

MINED LAND RECLAMATION PROGRAM

2003 Highlights

Demand for minerals in New York remained robust in 2003. Mineral products are essential for road and building construction and maintenance, as well as many other essentials of modern life. In spite of these facts, the siting of new mines across the State remains highly controversial. Out of the 589 mining permits that the Department issued in 2003, only 51 were for new mines.

Mined land reclamation bond cancellations increased 50% in 2003. Fewer entities are underwriting these bonds and it is getting increasingly difficult and expensive for mine operators to obtain financial security. Mining companies nationwide have been facing the same types of financial security problems and the Interstate Mining Compact Commission has established a working group to search for a solution to this important problem.

In 2003 the Division also saw an increasing number of requests for construction and agricultural exemptions from mining permit requirements. This trend is growing due to a variety of factors, such as: local government enactment of zoning regulations that prohibit mining, public opposition to most new mining proposals, and the time and expense necessary to obtain a mining permit through normal procedures. The Department thoroughly reviews each permit exemption request.

In 2003 the Department issued a mining permit to Cargill Salt for expansion and continued operation of its underground salt mine in Lansing, Tompkins County. The permit authorizes continued activity on 13,417 acres, principally beneath Cayuga Lake. The processing equipment is located underground, but all salt storage facilities are on the surface. This mine is the deepest underground salt mine in the western hemisphere.



Panoramic camera shots are very effective in documenting inspections of large facilities like mine sites. These before and after pictures of the Stony Ford Farm Mine in the Town of Walkill, Orange County document final reclamation at the 40-acre sand and gravel mine.

The upgraded permit conditions meet the highest regulatory standards achievable under State statutes and make the requirements for Cargill's Cayuga Mine comparable to those placed on the American Rock Salt mine in Genesee County. Under an Office of General Services lease, Cargill will pay the State a royalty on rock salt extracted from the State lands beneath the lake.

During 2003 the Department transferred all permits for the Balmat Mine in St. Lawrence County from the bankrupt Zinc Corporation of America (ZCA) to the new owner, St. Lawrence Zinc from Canada. The new company plans to reopen the mine when zinc prices reach sufficient levels; the company expects to employ roughly 165 people. The Balmat Mine has enough ore for at least 10 more years of production and recent gravity research indicates that there may also be another body of ore at the mine. When ZCA was operating, New York was one of the major producers of zinc in the country.

In 2003 Mined Land staff conducted an informational meeting in Delaware County on the new provisions that allow bluestone miners to explore for deposits without going through the full permit process. Mining staff worked with the officers of the New York State Bluestone Association to reach agreement on the required guidance, forms and procedures. To assist staff in reviewing proposals, the Division also developed maps of bluestone areas showing archeologically sensitive areas and other features.

AKZO Salt Co. submitted a written proposal to construct a brine recovery system at their former salt mine in the Town of Leicester, Livingston County. The roof rock over part of the salt mine collapsed on March 12, 1994, and water from overlying aquifers began to flow into the mine. Efforts to save the mine were abandoned by the end of 1994, and the mine was completely flooded in 1996. Department staff along with members of the Attorney General's Office, USGS, and the Livingston County Health Department met to discuss AKZO's proposal to pump brine from the collapse area and transform it into salt products and potable water for Livingston County residents. AKZO'S plan is to

lower the elevation of the brine in the collapse zone to keep it out of fractures that penetrate overlying freshwater aquifers. Initially AKZO would install pumping and monitoring wells. If the well tests are favorable, AKZO would then design a desalination and water treatment plant.

Controversy over hours of operation at several large sand and gravel mines in Suffolk County, Long Island became more of an issue in 2003. The mines have historically started to load trucks with sand at 4:00 a.m., but have waited until 7:00 a.m. for noisier activities like loading gravel or running mining equipment.

Even though the mines voluntarily changed their sand loading time to 5:00 a.m., local governments still want the Department to require later truck loading and travel hours. However, the mine operators maintain that an early starting time is crucial so customers can get their large trucks onto and off the Long Island Expressway before rush hour traffic starts. Department efforts to help the towns and mine operators negotiate a solution were unsuccessful.

