PRODUCTS OF NEW YORK MINES

New York State law does not require mine operators to report how much their facilities produce. However, every year the U.S. Geological Survey (USGS) collects information on a voluntary basis for over 100 mined commodities nationwide; the USGS state rank, production quantity and production value figures for New York are included on pages 55 to 64. Note that these federal figures should be regarded as minimums; the surveys are incomplete and the USGS regularly revises numbers as more information becomes available. However, the data is still useful for showing rough levels of production and year-to-year trends.

In 2003 crushed stone remained, by value, New York's leading non-fuel mineral, followed by cement (portland and masonry), salt, construction sand and gravel, and wollastonite. These five commodities accounted for 98% of the State's nonfuel mineral value. USGS estimated the value of the State's nonfuel mineral production at $978 million. In 2003 New York remained the only wollastonite-producing state and also rose to first place in production of industrial garnet. New York remained third in production of salt, fourth in talc and tenth in cement (portland and masonry). Other important minerals mined in New York include bluestone, sandstone, granite, shale, slate and clay.

Table 22 - New York Quantity of Production Rank for US, 1999 - 2003

	1999	2000	2001	2002	2003
Cement*	9	10	9	10	10
Garnet	1	2	2	2	1
Salt	4	3	3	3	3
Sand & Gravel**	13	13	12	12	14
Talc	4	4	4	4	4
Wollastonite	1	1	1	1	1
Zinc	4	4	4	***	***

New Yorkers use 50 pounds of minerals per capita per day !

* Portland and masonry cement
** Construction grade sand and gravel
*** Zinc mine temporarily closed in 2002, new owner expects to reopen

Limestone & Dolostone, Crushed Stone and Cement

New York's limestone and dolostone resources are found throughout the State. In 2003 New York had 99 limestone and dolostone producing mines that represented roughly 90% of the stone sold in New York. The most important products from these mines are crushed stone and cement which are both used predominantly in building and road construction and maintenance. Based on value, crushed stone was New York's leading nonfuel mineral in 2003, followed by cement (portland and mason).

Crushed Stone - New York's crushed stone dropped 15 percent in quantity and 13 percent in value from the previous year to 51,500,000 metric tons of stone worth roughly $358 million. While limestone and dolostone represent the vast majority of New York's crushed stone production, the State also produces crushed granite, marble, traprock, sandstone and quartzite.

Cement - The USGS did not publish 2003 cement quantity and value information for New York, but the figures would be in the vicinity of the 2,940,000 metric tons worth at least $230 million produced in 2001. Cement production is concentrated in the upper Hudson Valley area where a relatively pure limestone is quarried from the Coeymans formation.

Table 23 - Principal Limestone & Dolostone Producers: Largest Mine Locations, 2003*

Company	County	Town
Barrett Paving Materials, Inc.	St. Lawrence	Norfolk
	Lewis	Leyden
Buffalo Crushed Stone, Inc.	Genesee	Alabama
	Erie	Lancaster
Callanan Industries, Inc.	Montgomery	Florida
Dolomite Products Co., Inc.	Ontario	Manchester
	Wayne	Walworth
Hanson Aggregates NY, Inc.	Onondaga	DeWitt & Skaneateles
	Livingston	Lima
	Oneida	Marshall
	Jefferson	Pamelia
Lafarge N. American Cement	Albany	Coeymans
Tilcon New York, Inc.	Dutchess	Poughkeepsie
	Rockland	Stony Point

* Principal Producers based on number of acres permitted.

Sand and Gravel

Sand and gravel mines are New York's most common type of mine with 1,948 active mines spread across the State. Suffolk, Dutchess and Rensselaer Counties are New York's leading producers of sand and gravel due to their proximity to large markets and the occurrence of high quality glacial deposits. Sand and gravel is New York's fourth most economically important nonfuel mineral

In 2003 New York's production of construction grade sand and gravel declined by over 6% to 30,200,000 metric tons, but the value rose slightly to $172 million. The vast majority of this material was used for road and building construction and maintenance.

