Groundwater Study at Long Island Mines

June 2021
Agenda

Welcome and Introductions
Catherine Dickert, Division Director of Mineral Resources
Merlange Genece, Region 1 Acting Director

Presentation
Chris McKelvey, Section Chief Mined Land
Bob Yager, Mined Land Reclamation Specialist
Sarken Dressler, Professional Geologist

Questions and Answers
Aphrodite Montalvo, Public Participation Specialist
Overview

- Statewide regulation of mining in New York State
- Mines on Long Island
- Proposed groundwater monitoring study on Long Island
Statewide Regulation of Mining in New York State

Christopher McKelvey
Chief, Mined Land Section
Division of Mineral Resources
Mined Land Reclamation Law

- ECL Article 23, Title 27
  - Supersedes all other state & local laws that pertain to the extractive mining industry
- Regulations 6 NYCRR Parts 420 to 425
- Enacted in 1974, effective date 4/1/1975, major revisions in 1991
- Towns can regulate land use
Declaration of Policy

- Foster and encourage the development of a stable mining industry
- Prevent pollution resulting from mining activities
- Ensure reclamation of mined land so that the land can be used productively
- Develop domestic mineral resources and reserves to meet economic needs
- Protect health, safety, and general welfare of people
- Protect and perpetuate the taxable value of property
Mines in New York

- 1,801 active mines
- $1.69 billion annual direct economic impact
- $5 billion total economic impact
- 38,524 pounds – average annual use of mineral aggregates per person
- 90% sand and gravel or limestone
- Other commodities - bluestone, dolostone, garnet, granite, halite (salt), marble, topsoil, wollastonite, and zinc
Mined Land Reclamation Program

Permits

- Regulatory threshold - 750 cubic yards or 1,000 tons removed within twelve successive months
- Protect health and safety
- Sound environmental practices
  - Mined Land Use Plans
  - Permit Conditions
  - Inspections
  - Financial Security
  - Reclamation

Where Are Mines Located?
Reclamtion

- Approved reclamation since 1975
  - 26,458 acres
  - More than 3,000 mines
- Concurrent reclamation
- Reclamation objectives
- National award winners
Town of North Hempstead, Nassau County

273-acre sand and gravel mine

Reclamation Objective: Residential/Commercial
Mines on Long Island

Robert Yager
Supervising Mined Land Reclamation Specialist – Region 1
Mining on Long Island

• Currently 23 active mines and all are in Suffolk County
  ▪ 21 commercial
  ▪ 2 municipal
  ▪ Only sand and gravel are mined
  ▪ 7 in Southampton, 5 in Riverhead, 4 in Brookhaven, 3 in E. Hampton, 2 in Smithtown, 1 in Huntington and 1 in Shelter Island

• 6 sites are permitted to excavate into water table
  ▪ 4 have intersected water table as of this date
  ▪ All have on-site groundwater monitoring networks
  (whether currently mining or proposing to mine into water table)
Large Facilities
Smaller Facilities/Projects
Coram Materials - Dredges and Conveyors

- Dredges and conveyors are run by electricity from PSEG
- 2 clam shell dredges
- Close to 2 miles of conveyor belts move material to screening plants
- Conveyors eliminate need for diesel trucks
Roanoke Sand and Gravel

- Suction dredge
- Material is pumped directly into screening plant for sorting
- Dredge and screening plant use biodegradable hydraulic fluid
- Equipment runs on electricity generated onsite by natural gas generators
Mine Site Reclamation
Westhampton Property Association

- Pine Barrens concurrent reclamation
- 91 acres will be mined and reclaimed
Proposed Groundwater Study

Presented by
Sarken Dressler, P.G.
Division of Environmental Remediation
Highlights of Proposed GW Study:

- Study Objective: Determine the potential for impacts to groundwater quality resulting from sand mining on Long Island to help ensure the continued protection of the region’s sole-source aquifer.
- 3-year study period, beginning fall 2021
- Participation is voluntary
- Surface water monitoring not part of study
Quarterly groundwater monitoring events at all existing wells will consist of:

- Monitoring water levels to determine groundwater flow direction.

- Low-Flow sampling procedures (consistent with EPA 2017 Guidance):
  - Reduce flow rates to limit disturbance of sediments that might bias results.
  - Collect field parameters (DO, temperature, pH, ORP, conductivity, turbidity, etc) during purging to ensure sample being collected is representative of aquifer.
  - Decontaminate equipment before and after use.
LOW-FLOW SAMPLING METHOD OVERVIEW

UNSATURATED ZONE

Pump (peristaltic)

Battery

T-valve (turbidity measurement/sample point)

Discharge Only (not to be sampled)

Flow-Thru Cell with Instruments

Water Quality meter (measures DO, pH, Temp, ORP, Conductance)

Pump/ Suction Point at screen zone

Monitoring Well

Do NOT set intake too close to the bottom (where sediments collect)

AQUIFER
LOW-FLOW SAMPLING METHODS

Increasing Potential for Iron/Manganese

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<th>S&amp;G Mine A</th>
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Proposing first two sampling events for a broad list of compounds (baseline sampling):

- Volatile Organic Compounds
- Semi-Volatile Organic Compounds
- Target Analyte List Metals (total [unfiltered] and dissolved [field filtered])
- Polychlorinated biphenyls (PCBs)
- Herbicides
- Pesticides
- Cations / Anions (e.g., Mg2+, Ca2+, Nitrate, Sulfate)
- Total Dissolved Solids

Requesting consistent methods of analysis and use of certified laboratories.
Highlights of Proposed GW Study (CONT'D):

- After review of baseline results, may eliminate PCBs, herbicides, and pesticides.

- Quarterly electronic data submission for review:
  - Water levels (provided by consultant)
  - Field geochemical parameters (provided by consultant)
  - Analytical data (provided by laboratory)

- DEC will perform oversight of sampling events, to the extent feasible.

- DEC will prepare a report at the end of the study detailing results and providing recommendations.
Questions?

DEC Central Office

Catherine Dickert
Director Division of Mineral Resources

Matt Podniesinski
Director Bureau of Resource Development and Reclamation

Chris McKelvey
Chief Mined Land Section

Simone Rodriguez
Mined Land Reclamation Specialist

NYS Department of Health

Daniel Lang
Director of Strategic Operations

DEC Region 1

Merlage Genece
Acting Regional Director

Cathy Haas
Regional Engineer

Bob Yager
Supervising Mined Land Reclamation Specialist

Sarken Dressler
Professional Geologist

Matt Conlon
Mined Land Reclamation Specialist
Thank you

Simone Rodriguez
Mined Land Reclamation Specialist
NYSDEC
Division of Mineral Resources
625 Broadway, 3rd Floor
Albany, NY 12233-6500

Email: GWstudyLLmines@dec.ny.gov
Webpage: https://www.dec.ny.gov/lands/123134.html

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