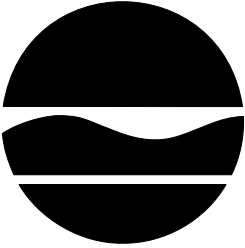

New York State



**Department of Environmental Conservation
Division of Mineral Resources**

New York State Oil, Gas and Mineral Resources 2004

Annual Report

New York State Department of Environmental Conservation

George E. Pataki, Governor

Denise M. Sheehan, Commissioner

Division Mission Statement

The Division of Mineral Resources is responsible for ensuring the environmentally sound, economic development of New York's non-renewable energy and mineral resources for the benefit of current and future generations.

This report was produced by the
NYS Department of Environmental Conservation

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Bradley J. Field, Director

New York State Oil, Gas and Mineral Resources 2004

State of New York
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EXECUTIVE SUMMARY

Mining occurs in every region of the State except the New York City area. Oil and gas development has historically occurred in the western half of the State, but the Finger Lakes region has been experiencing heavy activity for several years. Due to differences in legal reporting requirements, the types of statistics presented for the two programs are not identical. All information is for the year 2004.

Oil, Gas and Solution Mining

Inspections - Staff traveled 114,317 miles and performed 2,491 oil and gas inspections.

Permits and Completions

Gas:	Permits	133	Completions	70
Oil:	Permits	52	Completions	56
Other:	Permits	25	Completions	62
Total:	Permits	210	Completions	188

Wells Reported (All Types) 2004 - 13,591

Wells To Date (All Types) - 75,000, majority pre-regulation (most plugging status unknown).

Production & Market Value

Gas	46.9 bcf	\$Up	58%
Oil	184,065 bbl	\$Up	41%
Total O&G Mkt Value	\$334 million		

State Leasing - 96 leases were in effect covering 77,500 acres and 182 productive wells.

Revenues from Oil and Gas

State Revenues	\$1.3 million
Local Govt. Taxes (est.)	\$10.0 million
Landowner Royalties (est.)	\$41.8 million

Underground Natural Gas Storage - 23 facilities were 78% full at year-end.

Total Storage Capacity	209 bcf
Working Gas Capacity	105 bcf
Max. Daily Deliverability	1.927 bcf/day

Solution Mining - 5 facilities produced 2.23 billion gallons of brine equal to 2.65 million metric tons of salt.

Financial Security - In 2004 New York held \$12.9 million to guarantee well plugging and site reclamation.

Mined Land Reclamation

Inspections - Staff traveled 190,306 miles to perform 2,226 mine inspections.

Permits Issued

Total Permits	475	Fees Annual
New Permits	55	Regulatory
Renewal & Mod.	420	\$2.8 Million

Active Mines 2,272

Estimated Market Value \$1 Billion

US Production Rank by Quantity

Wollastonite	1st	Salt	3rd
Garnet	1st	Talc	4th

NY Rank by Value

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

Common Mine Types

Sand & Gravel	1,948
Limestone & Dolostone	98
Bluestone	54

Owner Type

Industry	1,761
County	57
Town	438

Net Affected Acreage 47,099

Life-of-Mine Acreage 110,482

Reclaimed Acreage, 2004 1,243

Reclaimed Since 1975 23,300

Financial Security - In 2004 New York required \$99.1 million to guarantee mine site reclamation.

DIVISION OF MINERAL RESOURCES PROGRAM HIGHLIGHTS

New York State gas production in 2004 was 46.9 billion cubic feet (bcf), an all-time record. The Trenton-Black River's contribution to the State's total production continued to climb and hit roughly 75% (35.9 bcf) in 2004.

Six new Trenton-Black River gas fields started production in 2004: Riverside and McNutt Run in Steuben County; Seeley Creek and Laurel Run in Chemung County; and Sexton Hollow and Meads Creek in Schuyler County.

Activity in other formations also showed promising signs. Discoveries in the Oneida-Oswego and Theresa sandstones demonstrated that New York has additional exploration targets with potentially significant reserves. Companies seeking new opportunities are taking notice that New York's "deep" formations are underexplored and deserve a closer look. More advanced exploration techniques used elsewhere in the country are no longer the exception here, but are routinely employed by many companies. For more details on the Trenton-Black River and other formations, please see pages 13 to 21.

In 2004 the price of oil reached levels not seen since the early 1980s and oil drilling picked up in the State's southern tier. Overall, New York's drilling permits hit a 12-year high in 2004. For the first time in recent memory, drilling rig availability has become a significant concern for New York's oil and gas operators.

By year-end 2004 a total of 15 deep wells had been drilled on or adjacent to New York State land. In 2004 the State collected \$525,000 in royalties on 8 Trenton-Black River wells. Steuben County has the most State acreage under lease due to the high level of drilling activity associated with the Trenton-Black River.

Issues surrounding well spacing and integration intensified significantly in 2004. In late January

DEC issued two Declaratory Rulings (#23-13, #23-14) in response to petitions filed by Western Land Services (WLS).

In 2004 there were 2,272 active DEC-regulated mines in New York State, a drop of 45 mines from 2003 and the sixth straight year of decline. The decrease is especially noticeable in the Long Island and lower Hudson Valley regions.

Nevertheless, statewide production of New York's major mined commodities remains relatively level from year-to-year. Increasingly, mine operators are choosing to replace production by expanding current mines rather than opening new ones. This trend holds true for both sand and gravel and hardrock quarries. Out of the 475 mining permits issued in 2004, only 55 were for new facilities.

A total of 47,099 acres were affected by mining in 2004 out of a total life-of-mine approved acreage of 110,482 acres. The Department continued to have success promoting concurrent reclamation with 479 acres reclaimed concurrently at 72 operating mines. Final reclamation of 764 acres occurred at 102 closed mines bringing the year's reclamation total to 1,243 acres. Approximately 23,300 acres of land affected by mining have been reclaimed since 1975.

The level of bluestone activity continued to increase in 2004. Record values for this paving and facing stone spurred new investment and increased production. In 2004 New York also rose to first place nationwide in garnet production.

In 2004 the Division held over \$99 million in financial security to guarantee reclamation of mines. However, recent experience at Department-reclaimed mines shows that many bonds are insufficient to cover costs. In 2004 the Division began an evaluation of bonding amounts statewide.

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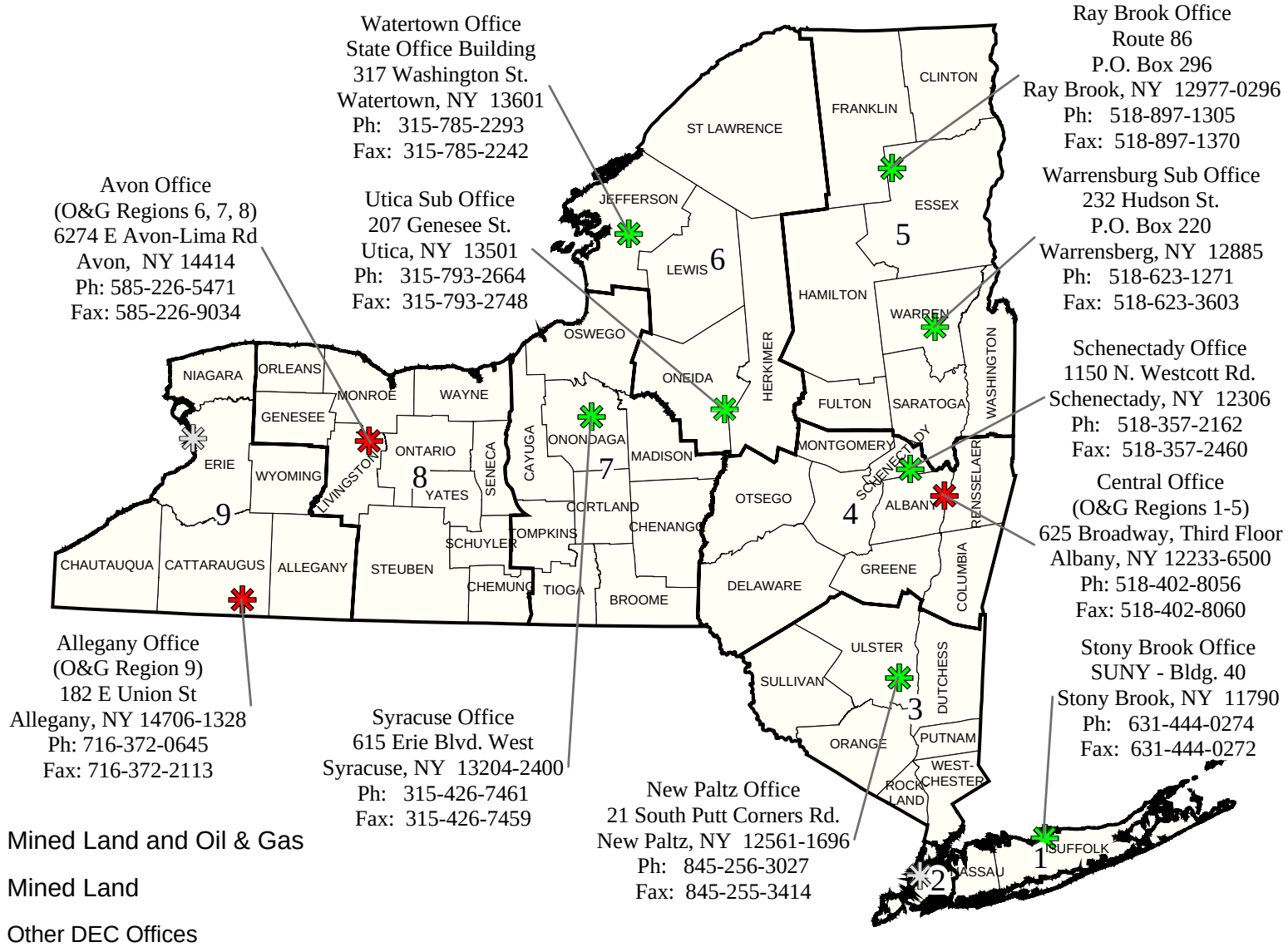
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Map 1 - Division of Mineral Resources Regional Service Areas



2004 New York Oil & Gas Industry At a Glance

Production and Market Value

Gas	46.9 bcf	\$Up 58%
Oil	184,065 bbl	\$Up 41%
Total Market Value	\$334 Million	

Revenues In Millions

State Leasing	\$766,000
Local Govt (est.)	\$10.0 million
Landowner Royalties (est.)	\$41.8 million

Financial Security

Plugging & Reclamation
\$12,902,799

State Leasing

96 leases covered 77,500 acres and 182 productive wells in 9 Counties.

All Reported Wells 13,591

Active Wells

Natural Gas	6,076
Oil	3,153
Gas Storage	908
Solution Salt	113

Underground Gas Storage

23 facilities, 78% full at year-end
Total Storage Capacity 209 bcf
Working Gas Capacity 105 bcf
Max. Deliverability 1.927 bcf/day

Solution Mining

5 facilities produced 2.23 billion gallons of brine (2.65 million metric tons salt.)

Natural Gas & Oil Abbreviations



Abbreviations for natural gas volume measurements:

mcf thousand cubic feet
mmcf million cubic feet
bcf billion cubic feet

Crude oil is also measured by volume. One barrel equals 42 gallons.



bbl barrel

What's an MCF Do ?

Roughly 4.2 million households in New York use natural gas for home heat, cooking and heating water. It takes just 69 mcf per year to heat the average New York home¹. The State's 2004 production of 46.9 bcf was enough to heat 680,000 homes.



¹ New York State data from US DOE/EIA 2001

MARKET VALUE AND ECONOMIC BENEFITS

Market Value

Due to both higher production and higher prices, the total market value of New York's oil and gas production increased by roughly 58% from \$212 million in 2003 to over \$334 million in 2004. Likewise the market value of natural gas rose 58% between 2003 and 2004 to \$327.7 million. While oil is a much smaller contributor to the total, it nonetheless rose an impressive 41% from 2003 to \$6.5 million in 2004.

Tax Revenues to Local Governments

Communities in oil and gas producing areas also benefit from the industry's activity. DEC estimates that real property taxes on 2004 natural gas and oil production were roughly \$10 million (gas \$9.83 million and oil \$194,000). Local governments assess their taxes each year based on a unit of production value determined by the NY State Division of Equalization and Assessment using a five-year average. This dampens the impact of fluctuating oil and gas prices.

State Lease Oil and Gas Prices

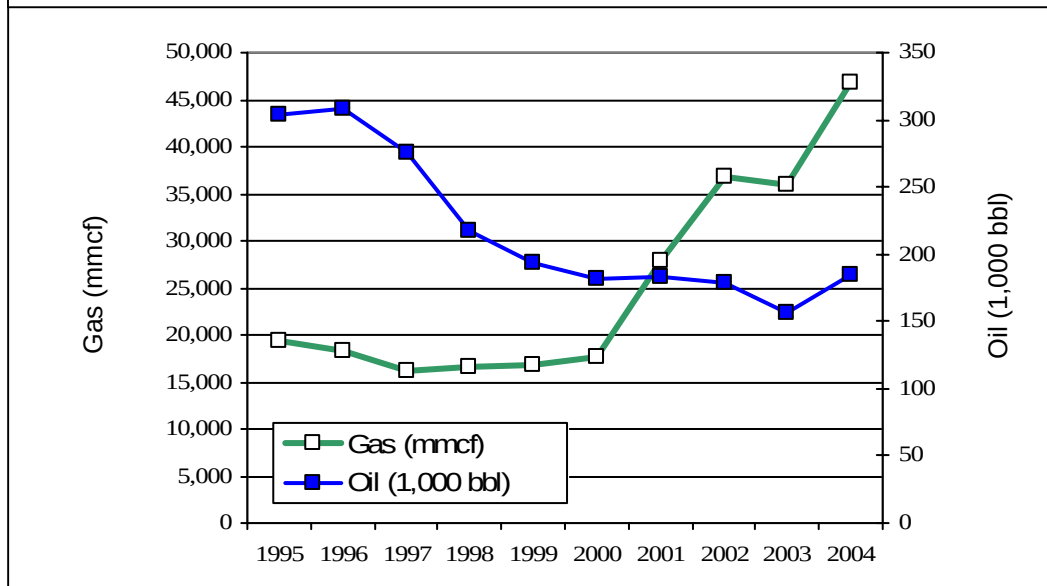
The average wellhead natural gas price of \$6.98 per mcf in 2004 was up 21% from the \$5.78 price of 2003. The average price of oil in 2004 of \$35.27 per bbl was up 20% from \$29.47 in 2003. These average prices were obtained from royalty payments made to the State for leases on State lands.

Landowner Royalties and Landowner Wells

The majority of landowners with producing oil and gas leases receive a royalty from the well operator. Based on an average royalty of one-eighth of the production value, it is estimated that landowners in New York received roughly \$41.8 million in royalties in 2004.

In addition, roughly 450 of New York's gas well operators are landowners with just one or two wells. Typically the wells are no longer commercially productive, but produce enough gas to help reduce their home heating costs.

Chart 1 - New York State Oil and Gas Production, 1995 - 2004



PRODUCTION OF OIL & GAS

Natural Gas Production

New York's reported natural gas production for 2004 was 46.9 bcf, an increase of 30% from 2003. Over 35.9 bcf of gas came from just 64 producing Trenton-Black River wells with one well producing over 6.5 bcf.

Oil Production

In 2004 New York's production of oil increased roughly 17% to 184,065 bbl from 157,313 bbl in 2003.

Top Counties and Companies

In 2004 Steuben County retook the lead when it more than doubled its natural gas production from 2003. In fact, Steuben County alone accounted for 47% of New York's 2004 production. Former leader Chemung County dropped back to second place with a slight production decrease. Chautauqua County continued in third place (see Table 1).

Fortuna Energy and Richardson Petroleum remained the top natural gas and oil producing companies respectively (see Table 2).

For Further Details

Map 2 on page 12 and the Appendix on page 73 give production information by town. Chart 2 on page 13 shows the State's oil and gas production for the past five years. Table 7 on page 21 gives production by geologic formation.

Table 1 - Top Ten Gas Counties, 2004

County	Gas (mcf)	Active Gas Wells	Average mcf/Well
Steuben	21,913,148	49	447,207
Chemung	12,538,992	29	432,379
Chautauqua	5,598,788	3,124	1,792
Schuyler	1,226,457	4	306,614
Erie	1,163,548	880	1,322
Cattaraugus	983,938	521	1,888
Cayuga	812,137	303	2,680
Genesee	745,477	494	1,509
Seneca	637,455	156	4,086
Wyoming	323,378	260	1,244

Table 2 - Top Ten Gas and Oil Producing Companies, 2004

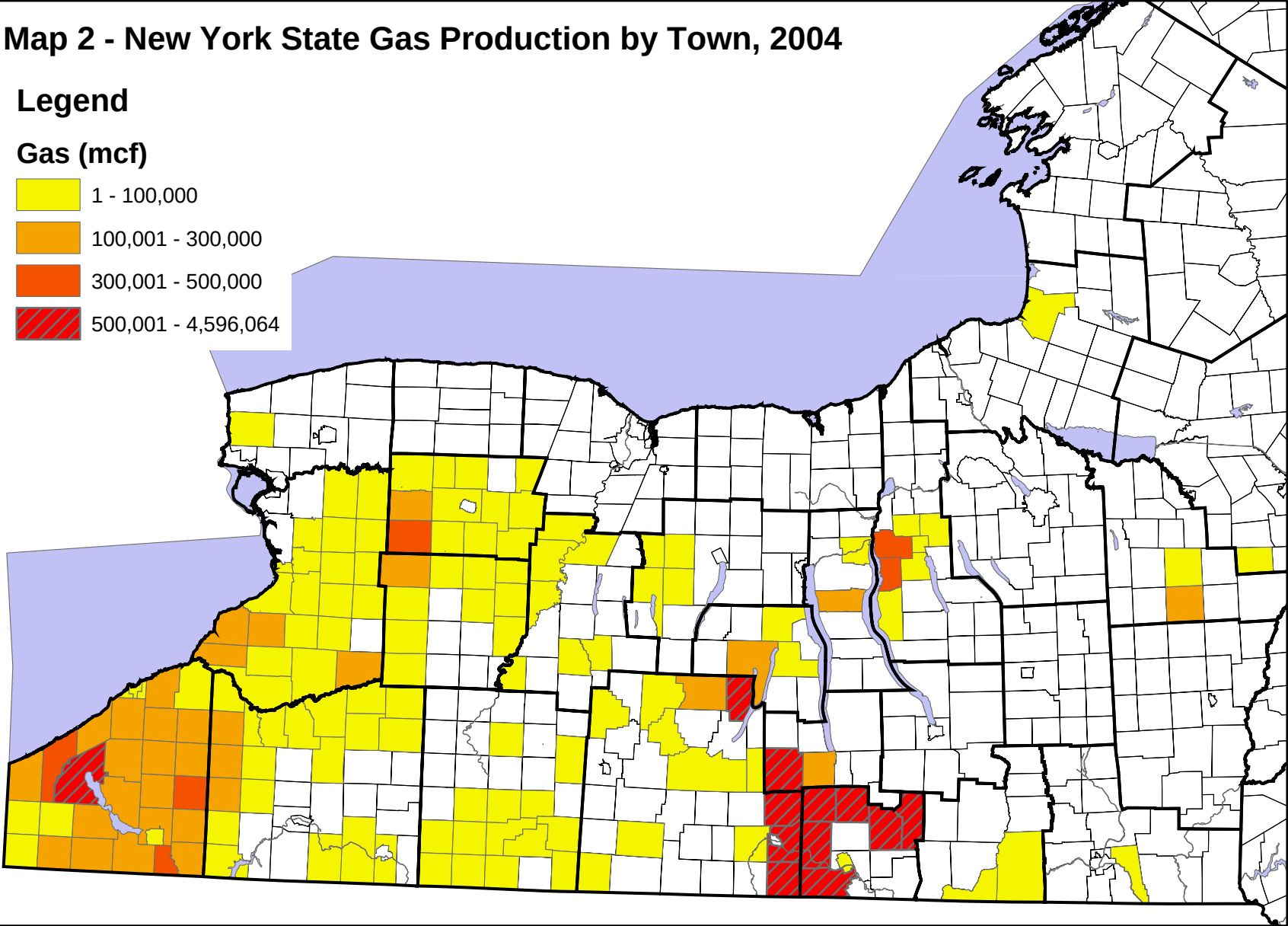
Company	Gas (mcf)	Company	Oil (bbl)
Fortuna Energy, Inc.	33,221,713	Richardson Petroleum Corp.	20,826
Columbia Natural Resources	3,766,696	McCracken, Carl A. III	17,291
Great Lakes Energy Partners	2,762,814	REI-NY, Inc.	12,126
Nornew, Inc.	905,210	East Resources, Inc.	11,016
Seneca Resources Corp.	624,256	Bouquin, Fred C. & Fred L.	10,669
United States Gypsum Co.	571,838	R & C Oil Co.	10,649
Kastle Resources Enterprises	549,380	Otis Eastern Services, Inc.	7,711
Stedman Energy, Inc.	492,697	Johnson, Mark & Troy	7,330
Lenape Resources, Inc.	317,028	Plants and Goodwin, Inc.	4,872
Resource Energy, Inc.	214,437	Woods Oil Company, Inc.	4,197

Map 2 - New York State Gas Production by Town, 2004

Legend

Gas (mcf)

- 1 - 100,000
- 100,001 - 300,000
- 300,001 - 500,000
- 500,001 - 4,596,064



TRENTON-BLACK RIVER ACTIVITY

Record Gas Production for 2004

In just the five years between 1999 and 2004 Trenton-Black River production has risen from 19% to 75% of New York's natural gas production. Between 2003 and 2004 the number of producing Trenton-Black River wells grew 28% from 50 to 64 and the number of fields rose 43% from 14 to 20.

