	Landfill	As-594
Auglaize	Sandkuhl Clay Works, Inc.	Sandkuhl Clay Works, Inc.	Salem	Glacial clay (Pleistocene)	Common clay products	Ae-7
Coshocton	Walhonding Sand & Gravel	Walhonding Valley Sand & Gravel	New Castle	Logan Formation (Mississippian)	Unspecified	Cn-WL
Cuyahoga	Boyas Excavating, Inc.	Boyas Excavating, Inc.	Independence	Bedford Shale (Devonian)	Baseball diamonds	Cya-42
Jackson	A. P. Green Refractories, Inc.	Poetker	Jefferson	Lower Kittanning clay (Pennsylvanian)	Refractories	Jkn-G
	Cedar Heights Clay Co.	Phillips	Madison	Allegheny Group (Pennsylvanian)	Refractories	Jkn-CH3
Licking	Nuway Services	Hopewell	McKean	Glacial clay (Pleistocene)	Construction	Lg-NU
Lucas	Envirosafe Services of Ohio, Inc.	Johlin Property Clay Mine	Oregon	Glacial clay (Pleistocene)	Landfill	Ls-E
Muskingum	Bowerston Shale Co.	Frazeysburg	Jackson	Flint Ridge and Middle Mercer (Pennsylvanian)	Common clay products	Mum-776
	Valley Clay Mining Co.	Spring Pit	Newton	#3 Clay, Clarion Shale, Tionesta (Pennsylvanian), Glacial clay (Pleistocene)	Common clay products	Mum-904
Portage	D & K Materials, Inc.	D & K Materials, Inc.	Brimfield	Glacial clay (Pleistocene)	Common clay products	Pe-101
	Patrick Excavating, Inc.	Patrick	Charlestown	Glacial clay (Pleistocene)	Construction	Pe-P
	Sober Sand & Gravel Co.	Sober Sand & Gravel Co.	Rootstown	Glacial clay (Pleistocene)	Construction	Pe-18
Preble	Loxley Aggregates, Inc.	Loxley Aggregates, Inc.	Twin	Glacial clay (Pleistocene)	Construction	Pre-9
Stark	L & M Mineral Co.	Barr Farm	Bethlehem	Newland-Brookville clay (Pennsylvanian)	Common clay products	Sk-LM
Tuscarawas	Belden Brick Co.	Belden Pit	Sugar Creek	Newland-Brookville clay (Pennsylvanian)	Common clay products	Ts-1646
		Moomaw Pit	Sugar Creek	Newland-Brookville clay (Pennsylvanian)	Common clay products	Ts-1517
		Shanesville Pit	Sugarcreek	Newland-Brookville clay (Pennsylvanian)	Common clay products	Ts-1939
		Wallick Pit	Franklin, Wayne	Newland-Brookville clay (Pennsylvanian)	Common clay products	Ts-1841
	Kimble Clay & Limestone Co.	Kimble Clay & Limestone Co.	Dover	Unidentified (Pennsylvanian)	Construction, landfill	Ts-1818
	L & M Mineral Co.	Spring	Mill, Warwick	Lower Kittanning (Pennsylvanian)	Common clay products	Ts-1982
Wayne	Zollinger Sand & Gravel Co.	Zollinger Sand & Gravel Co.	Chippewa	Glacial clay (Pleistocene)	Construction	We-15

2013 SHALE COMPANIES WITH SALES OR PRODUCTION

Company	Number of operations	Sales (tons)	Production (tons)
Athens Hocking Reclamation Center	1	75	80
Belden Brick Co.	4	77,683	77,683
Bowerston Shale Co.	2	60,516	60,516
CEMEX, Inc.	1	44,241	44,241
Crushers Stone Products, LLC	1	1,578	1,578
D. M. Mining, Inc.	1	9,600	9,600
DiGeronimo Aggregates, LLC	1	154,470	168,627
Glen-Gery Corp.	1	83,889	83,889
Kimble Clay & Limestone Co.	2	290,000	290,000
Knox County Board of Commissioners	1	914	914
L & M Mineral Co.	1	21,861	21,861
Lafarge Corp.	1	75,106	75,106
The Logan Clay Products Co.	1	12,994	16,503
Summitville Tiles, Inc.	1	19,270	19,270
Thompson Mining Co.	1	291	291
Valley Clay Mining Co.	1	16,140	16,140
Zollinger Sand & Gravel Co.	1	554	554
TOTAL: 17 companies	22	869,182	886,853

2013 OHIO DIRECTORY OF SHALE MINE OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY

For those mines for which a state mine number has not been assigned, a letter designation is used (example: Cn-B).

