UNDERGROUND MINES IN NEW YORK

INTRODUCTION

The following is a brief summary of currently operating and historic underground mines in New York. The purpose of compiling such a list is to indicate where underground cavities exist that are not obvious from the surface. Many of the mines listed here are developed along the lines of an underground mine as is most commonly envisioned. That is, a vertical shaft with drifts extending laterally from the shaft at various depths. However, some of the mines noted below are largely open pits with have shafts or drifts extending downward from the bottom. Others are adits driven into hillsides either alone or associated with open pit mines. This list is compiled from Luedeke, E.M., Wrucke, C.T., and Graham, J.A., 1959, *Mineral occurrences of New York State with selected references to each locality*: USGS Bull. 1072-F, pp. 385-444 and sources cited therein. Only the major geologic literature was consulted to assemble the data in this document. It is likely that there are additional small underground mines in New York that would be revealed by searching deeper into gray literature such as county gazetteers and historical society reports.

BACKGROUND

There are currently seven underground mines operating in New York. These are: USG Corp. gypsum mine at Oakfield, AKZO-Nobel Inc. salt mine at Retsof, Cargill Inc. salt mine at Portland Point, Zinc Corp. of America zinc mines at Balmat and Pierrepont, Gouverneur Talc Co. Inc. talc mine at Balmat and wollastonite mine at Lake Bonaparte. These mines vary greatly in character. Some follow mining plans that are extremely regular. Others are highly irregular in that the mine plan basically follows the ore bodies wherever they go. These operating mines vary in depth below the surface from roughly 75 feet to approximately 3000 feet. The footprints of these mines ranges from a few acres to thousands of acres. In addition to these underground openings, cavities created by solution mining of NaCl brines and cavities (in salt) created for the underground storage of natural gas also exist. Some of these cavities are very large, measured in the billions of cubic feet.

In order to understand the scope of underground mining in New York, a short description of typical mines for each commodity listed below is given here. Underground graphite mines usually extended from surface workings. The drifts 10 to 15 feet high followed the ore-bearing rock at shallow to moderately steep angles. Stopes were sometimes driven off the drifts. The workings generally did not reach more than 1000 to 1200 feet from the surface and, depending on the dip of the ore, may not have been more than a few tens of feet to a few hundred feet below the surface. All graphite mining ceased in New York by the early 1920's

Gypsum is recovered from relatively shallow (60-75') mines that vary from 2000 to 6000 feet wide and may extend five or more miles from the mine shaft. These tend to be rather regularly spaced room and pillar mines with the rooms being rather low. Depending on the thickness of the ore zone, the rooms may be only 3.5 to 4 feet in height. One company still mines crude gypsum in

New York although as recently as the mid-1970's other companies also operated mines here.

Iron mining for any of several different ore minerals ceased in New York in the middle of the '70's. Since at least four ore minerals were sought for iron over a period three centuries, the types of mines developed to extract these minerals varied considerably from one another. Hematite mines in Oneida County were shallow with low roofs and not very extensive laterally. Iron carbonate mines in Columbia County were much larger although not more than tens to a few hundred feet underground. Limonite mines in Columbia and Dutchess Counties were generally offshoots of open pit mines. These never exceeded a few hundred feet in depth. Magnetite mines in southeastern New York were deeper and more irregular. Some of these bottomed in excess of 600 feet. Magnetite mines in the Adirondacks were the most extensive iron mines in the state. These were convolute mines that followed the occurrence of the ore through the rock. Some of these mines reached 2000 feet in depth.

Lead mining for this metal itself rather than as a by- or co-product of other mining operations did not require deep mines. A few underground lead mines were attempted that were almost immediate economic failures. These mines had 10 to 20 foot diameter shafts to depths of 60 to 100 feet with short (100') drifts at one or more levels. These mines did not survive past the late 19th century.

Natural cement rock was quarried underground in New York until the mid-1960's. The mines generally began as quarries and then followed the dip of the rock underground at moderate angles. The mines were 800 to 1000 feet wide and extended underground for perhaps 1000 feet. At the maximum extent of the mine, the working level would have been up to a few hundred feet below the surface.

Pyrite mining *per se* as opposed to pyrite recovery as a by-product was carried out in a few, shallow underground mines. The shafts of these mines were likely to be inclined to follow the ore and reached only 200 to 300 feet. The strike length of the ore was generally under 1000 feet so these were not extensive mines. Pyrite mining began in the late 1800's and ceased in 1921.