Top Trenton-Black River Producers

In 2004 Fortuna Energy was New York's top Trenton-Black River producer with a total of 33.2 bcf of natural gas. Fortuna also owned all top 10 Trenton-Black River producing wells. Fortuna's Reed #1 well produced 6.5 bcf, in just 9 months far surpassing any other well in the State, and almost double the top well for 2003.

Columbia Natural Resources (CNR) remained the State's second largest Trenton-Black River

producer with 3.7 bcf. Great Lakes Energy Partners was in third place with 2.7 bcf.

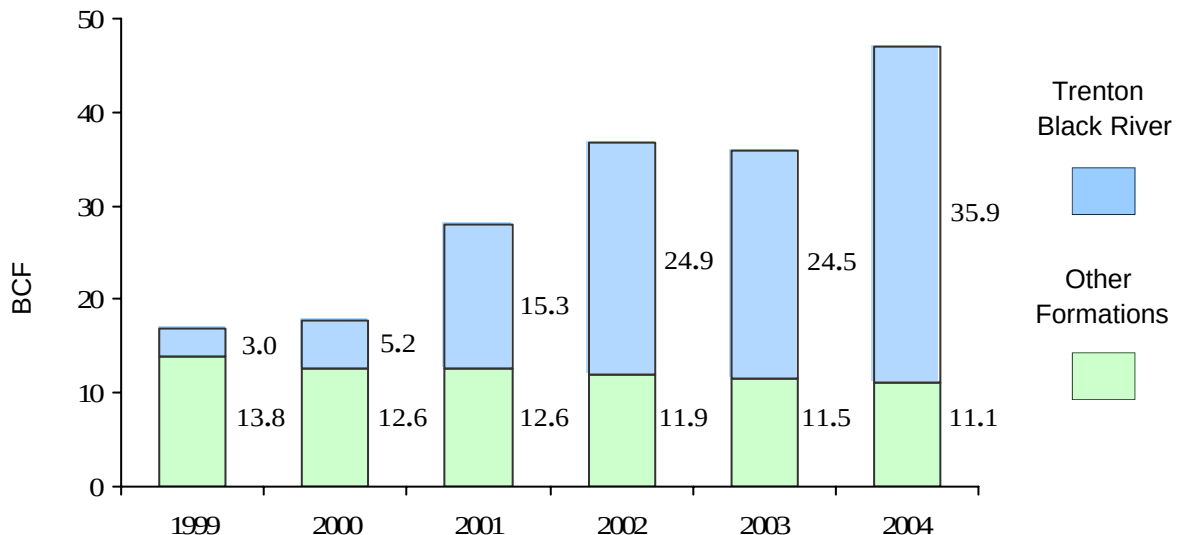
Quackenbush Hill replaced Wilson Hollow as the top producing Trenton-Black River field with the highest 2004 production (20.89 bcf), as well as the highest cumulative production (43.4 bcf). For further information on Trenton-Black River fields see Tables 3-6.

Drilling and Production Areas

Trenton-Black River permitting activity continued to climb in 2004. The Division issued 51 drilling permits to 8 different operators for 12 counties; 41 wells were drilled in 2004.

Trenton-Black River production occurred in 5 counties: Steuben, Chemung, Schuyler, Yates and Broome counties. However, the top 10 producing wells and fields were concentrated almost exclusively in Steuben and Chemung.

Chart 2 - Producing Source Formation for NY Natural Gas, 1999-2004



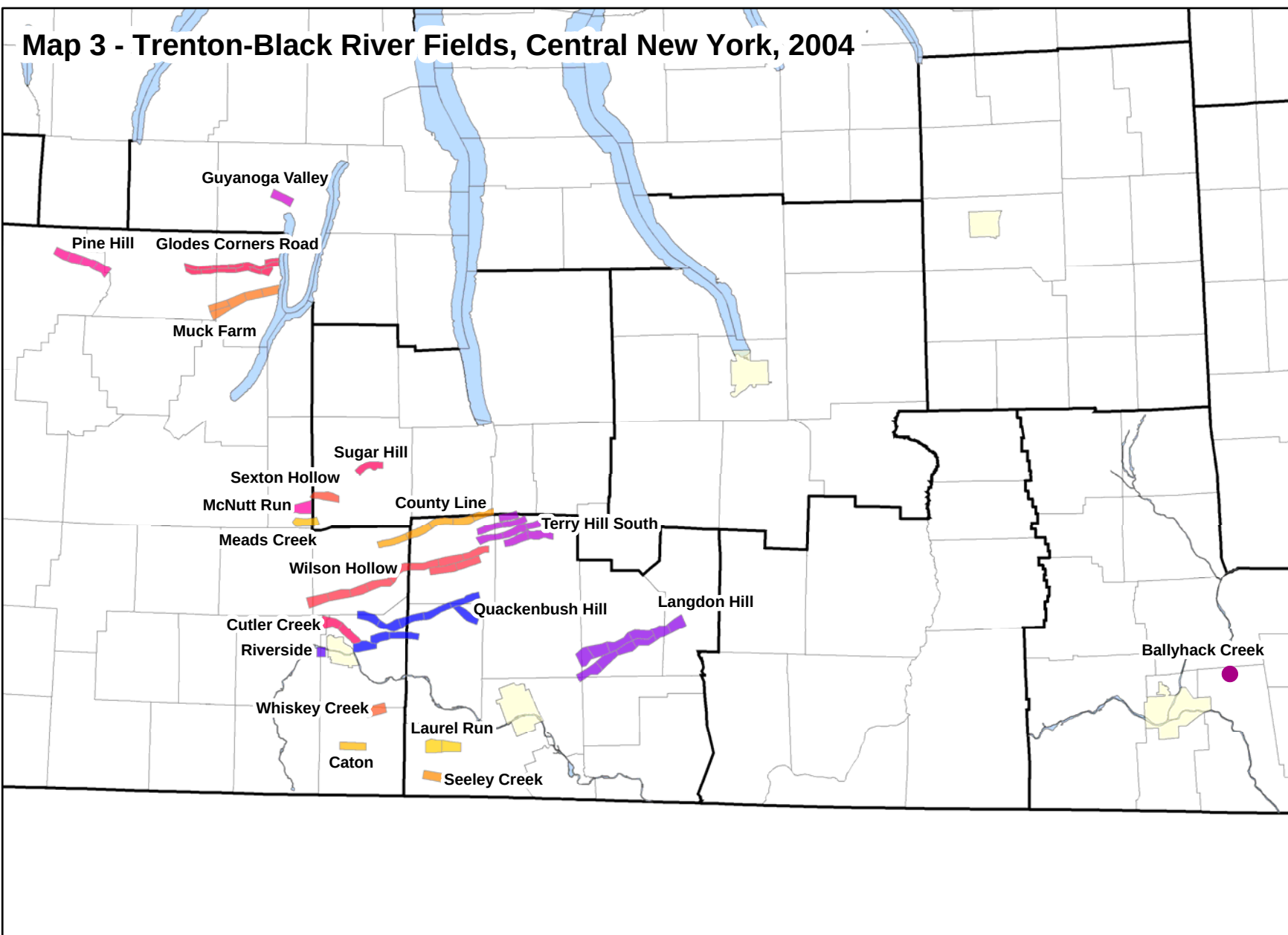


Table 3 - Top Ten Wells Trenton-Black River Production, 2004*				
Well Name*	2004 Production (bcf)	Cumulative Production Year-End 2004	County	Field Name
Reed 1	6.47	6.47	Steuben	Quackenbush
Lovell 1323	3.32	15.25	Chemung	Quackenbush
Hakes 1	2.91	2.91	Steuben	Quackenbush
Henkel 1359-A	2.77	6.45	Steuben	Quackenbush
Andrews 1	2.50	2.50	Steuben	Quackenbush
Parker 1401	1.48	6.43	Chemung	Wilson Hollow
Rhodes 1322	1.13	4.73	Chemung	Quackenbush
Gregory 1446-A	1.08	1.08	Chemung	Quackenbush
Harndon 1	1.01	1.01	Steuben	Whiskey Creek
Howe 1300-A	0.99	6.24	Steuben	Wilson Hollow

* For API Well Numbers see Table 5

Table 4 - Top Ten Fields Trenton-Black River Production, 2004*				
Field Name	2004 Production (bcf)	Number of Wells*	First Year of Production	Cumulative Production Year-End 2004
Quackenbush Hill	20.89	9	2000	43.43
Wilson Hollow	5.78	10	1999	31.01
Langdon Hill	1.28	5	2001	2.11
Terry Hill South	1.26	5	2001	7.08
Cutler Creek	1.14	2	2001	3.49
Whiskey Creek	1.01	1	2003	1.04
Seeley Creek	0.87	1	2004	0.87
Muck Farm	0.82	4	2000	7.26
Glodes Corner Road	0.49	12	1996	9.28
Meads Creek	0.48	1	2004	0.48

* Excludes shut-in wells

Table 5 - Detailed Cumulative Production to Year-End 2004, Trenton-Black River

Field and Wells	API Number	Months Production	Production 2004 (mmcf)	Production Total (mmcf)
Quackenbush Hill Field				
Lovell	31015228310000	49	3,323	15,250
Rhodes	31015228530000	43	1,131	4,729
Henkel	31101228710100	42	2,767	6,451
Hartman	31101228920100	40	638	2,395
Gregory	31015229180100	31	1,078	2,651
Andrews	31101230380000	10	2,504	2,504
Reed	31101230550000	9	6,475	6,475
Hakes	31101230540000	8	2,914	2,914
Soderblom	31015231340000	1	61	61
Hepfner	31015230280000	0	0	0
		Field Totals	20,891	43,430
Wilson Hollow Field				
Jimerson	31101227710000	62	655	4,369
Howe	31101228140100	54	999	6,242
Rice	31101228250000	51	90	622
VanVleet	31101228520000	46	481	2,349
Fratercangelo	31101228840100	39	294	2,940
Parker	31015228910000	35	1,481	6,431
Hardy	31015229190100	35	241	1,520
Lederer	31015229020100	35	164	884
Chemung SRA #1	31015229600000	31	795	2,787
Root	31015229750000	27	585	2,863
Apenowich	31101230590000	0	0	0
		Field Totals	5,785	31,007
Glodes Corner Rd. Field				
Gray	31101215920000	108	26	880
Evangelos	31101194970000	96	11	193
Levandowski	31101216880000	86	39	1,067
Covert 1	31010216890100	86	9	1,013
Pizura	31101216920000	86	9	766
Fox	31101217060000	84	62	980
Smith	31101217050000	84	59	1,035
Bergstresser	31101217100000	84	28	915

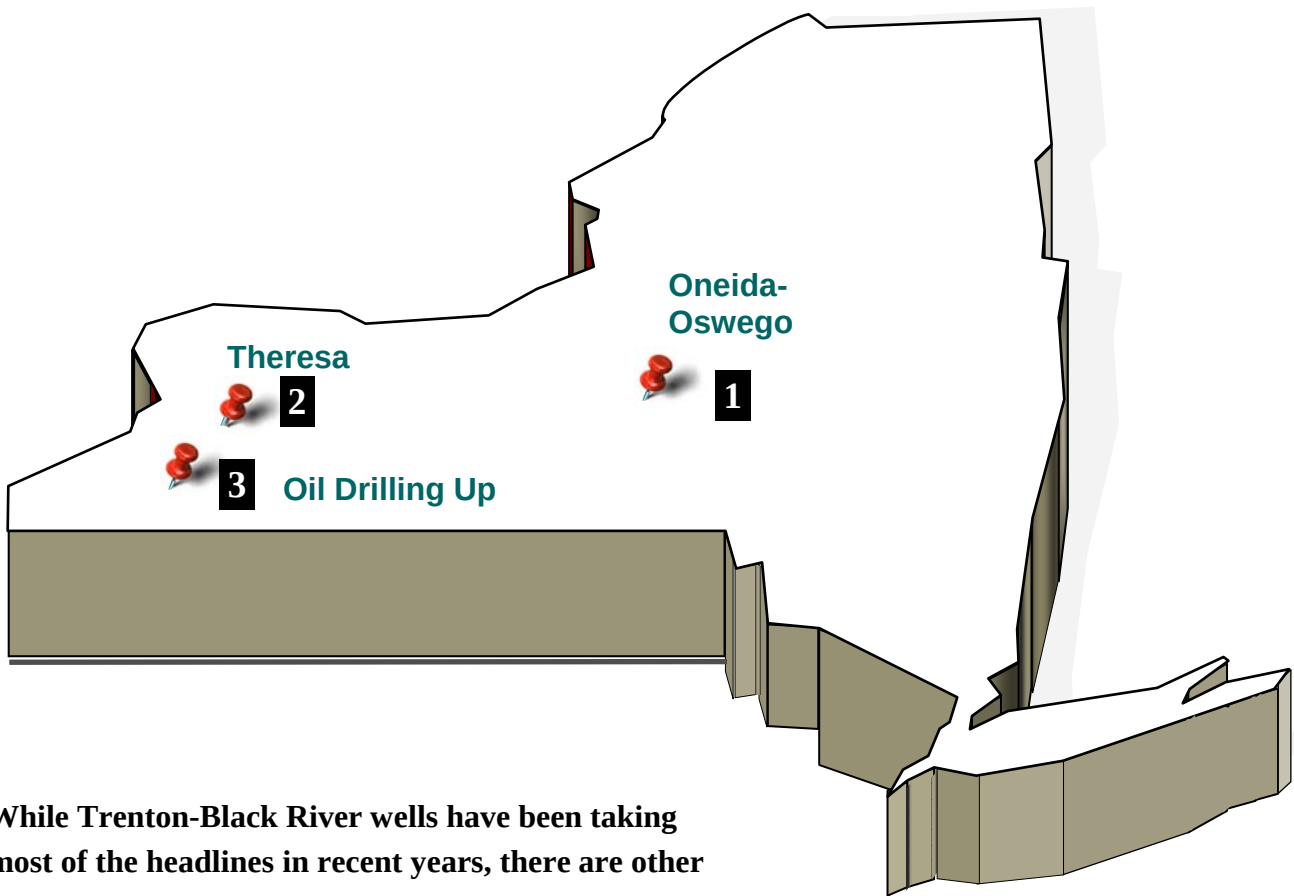
Field and Wells	API Number	Months Production	Production 2004 (mmcf)	Production Total (mmcf)
Glodes (continued)				
Kozak	31101217120000	83	2	60
Radigan	31101217030100	69	58	585
Covert 2	31101227680000	60	117	973
Ballam-Carter	31101227690000	50	72	820
Egresi	31101227720000	0	0	0
		Field Totals	492	9,287
Muck Farm				
Snyder	31101227550000	52	447	3,078
McAllister	31101227480000	52	216	2,425
Smith	31101227470000	52	107	1,101
Faber	31101227450000	52	52	655
		Field Totals	822	7,259
Terry Hill South				
Lant 1	31015228620000	46	250	1,964
Kimball	31015228570000	41	602	2,387
Broz	31015228260000	41	59	808
Clauss	31015228890100	39	71	616
Kienzle	31015228800100	37	274	1,311
Hammond	31015230170000	0	0	0
Gublo	31015229100000	0	0	0
		Field Totals	1,256	7,086
Cutler Creek				
Corning Game Club	31101228850000	42	673	3,030
Moss	31101231000000	3	468	468
		Field Totals	1,141	3,498
Langdon Hill				
Monahan	31015228380000	43	155	864
Usack	31015229330000	28	120	249
Konstantinides	31015230230000	9	363	363
Schmidt 1A	31015229110100	6	468	468
Davies	31015231040100	3	171	171
		Field Totals	1,277	2,115

Field and Wells	API Number	Months Production	Production 2004 (mmcf)	Production Total (mmcf)
County Line				
Whiteman	31015228390000	39	162	485
Roy	31015229010000	34	90	274
Purvis	31097228930000	30	154	587
Youmans	31101229760000	0	0	0
		Field Totals	406	1,346
Sugar Hill				
SRA 2 - 1	31097228410000	26	137	1,076
		Field Totals	137	1,076
Whiskey Creek				
Harndon 1	31101230400000	13	1,015	1,038
		Field Totals	1,015	1,038
Seeley Creek				
Curren	31015230760000	10	872	872
		Field Totals	872	872
Meads Creek				
Schuyler SRA 3-1	31097230720000	3	477	477
		Field Totals	477	477
Pine Hill				
Peck	31101227660000	50	34	191
S&D Farms 1	31101227580100	50	8	60
Wolcott	31101227600100	48	46	224
S&D Farms 1B	31101227590200	0	0	0
		Field Totals	88	475
Sexton Hollow				
Grand Prix 1	31097228300000	4	459	459
		Field Totals	459	459
Riverside				
Pace	31101229580000	6	377	377
		Field Totals	377	377

Field and Wells	API Number	Months Production	Production 2004 (mmcf)	Production Total (mmcf)
Ballyhack Creek				
Beagell 2 A	31007229950100	22	86	340
Butkowsky	31007230560100	0	0	0
		Field Totals	86	340
Guyanoga Valley				
Walters	31123227750100	17	248	330
		Field Totals	248	330
Caton Field				
Maxwell 1B	31101229630200	15	12	33
		Field Totals	12	33
McNutt Field				
SRA 3-2	31101231010000	2	24	24
		Field Totals	24	24
Laurel Run				
Harvey	31015230970000	1	4	4
		Field Totals	4	4
Total Trenton-Black River Production to 2004				110,533

Table 6 - New Trenton-Black River Fields Not Producing by Year-End			
Field	Well	API Number	Discovery Date
Beans Station	Gray	31101229490000	6/24/02
Cooper Hill	Sekella	31015231460000	1/18/05
Rayner Field	Gillis	31101231110000	11/8/04
South Corning	Eolin	31101231050000	10/12/04
West River	Bay 1B	31069229850200	6/18/04
Zimmer Hill	Drumm	31101231540000	1/18/05

Other Formations of Interest



While Trenton-Black River wells have been taking most of the headlines in recent years, there are other formations that also deserve special mention:

- 1 Oneida-Oswego Discovery** - Nornew's Bradley Brook Field in Madison County produced over 185 mmcf of gas in 2004 from 13 Oneida-Oswego sandstone wells drilled 1997-2004. In 2004 Nornew also applied for 5 drilling permits for the Oneida formation in nearby Chenango County.
- 2 Theresa Sandstone Discoveries** - The 2 wells in Ardent Resources' Bockhahn Field in Erie County (drilled 2003-4) produced over 105 mmcf of gas in 2004 and DEC issued the company a permit for a third well. In Cattaraugus County Stedman Energy completed drilling the Cagwin well in late 2004 and was evaluating the well at year's end. Interest in the Theresa formation is growing with the acquisition of new seismic information; the Theresa will see a drilling increase as additional prospects are identified.
- 3 Oil Well Drilling Activity** - In 2004 the average price of a barrel of oil was over \$31.00 for the first time since 1982 and industry responded with increased drilling. Operators applied for 52 oil well permits primarily for western New York, an increase of 14 from 2003. The Bradford, Chipmunk and Richburg all produce oil along with many other shallow Devonian formations.

Table 7 - Production by Geologic Formation, 2004

<u>Formation</u>	<u>Wells</u>	<u>Gas</u>	<u>Oil</u>
Devonian Shale	26	28,152	0
Canadaway*	2,475	18,602	100,465
Perrysburg	793	158,739	43,023
Tully	10	24,579	0
Hamilton	4	0	0
Marcellus	8	2,933	0
Onondaga	56	214,900	6,575
Oriskany	21	56,079	148
Helderberg	5	58,425	0
Akron	23	15,285	13
Medina	5,299	8,544,121	2,839
Bass Island	55	92,987	7,559
Queenston	462	1,434,704	0
Herkimer	5	52,435	0
Oneida-Oswego	16	211,536	0
Trenton	4	100	0
Black River	64	35,869,034	0
Little Falls	1	11,396	0
Theresa	6	122,062	0
Other	19	17,120	761

* Undifferentiated Canadaway Group includes Glade, Richburg, Bradford and other well-known oil producing formations

**To see a stratigraphic column of New York's geologic formations
go to <http://www.dec.state.ny.us/website/dmn/southstrat.htm>**

DRILLING PERMITS AND WELL COMPLETIONS

Drilling Permits

DEC issued 210 drilling permits in 2004, a 12-year record. The high price for oil and natural gas spurred the drilling increase seen in New York and the nation as a whole.

In 2004 DEC issued 133 gas, 52 oil, 9 brine, 14 geothermal and 2 stratigraphic wells. While a small part of the total, the 14 geothermal permits represent a record for that category.

In 2004 DEC issued permits for wells in 24 counties; the top 3 were Cattaraugus (46), Steuben (23), and Chautauqua County (22). Most of the oil drilling permits were issued for Cattaraugus (34) and Steuben (8) counties. Chautauqua (21) and Seneca counties (18) had the highest number of gas permits. Over the last decade the total number of counties listed on drilling permits in a single year has more than doubled.