County	Name of operator	Name of mine or quarry	Township	Geological unit (age)	Type and principal use	State mine number
Athens	Athens Hocking Reclamation Center	Athens-Hocking Clay Mine	York	Conemaugh Group (Pennsylvanian)	Construction, landfill, unspecified	As-594
Columbiana	Summitville Tiles, Inc.	Summitcrest, Inc.	Franklin	Conemaugh Group (Pennsylvanian)	Common clay products	Ca-SU
Cuyahoga	DiGeronimo Aggregates, LLC	DiGeronimo Aggregates, LLC	Independence	Chagrin Shale (Devonian)	Lightweight aggregate	Cya-19
Greene	CEMEX, Inc.	Miller, Schieder, Batdorf	Bath, Stewart	Upper Ordovician shale	Cement manufacture	Ge-8
Harrison	Bowerston Shale Co.	Bowerston (Calwell)	Monroe	Conemaugh Group (Pennsylvanian)	Common clay products	Hn-152
Knox	Knox County Board of Commissioners	Apple Valley	Brown	Logan Formation (Mississippian)	Construction	Kx-K
Lawrence	D. M. Mining, Inc.	Ice Creek Land Co.	Upper	Conemaugh Group (Pennsylvanian)	General fill	Le-D
Licking	Bowerston Shale Co.	Hanover Pit	Hanover	Logan Formation (Mississippian)	Common clay products	Lg-501
Marion	Glen-Gery Corp.	Iberia Quarry	Tully	Bedford Shale (Mississippian)	Common clay products	Mn-7
Muskingum	Thompson Mining Co.	Pleasant Valley Limestone	Hopewell		Landfill	Mum-907
	Valley Clay Mining Co.	Spring Pit	Newton	#3 clay, Clarion shale, Tionesta clay (Pennsylvanian)	Common clay products	Mum-904
Paulding	Lafarge Corp.	Paulding Quarry	Crane	Silica Shale (Devonian)	Cement manufacture	Pg-1
Perry	The Logan Clay Products Co.	Webb Summit	Monday Creek	Pottsville Group (Pennsylvanian)	Common clay products	Py-L
Tuscarawas	Belden Brick Co.	Belden Pit	Sugar Creek	Tionesta clay (Pennsylvanian)	Common clay products	Ts-1646
		Plotner Pit	Sugar Creek	Upper Mercer and Brookville clays (Pennsylvanian)	Common clay products	Ts-B
		Shanesville Pit	Sugar Creek	Brookville clay (Pennsylvanian)	Common clay products	Ts-1939
		Wallick Pit	Franklin, Wayne	Brookville clay (Pennsylvanian)	Common clay products	Ts-1841
	Kimble Clay & Limestone Co.	Kimble Clay & Limestone Co.	Dover	Brookville clay (Pennsylvanian)	Construction, landfill	Ts-1818
		Kimble Clay & Limestone Co.	Dover		Landfill	Ts-K1
	L & M Mineral Co.	Heil	Warwick	Brookville clay (Pennsylvanian)	Common clay products	Ts-1884
Wayne	Crushers Stone Products, LLC	Crushers Stone Products, LLC	Clinton	Unidentified shale (Mississippian)	Unspecified	We-25
	Zollinger Sand & Gravel Co.	Zollinger Sand & Gravel Co.	Chippewa	Glacial clay (Pleistocene)	Construction	We-15

2013 OHIO DIRECTORY OF SALT MINE AND SALT-BRINING PLANT OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY

County	Name of operator	Name of mine or quarry	Township	Geological unit and product	State mine number
Cuyahoga	Cargill, Incorporated	Cargill Deicing Technology	City of Cleveland	Salina (Silurian)—rock salt	Cya-30
Lake	Morton International, Inc.	Fairport Mine	Painesville	Salina (Silurian)—rock salt	Lke-6
Licking	R. H. Penick Co., Ltd. Royalty Enterprises, Inc.	R. H. Penick Co. King #1	Newark Madison	"Newburg" (Silurian)—natural brine "Newburg" (Silurian)—natural brine	Lg-45 Lg-4484
Summit	Cargill Salt	Cargill Salt	Coventry	Salina (Silurian)—artificial brine	St-9127
Wayne	Morton International, Inc.	Morton Salt Well Field 9129	Milton	Salina (Silurian)—artificial brine	We-9129

STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL SURVEY
Thomas J. Serenko, Chief