Rock salt mining, rather than solution mining, was and is carried on in mines that varied in size from a few hundred to greater than 6000 acres of open underground space. Although salt occurs in layers ranging from inches to a few tens of feet, it is the thicker, cleaner salt beds that are mining targets. Two companies currently mine salt in New York. The working levels of these two mines are roughly 1100 and 2800 feet below the surface. These and older rock salt mines were relatively regular room and pillar mines with a roof height of 10 to 15 feet. In addition to the aforementioned two salt mining companies, two others recover salt solely via solution mining methods.

Underground talc mines are of irregular configuration extending to depths of 2000 to 3000 feet. One company currently mines talc in New York in this manner. The mine is located in a region of complex geology and mining proceeds following the ore body. Drifts are 10 to 20 feet wide and stopes may reach heights in greater than 100 feet.

Two small underground wollastonite mines exist in New York. One is basically a room and pillar mine following the ore underground from an open pit at a moderate angle. The other is more of a development incline which may eventually be used as a haulageway for a more extensive underground mine. In neither case does the mine extend more that 200 feet underground with open spaces underground measuring in the tens of feet in all directions.

Two underground zinc mines are operating at this time in New York. Both have very irregular mine plans due to the complexity of the geologic setting of the ore bodies. One mine is nearly 800 feet at maximum depth and the other is slightly in excess of 3000 feet deep. Drifts are 10 to 20 feet wide and high. Stopes may extend up to 100 feet high and perhaps half of that in width. Older, now defunct, zinc mines in southeastern New York were much smaller in scale. These were simple shafts and drift mines that followed veins of ore to depths of several hundred feet.

LIST OF MINES

ARSENIC

Putnam County
Pine Pond mine, north of Kent Cliffs

GRAPHITE

Essex County
Lead Hill mines, 3 miles northwest of Ticonderoga
Mines of the Crown Point Graphite Co., 2.5 miles southwest of Ironville
Split Rock prospect, 8 miles northeast of Westport

Saratoga County
Graphite Products Corporation mine, 4 miles north of Saratoga Springs

Warren County
Lakeside mine, at Hague
Rowland mine, 1 mile southwest of Johnsburg
International Graphite Co. mine, 3 miles northwest of Pottersville
American mine, at Graphite

Washington County
Hooper Brothers mine, 4 miles northwest of Whitehall
Adirondack Mining & Milling Co. mines, 4 miles west of Whitehall
Champlain Graphite Co. mine, 3.5 miles west of Whitehall

GYPSUM

Erie County
Atlas Gypsum Corp. mine, 1 mile southwest of Clarence Center
National Gypsum Co. mine, immediately west to Atlas mine, southwest of Clarence Center
Certain-teed Products Corp. mine, 1 mile northwest of Akron

Genesee County
Mine in the Tonawanda reservation, 2.5 miles southwest of Alabama Station
Mines of US Gypsum Co., 1 mile west of Oakfield
Mines of Niagara Gypsum Co., 1 mile west of US Gypsum
Mines of Oakfield Plaster Mfg. Co., 2.5 miles west of Oakfield
Mine of Phoenix Gypsum Co., at Wheatfield Station

Ontario County
Mine, east of Victor village
Mine of Federal Gypsum Co., 2 miles northwest of Victor.

IRON

Clinton County
Palmer Hill mines, 2 miles north of Ausable Forks
Arnold Hill mines, 5 miles north of Ausable Forks
Bowen & Signor mine, 1.5 miles east of Clayburg
Clayburg mine, at Clayburg
Lyon Mountain (or Chateaugay) mines, at Lyon Mountain village
Mine 81, 1 mile northeast of Standish

Columbia County
Burden mines, at Burden
Weed mine, 2.5 miles southeast of Copake

Dutchess County
Mt. Riga mine, at Mount Riga

Essex
Hammondsville mines, 4 miles west of Ironville
Skiff mine, 4 miles west of Ironville
Mineville mines, at Mineville
Gates mine, 1 mile south of New Russia
Splitrock mine, 3.5 miles southeast of Wollonsburg
Mt. Defiance mine, at Ticonderoga

Franklin County
Bannerhouse mine, 2 miles southeast of Chateaugay village

Herkimer County
Salisbury mine, 2.5 miles north of Salisbury Center

Jefferson County
Shirtliff mine, 3 miles southeast of Theresa
Dickson mine, 2.5 northeast of Antwerp
Old Sterling mine, 2 miles southwest of Sprague ville
Keene mine, at Sprague ville