Finally, the Department collected its largest mining-related fine ever, \$375,000, from East Coast Mines in Suffolk County for illegally removing over 1 million cubic yards of material.



The roadrunner and wheelbarrow on a Cortlandville Sand & Gravel truck exemplify the need for timely delivery of construction materials.

MINE CHARACTERISTICS OVERVIEW

In 2003 there were 2,317 active DEC-regulated mines in New York State, a drop of 100 mines from the previous year (see Table 15). As explained in the box at the right, New York also has many unregulated mines (active and abandoned) that fall outside the jurisdiction of the Mined Land Reclamation Law; most of these are small mines. DEC has no statistics on unregulated mines and they are not included in this report. However, page 53 provides information on a joint project with the New York State Geological Survey to inventory old abandoned underground mines. Most of these old underground mines predate Department regulation.



Statistics in this report refer solely to mines that need a permit under the Mined Land Reclamation Law.

- ◆ More than 1,000 tons or 750 cubic yards of minerals in 12 consecutive months.
- ◆ More than 100 cubic yards of minerals in or adjacent to any body of water not classified as “protected” by Article 15 of the ECL.

Lands affected by mining before 1975 and not re-affected by later mining are not subject to the Mined Land Reclamation Law.

Mine Type

The vast majority of New York’s mines produce sand and gravel or other surficial deposits such as glacial till, clay and topsoil. However, the State does have roughly 250 hardrock mines that produce materials ranging from limestone, shale and salt, to more specialized products such as wollastonite and talc. Most of the State’s hardrock mines are surface quarries, but New York also has a few active underground mines. For more details on New York State’s mining commodities see pages 55-64.