Map IM-1 2013 Edition
11/2014

MAP OF ACTIVE MINERAL INDUSTRY OPERATIONS IN OHIO 2013

By
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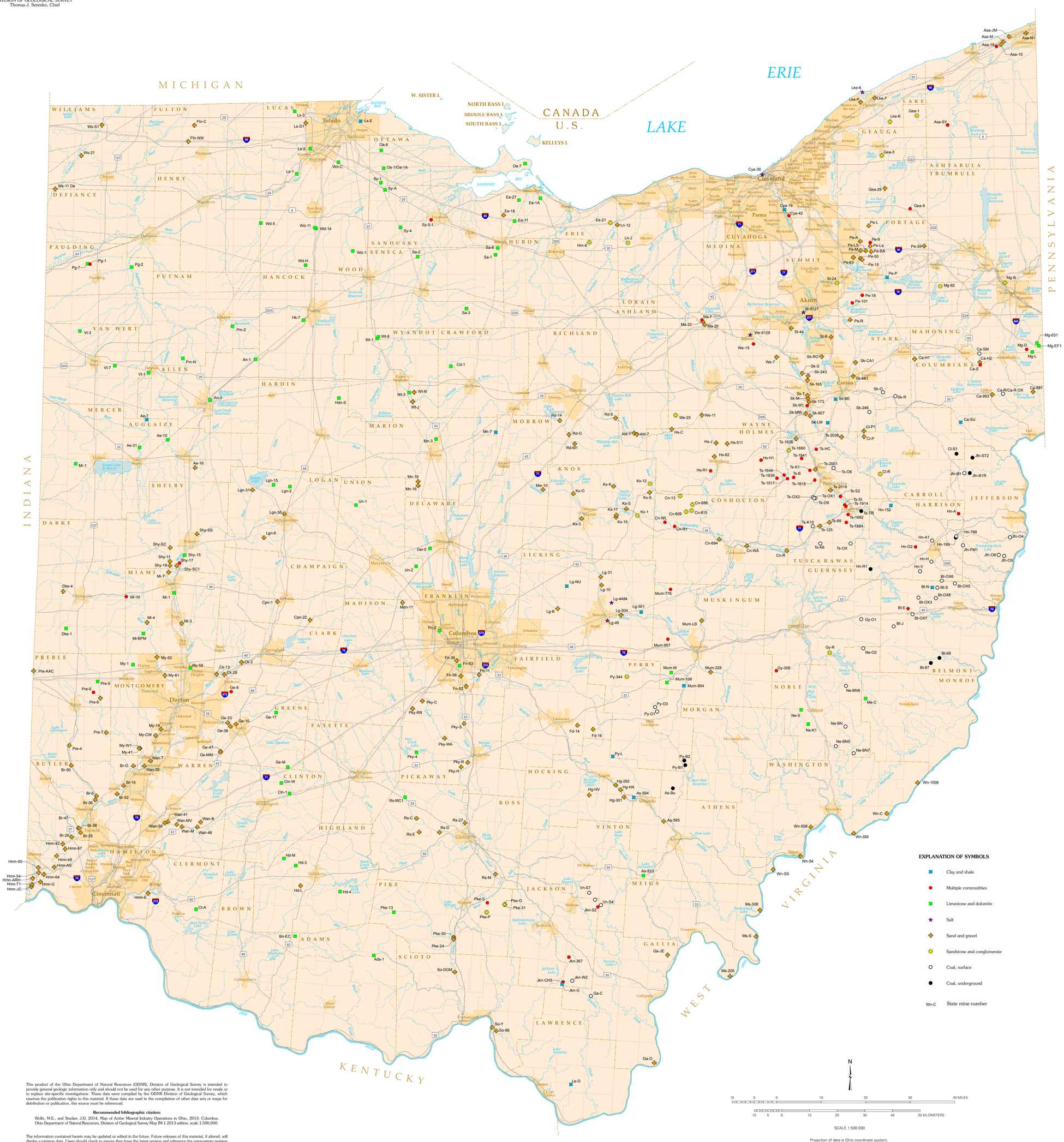
GIS Cartography by Dean R. Martin



ABOUT THE MAP

This map is based on operators listed in the *2013 Report on Ohio Mineral Industries* and is intended for general reference. Locations of mineral extraction operations are approximate and are based on permitting information on file at the Ohio Department of Natural Resources (ODNR), Division of Mineral Resources Management. The letters and numbers adjacent to the symbols are the state mine numbers assigned to operations listed in the directories of the *2013 Report on Ohio Mineral Industries*. Operator and other information can be accessed by using the state mine number and commodity to refer to the directories of operators reporting sales or production, by county, in the *Report on Ohio Mineral Industries*. Operator information for industrial-mineral operations that reported no production during the year can be accessed by searching the alphabetical directories for the state mine number. An interactive mineral industries map also is available on the ODNR Division of Geological Survey website. The interactive map is an improved tool for accessing company and production information and should be used (if available). The *Report on Ohio Mineral Industries* and the interactive map are accessible at **www.ohiogeology.com**.