Well Spuds and Completions

The number of wells spud (started) in 2004 rose to 181, a level not seen since the first Persian Gulf War. In 2004, 70 gas wells and 56 oil wells were completed with a total number of 188 wells of all types completed.

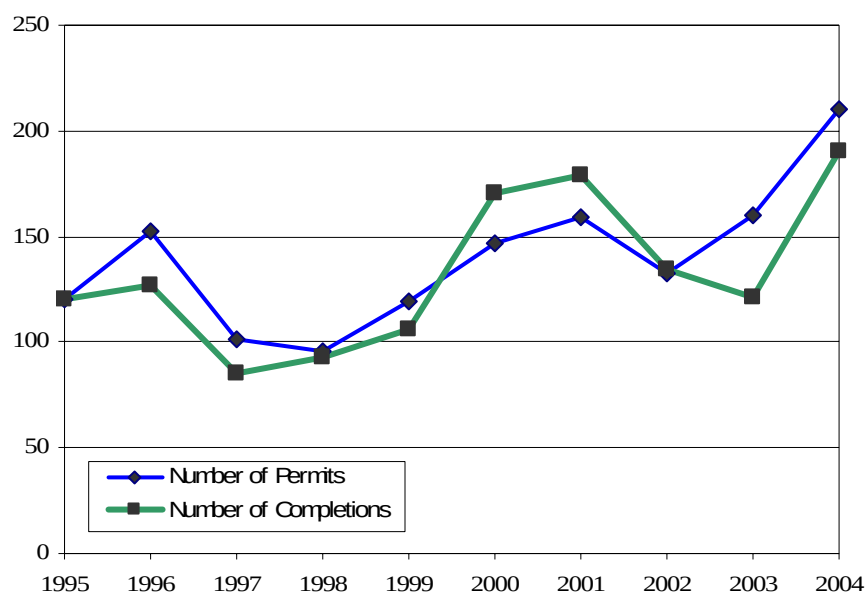
Formations Permitted

Interest in the Ordovician age carbonates of central New York remained strong during 2004 with 51 Trenton-Black River permits issued in 2004 compared to 38 in 2003.

For Details on 2004 Drilling Permits
go to

<http://www.dec.state.ny.us/website/dmn>

Chart 3 - Drilling Permits and Completions, 1994 - 2004



Drilling Permits, 2004

Gas:	133
Oil	52
Other	25
Total	210

Well Completions, 2004

Gas:	70
Oil	56
Other	62
Total	188

Table 8 - Drilling Permits by Well Type, 2004

County	Gas Well	Oil Well	Gas Storage	Brine Well	Strati-graphic	Geo-thermal	Total
Allegany		9					9
Bronx						1	1
Broome	3						3
Cattaraugus	12	34					46
Cayuga	3						3
Chautauqua	21	1					22
Chemung	15						15
Chenango	5						5
Cortland	3						3
Erie	6						6
Genesee	2						2
Livingston	4			7			11
Madison	3						3
New York					2	13	15
Oneida	1						1
Ontario	1						1
Schuyler	4						4
Seneca	18						18
Steuben	15	8					23
Tioga	4						4
Tompkins	2						2
Wayne	3						3
Wyoming	4			2			6
Yates	4						4
Total	133	52	0	9	2	14	210

Well Site Tanks

Temporary storage tanks may be used at well sites during both drilling and completion. They may hold brine, mud or freshwater used to lubricate the drill bit and carry away pulverized rock. During the completion stage they may hold make-up water for treatments that improve well production, or the tanks may hold the wastewater that flows back after the treatment is completed.



OIL & GAS WILDCATS AND FIELD EXTENSIONS

Wildcats

In 2004, 53 wildcats were drilled in New York State. The majority of the wildcats (70%) were drilled to the Trenton-Black River featured in the previous section of this report. However, wildcats were also drilled targeting the Theresa, Trenton, Queeston, Oneida, Clinton, Potsdam and Oriskany formations.

In 2004 the deepest wildcat, Strouse 1, was a Trenton-Black River well drilled in Chemung County to a true vertical depth of 11,747 feet. Chemung County was also the site of the deepest wildcat in 2003.

Compared to the previous year, the number of wildcats in 2004 increased by 51% and the geographic extent of wildcat activity increased also. Wildcat drilling took place from Erie County on the west to Delaware County on the east, a distance of approximately 170 miles.

In January 2004 Resource America Inc. drilled the Grant 6 well in Delaware County to a total depth of 5,140 feet in the Clinton formation. The company deemed the well non-commercial

Codes for Tables 9 & 10 Pages 25-30

GW	Gas Wildcat (proposed)
GE	Gas Extension (proposed)

after four unsuccessful attempts to complete it. The Grant 6 was the first drilling activity in Delaware County since 1988 when Cabot Oil & Gas Corporation drilled the Grant 1-A, which was also unsuccessful.

Field Extensions

In 2004, 19 field extensions were drilled in New York State, up 375% from the 4 extensions drilled in 2003. Eleven of 2004's field extensions were Trenton-Black River wells drilled in three fields (Quakenbush Hill, Terry Hill South and Langdon Hill) and 3 unnamed fields in Broome, Schuyler and Steuben Counties. Five Queenston field extensions and 1 Theresa field-extension were also drilled in 2004.



Directional Drilling Assembly

This Schlumberger directional assembly was photographed at Fortuna Energy's Drumm #1 well in Steuben County, a wildcat well listed on page 27 in the following table.

The equipment's ability to navigate while the well is being drilled allows the operator to control the direction of the wellbore. This type of tool is used to drill horizontal or directional wells.

Table 9 - Wildcats Drilled to True Vertical Depth (TVD) in 2004

County/ Town	Company	API Number	Well Name	TVD Feet	TD Date	Well Type	Field	Objective Formation
Broome								
Maine	Phillips Production Co.	31007230320000	Pond 1	8,990	4/22/04	GW	Not Applicable	Black River
Maine	Phillips Production Co.	31007230320100	Pond 1A	9,018	4/29/04	GW	Not Applicable	Black River
Nanticoke	Phillips Production Co.	31007230330000	Manwaring 1	8,956	6/8/04	GW	Not Applicable	Black River
Cattaraugus								
Freedom	Stedman Energy, Inc.	31009235340000	Bixby Hill 1	6,859	11/18/04	GW	Not Applicable	Theresa
Yorkshire	Stedman Energy, Inc.	31009235450000	Cagwin 1	6,412	10/28/04	GW	Cagwin	Theresa
Cayuga								
Venice	Hensoil, Inc.	31011616190000	Rejman 1S	3,572	11/5/04	GW	Not Applicable	Black River
Chemung								
Elmira	East Resources, Inc.	31015231730000	Hartman 1	10,670	12/16/04	GW	Not Applicable	Black River
Erin	Columbia Natural Resources	31015229110100	Schmidt 624537-A	10,000	2/7/04	GW	Langdon Hill	Black River
Erin	Columbia Natural Resources	31015231040000	Davies (624538) 1	10,218	5/10/04	GW	Not Applicable	Black River
Southport	Fortuna Energy, Inc.	31015230970000	Harvey 1	11,453	4/5/04	GW	Laurel Run	Black River
Southport	East Resources, Inc.	31015231140000	Strouse 1	11,747	6/18/04	GW	Not Applicable	Black River
Van Etten	Fortuna Energy, Inc.	31015231460000	Sekella 1	9,909	10/26/04	GW	Cooper Hill	Black River
Chenango								
Plymouth	Nornew, Inc.	31017231630000	Diehl 1-448	4,192	10/26/04	GW	Not Applicable	Oneida

Table 9 - Wildcats Drilled to True Vertical Depth (TVD) in 2004, (continued)

County/ Town	Company	API Number	Well Name	TVD Feet	TD Date	Well Type	Field	Objective Formation
Chenango (Continued)								
Smyrna	Nornew, Inc.	31017231370000	Thompson 1-442	4,275	7/21/04	GW	Not Applicable	Oneida
Smyrna	Nornew, Inc.	31017231640000	Hare 1	4,138	11/4/04	GW	Not Applicable	Oneida
Cortland								
Virgil	Columbia Natural Resources	31023230350200	Sega 1-B	7,522	10/6/04	GW	Not Applicable	Black River
Delaware								
Franklin	Resource America, Inc.	31025210700000	Grant 6	5,600	1/19/04	GW	Not Applicable	Clinton
Madison								
Stockbridge	Ardent Resources, Inc.	31053230910000	Green 1	3,750	4/23/04	GW	Not Applicable	Potsdam
Stockbridge	Ardent Resources, Inc.	31053230980000	Meeker 1	3,658	2/3/04	GW	Not Applicable	Potsdam
Oneida								
Vernon	Ardent Resources, Inc.	31065230900000	Wagner 1	2,660	2/9/04	GW	Not Applicable	Potsdam
Ontario								
Hopewell	Columbia Natural Resources	31069229430100	Stoddard (624633) 1A	3,001	7/10/04	GW	Not Applicable	Black River
Oswego								
Palermo	Seneca Resources Corp.	31075230700000	Loomis-1 37628	2,460	3/29/04	GW	Not Applicable	Black River
Schroepfel	Seneca Resources Corp.	31075230710000	Huntley-1 37627	2,690	3/12/04	GW	Not Applicable	Black River
Schroepfel	Seneca Resources Corp.	31075230770000	Phinney-1 37626	2,278	4/4/04	GW	Not Applicable	Black River

Table 9 - Wildcats Drilled to True Vertical Depth (TVD) in 2004, (continued)

County/ Town	Company	API Number	Well Name	TVD Feet	TD Date	Well Type	Field	Objective Formation
Schuyler								
Catharine	Fortuna Energy, Inc.	31097229350200	Wonderview Farms 1-B	8,340	4/2/04	GW	Not Applicable	Black River
Orange	Fortuna Energy, Inc.	31097230720000	SRA3 1	9,323	3/20/04	GW	Meads Creek	Black River
Orange	Fortuna Energy, Inc.	31097230860000	Towner 1	8,865	6/12/04	GW	Not Applicable	Black River
Reading	EOG Resources, Inc	31097231590000	Anderson 1	5,365	11/19/04	GW	Not Applicable	Queenston
Seneca								
Junius	Great Lakes Energy Partners	31099231310000	Brigham 1	4,237	12/1/04	GW	Not Applicable	Black River
Junius	Great Lakes Energy Partners	31099231530000	Shaup 1	4,182	11/21/04	GW	Not Applicable	Black River
Junius	Great Lakes Energy Partners	31099231780000	Serven 1	4,182	12/11/04	GW	Not Applicable	Trenton
Tyre	Great Lakes Energy Partners	31099231740000	Patsos 1	4,115	12/22/04	GW	Not Applicable	Trenton
Steuben								
Bradford	Fortuna Energy, Inc.	31101231010000	Steuben Reforestation 3 2	9,152	5/19/04	GW	McNutt Run	Black River
Bradford	Fortuna Energy, Inc.	31101231540000	Drumm 1	9,405	11/21/04	GW	Zimmer Hill	Black River
Cameron	Kelly Oil and Gas, Inc.	31101231330000	Crooks 1	4,143	6/16/04	GW	Not Applicable	Oriskany
Campbell	Fortuna Energy, Inc.	31101230590000	Apenowich 1	9,613	1/20/04	GW	Not Applicable	Black River

Table 9 - Wildcats Drilled to True Vertical Depth (TVD) in 2004, (continued)

County/ Town	Company	API Number	Well Name	TVD Feet	TD Date	Well Type	Field	Objective Formation
Steuben (Continued)								
Caton	Fortuna Energy, Inc.	31101231100000	Gillis 1	11,257	8/5/04	GW	Rayner	Black River
Corning	Fortuna Energy, Inc.	31101231050000	Eolin 1	9,992	5/11/04	GW	South Corning	Black River
Erwin	Fortuna Energy, Inc.	31101230850000	Erwin WMA 1	9,797	7/12/04	GW	Not Applicable	Black River
Erwin	Fortuna Energy, Inc.	31101231500000	TLT 1	9,405	12/18/04	GW	Not Applicable	Black River
Jasper	Kelly Oil and Gas, Inc.	31101231230000	Wade 1	4,560	7/7/04	GW	Not Applicable	Oriskany
Jasper	Kelly Oil and Gas, Inc.	31101231380000	Kent 1	4,450	6/29/04	GW	Not Applicable	Oriskany
Troupsburg	Nadel and Gussman, L.L.C.	31101231650000	Retherford 1	4,725	10/20/04	GW	Card School	Oriskany
Urbana	Cabot Oil & Gas Corp.	31101231510000	McDaniels 1	8,154	12/29/04	GW	Not Applicable	Black River
Tioga								
Oswego	Phillips Production Co.	31107231160000	Olin 1	10,174	7/26/04	GW	Not Applicable	Black River
Owego	Columbia Natural Resources	31107231160100	Olin 1-A (625488-A)	9,942	8/29/04	GW	Not Applicable	Black River
Tioga	Columbia Natural Resources	31107229740000	TGS Holdings 624831	10,340	10/15/04	GW	Not Applicable	Black River
Tompkins								
Enfield	Columbia Natural Resources	31109229980300	Stevenson 1-C (625359)	7,717	10/26/04	GW	Not Applicable	Black River
Enfield	Columbia Natural Resources	31109229980400	Stevenson 1-D (625359)	8,033	11/03/04	GW	Not Applicable	Black River

Table 9 - Wildcats Drilled to True Vertical Depth (TVD) in 2004, (continued)

County/ Town	Company	API Number	Well Name	TVD Feet	TD Date	Well Type	Field	Objective Formation
Yates								
Milo	Columbia Natural Resources	31123231360000	Zimmerman 624088	5,770	8/17/04	GW	Not Applicable	Black River
Milo	Columbia Natural Resources	31123231360100	Zimmerman 1A (624008-A)	6,523	8/29/04	GW	Not Applicable	Black River
Starkey	Columbia Natural Resource	31123229410100	Boudinot 623968-A	6,050	6/25/04	GW	Not Applicable	Trenton
Starkey	Columbia Natural Resources	31123229410101	Boudinot 623968-A	6,889	6/25/04	GW	Not Applicable	Trenton

Table 10 - Field Extensions Drilled to True Vertical Depth (TVD) in 2004

County/ Town	Company	API Number	Well Name	TVD Feet	TD Date	Well Type	Field	Objective Formation
Broome								
Fenton	Belden & Blake Corporation	31007230780000	Olson 1	9,631	3/2/04	GE	Not Applicable	Black River
Fenton	Columbia Natural Resources	31007230780100	Olson 1-A	9,536	3/12/04	GE	Not Applicable	Black River
Chemung								
Big Flats	Fortuna Energy, Inc.	31015231340000	Soderblom 1	9,695	9/13/04	GE	Quackenbush Hill	Black River
Catlin	Fortuna Energy, Inc.	31015230170000	Hammond 1	9,417	3/18/04	GE	Terry Hill South	Black River
Erin	Columbia Natural Resources	31015231040001	Davies (624538) 1	10,245	5/10/04	GE	Langdon Hill	Black River
Erin	Columbia Natural Resources	31015231040100	Davies (624538) 1A	10,265	5/11/04	GE	Langdon Hill	Black River
Erin	Columbia Natural Resources	31015231560000	Meade (625477) 1	10,030	11/30/04	GE	Langdon Hill	Black River

Table 10 - Field Extensions Drilled to True Vertical Depth (TVD) in 2004, (continued)

County/ Town	Company	API Number	Well Name	TVD Feet	TD Date	Well Type	Field	Objective Formation
Erie								
Sardinia	Ardent Resources, Inc.	31029235510000	Bockhahn G 1	6,063	6/3/04	GE	Bockhahn	Theresa
Madison								
Lebanon	Nomew, Inc.	31053231260000	Wedge 2-353	3,132	8/1/04	GE	Not Applicable	Oneida
Schuyler								
Dix	EOG Resources, Inc	31097231520000	WGI 3	9,120	12/20/04	GE	Not Applicable	Black River
Orange	Fortuna Energy, Inc.	31097228290100	Grand Prix 1-A (624065)	8,616	5/9/04	GE	Not Applicable	Black River
Seneca								
Fayette	Columbia Natural Resources	31099212860000	Jensen 1160-1	2,125	11/2/04	GE	Fayette-Waterloo	Queenston
Junius	Great Lakes Energy Partners	31099231770000	J & B Laird 1	1,652	11/17/04	GE	Not Applicable	Queenston
Seneca Falls	Great Lakes Energy Partners	31099231250000	Lott 2	1,972	8/12/04	GE	Not Applicable	Queenston
Seneca Falls	Great Lakes Energy Partners	31099231280000	Proper-Olsowske 2	1,954	8/25/04	GE	Fayette-Waterloo	Queenston
Seneca Falls	Great Lakes Energy Partners	31099231400000	Sauder-Lott 1	1,897	10/26/04	GE	Fayette-Waterloo	Queenston
Steuben								
Coming	Fortuna Energy, Inc.	31101230540000	Hakes 1	10,107	1/23/04	GE	Quackenbush Hill	Black River
Coming	Fortuna Energy, Inc.	31101230550000	Reed 1	9,883	1/10/04	GE	Quackenbush Hill	Black River
Coming	Fortuna Energy, Inc.	31101231000000	Moss 1	9,474	5/17/04	GE	Cutler Creek	Black River

INSPECTIONS, FEES AND FINES

Inspections

In 2004 Oil and Gas staff traveled 114,317 miles to perform 2,491 well site inspections. Staff inspect well sites:

- during permit application review to check environmental and public safety issues;
- during drilling to check on well site construction and drilling permit compliance;
- during the operating phase to check for leaks, spills or other potential problems; and
- to ensure that well plugging and site reclamation comply with requirements.

DEC staff perform follow-up inspections to ensure any violations are properly remediated.

Compliance Enforcement

Violations are handled with a mixture of enforcement tools, remediation requirements and

penalties. In 2004 the Oil and Gas Program collected \$109,172 in fines and penalties.

Permit Fees and Program Revenues

Total oil and gas revenues collected by the Division equaled \$1,253,466 in 2004 with the major sources shown in Table 11. Further details on leasing revenues are available on page 32.

Table 11 2004 Fees and Revenues	
Well Permit Fees	\$355,312
Oil and Gas Account	\$23,200
Leasing Revenues	\$765,782



DEC inspection vehicle at a producing well site.

STATE LAND LEASING

At the end of 2004 the Division managed 96 leases covering roughly 77,500 acres of State land, a slight decrease from 2003's 81,000 acres.

Steuben County has the most State acreage under lease due to the high level of drilling activity associated with the Trenton-Black River.

At year-end 2004 the State was earning royalties from 99 productive oil and gas wells physically located on State lands and another 83 producing wells on adjacent and/or unitized lands. These wells were held under 47 leases.

New York collected royalties from these 182 wells which produced 5.97 bcf of natural gas and 9,155 bbl of oil. The average prices paid were \$6.98 per mcf for gas and \$35.27 per barrel of oil.

In 2004 the State received total leasing revenues of \$765,782:

Delay Rentals - Operators submitted a total of \$128,213 in delay rentals, up 677% from 2003. The dramatic increase in delay rentals was due almost entirely to primary term payments for 21 new leases awarded in the State's 2003 lease sale in central New York.

Royalties - The State received \$525,000 in royalty revenue from production of oil and gas on 47 leases in 9 counties (20,855 acres). The 2004 royalty total was down 13.9% from its 2003 mark of \$609,821 which had been augmented by release of extra money held in escrow for a long period.

Storage Leases - Fourteen storage leases added \$109,986, down 6.3% from 2003. The majority of New York's storage lease acreage is in Cattaraugus County.

Lease Sale Revenue - The State received \$2,533 from a non-competitive lease of New York State Department of Transportation acreage in preexisting production units.

DEC Managed Oil and Gas Leases

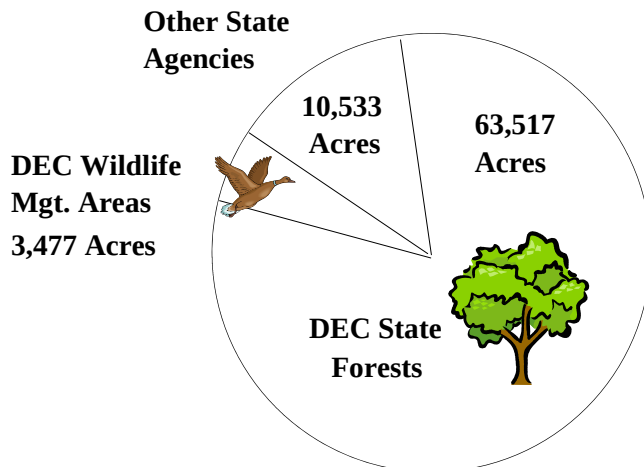


Table 12 - Total Leasing Revenues, 1997 - 2004

1997	\$168,029
1998	\$279,523
1999	\$3,206,406
2000	\$181,876
2001	\$379,845
2002	\$249,685
2003	\$5,326,927
2004	\$765,782



Chemung SRA #1 disturbed only 1.5 acres of State land, yet paid New York State over \$770,000 in royalties as of 12/31/04. The camouflaged well site is barely visible from the road. Above a glimpse inside the fence showing the well and production equipment.