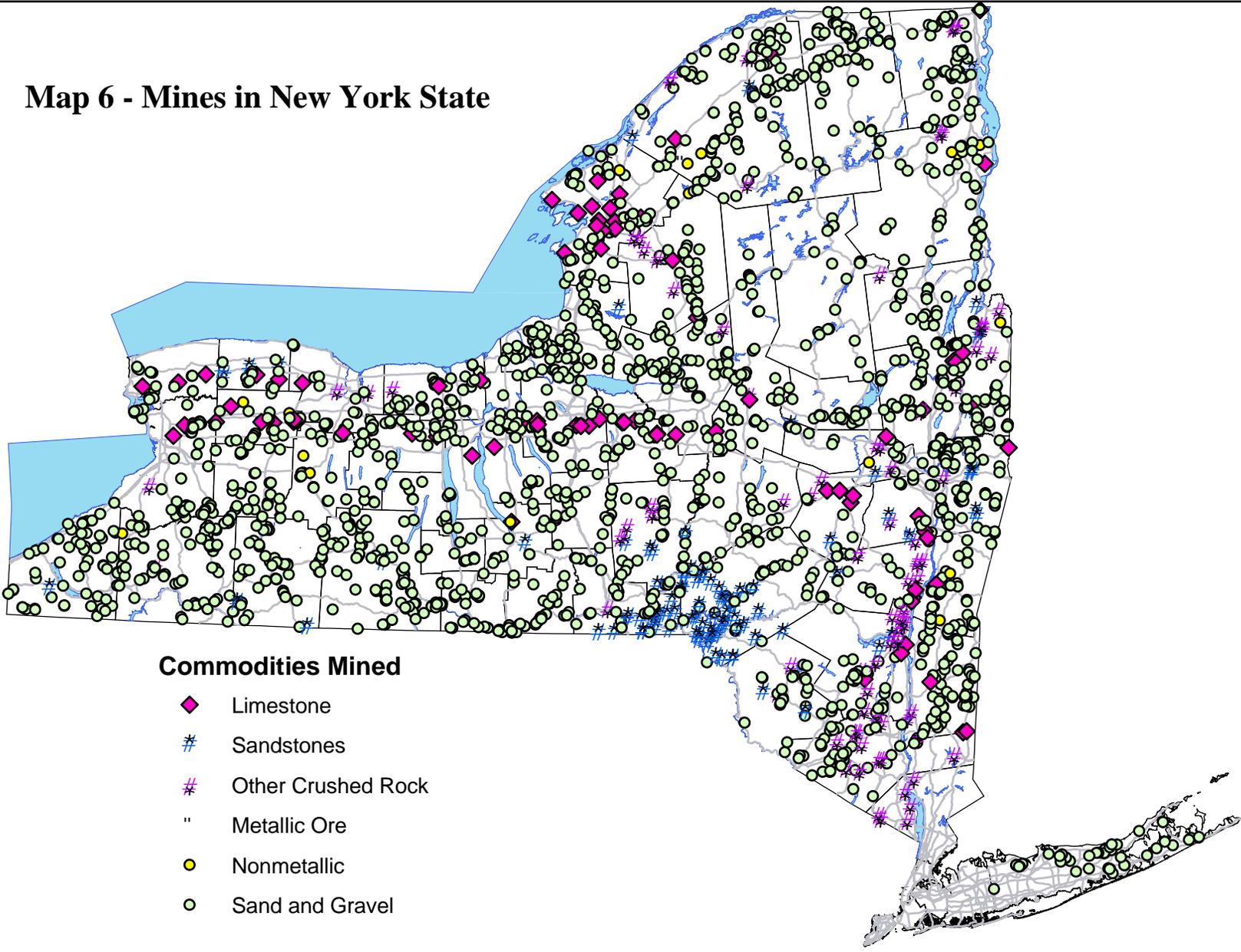
Owner Type

Industry operators own roughly three-fourths of the mines in the State, with roughly a 1 percent increase per year as shown in Table 15 below. Most of the government mines belong to town and county highway departments that need sand and gravel for road maintenance purposes. In addition, government agencies at all levels purchase a significant percentage of the State’s output of sand, gravel and other aggregates to maintain public roads.

Table 15 - Ownership of New York Mines, 2000-2003

	<u>2000</u>	<u>%</u>	<u>2001</u>	<u>%</u>	<u>2002</u>	<u>%</u>	<u>2003</u>	<u>%</u>
Industry	1,837	74%	1,849	75%	1,832	76%	1,776	77%
Town	542	22%	523	21%	503	21%	466	20%
County	78	3%	68	3%	64	3%	57	2%
State	18	1%	18	1%	17	1%	17	1%
Federal	-	-	1	-	1	-	1	-
Total	2,475	100%	2,459	100%	2,417	100%	2,317	100%

Map 6 - Mines in New York State



Geographic Distribution of Mines

Map 6 on page 44 shows that mines can be found everywhere in the State except the New York City area. However, the map does not convey the relatively small percentage of the State's land surface devoted to mining.

In 2003 there were active mines in 56 of New York's 62 counties. Comparison of the affected acreage covered under a mining permit with county land area shows that in 48 of the 56 counties, mining activity occupied less than 0.3 percent of the land area.

There were eight counties with 0.38 to 0.44 percent of their land affected by a mining permit. While this is still a very negligible amount, it's noteworthy that all eight counties are near major population centers that require large supplies of mineral resources for road and building construction and maintenance.

Mine Acreage Statistics

Affected Acreage - In 2003 the total affected land that mine operators were authorized to extract minerals from under their current permits was 48,533 acres.

Life-of-Mine Acreage - Operators must indicate the total area that they expect to mine under past, current and future permits for a site. In 2003 this total life-of-mine area, which includes past reclaimed acreage, was 126,674 acres.

Reclaimed Acres - In 2003 Mined Land staff approved final reclamation of 958 acres at 128 closed mines and concurrent reclamation of 598 acres at operating mines. Since 1975 a total of 22,208 acres of mined land has been reclaimed.

Net Affected Acreage - Net affected acreage is the total affected acreage ever covered under a mined land permit minus the reclaimed acreage.

Table 16 - Counties with Highest Net Affected Acreage Under Mining Permit*				
County	Population Center Nearby	Active Mines	Net Affected Acreage	Percent County Land Area
Albany	Capital Tri-City	20	1,278	0.38%
Dutchess	NY City & Long Island	65	2,061	0.39%
Genesee	Buffalo, Rochester & Thruway Corridor	28	1,282	0.40%
Livingston	Rochester	26	1,792	0.44%
Onondaga	Syracuse	46	2,081	0.40%
Ontario	Rochester	47	1,538	0.36%
Rensselaer	Tri-City	56	1,559	0.37%
Rockland	NY City & Long Island	5	555	0.44%

* Prepared using acreage in the Mining Commodities Appendix new this year. This appendix contains 2005 data and excludes acreage listed under multi-county, multi-region and statewide categories. Future versions of appendix will match year of annual report.