Lewis County
Port Leyden mine, at Port Leyden

Oneida County
Franklin mine, at Clinton
Borst mine, at Clinton

Orange County
Warwick Group, Raymer mine, 2 miles southeast of Warwick
Forest of Dean mine, 3.5 miles southeast of Highland Falls
Bull mine, 4.5 miles northwest of Highland Falls
Tower mine, 2 miles west of Highland Falls
Weatherby and Rattlesnake mines, 5.5 miles southwest of Highland Falls
Clove mine, 1 miles south of Monroe
Scott Group of mines, 3.5 miles northwest of Tuxedo Park

Putnam County
Todd mine, 1.5 miles west of Putnam Valley
Croft mine, 2 miles north of Putnam Valley
Brewster mines, at Brewster
Tilley Foster mine, 2 miles northwest of Brewster
Mahopac mine, 7 miles west of Brewster
Croton mine, 1 mile northeast of Croton Falls
Sunk (or Stuart) mine, 4.5 miles southwest of Kent Cliffs
Canopus (or Nelson) mine, 3 miles southeast of Cold Spring

St. Lawrence County
Caledonia mine, 1.5 northeast of Sprague ville
Clifton mine, 2.5 miles south of Clarksboro

Washington County

Fort Ann mines (4), 5 miles northwest of Fort Ann

LEAD

Columbia County
Ancram mines, 2.5 miles southeast of Ancram
Mine, at Canaan

Dutchess County
Mines, at Shekomeko

St. Lawrence County
Victoria mine, 1.5 miles south of Rossie

Westchester County
Sparta mine, at Ossining

NATURAL CEMENT

Ulster County
Mine, at East Kingston
Mine, at Rondout
Mine, at Quicklocks
Mine, at Rocklocks
Mine, at Binnewater
Mine, at Lawrenceville
Mine, at Rosendale

PYRITE

Putnam county
Phillips mine, at Anthony's Nose, Phillipstown

St. Lawrence County
Caledonia mine, 1.5 miles northeast of Spragueville
Stella mine, 1.5 miles northeast of Herman

SALT

Genesse County
Mine, 2.5 miles south of Leroy
Wells, at Leroy
Wells, at Pavilion

Livingston County
Mine and well, at Cuylerville
AKZO-Nobel Inc. mine, at Retsof
Mine, at Greigsville
Mine and wells, south of Livonia
Wells, at Mt. Morris
Wells, at Piffard
Wells, at York
Wells, at Lakeville
Well, Lackawanna, between Moscow and Mt. Morris

Onondaga County
Wells, at Tully

Schuyler County
Wells, at Watkins Glen
Wells, at Salt Point

Tompkins County
Wells, at Meyers
Wells, at Ludlowville
Wells, at Ithaca
Cargill Inc. mine, at Portland Point
Well, 2.5 miles north of Ithaca

Wyoming County
Wells, 1 mile south of Wyoming
Wells, at Warsaw
Wells, at Rock Glen, 3 miles south of Warsaw
Wells, at Silver Spring
Wells, at Castile
Wells, at Bliss
Wells, at Gainsville
Wells, at Pearl Creek
Wells, at Saltvale, between Wyoming and Warsaw
Wells, at Perry
Well, 2 miles south of Warsaw

TALC

Lewis County
Mine (Carbola Chemical Co.), 1.5 miles northeast of Natural Bridge

St. Lawrence County
Newton Hill mine, northeast of Talcville
International Talc Co. #3,4 and 5 mines, northeast of Talcville
Reynolds Talc Co. mine, northeast of Talcville
Uniform Fibrous Talc Co. mine (Wintergreen mine), at and southwest of Talcville
United States mine, at and southwest of Talcville
International Talc Co. #2 1/2 mine, at and southwest of Talcville
Loomis #1 mine (Woodcock mine), east of Sylvia Lake
Gouverneur Talc Co. mine, east of Sylvia Lake
Dominion Co. mine, east of Sylvia Lake
Arnold mine, southeast of Fowler
Wight mine, southeast of Fowler
Johnson mine, southeast of Fowler

WOLLASTONITE

Essex County
NYCO, Inc. mine, 2 miles southwest of Willsboro

Jefferson County
Gouverneur Talc Co., Valentine mine, 4 miles west of Harrisville

ZINC

Orange County
Guymard mine, 3.5 miles southwest of Otisville

St. Lawrence County
Hyatt mine, 0.5 miles southwest of Talcville
Edwards mine, at Edwards
Zinc Corporation of America, Inc. #2, 3 and 4 mines, at Balmat
Zinc Corporation of America, Inc. mine, at Pierrepont

Sullivan County
Shawangunk (or Summitville) mine, at Summitville

Ulster County
Ellenville mines, at Ellenville
Spring Glen mine, at Ellenville

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