Table 13 - Summary Leased State Lands, 2004

	<u>Rental Lease¹</u>	<u>Royalty Lease²</u>	<u>Storage Lease³</u>	<u>Total Leases</u>	<u>Total Acreage</u>
Allegany County	9	1		10	11,627
Cattaraugus County		2	8	10	10,043
Cayuga County		4		4	62
Chautauqua County		29		29	15,913
Chemung County		3		3	492
Erie County		2	2	4	265
Madison County	1			1	53
Ontario County			1	1	55
Schuyler County	4	2	1	7	11,884
Seneca County		1		1	17
Steuben County	21	3	2	26	27,117
Total	35	47	14	96	77,528

1 Rental status means no wells drilled yet under lease, so delay rental paid on per acre basis.

2 Royalty status means there are producing wells on the lease and the State receives royalties.

3 Storage means it is a lease for an underground storage facility.

ORPHANED AND ABANDONED WELLS



Old wooden casing pulled from a well drilled in the 1800s.

DEC estimates that over 75,000 oil and gas wells have been drilled in New York State since the 1820s. Most of the wells date before New York established a regulatory program. Many were never properly plugged or were plugged using older techniques that may not last.

Abandoned wells can leak oil, gas and/or brine; underground leaks may go undiscovered for years. These substances can contaminate ground and surface water, kill vegetation and cause safety and health problems. Historically, abandoned wells have been discovered in residential yards, playgrounds, parking lots, wooded areas, inside buildings and underwater in wetlands, creeks and ponds.

Every year DEC staff discover additional abandoned wells while conducting scheduled inspections or investigating complaints. Many abandoned well issues take several years to resolve as DEC pursues legal action against the responsible parties.

Plugging Permits and Bonds

At the end of its productive life a well must be properly plugged and abandoned and the land reclaimed. The well must be plugged with cement, equipment removed from the area, land graded, and the well site and access road revegetated.

In 2004, 145 wells were plugged in accordance with a DEC plugging permit. At year-end DEC held \$12.9 million in financial security to guarantee well plugging and reclamation. However bonds are not required for wells that predate DEC's regulatory program. The Oil & Gas Account is meant to fund plugging of preregulation wells with a \$100 fee applied to every drilling permit. Those funds are inadequate to cover the scope of the abandoned well problem and most wells end up being placed on a Priority Plugging List waiting for available funds.

Financial Security

\$12.9 Million

Wells Plugged

Total 145

- 72 Oil Wells
- 34 Gas Wells
- 39 Other

UNDERGROUND GAS STORAGE

Twenty-three natural gas and three liquefied petroleum gas underground storage facilities operated in 10 counties in the western and central parts of New York during 2004. DEC issued a permit for one new storage facility in 2004

Natural Gas Storage

Table 9 summarizes the 2004 year-end status of underground natural gas storage and Table 10 details activity during the year at each storage field. Storage operators injected 71.2 bcf of natural gas into storage during 2004 and delivered 69.8 bcf. Storage reservoirs were 78% full at the end of the reporting year and year-end working gas in storage represented 56% of working capacity. Underground storage reservoirs in New York State held a total of over 161.7 bcf of natural gas at year's end. More than 900 storage field wells were used during the year for injection, withdrawal or monitoring.

More gas is stored in the Oriskany sandstone formation than in any other rock unit in New York State. Used for storage at 10 fields including Stagecoach, the Oriskany accounted for 65% of total statewide capacity, 65% of working storage capacity and 61% of total maximum daily deliverability. The largest single storage field with respect to capacity, Dominion Transmission's Woodhull Field in Steuben County, can hold up to 35.9 bcf of gas in the Oriskany formation.

Permit Applications - In July 2004 the Department received underground storage permit applications from Dominion Transmission, Inc. for its proposed new Northeast Storage Project in the Town of Olean, Cattaraugus County, and from Steuben Gas Storage Company for a capacity expansion of its existing Adrian Reef facility in the town of Canisteo, Steuben County. The Adrian Reef modification permit was issued in November, authorizing the capacity increase through a higher maximum stabilized reservoir pressure. No additional surface facilities are in-

involved. The Dominion proposal involves conversion of a depleted natural gas production reef to storage. The Department will participate in the Federal Energy Regulatory Commission review of the project as a cooperating agency, in addition to conducting its own permit review.

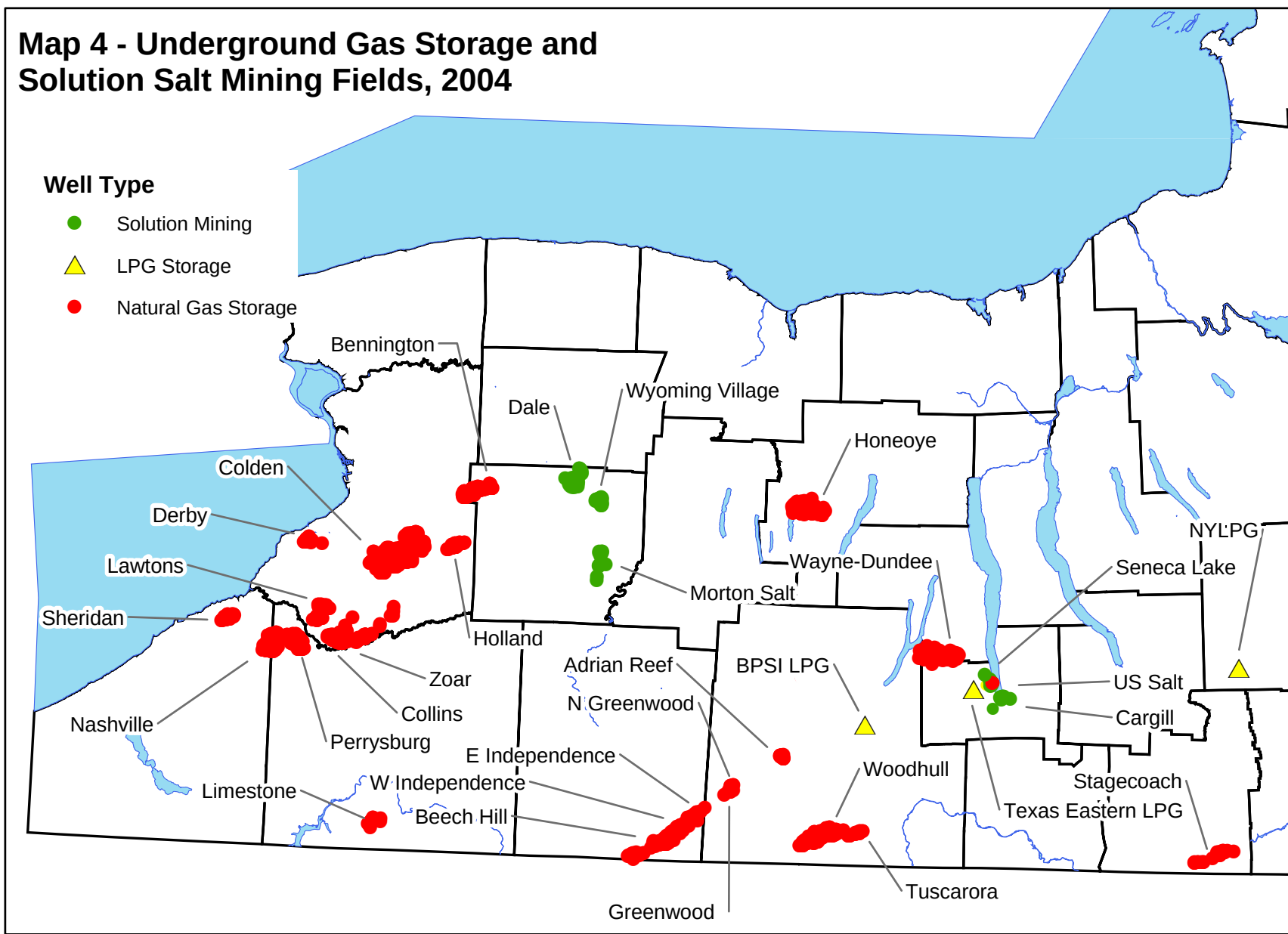
Storage permit applications from Wyckoff Gas Storage Company and National Fuel Gas Supply Company remained under review in 2004. An application from Seneca Lake Storage for an underground salt cavern storage project remains on hold at the request of the applicant.

Legal Action Over Stagecoach Royalties - In March 2004 the Commissioner denied a petition filed by a group of 45 landowners in the area of Stagecoach Field. They were challenging the Spacing and Integration Order 10 years after the applicable statute of limitations had expired and wanted royalties that had already been paid out. The Commissioner ruled that the petitioners did not present any evidence that supported the change. The royalties had already been paid to the mineral rights owners based on the 1993 Order and the field had since been converted to its current use as an underground natural gas storage facility.

Liquefied Petroleum Gas Storage

New York's three liquefied petroleum gas (LPG) underground storage facilities are in Cortland, Steuben and Schuyler Counties. The facilities store propane, butane and other liquid hydrocarbons for delivery to market as needed. Operators reported that 66,845,000 gallons of LPG were in storage at year-end 2004. The volume stored at year-end represents 45% of total LPG storage capacity.

Liquefied petroleum gas is stored in caverns excavated in the shales of the Genesee Group or solution mined out of the Salina Group salt formations, which are the same formations used by New York's five solution mining facilities.



**Table 14 - Summary and Year-End Status
Underground Natural Gas Storage, 2004**

	<u>Onondaga</u>	<u>Oriskany</u>	<u>Medina</u>	<u>Salt Cavern</u>	<u>Total</u>
Number					
Fields	2	10	10	1	23
Wells	51	333	524	3	911
Acreage					
Reservoir	7,541	29,706	42,706	4	79,957
Total	13,577	62,723	102,918	4	179,222
Total Storage Gas					
Capacity (bcf)	11.200	135.754	59.280	2.340	208.574
Year-End (bcf)	9.451	101.467	49.237	1.568	161.723
Working Gas					
Capacity (bcf)	6.863	69.027	27.973	1.450	105.313
Year-End (bcf)	5.114	34.740	17.930	0.678	58.642
Max. Daily Deliverability (mmcf/day)	100	1,171	511	145	1,927

**Table 15 - Liquefied Petroleum
Gas Storage Facilities**

	<u>Cavern Type</u>
Bath Petroleum Storage	Solutioned Salt
New York LP Gas Storage	Solutioned Salt
Texas Eastern Products	Excavated Rock

Table 16 - Summary Storage Field Activity, 2004

	Total Number Wells	Total Storage Capacity (bcf)	Gas to Storage (bcf)	Gas from Storage (bcf)	Designed Max. Deliverability (mmcf/day)
Dominion Transmission, Inc.					
Woodhull Field	51	35.904	15.412	17.115	357
Central NY Oil and Gas					
Stagecoach Field	18	14.750	8.788	8.657	500
Columbia Gas Trans. Corp.					
Dundee Field	134	11.000	3.212	2.909	77
Greenwood Field	6	3.600	0.107	0.034	5
N. Greenwood Field	2	3.200	0.754	0.476	9
Honeoye Storage Corp.					
Honeoye Field	39	10.780	4.582	3.845	55
National Fuel Gas Supply					
Beech Hill Field	56	23.000	4.170	4.642	66
Bennington Field	64	5.000	1.907	1.922	75
Colden Field	166	16.220	6.386	6.479	110
Collins Field	46	5.880	1.978	1.876	50
Derby Field	14	0.250	0.211	0.170	5
E. Independence Field	11	6.400	2.279	2.110	15
Holland Field	26	2.600	0.747	0.805	25
Lawtons Field	32	2.470	0.901	0.829	21
Limestone Field	14	19.800	1.482	1.406	37
Nashville Field	71	8.530	2.726	2.380	110
Perrysburg Field	40	3.850	0.754	0.621	35
Sheridan Field	26	3.700	0.983	0.905	25
Tuscarora Field	8	6.300	3.000	2.049	57
W. Independence Field	30	11.800	3.557	3.761	49
Zoar Field	39	2.200	0.764	0.921	40
NYS Electric & Gas					
Seneca Lake Field	3	2.340	1.536	1.757	145
Steuben Gas Storage Co.					
Adrian Reef Field	12	9.000	5.001	4.161	60
Totals	908	208.574	71.238	69.831	1,927

SOLUTION SALT MINING

Five solution mining facilities in New York (see Map 4 on page 36) produced 2.23 billion gallons of saturated brine, or about 2.65 million metric tons of salt, in 2004. Operators of these five facilities injected 2.24 billion gallons of fresh and recycled plant process water into bedded salt zones of the Upper Silurian Salina Group to recover the brine.

Brine withdrawals for 2004 represent a slight increase compared to 2003's figure of 2.08 billion gallons. The value of New York's 2004 solution salt mining production is estimated at \$100 million.

The 130 operating wells reported in 2004 include injection wells, withdrawal wells, wells equipped for both injection and withdrawal, and standby wells. Table 17 gives the number of operating and plugged wells at each facility.

U.S. Salt, Cargill, and Morton produced brine to supply on-site evaporation plants which manufacture and package table salt, water conditioning salt, and salt for other uses. Texas Brine and Occidental Chemical supplied chemical manufacturing plants in Niagara Falls via 60-mile-long brine pipelines.

In 2004 solution mining facilities accounted for approximately 41% of New York's total mined salt production, with the remainder extracted by conventional underground mining. According to U.S. Geological Survey statistics, New York typically ranks third among the states in total annual salt production volume.

New York has more than 10,000 square miles of salt beds under the central and western parts of the State. Most of these salt deposits are thick enough to be potentially commercial.

Table 17 - Status of Solution Salt Mining in New York, 2004

Operator	County	Town	Year Started	Operating Wells	Plugged Wells
U.S. Salt	Schuyler	Reading	1893	6	66
Cargill	Schuyler	Dix	1898	17	13
Morton	Wyoming	Castile & Gainesville	1884	20	25
Occidental Chemical	Wyoming	Middlebury (Dale Field)	1970	52	98
Texas Brine	Wyoming	Middlebury (Wyo. Vil. Field)	1984	35	35
Total				130	237

GEOTHERMAL AND STRATIGRAPHIC WELLS

New York City continued to be the focus of geothermal and stratigraphic well activity in 2004. A permit is required from DEC for all geothermal and stratigraphic test wells over 500 feet deep. The 2 stratigraphic test wells were only 590 feet, but the 14 geothermal wells ranged from 950 to 1,550 feet in depth.

Site reviews for wells drilled in an urban environment are far different from those in rural areas where the majority of wells regulated by the Division are drilled. The factors that the Division reviews for most permits, such as impacts to surface and groundwater resources, are supplemented by topics such as traffic control and sewer discharges which are handled by city agencies. Other urban siting concerns include avoidance of subsurface utilities, noise abatement, and emergency access and evacuation routes to and from buildings.

Stratigraphic Wells

DEC issued 2 stratigraphic well permits to the New York City Department of Environmental Protection (NYCDEP) to collect geologic information on the proposed route of City Water Tunnel #3. The tunnel is under construction 350 to 550 feet below the streets of Manhattan to

convey drinking water for the city from upstate reservoirs.

Geothermal Wells

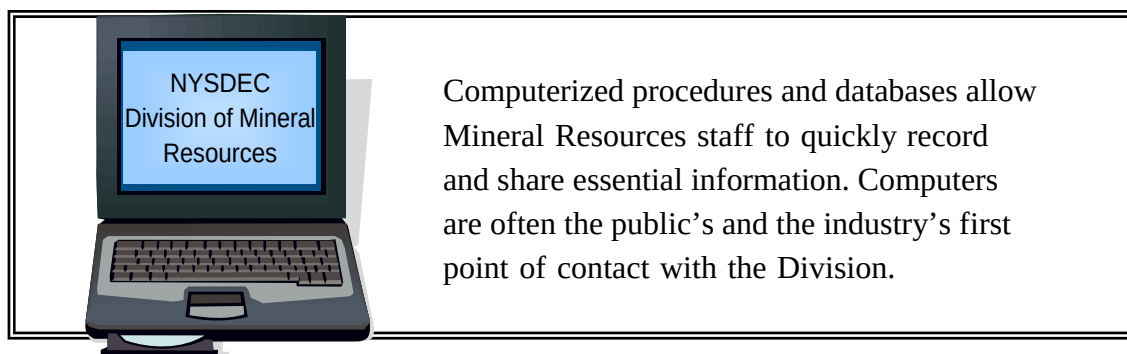
Three separate projects in New York City resulted in a record high of 14 geothermal well permits being issued in 2004. These geoexchange wells use the earth as either a heat source or a heat sink, depending upon the season, by circulating water between the surface and the bottom of the well. Since the mean earth temperature beneath New York City at the permitted well depths is roughly 55° F, these wells are expected to have high operating efficiency. One well tested subsurface conditions for geothermal heating and cooling of the Bronx Zoo Lion House exhibit. Thirteen other wells were permitted to support two residential and commercial projects. One project has qualified for the Green Building Tax Credit Program administered by the Department.

The Division expects geothermal drilling activity to continue and perhaps even increase in future years due to the economic and environmental benefits associated with this technology, as well as the incentives from rising fuel costs and "Green Building" tax credits.

Table 18 - Permitted Geothermal Wells, 2004

Company	Wells	Project	Location	Use/Purpose
1400 5th, LLC	6	1400 Fifth Avenue	Manhattan	Residential/ Commercial
New York City Design Dept.	1	Bronx Zoo	Bronx	Lion House Exhibit
Yarrow Development	7	South St Seaport	Manhattan	Residential

INFORMATION TECHNOLOGY



Website Use Statistics

Public use of the Division's website increased dramatically from the previous year for both the Mined Land and Oil and Gas Programs. The average number of user sessions rose 25% to 452 sessions per day, with an average session length of 22 minutes. The number of unique visitors rose by 11% and the total number of page views rose by 28%. Visitors downloaded over two gigabytes of information per month.

Electronic Reporting and Annual Reports

The Division mailed out preprinted Annual Well Reports to 986 registered owners of the 14,430 active oil and gas wells in the State for 2004. In addition to ensuring compliance and collecting basic information on the industry, production data from the reports is used by local governments to assess property taxes.

For the past five years well owners have had the option of filing their reports electronically using an Access database. However, this option has appealed mostly to the larger oil and gas companies with the ability to electronically load data. In 2004 the Division created a second electronic reporting option aimed at small operators. This new application is user-friendly - the operator enters their production data directly into a form on their computer screen, saves it in an xmi for-

mat and e-mails it back to the Division where the figures are uploaded into the database.

In 2004 well owners submitted electronic reports covering 6,070 wells or 50% of the State's reported wells. The 20% improvement from the previous year was due mostly to small operators taking advantage of the new electronic filing method. The percent of the State's total gas production reported by electronic filing increased from 91% in 2003 to 94% in 2004.

2004 marked the first year that reports for natural gas underground storage and solution mining facilities could be electronically filed. Staff also developed computerized well status forms for stratigraphic, monitoring and brine disposal wells.

Since New York does not have a protocol for digital signatures, well owners must still submit paper copies. Nonetheless, electronic reporting reduces data entry errors and saves significant time for both the industry and the Department.

2004 Special Projects

The Division worked with DEC Public Affairs staff to create a Flash presentation on the Mined Land program. Flash is a relatively recent software format that can be used to deliver graphics, video-like animation, sound and interactiv-



ity over the Internet. This new website feature educates visitors on how DEC protects the environment through mine permit requirements. Along the way visitors are treated to some eye-catching examples of successful mine reclamation (<http://www.dec.state.ny.us/website/dmn/recflash/index.html>).

In 2004 the Division also completed a Mined Land Database User's Manual to assist staff with database entry and retrieval of program information. The manual includes information on developing custom queries and reports to help staff get the most out of the available data.

In late 2004 the Division started a pilot test of an electronic inspection recording system. The new method, employing a Palm Pilot, makes record keeping easier.

When field staff return to the office, they can simply electronically download the information into the Division's database with no delay for typing data. Inspection results becomes available to the entire Division much more quickly using these new procedures.

The pilot project was run by Mined Land staff in DEC Regions 3, 4, 7 and 9 with eventual plans for adoption statewide by both the Mining and Oil and Gas programs. Staff performed sufficient inspections by year-end 2004 to determine the system worked well.

The importance of this new initiative to the Division cannot be overstated. As can be seen from the statistics in the illustration above, the two programs combined perform well over 4,500 inspections per year.

<http://www.dec.state.ny.us/website/dmn>

2004 New York Mining Industry At a Glance

Active Mines
2,272

Approx. Value
\$1 Billion

U.S. Quantity Rank

Wollastonite	1st
Garnet	1st
Salt	3rd
Talc	4th

Affected & Reclaimed Land

Net Affected Acreage	47,099
Life-of-Mine Acreage	110,482
Reclaimed, 2004	1,243
Reclaimed Since 1975	23,300

Common Mine Types

Sand & Gravel	1,948
Limestone (dolostone)	98
Bluestone	54
Sandstone	24

Owner Type

Industry	1,761
Government	511
- Local Govt.	495
- State Govt.	16

Financial Security

For Reclamation
\$99,060,756

Annual Regulatory Fees
\$2,774,583

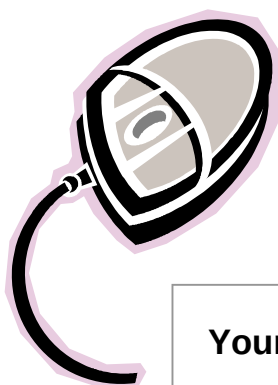
Regulated Vs. Unregulated Mines

DEC's statistics in this Annual Report cover only mines regulated under the Mined Land Reclamation Law as described at the right. New York also has many unregulated mines (active & abandoned) that fall outside the law's jurisdiction. Most of these are small mines and/or mines that predate the 1975 law.