Trends in Mine Size

Table 17 below gives 2000-2003 size range information for all active mines based on their affected acreage. The table clearly shows that the number of large mines has been increasing over time while the number of small mines has been decreasing.

The renewal permits that staff issued in 2003 were for mines ranging in size from 1 to 759 acres. In 2003 there were 37 mine renewals over

100 acres in size compared to just 12 that large in 2002. Permits for new mines ranged in size from 1 to 40 acres in 2002 and just 1 to 30 acres in 2003. The average size of new mines dropped from 7.42 acres in 2002 to 6.2 acres in 2003.

**2003 Annual Fees
for Permits
\$2,582,509**

Table 17 - Affected Acreage of Existing Mines, 2000-2003				
	2000	2001	2002	2003
Minor projects*	85	87	82	80
0-5 acres	901	852	814	751
6-10 acres	603	605	584	549
11-20 acres	436	441	449	446
21-30 acres	155	166	178	172
>30 acres	295	308	310	319
Total Mines	2,475	2,459	2,417	2,317



Mine operators are dependent on naturally occurring deposits that must be located, proved economic, financed, permitted and bonded before production starts. There are also costs for overburden removal, blasting and on-site processing equipment, such as the crushers required to produce this limestone aggregate.

MINED LAND RECLAMATION PERMITS

Permits Issued 2003

Mined Land Reclamation permits are issued for a set term of five years or less and must be renewed. In 2003 staff issued 51 new mine permits and 538 renewals or modification permits, for a total of 589. These 2003 figures show the continuing trend of fewer applications for new mines and increased interest in expanding the existing ones (see Table 18). This trend is attributed to escalating opposition to new mines as residential development moves into rural areas.

A renewal permit may simply authorize continued operation of the mine or it may allow modifications such as expansion of the life-of mine area, mining deeper, or addition of processing equipment. Permit modifications always involve extra review and frequently require environmental impact statements and public hearings.



While mines sometimes receive community support for the essential materials they provide, public opposition to mines, like this “Stop the Mine” sign is a much more common reaction.

Table 18 - Permits 2000 to 2003

	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>
New Permits	71	71	56	51
Renewals & Modifications	290	307	367	538
Total Permits	361	378	423	589

The Division of Mineral Resources encourages communities to:

- learn about mineral resources within their boundaries, and
- use land-use planning tools to prevent future conflicts with mining activities.



This class for Cornell University Landscape Architecture Students was jointly sponsored by Cornell and the Tioga County Soil and Water Conservation District to familiarize the students with rural land-use planning issues. Mined Land staff assisted with the course and critiqued mining and reclamation plans prepared by the students. Mined Land staff across the State are available to meet with town officials to discuss mining issues in their community.

Geographic Distribution of Permit Activity

Table 19 shows the ten largest permit renewals for 2003 based on affected acreage. Hardrock quarries make up only 16% of New York mines, but six of the ten largest renewal permits (60%) were hardrock. This table also illustrates the trend toward industry consolidation. Both Hanson Aggregates and Lafarge North American are nationwide mining companies; they own five of the ten mines listed.

Table 20 compares the top five counties for mining permits (all types) for 2002 and 2003. Note that both St. Lawrence and Cattaraugus Counties are listed for both years. However, the vast majority of permits involved were for mines under 20 acres.

Table 21 shows the top ten counties with the

most new mining permits issued in 2002 and 2003. Note that five of the counties are listed under both years: Clinton, Delaware, Oswego, Rensselaer and Suffolk.



Hydraulic shovel loading dumptruck with rubbleized stone after a blast.

