

Hunter College - CUNY  
Department of Geography  
Nature of New York

**Optional Exercise 20: Mining and Land Reclamation**

Check One: For grading  For extra credit

Due by the day of the final exam

**PURPOSE:** This exercise relates NYS's geologic environment, the processes that have shaped the state's landscape and human interaction to the location of its mineral resources along with the efforts made to reclaim and restore mined land once mining activities have ended.

**INTRODUCTION:**

When the word "resources" is used, human interaction is assumed because a value has been placed on a naturally occurring commodity. Not only is human interaction assumed, the possibility of environmental degradation becomes a reality. As a result of years of mining (many of which were un- or under-regulated) there a negative human impact can be discerned. The reclamation of mined land is now mandated by state law.

Please remember that not all minerals are of commercial use nor are they found in quantities that make them economically feasible to mine. Also, mining activities that were active in the past may have been closed for geologic, economic, and/or environmental reasons but are still part for any analysis of regional development.

**The assignment begins on page 3.**

**Read the following:**

**1. Background.**

Read both **Chapter 15 of "Geology of New York"** text and the **Minerals hand-out** from the course home page.

**2. NYS Museum.**

- Visit the **NYS Museum web site** ([www.nysm.nysed.gov](http://www.nysm.nysed.gov)). Locate its "**Geology Collection**" of NYS minerals and rocks.
- Read about the museum's geology and paleontology collections. Direct link: <http://www.nysm.nysed.gov/research-collections/geology/mineralogy/collections/minerals>
- The **NYS Academy of Mineralogy** is at <http://www.nysam.org/>. Click on "**View mineral display cases**" to see the museum's mineral and rock collections. *In many cases, if you click on a specimen image you will enlarge it to see physical detail and get additional information about it.*

**3. Mining and Reclamation.**

Go to <http://www.dec.ny.gov/lands/5020.html?showprintstyles>. At the top of the page read about **Mining and Reclamation**. Note the links to related topics at the bottom of the page, especially "**Mining in New York**" which you will use in this exercise; direct link: <http://www.dec.ny.gov/lands/5045.html>.

**4. Mining Data and Statistics link:** <http://www.dec.ny.gov/lands/42041.html>

## CONSULT

### 1. Annual Minerals Reports.

- a. **2013 Annual Fact Sheet:**  
[http://www.dec.ny.gov/docs/materials\\_minerals\\_pdf/minfactsheet13.pdf](http://www.dec.ny.gov/docs/materials_minerals_pdf/minfactsheet13.pdf).
- b. **Products of NYS Mines:**  
[http://www.dec.ny.gov/docs/materials\\_minerals\\_pdf/minfactsht12.pdf](http://www.dec.ny.gov/docs/materials_minerals_pdf/minfactsht12.pdf).
- c. **Minerals mined by county:**  
<http://www.dec.ny.gov/cfm/xtapps/MinedLand/standard/commodities/>
- d. **Mines in New York - map and fact sheet:**  
<http://www.dec.ny.gov/lands/92956.html>
- e. **Mined Land Reclamation Executive Summary 2014:**  
<http://www.dec.ny.gov/lands/92915.html>
- f. **Oil, Gas and Solution Mining:** Executive Summary and Trends:  
<http://www.dec.ny.gov/energy/92904.html>
- g. The **2012 New York Oil, Gas and Mineral Resources Annual Reports**, are the latest available: [http://www.dec.ny.gov/docs/materials\\_minerals\\_pdf/12anrpt.pdf](http://www.dec.ny.gov/docs/materials_minerals_pdf/12anrpt.pdf).

Electronically flip through the pages to find information on your counties.  
***These are long documents. Be selective before you hit the PRINT button.***  
*You may find some maps/graphs helpful in completing the assignment. Previous reports are available through the DEC search box.*

### 2. Distribution Maps.

For distribution maps of mines and wells, go to <http://www.dec.ny.gov/energy/4733.html>. NOTE: Once you are at the mapping site, be sure **zoom in** on the counties you selected to get to the point where use can see the location of the mines and then click on **IDENTIFY** to get information about the mine. **The legend changes as you zoom in and more detail is provided.** You need to set an **ACTIVE** layer and to **REFRESH** the map after making changes. You can title and print unique maps using the *Environmental Navigator for Minerals* at: <http://www.dec.ny.gov/imsmaps/minerals/viewer.htm>.

### 3. Additional Information.

Consult links within the DEC web site and the county web sites for additional information on mining activities. For **oil, gas and solution salt mines** in western NYS go to <http://www.dec.ny.gov/energy/1534.html>.

## **ASSIGNMENT:**

**Describe the mining situation** (both for commodities mined and mine rehabilitation) **in each of your counties. Relate the mined products to the geology of the area in your counties where it is located. Use the latest information provided by DEC.**

**This may be done in chart format but you need to include a written summary page in paragraph format that compares both the mining and extraction activities in the 3 counties as well as mined land reclamation projects.**

**Include the following in your chart:**

### **A) Mined Materials and their Uses.**

Go to <http://www.dec.ny.gov/cfm/xtapps/MinedLand/standard/commodities/> and [www.nysm.nysed.gov/esogis](http://www.nysm.nysed.gov/esogis) to see if your counties produce or have produced in the past any of the materials listed on these web pages. From **Chapter 15** and the **Minerals handout** find their uses.

>>>Don't forget to include information about oil, gas and salt wells if they exist in your county. If the mines/wells are inactive, note that in your discussion and use the historic perspective in your summary.

### **B) Geologic Setting.**

Note each county's **physiographic region** (consult the landforms handout and the geology book chapters) and **predominant bedrock** (sedimentary/igneous/metamorphic) found there. *Be aware that some counties straddle two or more geologic settings but mining may be limited to one geologic setting.*

### **C) Active Mines and Wells.**

From the sources above and other DEC links gather information about mining activities in your counties. **Note the number of active ("permitted") facilities in each of your counties.** For additional information about wells, go to [www.nysm.nysed.gov/esogis](http://www.nysm.nysed.gov/esogis). Also check the appendices of the minerals report in paragraph 4 of the main section.

**NOTE: If there are no active facilities in a county, give reasons for its absence.**

### **D) Mined Land Reclamation.**

Reread the summary of the 2012 report on mined land reclamation. <http://www.dec.ny.gov/lands/92915.html>. **Discuss NYS's effort to rehabilitate mined land in your counties within the scope of the program.** Include **(1)** a brief explanation of the law and **(2)** one example of reclaimed land from each of the counties selected. *(For example, the sand pits of Manhasset Neck in Nassau County have been turned into a park.)* See <http://www.dec.ny.gov/lands/5020.html>, [http://www.dec.ny.gov/cfm/xtapps/MinedLand/standard/ml\\_summaries/](http://www.dec.ny.gov/cfm/xtapps/MinedLand/standard/ml_summaries/) and the mining-related environmental cleanup and brownfields areas (**not the industrial and dump sites**) at <http://www.dec.ny.gov/chemical/brownfields.html?showprintstyles>.