Mines need a permit under the Mined Land Reclamation Law if they remove:

- ♦ 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 waterbody not classified as "protected" by ECL Article 15.

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



For Details on Mines in Your Area

Your County's Mined Land Reclamation Summary Report

NYS DEC Division of Mineral Resources 12/31/04

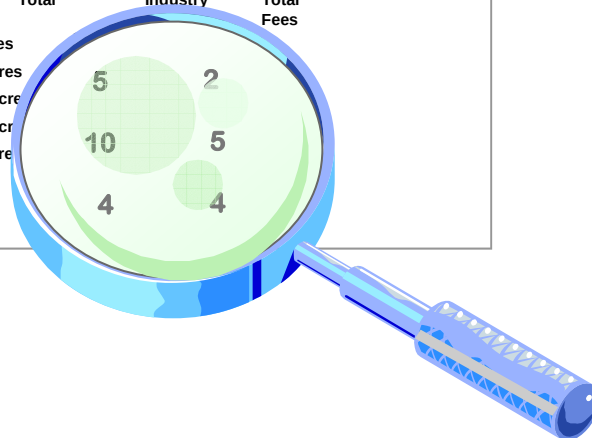
	Active Mines		Industry Mines	
	Total	Average	Total	Average
No. Mines of Record	25		16	
Acreage Affected	1,324	53	1,028	73
Acreage Reclaimed	531	21	235	16
Net Affected Acreage	793	32	794	56
Life-of-mine Acreage	1,731	69	1,329	94

Number of Active Mines by Owner Type

County	2
Town	7
Industry	16

Number of Active Mines by Size

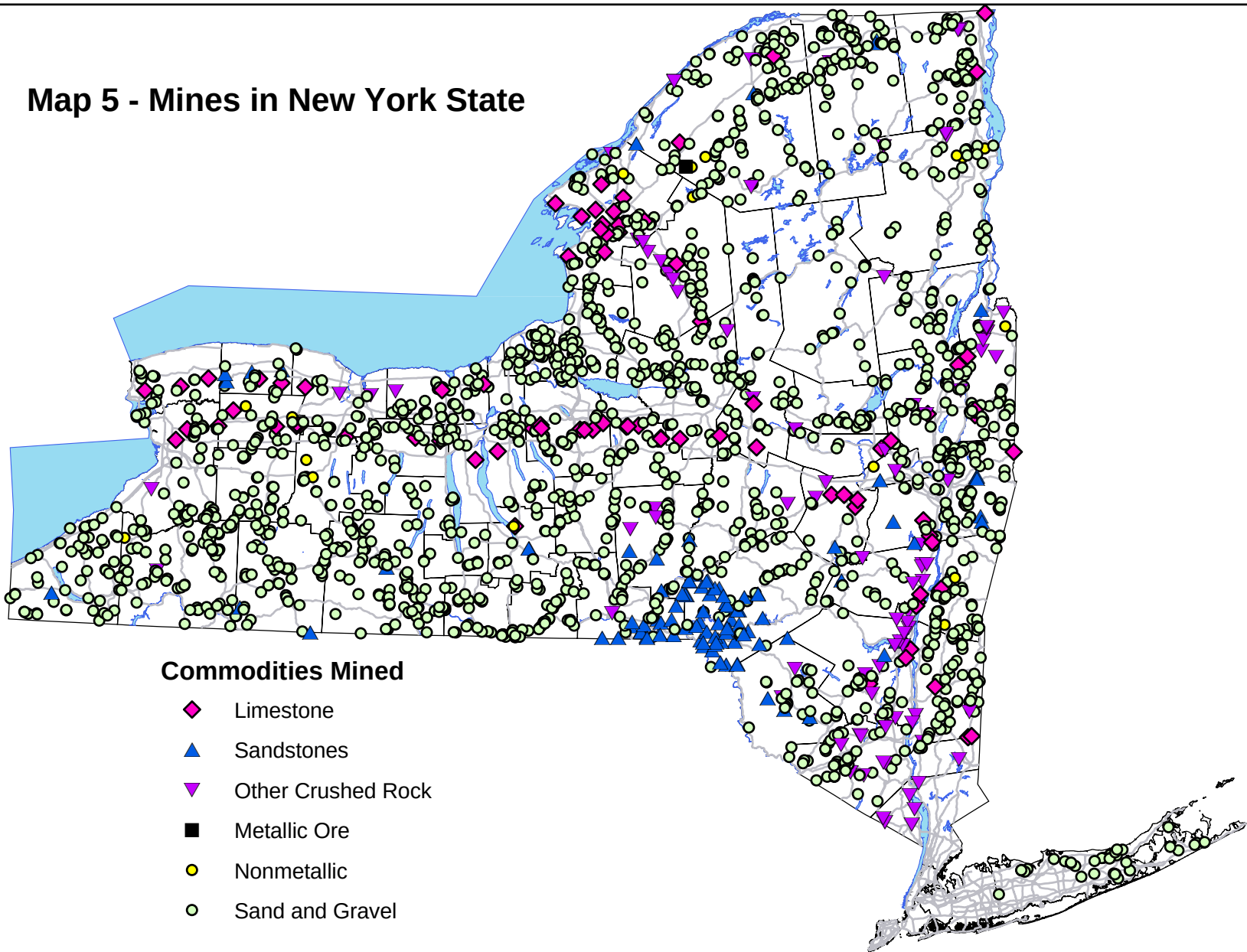
	Total	Industry	Total Fees
0-5 acres			
6-10 acres	5	2	
11-20 acres			
21-30 acres	10	5	
> 31 acres	4	4	



VISIT

<http://www.dec.state.ny.us/website/dmn/minedsums.htm>

Map 5 - Mines in New York State



MINED LAND PROGRAM OVERVIEW

Types of Mines in New York

In 2004 New York had 2,272 active mines. The vast majority of these mines produce sand and gravel or other surficial deposits such as glacial till, clay or topsoil. However, New York has roughly 250 hardrock mines that produce materials ranging from limestone, shale and salt, to less common products such as wollastonite and talc. Most of the State's hardrock mines are surface quarries, but there are also a few active underground mines. For more details on New York's mining commodities see pages 57-69 and the Appendix on page 81.

Permits Issued 2004

In 2004 staff issued 55 permits for new mines and 420 renewals or modifications, for a total of 475 permits (see Table 19). The relatively low number of new mine permits in 2004 is part of a continuing trend associated with strong public opposition to mining activities. Table 20 shows the top types of new mines permitted.

Mining permits are issued for a term of five years or less and must be renewed. A renewal permit simply authorizes continued operation of the mine. A modification permit allows changes such as expansion of the mine's surface area, mining deeper, or addition of processing equipment. Permit modifications always involve extra review and frequently require an environmental impact statement and public hearing.

Table 19 - Permits 2000 to 2004					
	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>
New Permits	71	71	56	51	55
Renewals & Modifications	290	307	367	538	420
Total Permits	361	378	423	589	475

Geographic Distribution of Mines

Map 5 on page 45 shows that mines can be found statewide; in 2004 there were active mines in 55 of New York's 62 counties. However, the map does not convey the relatively small percentage of the State's land surface devoted to mining.

The wide variation in county size means comparisons of the acreage under permit in each county can be misleading. For example, St. Lawrence, the State's largest county at 1,700,000 square acres, is 15 times larger than Rockland County. While St. Lawrence County had a relatively high total of 1,653 net affected acres under mining permit in 2004, that represented just 0.01% of the County's land area.

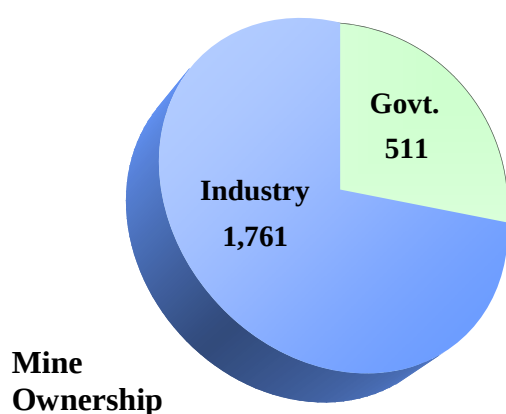
Therefore, Table 21 ranks counties by the percent of their land surface under permit. This table shows that mining activity is concentrated near heavily populated areas which require larger quantities of mineral resources for roads and buildings. In 2004 just 8 counties had more than 0.30% of their land surface under a mining permit (Albany, Dutchess, Genesee, Livingston, Onondaga, Ontario, Rensselaer, Rockland) with a range of 0.35 to 0.44%. For most of the counties with active mines, less than 0.25% of their land is covered by mining permits.

Table 20 - Commodity Type New Mines Permitted, 2004	
Sand & Gravel	39
Bluestone	5
Clay	4
Topsoil	3
Dolostone	1
Peat	1

Table 22 shows the top 5 counties for mining permits in 2004. However, note that very few permits were for new mines, just renewals. Table 23 summarizes mining permits issued in 2004 by County.

Owner Type

In 2004 industry operators owned 1,761 mines or roughly three-fourths of the mines in the State. Most of the government mines belong to highway departments that use the material for road maintenance. In 2004 there were 57



county-owned mines and 438 belonging to towns, villages and other small local government entities. In addition to owning roughly one quarter of the mines in New York, government agencies at all levels purchase significant quantities of sand, gravel and other aggregates from commercial mines.

Annual Regulatory Fees

In 2004 the Division collected \$2,774,583 in annual regulatory fees, up roughly 8% from 2003. Acreage-based fees are collected for individual, industry and state-owned mines. County, town, village and other local government mines are exempt. The fees are used to support the mining program.

Operators who do not pay their fees shortchange the mining program and have an unfair competitive advantage. In 2004 DEC Region 6 ran a successful pilot test of a new permit suspension strategy to collect overdue fees. Upon completion of the successful pilot, the new enforcement program was slated for statewide adoption. Database enhancements now allow staff to more closely monitor payment histories.

Table 21 - Counties with Highest Percentage of Land Under Mining Permit, 2004

County	Population Ctr. Nearby	Active Mines	Net Affected Acreage	Land Percent
Livingston	Rochester	26	1,802	0.45%
Rockland	NY City	4	493	0.44%
Genesee	Buffalo	28	1,297	0.41%
Onondaga	Syracuse	45	1,969	0.39%
Dutchess	NY City	62	1,940	0.38%
Ontario	Rochester	45	1,553	0.38%
Rensselaer	Capital/ Tri-City	55	1,543	0.37%
Albany	Capital/ Tri-City	19	1,218	0.36%

Table 22 - All Mining Permits Top 5 Counties, 2004

	New Permits	Total Permits
Saratoga	1	20
Cattaraugus	1	19
Dutchess	1	19
Jefferson	2	19
St. Lawrence	4	19

Table 23 - Summary of Mined Land Permits Issued, 2004

<u>County</u>	<u>New Permits</u>		<u>Total Permits*</u>	
	<u>Number</u>	<u>Acres</u>	<u>Number</u>	<u>Acres</u>
Albany	2	10	4	109
Allegany	3	8	16	93
Broome	2	20	3	63
Cattaraugus	1	4	19	600
Cayuga	0	0	4	44
Chautauqua	4	22	17	162
Chemung	0	0	7	151
Chenango	0	0	4	147
Clinton	1	4	9	111
Columbia	2	19	10	195
Cortland	0	0	5	201
Delaware	6	33	16	140
Dutchess	1	5	19	516
Erie	1	2	15	489

<u>County</u>	<u>New Permits</u>		<u>Total Permits*</u>	
	<u>Number</u>	<u>Acres</u>	<u>Number</u>	<u>Acres</u>
Essex	0	0	8	55
Franklin	1	5	18	155
Fulton	0	0	2	24
Genesee	0	0	4	171
Greene	1	5	6	139
Hamilton	0	0	5	46
Herkimer	2	9	13	564
Jefferson	2	9	19	266
Lewis	3	13	7	85
Livingston	0	0	8	364
Madison	0	0	5	98
Monroe	0	0	4	101
Montgomery	1	4	3	59
Niagara	1	5	2	10

* Includes new, renewal and modification permits.

Table 23 - Summary of Mined Land Permits Issued, 2004 (continued)

<u>County</u>	<u>New Permits</u>		<u>Total Permits*</u>	
	<u>Number</u>	<u>Acres</u>	<u>Number</u>	<u>Acres</u>
Oneida	2	20	15	253
Onondaga	0	0	13	355
Ontario	1	5	12	803
Orange	0	0	13	224
Orleans	0	0	5	218
Oswego	2	15	11	206
Otsego	0	0	3	45
Putnam	0	0	1	23
Rensselaer	0	0	5	653
Rockland	0	0	2	183
Saratoga	1	20	20	402
Schenectady	0	0	1	11
Schoharie	0	0	1	77
Schuyler	1	7	3	71

<u>County</u>	<u>New Permits</u>		<u>Total Permits*</u>	
	<u>Number</u>	<u>Acres</u>	<u>Number</u>	<u>Acres</u>
Seneca	0	0	1	64
St. Lawrence	4	20	19	1,357
Steuben	0	0	17	505
Suffolk	4	15	11	121
Sullivan	1	5	7	540
Tioga	0	0	4	30
Tompkins	0	0	2	85
Ulster	0	0	9	139
Warren	0	0	13	151
Washington	3	76	13	231
Wayne	1	3	13	539
Wyoming	1	2	7	50
Yates	0	0	2	55

* Includes new, renewal and modification permits.

Trends in Mine Size and Number

Mine renewal permits issued in 2004 ranged in size from 1 to 432 acres. In contrast, roughly 70 percent of new mines permitted in 2004 were under 5 acres. The largest new mine was the 64-acre Smiths Basin dolostone mine in Washington County belonging to Jointa Galusha.

Table 24 gives 2000-2004 size range information for all active mines based on net affected acreage. The table shows that the number of large mines has been increasing over time while the number of small mines has been decreasing.

The minor projects in the first row of the table are always less than five acres in size. They are subject to a simpler review process, but must comply with very strict criteria: minimum setbacks from homes and surface waters; a maximum 20-foot mine depth; no mining below water table; no hardrock (consolidated material) mining; and no on-site processing equipment, such as washing or crushing machines.

Mine Acreage Types and Statistics

Net Affected Acreage - Net affected acreage is the total affected acreage ever covered under a mined land permit minus the reclaimed acreage. In 2004 the total affected land that mine operators were authorized to extract minerals from under their current permits was 47,099 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 2004 this total life-of-mine area, which also includes past reclaimed acreage, was 110,482 acres.

Reclaimed Acres - In 2004 Mined Land staff approved final reclamation of 764 acres at 102 closed mines and concurrent reclamation of 479 acres at 72 operating mines. Table 25 on page 57 summarizes 2004 reclamation by County.

Since 1975 a total of 23,300 acres of mined land have been reclaimed.

Table 24 - Net Affected Acreage of Existing Mines, 2000-2004

	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>
Minor Projects	85	87	82	80	78
0-5 Acres	901	852	814	751	712
6-10 Acres	603	605	584	549	532
11-20 Acres	436	441	449	446	442
21-30 Acres	155	166	178	172	179
>30 Acres	295	308	310	319	329
Total Mines	2,475	2,459	2,417	2,317	2,272

MINE RECLAMATION

Reclaimed Land Uses

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.

Reclamation takes two forms based on timing of the work - concurrent or final (for 2004 acreage statistics see pages 50 and 53). Concurrent reclamation is reclamation of an affected or mined-out area while resources are still being extracted from other parts of the mine site.

The Division of Mineral Resources strongly promotes concurrent reclamation, particularly for mines over 10 acres. Concurrent reclamation is almost always economically feasible and has a number of advantages. Chief among these is the reduced potential for negative environmental impacts (dust, erosion, sedimentation) and the improved standing of the mine in the eyes of the surrounding community.

Financial Security

At the end of 2004 the Division held \$99,060,756 in financial security that mine operators posted to guarantee the reclamation of mined land. This was an increase of \$5.8 million from 2003. If an operator fails to reclaim a mine, DEC claims the financial security and uses it to reclaim the land. However, recent reclamation experiences show that posted bond amounts have not kept pace with rising reclamation costs over the years. The Division started a detailed analysis of financial security on file in 2004; the law authorizes DEC to increase financial security requirements if necessary. The state-wide average of \$2,334/ acre is insufficient to cover complete reclamation in most cases.

DEC Mine Reclamation

In 2004 the Division of Mineral Resources claimed the financial security for two mines and arranged reclamation with DEC's Operations Division. The mines were in Chautauqua and Onondaga Counties. The Santaro mine shown in the photo below was a steep site with safety problems, trash, erosion and offsite sedimentation.

DEC Mine Reclamation

Final seeding of the Santaro mine site in Onondaga County. The sprayer machine contains seed, water and fertilizer.



2004 Reclamation Highlights

Dutchess Quarry and Supply Company was the winner of the 2004 New York State Mined Land Reclamation Award for their voluntary reclamation of an abandoned mine in Pleasant Valley, Dutchess County. The company acquired the 15-acre Elizabeth Lansing Sand and Gravel Mine, graded the site to match the contours of the surrounding land and seeded it with a cool-season grass and legume mixture. The reclamation replaced an eyesore with a beautiful open meadow. Other notable reclamation during 2004 included:

- Lafarge continued its concurrent reclamation project at their Freedom Pit in Cattaraugus County. In the spring of 2004 DEC Region 9 staff inspected 7,200 trees and shrubs planted on 18 acres the previous year. The reclamation project will ultimately include Karner Blue butterfly habitat, a blight-resistant chestnut-oak forest, wetlands and shrub transition zones for songbirds and other wildlife. Staff also inspected about 10 acres planted to grass savannas and blue lupine.
- Country Side Sand and Gravel in Cattaraugus County opened over 7,000 feet of shoreline to public fishing on a lake excavated in the course of mining. The company also built a one-acre parking lot for public use. A fence separates the 20- to 40-foot deep lake from the active mine. In September 2004 a fisherman caught a 14 lb., 33-inch pike.
- T. H. Kinsella, a company with several mines in DEC Region 7, sought approval to create wetland credits by voluntarily altering the approved reclamation plan for one of their mines from a cornfield to a wetland. As a result, Region 7 Mined Land staff worked with the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, USEPA, and DEC's Divisions of Environmental Permits and Fish and Wildlife to start development of the first Wetland Mitigation Banking program in Region 7.



Volunteers from DEC's Camp Rushford and mine employees helped DEC Fish and Wildlife staff band Canada geese at Country Side Sand and Gravel's Dayton mine in Cattaraugus County (see above). The geese reside on one of the facility's lakes created by mining into the groundwater table. Fish and Wildlife staff herded roughly 300 birds into collection pens and the volunteers carried the birds to the DEC biologists for banding.

Table 25 - Reclaimed Acreage Summary, 2004*			
County	<u>Concurrent Reclamation</u>	<u>Final Reclamation</u>	<u>Total Reclamation</u>
Albany	-	42	42
Allegany	-	25	25
Broome	70	4	74
Cattaraugus	-	5	5
Chautauqua	3	6	9
Chemung	-	9	9
Chenango	3	7	10
Clinton	13	20	33
Columbia	-	27	27
Cortland	-	7	7
Delaware	9	47	56
Dutchess	44	86	130
Erie	-	13	13
Essex	5	22	27
Franklin	18	8	26
Fulton	5	-	5
Genesee	15	2	17
Greene	4	4	8
Hamilton	-	2	2
Herkimer	5	1	6
Jefferson	29	17	45
Lewis	-	15	15
Madison	5	12	17

* Figures rounded so totals may not be exact.

Table 25 - Reclaimed Acreage Summary, 2004* (continued)			
County	<u>Concurrent Reclamation</u>	<u>Final Reclamation</u>	<u>Total Reclamation</u>
Monroe	2	5	8
Oneida	2	23	25
Onondaga	2	1	3
Ontario	30	40	70
Orange	2	133	135
Oswego	29	1	30
Otsego	5	7	12
Rensselaer	5	35	40
Saratoga	5	16	21
Schenectady	1	-	1
Schuyler	6	10	16
St. Lawrence	81	36	117
Steuben	13	-	13
Sullivan	2	-	2
Suffolk	-	2	2
Tioga	10	-	10
Tompkins	4	11	15
Ulster	6	20	26
Warren	-	13	13
Washington	6	18	24
Wayne	43	9	52
Westchester	-	5	5
Total	479	764	1,243

* Figures rounded so totals may not be exact.

INSPECTIONS AND REMEDIATION

Inspections

In 2004 Mined Land staff performed 2,226 mine inspections and traveled 190,306 miles. Staff inspect mine sites:

- during permit application review,
- during the operating phase for general compliance,
- to ensure that violations are remediated as required,
- to ensure that reclamation complies with requirements, and
- to investigate complaints.