**Table 19
Permit Renewals Ten Largest Mines - 2003**

<u>County</u>	<u>Company</u>	<u>Mine Name</u>	<u>Mine Type</u>	<u>Acres*</u>
Albany	Lafarge N. American Cement	Ravena Quarry	Limestone	759
Oswego	Hanson Aggregates NY	Lacona-North	Sand & Gravel	408
Greene	St. Lawrence Cement	Catskill Quarry	Limestone	318
Columbia	St. Lawrence Cement	Hudson Quarry	Limestone	281
Onondaga	Hanson Aggregates NY	Skaneateles Quarry	Limestone	270
Oneida	Hanson Aggregates NY	Oriskany Falls Quarry	Limestone	264
Genesee	Frey Concrete	Frey Sand and Gravel	Sand & Gravel	260
Ontario	Hanson Aggregates NY	Phelps Mine	Sand & Gravel	238
Niagara	Redland Quarries NY	Lockport Quarry	Limestone	225
Cattaraugus	Country Side Sand and Gravel	Country Side Site	Sand and Gravel	220

* Based on total affected acreage (includes reclaimed acres).

Table 20
All Mining Permits - Top Five* Counties, 2002-2003

<u>2002</u>				<u>2003</u>			
County	Total Permits	Renewal Permits	New Permits	County	Total Permits	Renewal Permits	New Permits
Cattaraugus	29	27	2	St. Lawrence	30	27	3
St. Lawrence	23	21	2	Oswego	26	22	4
Rensselaer	20	17	3	Chautauqua	20	18	2
Franklin	19	17	2	Cattaraugus	18	17	1
Erie	18	18	0	Steuben	18	18	0

* Ranked by total number of permits. Second permit not counted in the 12 cases statewide where more than one permit issued to a single mine in 2003 (typically a modification permit followed by a renewal permit).

Table 21
New Mining Permits - Top Ten* Counties, 2002-2003

<u>2002</u>			<u>2003</u>		
County	Permits	Total Acres	County	Permits	Total Acres
Delaware	5	25	Delaware	5	14
Wayne	5	23	Oswego	4	31
Rensselaer	3	63	Suffolk	3	36
Washington	3	14	Otsego	3	27
Oneida	3	10	St. Lawrence	3	13
Oswego	2	62	Broome	3	13
Saratoga	2	24	Clinton	2	13
Niagara	2	22	Rensselaer	2	11
Clinton	2	16	Chemung	2	10
Suffolk	1	17	Albany	1	30

* Ranked first by number of permits then by acreage. County omitted if 2003 new mine permits total under 10 acres

MINE RECLAMATION AND BONDS

Mine Reclamation

Final uses of mined land can vary considerably depending on location, size and depth of the site, surrounding land uses and local zoning. Farmland and pasture are two of the most common reclamation objectives in New York State, but mined land is also reclaimed to residential, forestry, wildlife, recreational, commercial and industrial uses.



Before



After

Reclamation takes two forms based on timing of the work - concurrent or final. Concurrent reclamation is reclamation of an affected or mined-out area while resources are still being extracted from other parts of the mine site.

Although concurrent reclamation is not required, the Mined Land Reclamation Law states that it should be done where possible. The Division of Mineral Resources strongly promotes concurrent reclamation, particularly for mines over ten acres.

Concurrent reclamation is almost always economically feasible and has a number of advantages. Chief among these are the reduced potential for negative environmental impacts (dust, erosion, sedimentation) and the improved standing of the mine in the eyes of the surrounding community.



Concurrent reclamation in foreground while mining continues in background. Concurrent reclamation requirements are negotiated during permitting.

Affected & Reclaimed Land

Affected Acreage	51,075
Life-of-Mine Acreage	126,674
Reclaimed, Final 2003	958
Concurrent 2003	598
Reclaimed Since 1975	22,208



Reclaimed Wetland

Financial Security

At the end of 2003, the Division held \$93,248,713 in financial security that mine operators posted to guarantee the reclamation of mined land. This was an increase of \$5.9 million from 2002.

Financial Security
\$93,248,713

Mined land reclamation bond cancellations increased 50% in 2003. Fewer entities are underwriting these bonds and it is getting increasingly difficult and expensive for mine operators to obtain financial security. Mining companies nationwide have been facing the same types of financial security problems and the Interstate Mining Compact Commission has established a working group to search for a solution. In the meantime, companies that formerly supplied financial security to mine operators continue to leave the market. For example, DEC noted a 59% increase in bond cancellations in May 2003 when Kemper Insurance Company decided to stop offering bonds to mine operators.