Table 24 - Principal Sand & Gravel Producers: Largest Mine Locations, 2003*

Company	County	Town
Buffalo Crushed Stone, Inc.	Cattaraugus Allegany	Machias (2) & Farmersville Alfred
Burton F. Clark, Inc.	Delaware	Davenport
Callanan Industries, Inc.	Rensselaer Albany	North Greenbush Coeymans
Cranesville Aggregate Co., Inc.	Schenectady Columbia	Glenville Claverack
Dalrymple Gravel & Contr.	Steuben Chemung	Campbell Chemung
E. Tetz & Sons, Inc.	Sullivan Orange	Thompson Wawayanda
Elam Sand and Gravel Corp.	Ontario Wayne	West Bloomfield Macedon
F. S. Lopke Contracting, Inc.	Tioga Broome	Tioga (2 mines) Barker
Frey Concrete	Genesee	Alexander
Gernatt Asphalt Products, Inc.	Erie	Sardinia (2 mines)

Company	**County**	**Town**
Graymont Materials (NY), Inc.	Clinton	Schuyler Falls
	St. Lawrence	Parishville
Hanson Aggregates NY, Inc.	Oswego	Sandy Creek
	Ontario	Phelps & Victor
	Livingston	Caledonia
	Herkimer	Russia
	Steuben	Bath
Lafarge North America, Inc.	Cattaraugus	Freedom
	Erie	Lancaster
Northern Aggregates, Inc.	Oswego	Volney
Red Wing Properties, Inc.	Dutchess	La Grange (2 mines)
Syracuse Sand & Gravel, LLC	Ontario	Phelps
Valley Sand & Gravel, Inc.	Livingston	Caledonia
Warren W. Fane, Inc.	Rensselaer	Schaghticoke (2 mines)
William M. Larned & Sons, Inc.	Albany	Guilderland

* Principal Producers based on number of acres permitted.

A 2003 inspection conducted by Region 7 Mined Land staff at the Town of Windsor Highway Department's sand and gravel mine in Broome County included a large processing operation set up by the New York Army National Guard for training purposes.

Salt

More than 10,000 square miles of central and western New York are underlain by the Salina formation which contains roughly 3.9 trillion metric tons of rock salt. This large salt resource has been very important throughout the State's history. The Cargill Lansing mine, near Ithaca, is the deepest underground salt mine in the western hemisphere and the former AKZO Retsof mine, near Geneseo, was the largest underground salt mine in the world when it was in operation. In 2003 salt ranked third by value in New York's nonfuel minerals commodities and the State was also the country's third largest salt producer.

There are two rock salt mines in New York State. Salt is also produced from five solution mining facilities in Schuyler and Wyoming Counties (see page 38). In 2003 these solution mining facilities produced brine equivalent to 2.5 million metric tons of salt worth approximately $100 million. Data voluntarily submitted to the U.S. Geological Survey shows that the State's total salt output for 2003 was approximately 4.9 million metric tons, worth $190 million. This means that New York's 2003 rock salt production was roughly 2.4 million metric tons worth approximately $90 million. While these figures are not exact, they are useful indicators of the level and value of production in New York.

Table 25 - Principal Salt Producers: Mine Locations, 2003*

Company	County	Town
American Rock Salt, Inc.	Livingston	Groveland
Cargill, Inc.	Tompkins	Lansing

* Principal Producers based on number of acres permitted.

This photo of the American Rock Salt Mine shows a temporary hoist used during initial development of the mine. Its twin is in the background. The temporary structures were used while the shafts were being sunk and the mine's underground infrastructure developed. They were replaced with permanent hoists when the mine went into full production.