Violations and Fines

Violations are handled with a mixture of enforcement tools, remediation requirements and penalties. In 2004 the Mined Land Program collected \$40,800 in fines and penalties.

At right is an example of severe erosion and slumping caused by a mine operator's failure to install adequate erosion control measures. As required by the Department, the operator restored and revegetated the area.

Remediation After Violation



Before



After



**For More Information on the
Mined Land Reclamation Program
See the new FLASH presentation at**

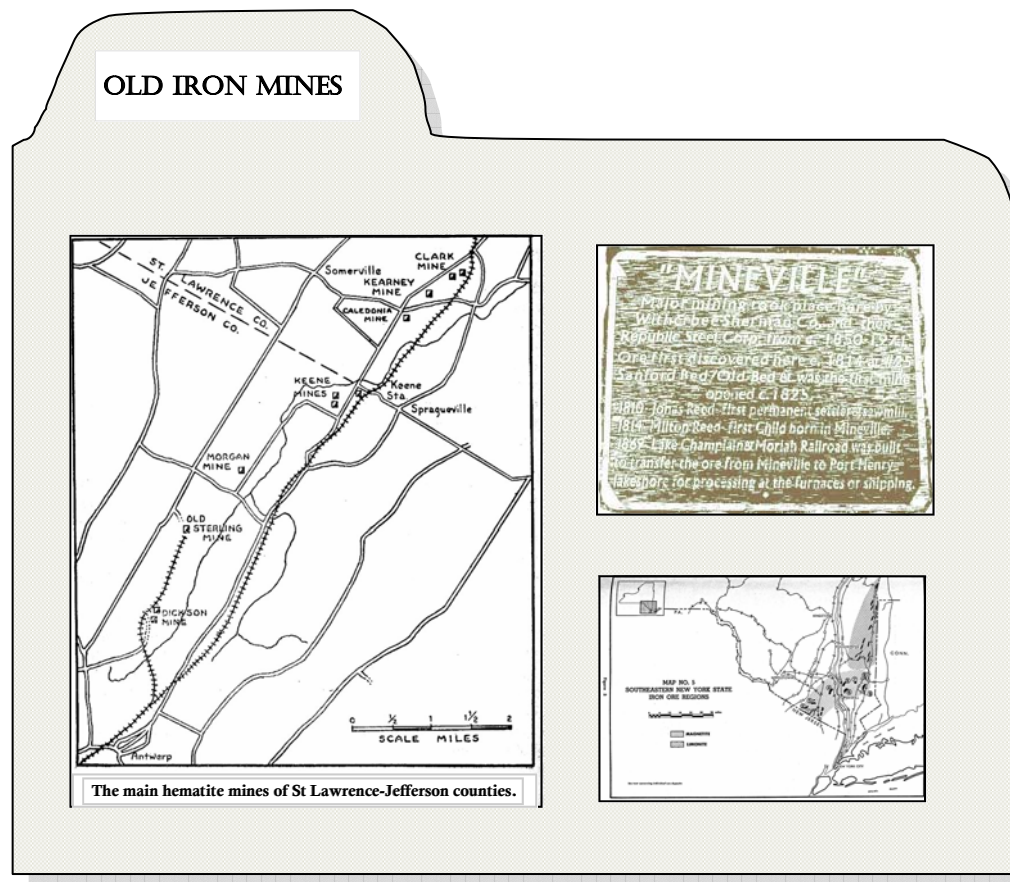
<http://www.dec.state.ny.us/website/dmn>

OLD ABANDONED MINES

The mining industry in New York achieved its greatest extent during the 19th and early 20th centuries. However, many underground mines from that period have long been abandoned with few remaining records available.

In 2004 DEC and the New York State Geological Survey (NYSGS) continued their joint work under a small grant from the U.S. Mine Safety and Health Administration (MSHA). DEC and

the NYSGS have been researching information on roughly 255 major underground mines throughout the State. Staff working on the project established an underground mine database to index mine maps. They also scanned a total of 900 images of mine maps and other maps showing mine locations. If additional funding is found, the two agencies will georeference all available mine maps and provide the information in a web-based format.



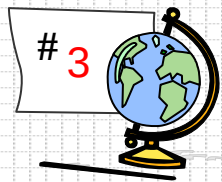
Many of the mine maps collected by DEC and the NY State Geological Survey are from old iron mines. Iron ore was once a very important product for NY State.

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. Selected USGS information on state rank, production quantity and production value figures for New York are included on pages 57 to 66. These figures should be regarded as minimums since the surveys are incomplete and USGS regularly revises their statistics as more information becomes available. However, the figures are still useful for showing rough levels of production and year-to-year trends.

In 2004 New York remained the only wollastonite-producing state in the country and also retained its recently achieved first place rank in production of industrial garnet. New York likewise remained third in production of salt and fourth in talc. New York usually ranks around tenth nationwide in cement (2004 USGS figures not yet available).

As far as economic importance within the State, crushed stone is usually New York's leading non-fuel mineral, followed by cement (portland and masonry), salt, construction sand and gravel, and wollastonite. These five commodities typically account for 98% of the State's nonfuel mineral value which generally runs around \$1 billion.



In world production*, the State of New York ranks 3rd in wollastonite, behind countries China and India.



In U.S. production*, New York ranks:

- 1st in wollastonite and garnet,
- 3rd in salt, and
- 4th in talc.



New Yorkers use 50 pounds of minerals per person per day.

* Production rank based on volume

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. 2004 figures are not yet available from USGS.

Table 26 - Sand and Gravel Mines Over 125 Permitted Acres, 2004

<u>Company</u>	<u>County</u>	<u>Town</u>	<u>Acres</u>
Callanan Industries	Rensselaer	North Greenbush	412
Hanson Aggregates NY, Inc.	Oswego	Sandy Creek	273
Valley Sand & Gravel, Inc.	Livingston	Caledonia	213
Hanson Aggregates NY, Inc.	Livingston	Caledonia	200
Frey Concrete, Inc.	Genesee	Alexander	188
Hanson Aggregates NY, Inc.	Herkimer	Warren	186
Barney & Dickenson, Inc.	Broome	Vestal	184
Champion Sand & Gravel, Inc.	Jefferson	Champion	170
Hanson Aggregates NY, Inc.	Herkimer	Russia	160
F S Lopke Contracting, Inc.	Tioga	Tioga	158
Knight Settlement S&G LLC	Steuben	Bath	156
Lafarge North America, Inc.	Cattaraugus	Freedom	149
Gernatt Asphalt Products, Inc.	Erie	Sardinia	148
Hanson Aggregates NY, Inc.	Ontario	Phelps	147
Buffalo Crushed Stone, Inc.	Cattaraugus	Farmersville	146
Fletcher Gravel Co, Inc.	Onondaga	Marcellus/ Camillus	137
Graymont Materials NY, Inc.	Clinton	Schuyler Falls	135
Hanson Aggregates NY, Inc.	Steuben	Bath	134
Troy Sand & Gravel Co. Inc.	Rensselaer	Sand Lake	128
Hanson Aggregates NY, Inc.	Ontario	Victor	127

Table 27 - Largest Sand and Gravel Mine Operators, Total Permitted Acres, 2004

<u>Company</u>	<u>Counties</u>	<u>Acres</u>
Hanson Aggregates NY, Inc.	Oswego, Livingston, Herkimer, Ontario, Steuben, Schuyler, Oneida, Wayne, Monroe, Montgomery, Chemung, Cattaraugus	2,130
Lafarge North America, Inc.	Cattaraugus, Erie, Genesee, Wyoming	588
Buffalo Crushed Stone, Inc.	Cattaraugus, Allegany, Genesee, Erie	586
Callanan Industries, Inc.	Rensselaer, Albany	546
Gernatt Asphalt Products, Inc.	Erie, Cattaraugus, Chautauqua	487
Graymont Materials NY, Inc.	Clinton, St. Lawrence, Essex, Franklin	466
F S Lopke Contracting, Inc.	Tioga, Broome	465
Cranesville Aggregate Co., Inc.	Schenectady, Columbia, Saratoga, Jefferson Fulton	404
Dalrymple Gravel & Contracting	Steuben, Chemung	330
Elam Sand & Gravel Corp.	Wayne, Ontario, Steuben, Livingston	309



Mines that produce sand, gravel and other aggregates can only be sited where these resources occur naturally.

Limestone, Dolostone, Crushed Stone and Cement

Limestone and dolostone make up the second biggest category of New York mines with 98 scattered across the State. These mines produce roughly 90% of the stone sold in New York State. They collectively encompass 11,378 permitted acres with nearly half of that acreage in DEC Regions 4 and 8 (see map on page 8).

New York's most important products from these mines are crushed stone and cement which are used predominantly in building and road construction and maintenance. Based on value, crushed stone is usually New York's leading nonfuel mineral, followed by cement.

The most recently available USGS figures show New York typically produces over 50 million metric tons of stone worth over \$350 million. While limestone and dolostone represent the vast majority of the State's crushed stone production, New York also produces crushed granite, marble, traprock, sandstone and quartzite.

Previous USGS figures show that New York typically produces around 3 million metric tons of cement worth over \$225 million. Cement production is concentrated in the upper Hudson Valley area where a relatively pure limestone is quarried from the Coeymans formation.

Table 28 - Limestone and Dolostone Mines Over 250 Permitted Acres, 2004			
<u>Company</u>	<u>County</u>	<u>Town</u>	<u>Acres</u>
Hanson Aggregates NY, Inc.	Onondaga	Dewitt	790
Lafarge N. American Cement	Albany	Coeymans	759
Tilcon NY, Inc.	Dutchess	Poughkeepsie	682
St. Lawrence Cement Co.	Greene	Catskill	318
Hanson Aggregates NY, Inc.	Livingston	Lima	285
St. Lawrence Cement Co.	Columbia	Greenport	281
Hanson Aggregates NY, Inc.	Onondaga	Skaneateles	270
Glens Falls Lehigh Cement Co.	Greene	Catskill	267
Buffalo Crushed Stone, Inc.	Genesee	Alabama	264
Hanson Aggregates NY, Inc.	Oneida	Marshall	264
Hanson Aggregates NY, Inc.	Jefferson	Pamelia	263

Table 29 - Largest Limestone & Dolostone Mine Operators, Total Permitted Acres, 2004

<u>Company</u>	<u>Counties</u>	<u>Acres</u>
Hanson Aggregates NY, Inc.	Genesee, Herkimer, Jefferson, Livingston, Oneida, Onondaga, Ontario, St. Lawrence, Orleans, Cayuga, Montgomery, Wayne	3,076
Tilcon NY, Inc.	Dutchess, Rockland, Ulster	838
Callanan Industries, Inc.*	Monroe, Montgomery, Madison, Ulster	774
Lafarge N. American Cement	Albany	759
Dolomite Products Co., Inc.	Genesee, Monroe, Ontario, Wayne	669
St. Lawrence Cement**	Columbia, Greene	599
Barrett Paving Materials, Inc.	Herkimer, Jefferson, Onedia, St. Lawrence	546
Redland Quarries NY, Inc.	Niagara	489
Buffalo Crushed Stone, Inc.	Erie, Genesee	460
Glens Falls Lehigh Cement Co.	Greene, Saratoga	343
Cobleskill Stone Products, Inc.	Schoharie	284

* Includes Callanan dba Iroquois Rock Products

** Includes St Lawrence, LLC and Co.



Old steam shovel at the Jamesville Quarry.

The Jamesville Quarry is a connected group of mine sites forming an 1,811-acre quarry property in the Town of Dewitt, Onondaga County. When the Jamesville Quarry opened in 1878, it was mined by hand for slake lime that was loaded onto horse-drawn wagons. By 1909 Allied Chemical had taken over the mine to extract raw materials for soda ash. Steam or electric shovels excavated the stone and it was loaded onto railroad hopper cars.

Today, Hanson's large modern mining equipment can produce stone at a maximum rate of 1,700 tons per hour.

Garnet

Since 2003 New York State has ranked first in industrial garnet-production in the United States. Since there are just a few companies that account for all U.S. industrial garnet production, USGS does not publish detailed production statistics for New York State. However, generally speaking, Barton Mines in Warren County is the largest U.S. garnet producer. NYCO Minerals probably ranks third in the country; the company produces accessory garnet with their main product, wollastonite.

Table 30 - New York Garnet Mine, Permitted Acres, 2004			
<u>Company</u>	<u>County</u>	<u>Town</u>	<u>Acres</u>
Barton Mines Co., LLC	Warren	Johnsburg	107

Barton currently extracts garnet from its Ruby Mountain mine in the Town of Johnsburg. However the company's nearby Gore Mountain mine, which opened in 1878 and ran until 1983, was the largest garnet mine in the world during its operation. Garnets from the company's current Ruby Mountain site make especially high-quality abrasives. Most New York garnet 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 imperfections to be used in jewelry.



Garnet boulder on display at the New York State Fairgrounds in Syracuse. The boulder was donated by the Barton Garnet Mines.

Wollastonite

New York is the only commercial producer of wollastonite in the country and the State's four mines, located in the Adirondacks, account for all U.S. production. New York is the third largest producer of wollastonite in the world providing about 25% of global production. Wollastonite has been mined in New York for over 50 years.

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, which was solely from New York, increased between 2003 and 2004. An industry consultant routinely cited by USGS gives annual production estimates in the range of 115,000 tons per year. Within the State, wollastonite usually ranks as New York's fifth most valuable nonfuel mineral.



DEC Inspector on left and a mine employee surveying NYCO's Lewis wollastonite mine.

One of wollastonite's most unusual characteristics is its ability to cleave into needle-like (acicular) crystals. These fibrous particles make it useful both as an asbestos replacement and as reinforcement material in products ranging from plastics, ceramics and brake pads to paint, coatings and sealants.

China, the world's largest producer, is the main source of the lower-grade wollastonite imported into the U.S. New York's mines now generally focus on higher-grade wollastonite and a portion of each mine's output is specially milled and/or surface treated to achieve specific industrial properties.

Table 31 - New York Wollastonite Mines, Permitted Acres, 2004

<u>Company & Mine</u>	<u>County</u>	<u>Town</u>	<u>Acres</u>
NYCO/ Oak Hill Mine	Essex	Lewis	127
NYCO/ Lewis Mine	Essex	Lewis	90
Gouverneur Talc/ No. 4 Mine	Lewis	Diana	49
NYCO/ Willsboro Mine	Essex	Willsboro	4

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. Once again in 2004 New York was the third largest salt producer in the country. There are currently two active rock salt mines in New York State, Cargill's Cayuga Mine centered around Cayuga Lake in Tompkins and Seneca Counties and American Rock Salt's Hampton Corners Mine in Livingston County. Salt is also produced from five solution mining facilities in Schuyler and Wyoming Counties (see page 39).

For 2004 the U.S. Geological Survey estimated New York's combined salt output from underground mines and solution salt mining wells at roughly 6.4 million metric tons worth \$301 million. New York's estimated brine production figures for 2004 subtracted from the total leave an estimated rock salt production of roughly 3.75 million metric tons. New York ranked third nationally in salt production from 2000 to 2004. Within the State, salt typically ranks third in the value of New York's non-fuel mineral commodities.

The Cargill Lansing mine, near Ithaca, is the larger of the State's two salt mines. It is also the deepest underground salt mine in the western hemisphere. The much smaller American Rock Salt mine in Livingston County began production in December 2000 to replace the abandoned AKZO Retsof mine near Geneseo. When the Retsof mine was in operation, it was one of the largest underground salt mine in the world.



Salt has been mined in the area of Cayuga Lake since at least 1915, but Cargill did not take over the mine until the 1970s. The company extracts salt from a depth of roughly 2,000 feet under portions of the lake and surrounding lands. Cargill leases the underwater land from the NY State Office of General Services and pays a basic royalty of 2% per ton of the market unit-value of the marketable rock salt with adjustments for production in excess of 1,500,000 tons. Virtually all the salt from this particular mine is sold as road deicing salt. However, salt also has a broad array of uses in food and chemical products.



Worker installing roof bolts at Cargill's Lansing Mine. Photograph by Simon A. Wheeler, Elmira Star Gazette 2002, copyright 2004.

Table 32 - New York Underground Salt Mines, Permitted Acres, 2004

<u>Company</u>	<u>Counties</u>	<u>Acres</u>
American Rock Salt, Inc.	Livingston	672
Cargill, Inc.	Seneca, Tompkins	9,260

Talc

In 2004 New York ranked fourth in the country in talc production. Since there are so few talc producing companies in the country, the USGS does not publish detailed production information, but they did indicate that New York's talc production increased in 2004.

Gouverneur Talc is New York's only talc producing company, and their overall land holdings cover roughly 2,000 acres in the northwest Adirondacks. While the company has more than one mine with a current permit, most of their production is from their #1 Mine, an open pit facility also known as the Arnold Mine. Since most talc in the U.S. is sold only after crushing and grinding, Gouverneur Talc has an active milling operation at Balmat.

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.

Talc 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 33 - New York Talc Mines. Permitted Acres, 2004

<u>Company</u>	<u>County</u>	<u>Town</u>	<u>Acres</u>
Gouverneur Talc No. 1 & 2 Mine	St. Lawrence	Fowler	185
Gouverneur Talc No. 3 Mine	St. Lawrence	Edwards	5

Zinc

While New York has historically been a major zinc producer, there was no 2004 production from the single remaining zinc mine in the northwestern Adirondacks. The Pierrepont mine was permanently closed in 2001 and the mine site reclaimed. Work at the Balmat mine was also suspended at the same time while the company awaited a buyer. When the 2 mines were operating they ranked in the top 10 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 United States. This mine has a new owner and is expected to eventually resume production when the price of zinc improves.

Sandstone

In 2004 there were 24 mines in New York producing sandstone which is widely found across the State in the form of sedimentary sandstones, graywacke, metamorphic quartzite and conglomerate. There are no quantity or value statistics available for New York sandstone production. Mines produce sandstone blocks for building, flagstone and curbing. However, most of the sandstone is crushed for aggregate and some larger blocks are sold for riprap to stabilize waterways and embankments. 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.

Callanan Industries is the company with the most sandstone mines (6 in eastern New York). The highest concentrations of permitted acreage for sandstone mining is in two areas. The first is a roughly 40-mile long trend in Sullivan and Delaware Counties (total 551 permitted acres) and the second is in Orleans County (176 permitted acres).

Table 34 - Sandstone Mines Over 50 Permitted Acres, 2004

<u>Company</u>	<u>County</u>	<u>Town</u>	<u>Acres</u>
Callanan Industries, Inc.	Sullivan	Thompson	375
Cobleskill Stone Products, Inc.	Delaware	Hancock	123
E. Tetz & Sons, Inc.	Sullivan	Thompson	103
Shelby Crushed Stone, Inc.	Orleans	Shelby	88
Callanan Industries, Inc.	Rensselaer	Brunswick	76
Hanson Aggregates NY, Inc.	Orleans	Murray	68
Blades Construction Products, Corp.	Steuben	Bath	55
Callanan Industries, Inc.	Sullivan	Cochecton	53



Potsdam sandstone is a well-known type of sandstone found on many public buildings in New York State and elsewhere. In the 1800s it was lauded for its ability to withstand the effects of fire, such as cracking and spalling, much better than granite. In fact its fire resistant properties were so well known it was a preferred material for lining furnaces.

Bluestone

New York and Pennsylvania are the only sources of bluestone, a specific type of commercial sandstone. The New York State Bluestone Association estimates that the market value of bluestone is approximately \$40 million a year.

In 2004 there were 54 permitted bluestone mines in an area extending from Tompkins County on the west to Albany County on the east. However the majority of the bluestone activity is in Delaware and Broome Counties. In Broome County roughly 90% of the bluestone mines are in the Pennsylvania border towns of Windsor and Sanford. In Delaware the majority of mines are in the western end of the county with the highest number in Hancock, a long-time stronghold of the bluestone industry.

Bluestone mining is by nature a relatively small-scale operation. Roughly 60% of the bluestone mines are between 1 and 5 acres in size. The operators with the largest mines are shown in Table 35. In 2004 the companies with the highest number of mines were Johnston & Rhodes Bluestone (16), Tompkins Bluestone (5), and Indian Country (5).

While bluestone is a strongly cemented rock, it splits easily into smooth thin slabs that are ideal for outdoor patios, building exteriors and indoor floors. Bluestone's current popularity has led to exploration for new deposits and reopening of old mines. In addition, bluestone's recent high prices are enabling mine operators to switch from old-fashioned hand mining to more modern techniques and equipment.

As an aid to exploration, bluestone miners have the option of applying for a simplified one-year Exploration Authorization (EA) instead the full mining permit. When the EA expires, the operator must apply for a regular mining permit if the site is commercially viable or reclaim the land. In 2004 DEC issued 8 regular bluestone mining permits, renewed 2 EAs and issued 2 new ones.

Table 35 - Bluestone Mines Over 15 Permitted Acres, 2004

<u>Company</u>	<u>County</u>	<u>Town</u>	<u>Acres</u>
Heldeberg Bluestone & Marble	Albany	Berne	30
Damascus 535 Quarry & Stone	Broome	Windsor	24
Larry Schaefer	Delaware	Deposit	22
RCS, LLC	Delaware	Multiple Towns	18
Johnston & Rhodes Bluestone, Co.	Delaware	Masonville	16
Johnston & Rhodes Bluestone, Co.	Delaware	Hancock	15
Indian Country, Inc.	Broome	Sanford	15
Kenneth Decker	Broome	Conklin	15

Granite

In 2004 there were 17 granite mines operating mostly in the Adirondack and Taconic regions. Washington County, with 6 mines, has the highest concentration of this type of mine in New York State. New York granite mines include anorthosite and granitic gneiss.