2013 OHIO ECONOMIC GEOLOGY IN BRIEF

Reports were filed in 2013 for 99 coal-mining operations, including 3 mines with their own coal-washing facilities. Coal production was reported from 59 individual operations. Reports also were filed for 6 separate coal-washing plants and associated facilities. Of the 559 industrial-mineral-mining operations known to be operating in 2013, 347 operations were reported active. A total of 36 mines reported production of multiple mineral commodities, including coal and/or one or more industrial minerals. There were 643 new wells completed for oil and gas in 2013, of which 623 were productive and 20 were dry.

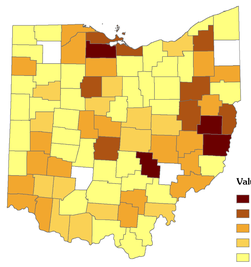
The total tonnage of coal and industrial minerals produced in Ohio during 2013 was 117,700,890 tons or approximately 10.3 tons per capita. The total value[3] of coal was $1,199,674,459 in 2013; the value of oil and gas was $1,355,625,470; and the total value[1] of all industrial minerals was $893,425,812 in 2013 (table 1). The combined total value of fuel and nonfuel minerals produced in Ohio during 2013 was $3,448,725,741 or approximately $298 per capita. Reported and estimated total employment in the extractive industries of Ohio in 2013 was more than 12,000 people.

[1]Includes reported and estimated values. Some operations reporting sales did not report a value for those sales. A countywide- or statewide-average price per ton was calculated for each industrial-mineral commodity based on sales for which the value was reported. A countywide-average price per ton was calculated for coal based on sales for which the value was reported and method of production. These calculated averages were used to estimate the value of the sales for which the actual values were not reported.

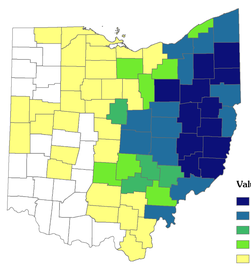
TABLE 1. *2013 Fuel and nonfuel mineral sales and production in Ohio*

Commodity	Production[1]	Sales[2]	Value[3]	Change in value from 2012 (percent)
Coal	24,844,384 tons	24,874,770 tons	$1,199,674,459	+1.5
Limestone and dolomite	57,562,592 tons	57,871,840 tons	$512,247,281	+3.6
Sand and gravel	28,708,583 tons	29,691,597 tons	$200,273,102	+4.2
Salt	3,964,757 tons	4,391,138 tons	$123,256,445	−3.5
Sandstone and conglomerate	1,343,703 tons	1,308,675 tons	$41,913,113	−10.1
Clay	389,816 tons	434,475 tons	$4,019,771	+115.4
Shale	886,833 tons	869,182 tons	$11,716,100	+58.4
Gas	167,923,260 thousand cubic feet	not available	$589,410,643	+137.5
Oil	8,005,588 barrels	not available	$766,214,827	+67.3

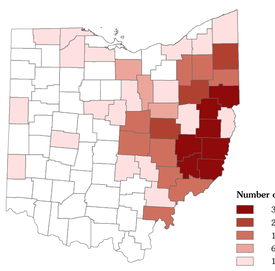
[1]The production figures for industrial minerals are estimates, as many operators do not know actual production. For those operators that do not report production, production is assumed equal to sales or estimated from ODNR Division of Mineral Resources Management records.
[2]Includes material for captive use.
[3]The FOB value of industrial minerals sold was estimated for mines that failed to report this information and for those producting material for captive use. These estimates were calculated using a countywide- or statewide-average price per ton calculated on reported FOB values.



Total value of produced coal and/or industrial minerals in Ohio in 2013, by county.



Total value of oil and gas produced in Ohio in 2013, by county.



Number of oil-and-gas wells drilled and/or completed in Ohio in 2013, by county.

EXPLANATION OF SYMBOLS

- Clay and shale
- Multiple commodities
- Limestone and dolomite
- Salt
- Sand and gravel
- Sandstone and conglomerate
- Coal, surface
- Coal, underground
- Wn-C State mine number

N

10 5 0 10 20 30 40 MILES

10 5 0 10 20 30 40 50 KILOMETERS

SCALE 1:500 000

Projection of data is Ohio coordinate system, south zone, North American Datum 1983.

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