Normally when an operator fails to reclaim a mine, the surety company forfeits the financial security and the Department uses it to reclaim the land. Sureties also have the option of paying directly for the reclamation. However, actual reclamation costs can easily exceed the posted bond amount. The Department is studying the adequacy of current mine reclamation bonds.

2003 Mine Inspections

Site Visits - 2,226
Staff Travel - 190,306 Miles

Mined Land staff inspect mine sites: 1) during permit application review, 2) during the operating phase for compliance with Department requirements, and 3) when land is reclaimed. They also investigate complaints against mining operations though many of these turn out to be against mines outside the scope of the Mined Land Reclamation Law.

2003 Mined Land Reclamation Award



Southern Tier Stone Products in the City of Binghamton, Broome County was selected as the winner of the 2003 New York State Mined Land Reclamation Award for their voluntary reclamation of a mine. The prestigious award reflects the company's dedication to high standards of environmental protection through efficient mining and reclamation practices.

The company choose to reclaim the site even though it was not required. The reclamation eliminated an eyesore and created a beautiful open meadow and visual buffer for visitors at the nearby State Park campground.

Mining at the site pre-dated the enactment of the NYS Mined Land Reclamation Law in 1975. Until the mine was taken over by Southern Tier Stone, it was a long-term regulatory problem for both DEC and the Town of Fenton.

ABANDONED MINE ISSUES

Many mines that were operating in the 19th and 20th centuries have long been abandoned with few records available. In 2003 DEC and the New York State Geological Survey (NYSGS) received a \$20,000 joint grant from the U.S. Mine Safety and Health Administration (MHA) to inventory underground mines. The funds were provided under a federal program started in response to the 2002 Quecreek disaster (Pennsylvania). The disaster occurred when miners breached the wall of a flooded un-mapped abandoned mine.

DEC and the NYSGS have been inventorying and recording georeference information for the surface entrances to roughly 150 major underground abandoned mines throughout the State. The amount of money awarded was less than the \$77,000 originally requested. If additional funding is found, the two agencies will digitize all available mine maps and provide the information in a web-based format.

As an example of the types of problems associated with abandoned mines, in 2003 Mined Land staff attended a field trip sponsored by DEC's Bureau of Public Land Services to former mine sites in Ninham State Park, Putnam County. Mined Land staff were asked to provide input regarding the occurrence of arsenic at former mines on the property and the potential groundwater impacts if proposed logging activity was approved. While the mines were started in search of other materials, there was also limited production of arsenic which ended around 1907.

On December 21, 2003, U.S. Gypsum (USG) notified DEC that a surface subsidence feature had been found over 1,000 feet north of the company's abandoned underground gypsum mine in the Town of Oakfield, Genesee County. The five-foot wide by three-foot deep feature was originally reported to the Genesee County Sheriff's Department and USG on December 16. Based on the distance from the boundary of USG's mine and the mine's depth, it is highly

unlikely that the subsidence problem was associated with USG's mine. However, there were other mines in the area that were abandoned in the late 1800s and early 1900s that were never subject to Department jurisdiction and there is no specific information on their location. Despite the lack of connection to USG, the company repaired the depression. While this subsidence was relatively minor, there have been subsidence incidents at old abandoned mines in previous years that were much more serious.

DEC also has initiatives to deal with more recently abandoned mines. DEC seizes financial security and arranges for reclamation of mines when an operator does not comply with the reclamation requirements in their permit. In 2003 DEC staff started preparation for reclamation of an abandoned mine known as the Whippo Site in the Town of Poland, Chautauqua County. Approximately 5 acres of mined land had been left unreclaimed and DEC seized the bond.

In Region 7 Mined Land staff have been engaged in a multi-year pilot project aimed at bringing abandoned mines into compliance. One hundred and six mines with expired permits were targeted for inspections, legal correspondence and consent orders. When the pilot project is completed and the results evaluated, it will serve as a model for statewide efforts.



Abandoned Whippo Mine in Cattaraugus County.