While granite had long been used for building exteriors, statues and gravestone monuments, it has recently become very popular for kitchen countertops and other interior decorative uses. New York granite ranges in color from gray and green to black. The larger granite mines produce crushed stone.

Table 36 - Granite Mines Over 20 Permitted Acres, 2004

<u>Company</u>	<u>County</u>	<u>Town</u>	<u>Acres</u>
Hanson Aggregates NY, Inc.	Oneida	Forestport	100
Peckham Materials Corp.	Saratoga	Greenfield	91
Graymont Materials NY, Inc.	Franklin	Brandon	67
Wingdale Materials, LLC	Dutchess	Dover	60
Thalle Industries, Inc.	Dutchess	Fishkill	46
Graymont Materials NY, Inc.	Essex	St. Armand	36
Lake Placid Granite Co.	Essex	Jay	29
Lake Placid Granite Co.	Essex	Jay	20



Wingdale Materials'
underground granite
mine, Dutchess County.

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DIVISION OF MINERAL RESOURCES
OIL AND GAS STATISTICS ¹
(1995 - 2004)

Annual Production	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Oil (1,000 bbl)	304	309	276	217	193	181	183	179	157	184
Gas (mmcf)	19,312	18,244	16,189	16,608	16,836	17,808	28,020	37,133	36,025	46,948
Well Statistics										
Oil	3,208	3,464	3,478	3,739	3,463	2,962	3,373	3,106	3,117	3,153
Gas	6,216	5,869	5,741	5,903	5,756	5,775	5,949	5,773	5,906	6,076
Inactive Oil	1,117	1,650	1,265	1,590	1,165	1,340	1,416	1,343	1,547	1,640
Inactive Gas	667	565	709	579	583	850	843	929	832	886
Storage	866	868	867	885	885	870	877	905	908	908
Active Brine	70	64	65	79	87	93	94	96	106	113
Inactive Brine	52	61	70	57	57	61	52	51	38	17
Water Injection	783	668	554	471	223	667	568	434	683	656
P&A (During Year)	219	233	187	169	138	131	79	146	142	145
Number of Wells	13,198	13,442	12,936	13,472	12,357	12,749	13,251	12,783	13,279	13,594
Drilling & Completions										
1. Total Wells Spudded	112	144	91	74	101	128	139	109	137	181
2. Total Wildcats	3	4	3	25	23	22	15	40	35	53
3. Discoveries	3	3	2	5	6	129	123	60	60	126
Oil Wildcat	0	0	1	0	0	0	0	0	1	0
Gas Wildcat	3	4	1	5	7	9	4	10	10	14
4. Total Dry Holes	2	4	3	20	21	16	24	32	25	28
5. Oil										
Development	20	71	29	7	25	17	25	17	28	56
Extension	0	0	0	0	0	0	0	0	0	0
6. Gas										
Development	28	31	20	30	15	98	80	28	19	40
Extension	0	0	1	6	6	5	14	5	3	16
7. Injection	14	0	0	0	0	0	0	0	0	0
8. Disposal	0	2	0	0	0	0	0	0	0	0
9. Stratigraphic	20	0	0	0	6	1	1	1	15	9
10. Service	2	2	0	0	0	0	0	0	0	0
11. Brine	14	3	12	19	7	13	15	10	11	15
12. Storage	7	8	1	3	0	0	5	15	3	1
13. Geothermal	0	0	2	0	0	0	6	1	6	6
13a. Suspended wells ²										3
14. Total Completions (3,4,5,6,7,8,9,10,11,12, 13, 13a)	110	125	68	90	87	159	174	119	121	188
Footage (1,000's) Vertical Wells	244	313	207	276	261	534	608	266	248	354
Deviated Wells	0	21	3	28	43	88	99	93	91	237
15. Total Footage Drilled	244	334	210	304	304	622	707	359	339	591
Proven Reserves at Year End										
Gas (mmcf)										
A. In Situ	219,084	205,522	192,546	189,342	65,160	96,273	174,014	307,214	163,559	208,707
B. In Storage Reservoirs	159,500	171,100	154,496	165,112	157,210	147,313	164,313	162,099	176,936	161,732
C. Total	378,584	376,622	347,042	354,454	222,370	243,586	338,327	469,313	340,495	370,439
Oil (1000 bbls)										
	2,850	2,900	2,645	2,428	846	783	1,189	1,069	1,066	1,056

¹ Statistics for lines 2 - 15 are based upon received completion reports from the operators.

² Suspended wells: wells drilled to TD but completion category not yet determined.

Statistics computed on February 1, 2006

Division of Mineral Resources Oil and Gas Statistics, 1994 - 2004.

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Oil and Gas Production by Town in Each County, 2004

Town	Gas (mcf)	Oil (bbl)	Water (bbl)	Active Gas Wells	Inactive Gas Wells	Active Oil Wells	Inactive Oil Wells	Active Water Injection Wells	Inactive Water Injection Wells
Allegany County									
Alfred	0	0		1	1	0	0	0	0
Allen	2,762	0	18	1	1	0	0	0	0
Alma	3,890	3210	668	25	3	173	76	0	54
Almond	1,357		1	1	0	0	0	0	0
Amity	31,402	0	0	2	1	0	4	0	0
Andover	29,527	6803	523	2	14	122	19	0	11
Bolivar	648	5139	304,983	0	8	283	443	15	79
Centerville	0	0		0	1	0	0	0	0
Clarksville	375	0		0	0	5	55	0	27
Friendship		3	5	0	0	1	0	0	0
Genesee	1,236	1427	1,169	5	5	70	109	0	73
Independence	68,923	9411	55,711	7	0	252	0	15	0
New Hudson	0			0	1	0	0	0	0
Rushford	0	0	0	2	2	0	0	0	0
Scio	2,212	247	751	3	3	39	136	0	20
Ward	210	0		3	0	0	24	0	8
Wellsville	846	3679	203	0	0	68	35	0	9
Willing	0	164	3	1	0	15	34	0	0
Wirt	140	879	819	0	2	127	33	0	0
County Total	143,528	30,962	364,854	53	42	1,155	968	30	281
Broome County									
Colesville	0	0	0	0	1	0	0	0	0
Fenton	0	0	0	0	0	0	0	0	0
Kirkwood	86,054	0	3,609	1	0	0	0	0	0
Maine				0	1	0	0	0	0
Triangle				0	1	0	0	0	0
County Total	86,054	0	3,609	1	3	0	0	0	0
Cattaraugus County									
Allegany	2,977	26945	316,646	7	1	676	359	9	277
Ashford	26,125	1429	3	17	3	2	0	0	0
Carrollton	545	59037	4,354	5	0	550	164	8	14
Conewango	176,477	0	244	78	1	0	1	0	0
Dayton	157,211	0	28	56	5	0	0	0	0
East Otto	12,395	0	38	5	0	0	0	0	0
Ellicottville	4,688	0	20	12	1	0	0	0	0
Farmersville	220	62	75	2	0	4	0	0	0
Freedom	15,888	540	2	8	3	1	0	0	0
Great Valley				1	0	0	0	0	0
Hinsdale		16	1	0	0	4	0	0	0
Leon	241,879	0	86	82	4	0	0	0	0
Little Valley				2	0	0	0	0	0
Machias	100	0		1	1	0	0	0	0
Mansfield				1	0	0	0	0	0
Napoli	1,814			2	0	0	0	0	0
New Albion	16,414	0	26	11	6	0	0	0	0
Olean	76,254	4892	194	5	1	138	35	0	18
Otto	71,798	0	320	67	3	0	0	0	0
Perrysburg	6,344	0	200	11	16	0	0	0	0

Oil and Gas Production by Town in Each County, 2004

Town	Gas (mcf)	Oil (bbl)	Water (bbl)	Active Gas Wells	Inactive Gas Wells	Active Oil Wells	Inactive Oil Wells	Active Water Injection Wells	Inactive Water Injection Wells
Cattaraugus County									
Persia	59,644	0	131	46	49	0	0	0	0
Portville				1	0	0	0	0	0
Randolph	92,421	426	55	82	3	1	0	0	0
South Valley	1,223	0	0	2	0	0	0	0	0
Yorkshire	19,521	2	0	17	5	0	0	0	0
County Total	983,938	93,349	322,423	521	102	1,376	559	17	309
Cayuga County									
Auburn City	5,000			1	0	0	0	0	0
Aurelius	422,187	0	1,210	145	1	0	0	0	0
Cato	0	0	0	0	0	0	0	0	0
Fleming	63,320	0	167	31	2	0	0	0	0
Ledyard	1			2	0	0	0	0	0
Owasco	0	0		2	1	0	0	0	0
Scipio				1	0	0	0	0	0
Sennett	261	0	0	2	3	0	0	0	0
Springport	314,475	0	517	110	7	0	0	0	0
Summerhill	0	0		0	1	0	0	0	0
Throop	6,893			9	0	0	0	0	0
County Total	812,137	0	1,894	303	15	0	0	0	0
Chautauqua County									
Arkwright	106,753	0	717	120	8	0	0	0	0
Busti	209,062	14484	1,479	112	13	398	86	0	0
Carroll	121,860	0	35	55	6	0	3	0	0
Charlotte	117,971	0	639	94	13	0	1	0	0
Chautauqua	551,523	0	8,797	317	9	0	0	0	0
Cherry Creek	269,104	0	3,470	118	7	0	0	0	0
Clymer	214,758	2158	8,416	114	12	3	2	0	0
Dunkirk	56,641	0	237	22	7	0	0	0	0
Dunkirk City	25,606	0	249	18	3	0	0	0	0
Ellery	206,480	156	2,568	108	12	10	5	0	0
Ellicott	171,341	21	169	55	1	0	0	0	0
Ellington	382,906	0	3,203	172	8	0	0	0	0
French Creek	41,678	0	1,463	53	13	0	0	0	0
Gerry	260,825	13720	11,186	134	23	9	8	0	0
Hanover	98,187	0	444	70	11	0	0	0	0
Harmony	211,353	0	9,555	102	18	0	0	0	0
Jamestown	7,017		8	3	1	0	0	0	0
Kiantone	355,438	0	898	57	0	0	0	0	0
Mina	83,353	0	2,800	71	0	0	0	0	0
North Harmony	287,976	6587	16,552	125	30	12	4	0	0
Perrysburg	0		0	0	1	0	0	0	0
Poland	243,543	122	244	111	1	0	0	0	0
Pomfret	213,831	0	7,744	179	13	0	0	0	0
Portland	212,712	0	147	132	4	0	0	0	0
Ripley	213,296	0	2,136	180	9	0	0	0	0
Sheridan	149,466	0	775	83	15	0	0	0	0
Sherman	136,305	137	3,470	80	3	0	0	0	0
Stockton	145,260	0	652	109	6	0	0	0	0
Villanova	103,916	0	970	77	3	0	0	0	0
Westfield	400,627	0	1,344	253	13	0	0	0	0

Oil and Gas Production by Town in Each County, 2004

Town	Gas (mcf)	Oil (bbl)	Water (bbl)	Active Gas Wells	Inactive Gas Wells	Active Oil Wells	Inactive Oil Wells	Active Water Injection Wells	Inactive Water Injection Wells
Chautauqua County									
County Total	5,598,788	37,385	90,367	3,124	263	432	109	0	0
Chemung County									
Big Flats	4,515,947	0	1,961	3	1	0	0	0	0
Catlin	4,596,064	0	9,242	8	1	0	0	0	0
Chemung		0	0	0	0	0	0	0	0
Elmira	0	0	0	0	0	0	0	0	0
Elmira	3			1	0	0	0	0	0
Erin	913,766	0	111,696	4	4	0	0	0	0
Southport	876,766	0	439	2	0	0	0	0	0
Van Etten	619,000	0	1,523	6	0	0	0	0	0
Veteran	1,017,446	0	3,079	5	0	0	0	0	0
County Total	12,538,992	0	127,940	29	6	0	0	0	0
Chenango County									
Plymouth	0	0	0	0	0	0	0	0	0
Smithville				0	4	0	0	0	0
Smyrna	0	0	0	0	2	0	0	0	0
County Total	0	0	0	0	6	0	0	0	0
Cortland County									
Homer	0	0	0	0	0	0	0	0	0
Virgil	0	0	0	0	0	0	0	0	0
County Total	0	0	0	0	0	0	0	0	0
Delaware County									
Hancock	0	0		0	1	0	0	0	0
County Total	0	0		0	1	0	0	0	0
Erie County									
Alden	60,066	0	2,016	55	10	0	0	0	0
Amherst	0	0		0	2	0	0	0	0
Aurora	38,395		50	45	18	0	0	0	0
Boston	16,740	0	50	31	8	0	0	0	0
Brant	144,515	0	2,069	99	15	0	0	0	0
Buffalo	0	0		1	2	0	0	0	0
Cheektowaga	9,439		6	11	2	0	0	0	0
Clarence	700		1	6	1	0	0	0	0
Colden	4,445	0	0	11	11	0	0	0	0
Collins	3,201	0	5	4	11	1	0	0	0
Concord	79,934	0	325	59	14	0	0	0	0
Eden	107,491	0	1,537	145	10	0	0	0	0
Elma	96,352	0	132	50	10	0	0	0	0
Evans	121,229	0	985	92	9	0	0	0	0
Hamburg	65,579	0	16	40	39	0	0	0	0
Holland	0			2	1	0	0	0	0
Lackawanna	868			2	2	0	0	0	0
Lancaster	44,489	0	29	26	32	0	0	0	0
Marilla	25,585	0	0	33	6	0	0	0	0
Newstead	83,017	0	200	54	11	0	0	0	0
North Collins	46,712	0	91	55	20	0	0	0	0

Oil and Gas Production by Town in Each County, 2004

Town	Gas (mcf)	Oil (bbl)	Water (bbl)	Active Gas Wells	Inactive Gas Wells	Active Oil Wells	Inactive Oil Wells	Active Water Injection Wells	Inactive Water Injection Wells
Erie County									
Orchard Park	53,004	62	0	34	29	1	0	0	0
Sardinia	122,102	0	0	14	1	0	0	0	0
Tonawanda	0			0	1	0	0	0	0
Tonawanda City				1	1	0	0	0	0
Wales	1,357	0	75	6	13	0	0	0	0
West Seneca	38,328		0	4	4	0	0	0	0
County Total	1,163,548	62	7,587	880	283	2	0	0	0
Genesee County									
Alabama	19,211	0	85	20	2	0	0	0	0
Alexander	46,551	0	315	41	0	0	0	0	0
Batavia	27,685	0	810	20	1	0	0	0	0
Batavia City	17,072	0	80	20	0	0	0	0	0
Bergen	18			3	0	0	0	0	0
Bethany	21,159	0	870	29	3	0	0	0	0
Darien	314,475	0	12,233	197	12	0	0	0	0
Elba	875	0	0	3	0	0	0	0	0
Le Roy	36,492			5	5	0	0	0	0
Oakfield	12,011	0	100	12	0	0	0	0	0
Pavilion	22,008	0	522	21	6	0	0	0	0
Pembroke	227,659	0	1,102	122	1	0	0	0	0
Stafford	261			1	1	0	0	0	0
County Total	745,477	0	16,117	494	31	0	0	0	0
Livingston County									
Avon	15,520	0	135	16	0	0	0	0	0
Caledonia	48,970	0	1,425	48	1	0	0	0	0
Groveland	0			0	1	0	0	0	0
Leicester	33,112			20	8	0	0	0	0
Nunda				1	0	0	0	0	0
Ossian				1	0	0	0	0	0
Portage	1,153			2	0	0	0	0	0
Sparta	6			2	0	0	0	0	0
West Sparta	50			6	0	0	0	0	0
York	33,078	0	1,435	45	3	0	0	0	0
County Total	131,889	0	2,995	141	13	0	0	0	0
Madison County									
Brookfield				1	0	0	0	0	0
Eaton	6,575	0	1,335	4	0	0	0	0	0
Lebanon	260,285	0	5,096	15	6	0	0	0	0
Stockbridge	0			0	2	0	0	0	0
County Total	266,860	0	6,431	20	8	0	0	0	0
Montgomery County									
Root				0	0	0	0	0	0
County Total				0	0	0	0	0	0
Niagara County									
Lewiston	150			1	0	0	0	0	0

Oil and Gas Production by Town in Each County, 2004

Town	Gas (mcf)	Oil (bbl)	Water (bbl)	Active Gas Wells	Inactive Gas Wells	Active Oil Wells	Inactive Oil Wells	Active Water Injection Wells	Inactive Water Injection Wells
Niagara County									
County Total	150			1	0	0	0	0	0
Oneida County									
Sangerfield	125	0	0	2	1	0	0	0	0
Vernon	0			0	0	0	0	0	0
County Total	125	0	0	2	1	0	0	0	0
Onondaga County									
Lysander	0	0		1	1	0	0	0	0
Marcellus	0	0	0	0	2	0	0	0	0
Tully	0	0	0	0	0	0	0	0	0
County Total	0	0	0	1	3	0	0	0	0
Ontario County									
Bristol	11,683		0	3	0	0	0	0	0
Canandaigua				1	0	0	0	0	0
East Bloomfield	49,214		49	13	0	0	0	0	0
Geneva	0			0	2	0	0	0	0
Geneva City	0			0	1	0	0	0	0
Gorham		0	0	0	0	0	0	0	0
Hopewell	0	0	0	0	0	0	0	0	0
Phelps	0			0	1	0	0	0	0
Richmond	501		0	2	0	0	0	0	0
West Bloomfield	3,008		0	2	0	0	0	0	0
County Total	64,406	0	49	21	4	0	0	0	0
Oswego County									
Richland	100	0		1	5	0	0	0	0
Schroeppel				0	1	0	0	0	0
West Monroe				1	0	0	0	0	0
Williamstown	0	0		1	1	0	0	0	0
County Total	100	0		3	7	0	0	0	0
Schuyler County									
Catharine		0	0	0	1	0	0	0	0
Dix	153,650	0	187	1	1	0	0	0	0
Montour		0	0	0	1	0	0	0	0
Orange	1,072,807	0	172	3	1	0	0	0	0
Reading	0	0		0	1	0	0	0	0
County Total	1,226,457	0	359	4	5	0	0	0	0
Seneca County									
Fayette	460,761	0	2,118	108	9	0	0	0	0
Junius	0	0	0	1	1	0	0	0	0
Seneca Falls	19,191	0	0	4	5	0	0	0	0
Tyre	0	0	0	0	3	0	0	0	0
Varick	157,503	0	490	43	1	0	0	0	0
Waterloo	0	0	0	0	1	0	0	0	0
County Total	637,455	0	2,608	156	20	0	0	0	0
Steuben County									

Oil and Gas Production by Town in Each County, 2004

Town	Gas (mcf)	Oil (bbl)	Water (bbl)	Active Gas Wells	Inactive Gas Wells	Active Oil Wells	Inactive Oil Wells	Active Water Injection Wells	Inactive Water Injection Wells
Steuben County									
Avoca	1,523			2	0	0	0	0	0
Bath	13,316	0	0	2	0	0	0	0	0
Bradford	24,183	0	0	0	0	0	0	0	0
Cameron	0	0		1	0	0	0	0	0
Campbell		0	0	0	1	0	0	0	0
Canisteo	0	0	0	0	2	0	0	0	0
Caton	1,027,011	0	625	2	1	0	0	0	0
Cohocton	87,513	0	101	3	1	0	0	0	0
Corning	14,312,320	0	9,828	7	1	0	0	0	0
Corning City	2,504,129	0	3,829	1	0	0	0	0	0
Dansville	12,090	12	0	1	0	0	0	0	0
Erwin	560	0	0	1	2	0	0	0	0
Fremont				0	1	0	0	0	0
Greenwood		200	30	2	0	4	0	0	0
Hartsville	0			1	1	0	0	0	0
Hornby	2,519,338	0	2,358	5	2	0	0	0	0
Howard	0	0	6	1	1	0	0	0	0
Jasper	34,385	0	0	2	5	0	0	0	0
Prattsburg	217,865	0	799	5	1	0	0	0	0
Pulteney	1,093,966	0	1,403	11	1	0	0	0	0
Troupsburg	0	0	0	0	3	0	0	0	0
Tuscarora				0	0	0	0	0	0
Urbana	0	0		0	0	0	0	0	0
Wayne	0	0	0	0	1	0	0	0	0
West Union	64,947	19838	111,045	2	4	188	4	18	1
Woodhull				0	1	0	0	0	0
County Total	21,913,148	20,050	130,024	49	29	192	4	18	1
Tioga County									
Nichols	62,714		521	5	0	0	0	0	0
Owego	451	0	30	1	0	0	0	0	0
Spencer		0	0	0	0	0	0	0	0
Tioga	0	0	0	0	0	0	0	0	0
County Total	63,165	0	551	6	0	0	0	0	0
Tompkins County									
Dryden	0	0	0	0	1	0	0	0	0
Enfield	0	0	0	0	0	0	0	0	0
County Total	0	0	0	0	1	0	0	0	0
Wayne County									
Butler				1	1	0	0	0	0
Galen	0	0	0	0	3	0	0	0	0
County Total	0	0	0	1	4	0	0	0	0
Wyoming County									
Arcade	61,668	0	140	39	0	0	0	0	0
Attica	933			2	2	0	0	0	0
Bennington	111,906	0	3,855	86	3	0	0	0	0
Castile	8,566			4	0	0	0	0	0
Covington	36,378	0	210	21	3	0	0	0	0