Wollastonite

Wollastonite was New York's fifth most valuable nonfuel mineral in 2003. More importantly, New York is the only commercial producer of wollastonite in the country and the State's four mines, located in the Adirondacks, account for almost all U.S. production. According to USGS estimates, imports of wollastonite into the U.S. are relatively low, so New York's mines supplied over 90 percent of the wollastonite used in the country. New York's wollastonite mines also supplied roughly one-fourth of the world production in 2003.

Wollastonite is a white, fibrous industrial mineral. One of wollastonite's most unusual characteristics is its ability to cleave into needle-like (acicular) crystals. These fibrous particles make it useful as an asbestos replacement and as reinforcement in a wide array of products such as plastics, coatings, friction products, ceramics, paint and sealants.

To protect proprietary data, the USGS does not publish detailed quantity and value statistics for NY wollastonite. However, the federal agency did note that domestic production dropped in 2003. North American (New York and Mexico) wollastonite producers appear to be changing their marketing strategy and focusing on higher-value acicular wollastonite, particularly for plastics, and leaving the lower end of the market to imports.

Table 26 - Principal Wollastonite Producers: Mine Locations, 2003*

Company	County	Town
Gouverneur Talc Co., Inc.	Lewis	Diana
NYCO Minerals, Inc.	Essex	Lewis
	Essex	Willsboro

* Principal Producers based on number of acres permitted.

NYCO Minerals, Inc. Lewis Mine in Lewis County is a conventional open-pit mine where ore is drilled, blasted and then hauled to a processing plant. NYCO chemically modifies the surface of some of its wollastonite products to improve performance.

Garnet

In 2003 New York rose to first place in the industrial garnet-producing states in the U.S. Barton Garnet's Gore Mountain mine, which opened in 1878 in the Adirondacks, was the largest garnet mine in the world during its operation. In 1983 the company's mining activity shifted to nearby Ruby Mountain. Garnets from Ruby Mountain make especially high-quality abrasives. Since there is only one garnet-producing mine in the State, the USGS does not publish New York production information.

Most of the garnet from New York is used for sandpaper. Garnet is also used in grinding and polishing glass and metal, sandblasting, water filtration and waterjet stone cutting. Garnet is a well-known gemstone, but most New York garnets have too many internal cracks for this use.

Table 27 - Principal Garnet Producer: Mine Location, 2003*

Company	County	Town
Barton Mines Co., LLC	Warren	Johnsburg

* Principal Producer based on number of acres permitted.

Talc

In 2003 New York ranked fourth in the country in talc production. The USGS does not publish talc production information by state to protect proprietary data. However, they did note that New York production was up in 2003.

While Gouverneur Talc is New York's only talc producing company, their holdings include two permitted mines on roughly 200 acres of land in the northwest Adirondacks, as well as two milling operations. Industrial talc is a mixture of talc, tremolite, anthophyllite, serpentine and dolomite. Because of the presence of these minerals, New York's industrial talc is fibrous with long, thin white needle-like crystals. It is used as a paint extender, a carrier for insecticide dust and in many other products where a white powdery mineral is needed. It is also used in ceramics, filler in asphalt roofing, putty and linoleum.

Table 28 - Principal Talc Producer: Largest Mine Location, 2003*

Company	County	Town
Gouverneur Talc Co., Inc.	St. Lawrence	Edwards

* Principal Producer based on number of acres permitted.

Sandstone and Bluestone

In 2003 there were 22 mines in New York producing sandstone, including graywacke, metamorphic quartzite, conglomerate and sedimentary sandstones. Sandstone, which is widely found across the State, is cut into blocks for building, flagstone and curbing. Some sandstone is used for rip-rap and some is crushed to make concrete aggregate. Pure quartz sandstone can be used to make high-quality glass, but sandstone in New York contains too much iron and alumina for this purpose. There are no quantity or value statistics available for New York sandstone production.