Oil and Gas Production by Town in Each County, 2004

Town	Gas (mcf)	Oil (bbl)	Water (bbl)	Active Gas Wells	Inactive Gas Wells	Active Oil Wells	Inactive Oil Wells	Active Water Injection Wells	Inactive Water Injection Wells
Wyoming County									
Gainesville	0			0	1	0	0	0	0
Genesee Falls	0			0	1	0	0	0	0
Java	15,267	0	175	22	0	0	0	0	0
Middlebury	668	0		1	5	0	0	0	0
Perry	42,059	0	225	41	7	0	0	0	0
Pike				1	0	0	0	0	0
Sheldon	44,673	0	1,060	38	2	0	0	0	0
Warsaw	1,260		0	5	1	0	0	0	0
County Total	323,378	0	5,665	260	25	0	0	0	0
Yates County									
Barrington	0	0	0	0	2	0	0	0	0
Benton	325	0	0	4	8	0	0	0	0
Italy		0	0	0	0	0	0	0	0
Jerusalem	248,157	0	370	1	2	0	0	0	0
Milo	203	0	0	1	0	0	0	0	0
Potter	0			0	1	0	0	0	0
Starkey	0	0	0	0	0	0	0	0	0
Torrey	0			0	1	0	0	0	0
County Total	248,685	0	370	6	14	0	0	0	0
State Total	46,948,280	181,808	1,083,843	6,076	886	3,157	1,640	65	591

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Mine Commodities, 2004

Mineral	Active Mines	Reclaimed Mines	Life Of Mine Acres	Affected Acres	Reclaimed Acres	Net Affected Acres
Albany						
Bluestone	1	0	86	40	0	40
Clay	2	3	111	49	8	41
Limestone	2	0	1,116	764	0	764
Sand and Gravel	12	20	704	549	250	300
Shale	2	2	103	104	21	83
Topsoil	0	1	22	22	22	0
County Totals	19	26	2,143	1,528	301	1,228
Allegany						
Bluestone	0	0	27	0	0	0
Clay	1	1	19	7	4	3
Glacial Till	0	2	3	2	2	0
Sand and Gravel	52	32	1,392	725	149	576
Sandstone	1	0	13	4	0	4
Shale	0	0	3	3	3	0
Stone	0	0	0	1	0	1
Topsoil	1	0	11	5	0	5
County Totals	55	35	1,468	747	158	589
Broome						
Bluestone	14	2	223	171	12	159
Clay	0	2	34	6	6	0
Glacial Till	0	3	19	19	19	0
Sand and Gravel	25	25	1,656	1,441	497	944
Sandstone	0	0	4	4	0	4
Shale	1	0	25	19	7	12
Topsoil	0	1	3	3	3	0
County Totals	40	33	1,964	1,664	544	1,120
Cattaraugus						
Clay	0	2	42	16	16	0
Glacial Till	0	2	14	8	8	0
Peat	1	0	10	3	0	3
Sand and Gravel	72	38	4,649	2,168	560	1,600
Shale	1	3	21	21	15	6
Topsoil	0	1	16	17	15	2
County Totals	74	46	4,752	2,233	614	1,611
Cayuga						
Clay	1	2	88	22	17	5
Glacial Till	1	1	26	26	6	20
Limestone	1	0	225	74	0	74
Sand and Gravel	27	31	805	540	221	319
Shale	0	1	0	0	0	0
Topsoil	0	0	56	56	0	56
County Totals	30	35	1,200	718	244	474
Chautauqua						
Clay	1	2	82	73	44	29
Glacial Till	0			28	28	0

Mine Commodities, 2004

Mineral	Active Mines	Reclaimed Mines	Life Of Mine Acres	Affected Acres	Reclaimed Acres	Net Affected Acres
Chautauqua						
Peat	0	0	7	0	0	0
Sand and Gravel	58	69	1,797	1,031	518	505
Sandstone	1	0	28	12	0	12
Topsoil	0	3	30	33	31	2
County Totals	60	76	1,979	1,177	621	548
Chemung						
Clay	0	1	4	4	4	0
Glacial Till	0	1	0	6	6	0
Sand and Gravel	27	18	737	619	130	489
Topsoil	2	0	34	30	0	30
County Totals	29	20	775	659	140	519
Chenango						
Bluestone	4	0	36	27	2	25
Clay	0	1	13	1	1	0
Sand and Gravel	36	40	1,309	887	222	665
Shale	4	3	16	22	9	13
Topsoil	0	1	9	0	0	0
County Totals	44	45	1,383	937	234	703
Clinton						
Clay	0	2	2	4	4	0
Granite	2	0	156	23	0	23
Limestone	1	1	16	8	3	5
Sand and Gravel	54	40	1,879	978	275	703
Stone	1	0	164	102	0	102
Topsoil	1	3	25	37	27	10
County Totals	59	46	2,242	1,153	309	844
Columbia						
Clay	0	6	48	111	111	0
Limestone	2	0	1,299	357	0	357
Peat	2	8	77	72	39	33
Sand and Gravel	36	20	1,212	880	230	650
Shale	0	1	3	3	3	0
County Totals	40	35	2,639	1,423	383	1,040
Cortland						
Glacial Till	0	3	9	24	24	0
Sand and Gravel	20	28	989	670	359	311
Shale	0	1	1	1	1	0
Topsoil	0	0	20	20	0	20
County Totals	20	32	1,019	715	384	331
Delaware						
Bluestone	40	1	366	296	12	284
Clay	1	0	5	4	0	4
Sand and Gravel	35	30	742	561	190	372
Sandstone	1	0	128	123	0	123

Mine Commodities, 2004

Mineral	Active Mines	Reclaimed Mines	Life Of Mine Acres	Affected Acres	Reclaimed Acres	Net Affected Acres
Delaware						
County Totals	77	31	1,242	984	202	783
Dutchess						
Clay	0	0	0	0	0	0
Dolostone	1	0	682	682	0	682
Glacial Till	0	1	0	0	0	0
Granite	0	0	0	0	0	0
Limestone	1	0	95	95	0	95
Marble	1	0	2	2	0	2
Sand and Gravel	58	53	2,912	2,287	1,096	1,191
Stone	0	1	70	70	70	0
Topsoil	0	0	0	0	0	0
County Totals	61	55	3,761	3,136	1,166	1,970
Erie						
Clay	5	10	475	247	189	57
Glacial Till	0	3	93	66	65	1
Gypsum	0	0	17	0	0	0
Limestone	4	0	1,181	511	0	511
Sand and Gravel	42	26	2,916	1,665	659	1,006
Shale	1	0	44	4	0	4
Topsoil	1	2	248	143	138	5
County Totals	53	41	4,974	2,636	1,051	1,584
Essex						
Clay	0	1	3	3	3	0
Granite	2	0	100	49	1	48
Iron Ore	0	1	138	138	138	0
Limestone	1	2	7	9	4	5
Sand and Gravel	44	19	995	495	126	369
Stone	1	0	256	36	0	36
Topsoil	0	1	0	10	10	0
Wollastonite	3	0	226	221	0	221
County Totals	51	24	1,725	961	282	679
Franklin						
Clay	1	0	5	5	0	5
Granite	1	0	108	67	0	67
Sand and Gravel	67	31	1,024	694	143	551
Sandstone	2	0	53	18	0	18
Topsoil	0	1	8	8	8	0
County Totals	71	32	1,198	792	151	641
Fulton						
Glacial Till	0	1	0	2	2	0
Sand and Gravel	27	22	870	508	175	333
Topsoil	0	1	8	7	7	0
County Totals	27	24	878	517	184	333

Mine Commodities, 2004

Mineral	Active Mines	Reclaimed Mines	Life Of Mine Acres	Affected Acres	Reclaimed Acres	Net Affected Acres
Genesee						
Clay	1	1	17	13	8	5
Gypsum	1	0	15	11	0	11
Limestone	6	0	1,156	849	0	849
Marl	1	1	29	29	23	7
Sand and Gravel	18	11	1,513	705	275	431
County Totals	27	13	2,729	1,607	305	1,302
Greene						
Clay	0	1	12	12	12	0
Limestone	3	0	2,948	692	0	692
Sand and Gravel	12	10	263	221	66	155
Sandstone	1	1	129	18	4	14
Shale	6	3	279	192	21	171
Topsoil	0	1	8	8	8	0
County Totals	22	16	3,639	1,143	111	1,032
Hamilton						
Sand and Gravel	21	17	249	204	82	122
County Totals	21	17	249	204	82	122
Herkimer						
Clay	0	8	66	66	66	0
Dolostone	1	0	50	37	0	37
Limestone	2	0	170	125	0	125
Sand and Gravel	49	54	1,908	1,309	247	1,062
Topsoil	1	1	17	9	3	6
County Totals	53	63	2,211	1,546	316	1,230
Jefferson						
Clay	1	8	98	133	132	1
Granite	1	0	15	9	0	9
Limestone	15	5	904	643	13	630
Peat	1	1	23	14	5	9
Sand and Gravel	64	97	2,243	1,758	775	983
Shale	1	0	2	2	0	2
Topsoil	3	8	181	181	166	16
County Totals	86	119	3,465	2,740	1,091	1,649
Lewis						
Clay	0	3	6	6	6	0
Limestone	1	0	20	3	0	3
Sand and Gravel	41	62	875	720	272	448
Shale	4	3	27	27	18	9
Topsoil	0	1	0	3	3	0
Wollastonite	1	0	54	54	5	49
County Totals	47	69	982	812	303	509
Livingston						
Limestone	1	0	429	285	0	285
Salt	2	0	9,055	727	30	697

Mine Commodities, 2004

Mineral	Active Mines	Reclaimed Mines	Life Of Mine Acres	Affected Acres	Reclaimed Acres	Net Affected Acres
Livingston						
Sand and Gravel	23	11	1,186	937	117	820
County Totals	26	11	10,670	1,949	147	1,802
Madison						
Clay	0	1	10	1	1	0
Glacial Till	0	1	18	18	18	0
Limestone	3	0	447	200	0	200
Peat	0	1	70	5	5	0
Sand and Gravel	22	16	836	490	181	309
Topsoil	0	1	49	0	0	0
County Totals	25	20	1,430	714	205	509
Monroe						
Dolostone	2	0	247	220	0	220
Glacial Till	0	1	25	25	25	0
Limestone	1	0	298	242	0	242
Sand and Gravel	11	10	1,176	765	447	319
County Totals	14	11	1,745	1,252	472	780
Montgomery						
Clay	1	0	4	4	0	4
Dolostone	2	0	382	320	0	320
Limestone	0	1	7	7	7	0
Sand and Gravel	6	2	233	170	21	149
Stone	1	0	112	73	0	73
County Totals	10	3	738	574	28	546
Multicounty						
Limestone	1	0	155	141	0	141
County Totals	1	0	155	141	0	141
Multi-Region						
Salt	1	0	13,417	9,260	0	9,260
Sand and Gravel	0	0	1	0	0	0
Shale	0	0	0	0	0	0
County Totals	1	0	13,418	9,260	0	9,260
Nassau						
Sand and Gravel	0	1	273	273	273	0
County Totals	0	1	273	273	273	0
Niagara						
Clay	12	6	961	393	71	322
Glacial Till	0	1	10	33	10	23
Limestone	3	0	1,058	538	49	489
Sand and Gravel	3	13	290	191	159	32
Topsoil	1	0	13	15	0	15
County Totals	19	20	2,332	1,170	289	881

Mine Commodities, 2004

Mineral	Active Mines	Reclaimed Mines	Life Of Mine Acres	Affected Acres	Reclaimed Acres	Net Affected Acres
Oneida						
Clay	0	3	20	25	25	0
Granite	1	0	100	100	0	100
Industrial Sand	3	0	634	102	0	102
Limestone	1	0	342	264	0	264
Sand and Gravel	58	73	2,383	1,414	626	788
Shale	0	2	6	6	6	0
Topsoil	1	1	12	12	8	4
County Totals	64	79	3,497	1,922	665	1,258
Onondaga						
Clay	3	1	41	30	8	22
Glacial Till	2	14	214	199	189	10
Limestone	7	0	1,886	1,507	100	1,407
Sand and Gravel	30	23	1,520	1,140	519	621
Shale	0	4	80	18	18	0
Topsoil	3	3	179	150	95	55
County Totals	45	45	3,920	3,044	929	2,115
Ontario						
Clay	2	2	51	51	14	37
Glacial Till	1	0	96	71	0	71
Limestone	2	0	540	347	0	347
Sand and Gravel	40	16	2,593	1,802	703	1,099
County Totals	45	18	3,280	2,271	718	1,553
Orange						
Clay	0	0	0	5	0	5
Dolostone	2	0	80	80	0	80
Glacial Till	0	1	3	2	2	0
Limestone	0	0	0	30	0	30
Sand and Gravel	44	32	1,534	1,325	596	729
Shale	5	0	178	71	0	71
County Totals	51	33	1,795	1,513	598	915
Orleans						
Clay	0	4	64	60	60	0
Limestone	2	0	404	260	0	260
Sand and Gravel	14	6	684	267	65	202
Sandstone	4	0	185	176	0	176
County Totals	20	10	1,337	763	125	638
Oswego						
Clay	0	0	5	0	0	0
Glacial Till	1	4	82	73	33	40
Industrial Sand	0	1	8	5	2	3
Sand and Gravel	100	58	4,617	2,766	1,243	1,511
Sandstone	1	0	7	4	0	4
Topsoil	3	2	134	109	32	77
County Totals	105	65	4,853	2,957	1,310	1,635

Mine Commodities, 2004

Mineral	Active Mines	Reclaimed Mines	Life Of Mine Acres	Affected Acres	Reclaimed Acres	Net Affected Acres
Otsego						
Bluestone	0	0	5	5	0	5
Clay	0	3	7	10	10	0
Sand and Gravel	32	14	884	645	170	476
Shale	1	1	5	1	0	1
County Totals	33	18	901	661	180	482
Putnam						
Glacial Till	0	0	0	0	0	0
Granite	0	0	8	8	0	8
Limestone	1	0	38	38	0	38
Sand and Gravel	3	2	39	47	26	21
County Totals	4	2	85	93	26	67
Rensselaer						
Clay	2	3	80	77	16	61
Limestone	1	0	71	29	0	29
Sand and Gravel	47	34	2,173	1,632	269	1,363
Sandstone	3	0	482	119	0	119
Shale	0	1	6	6	6	0
County Totals	53	38	2,813	1,863	291	1,572
Rockland						
Dolostone	1	0	184	145	0	145
Granite	0	0	225	0	0	0
Trap Rock	3	0	407	348	0	348
County Totals	4	0	816	493	0	493
Saratoga						
Clay	4	3	57	44	20	24
Dolostone	1	0	71	67	0	67
Industrial Sand	0	1	0	5	5	0
Limestone	1	0	83	79	0	79
Sand and Gravel	55	40	2,523	1,434	309	1,125
Shale	1	1	12	6	1	5
Topsoil	2	1	36	35	24	11
County Totals	64	46	2,782	1,670	359	1,310
Schenectady						
Clay	0	1	15	15	15	0
Limestone	1	0	3	3	0	3
Peat	0	0	0	15	0	15
Sand and Gravel	6	6	321	290	78	212
Sandstone	0	0	4	4	0	4
Shale	1	1	26	11	6	5
County Totals	8	8	369	338	99	239
Schoharie						
Limestone	4	0	525	366	0	366
Sand and Gravel	10	9	183	137	47	90
Sandstone	0	0	15	15	0	15

Mine Commodities, 2004

Mineral	Active Mines	Reclaimed Mines	Life Of Mine Acres	Affected Acres	Reclaimed Acres	Net Affected Acres
Schoharie						
Shale	3	3	27	22	6	16
County Totals	17	12	750	540	53	487
Schuyler						
Sand and Gravel	12	9	477	361	45	316
Topsoil	0	1	2	2	2	0
County Totals	12	10	479	363	47	316
Seneca						
Clay	2	0	102	102	0	102
Limestone	1	0	424	173	0	173
Sand and Gravel	3	3	162	122	31	91
Shale	0	1	2	2	2	0
County Totals	6	4	689	398	33	365
St. Lawrence						
Clay	2	8	202	195	147	48
Dolostone	4	0	586	394	5	389
Granite	1	0	4	4	0	4
Limestone	1	0	24	24	0	24
Marble	1	0	173	84	2	82
Sand and Gravel	100	110	2,569	1,889	869	1,020
Sandstone	2	0	34	9	0	9
Talc	2	0	194	214	40	174
Topsoil	4	14	317	279	211	68
Zinc	1	3	1,441	881	449	432
County Totals	118	135	5,543	3,972	1,723	2,249
Statewide						
Bluestone	0	1	0	1	1	0
Clay	0	2	26	46	46	0
Emery	0	1	10	10	10	0
Glacial Till	0	30	18	196	196	0
Industrial Sand	0	1	90	90	90	0
Limestone	0	1	0	6	6	0
Peat	0	4	3	149	149	0
Salt	0	1	0	50	50	0
Sand and Gravel	0	301	557	1,887	1,630	257
Sandstone	0	1	0	0	0	0
Shale	0	9	14	29	29	0
Stone	0	1	0	4	4	0
Topsoil	0	4	10	53	53	0
County Totals	0	357	728	2,521	2,264	257
Steuben						
Clay	0	1	0	25	25	0
Glacial Till	0	2	11	13	13	0
Sand and Gravel	77	35	2,716	2,090	306	1,784
Sandstone	1	0	64	55	0	55
Topsoil	0	2	32	32	13	19

Mine Commodities, 2004

Mineral	Active Mines	Reclaimed Mines	Life Of Mine Acres	Affected Acres	Reclaimed Acres	Net Affected Acres
Steuben						
County Totals	78	40	2,823	2,215	357	1,858
Suffolk						
Sand and Gravel	45	14	1,628	1,473	360	1,127
County Totals	45	14	1,628	1,473	360	1,127
Sullivan						
Clay	1	0	5	5	0	5
Sand and Gravel	26	29	1,263	780	303	477
Sandstone	2	0	620	428	0	428
Shale	2	2	14	10	4	6
County Totals	31	31	1,902	1,223	307	915
Tioga						
Glacial Till	0	2	3	5	5	0
Sand and Gravel	35	27	2,198	1,463	506	956
Topsoil	0	1	14	14	14	0
County Totals	35	30	2,215	1,482	525	956
Tompkins						
Clay	0	1	4	4	4	0
Glacial Till	1	3	25	28	11	17
Limestone	1	0	126	126	103	23
Sand and Gravel	12	20	521	342	145	197
Sandstone	1	0	20	12	0	12
Topsoil	0	2	2	5	5	0
County Totals	15	26	698	517	268	249
Ulster						
Bluestone	3	0	56	26	0	26
Clay	3	3	53	53	36	17
Dolostone	1	0	397	11	0	11
Limestone	3	0	361	193	0	193
Sand and Gravel	27	31	949	637	317	320
Sandstone	1	1	15	15	4	11
Shale	14	14	278	202	79	123
County Totals	52	49	2,109	1,137	436	701
Warren						
Garnet	1	1	180	162	55	107
Limestone	2	0	252	97	0	97
Sand and Gravel	35	15	904	528	78	450
County Totals	38	16	1,336	787	133	654
Washington						
Clay	1	2	52	52	47	5
Dolostone	1	0	197	64	0	64
Granite	4	0	143	53	0	53
Limestone	2	0	160	115	0	115
Sand and Gravel	42	34	1,240	761	277	484

Mine Commodities, 2004

Mineral	Active Mines	Reclaimed Mines	Life Of Mine Acres	Affected Acres	Reclaimed Acres	Net Affected Acres
Washington						
Sandstone	2	1	19	15	1	14
Shale	2	1	18	10	4	6
Stone	1	0	72	36	0	36
Topsoil	1	2	82	41	20	22
County Totals	56	40	1,982	1,146	348	798
Wayne						
Clay	0	1	28	28	28	0
Dolostone	1	0	167	135	0	135
Glacial Till	0	4	25	25	25	0
Limestone	1	0	134	110	0	110
Sand and Gravel	46	34	2,273	1,399	561	839
Topsoil	0	1	65	1	1	0
County Totals	48	40	2,692	1,698	614	1,084
Westchester						
Emery	0	1	5	5	5	0
Sand and Gravel	0	3	21	18	18	0
Shale	1	0	4	4	0	4
Trap Rock	0	0	2	0	0	0
County Totals	1	4	32	27	23	4
Wyoming						
Clay	0	1	8	12	8	4
Sand and Gravel	28	20	916	403	205	198
Topsoil	0	1	21	21	15	6
County Totals	28	22	945	436	228	208
Yates						
Clay	1	1	35	33	18	15
Glacial Till	1	0	24	8	0	8
Sand and Gravel	11	5	311	222	79	143
County Totals	13	6	370	263	97	166