Table 29 - Principal Sandstone Producers: Largest Mine Locations, 2003*

Company	County	Town
Blades Construction Products	Steuben	Bath
Callanan Industries, Inc.	Sullivan	Cohecton, Thompson
	Rensselaer	Brunswick
Cobleskill Stone Products, Inc.	Delaware	Hancock
Hanson Aggregates NY, Inc.	Orleans	Murray
Shelby Crushed Stone Products	Orleans	Shelby

New York and Pennsylvania are the only sources of bluestone, a particular type of commercial sandstone. In 2003 there were 51 bluestone mines in Regions 4, 7 and northern Region 3. The New York State Bluestone Association estimates that it is a $40-million-a-year industry. The term “bluestone” was first applied to certain “blueish” colored sandstones quarried in Ulster County in the 1800s. As the industry developed, abundant quantities of similar materials were discovered in other locations. While bluestone is a strongly cemented rock, it splits easily into thin smooth slabs. The color varies from blue-gray, blue-green, buff, steel-gray to rust. It is used mainly for decorative purposes such as stone walls, outdoor patios, building exteriors, indoor floors and swimming pool steps and borders.

Table 30 - Principal Bluestone Producers: Largest Mine Locations, 2003*

Company	County	Town
Damascus 535 Quarry & Stone	Broome	Windsor
Heldeberg Bluestone	Albany	Berne
Indian Country, Inc.	Broome	Sanford
Johnston & Rhodes Bluestone	Delaware	Hancock
Larry Shaefer	Delaware	Deposit

* Principal Producers based on number of acres permitted.

Granite

In 2003 there were 11 granite mines operating mostly in the Adirondacks. Granite is used largely for building exteriors, granite countertops, other internal decorative uses, statues and gravestone monuments. It is also used as aggregate. New York granite ranges in color from gray and green to black.

Table 31 - Principal Granite Producers: Largest Mine Locations, 2003*

Company	County	Town
Champlain Stone Ltd.	Washington	Fort Ann & Whitehall
Graymont Materials NY, Inc.	Franklin Clinton	Brandon Mooers
Hanson Aggregates NY, Inc.	Oneida	Forestport
Lake Placid Granite Co.	Essex	Jay (2 mines)
Thalle Industries, Inc.	Dutchess	Fishkill

* Principal Producers based on number of acres permitted. Includes anorthosite.

Zinc

While New York has historically been a major zinc producer, there was no production from the single zinc mine in the northwestern Adirondacks in 2003. The Pierrepont mine was permanently closed in 2001 and work at the Balmat mine was suspended awaiting a buyer. When the two mines were operating they ranked in the top ten zinc mines in the country and New York ranked third or fourth in total production. During 2000, which was the last full year of operation, the Balmat mine was the third most productive zinc mine in the country. This mine has a new owner and is expected to resume production when the price of zinc improves.

See the Appendices on page 101 for more details on mines in your area:

- **Final Reclamation of Mines in 2003**
- **Mining Permits Issued in 2003**
- **Mine Commodities, 2003**

2003 New York Mining Industry At a Glance

2,317 Active Mines

$978 Million
Estimated 2003 Production Value

Annual Regulatory Fees
$2,582,509

Major Types Of Mines, 2003

Sand & Gravel	1,948
Limestone & Dolostone	99
Bluestone	51
Sandstone	22
Granite	11
Wollastonite	4
Garnet	1
Salt	2
Talc	2
Zinc	1

Affected & Reclaimed Land

Affected Acreage	51,075
Life-of-Mine Acreage	126,674
Reclaimed, 2003	1,556
Reclaimed Since 1975	22,208

US Quantity Rank, 2003

Wollastonite	1st
Garnet	1st
Salt	3rd
Talc	4th
Cement	10th
Sand & Gravel	14th

NY Value Rank, 2003 Non-Fuel Minerals

Crushed Stone	1st
Cement	2nd
Salt	3rd
Sand & Gravel	4th
Wollastonite	5th

Owner Type, 2003

Industry	1,776
Government	541
Local Govt.	523
State Govt.	17
Federal Govt.	1

Financial Security
To Guarantee Reclamation
$93,248,713