NEW YORK GEOTHERMAL ENERGY ORGANIZATION

August 22, 2025

Department of Environmental Conservation
Division of Mineral Resources
625 Broadway
Albany, NY 12233

RE: 6 NYCRR Part 550 and add 6 NYCRR Parts 561, 563, and 569. Draft Scope for Geothermal Closed Loop Boreholes and closed loop stratigraphic test wells >500'.

Dear Division of Mineral Resources,

Below please find comments for your consideration in reviewing geothermal drilling >500' submitted by NY-GEO and its members.

Part 561.1 Permit Application, Application Fee, and Financial Security

Request to DEC to prioritize the review of permit applications for borehole drilling projects exceeding 500 feet that are already in progress before the effective date of the rule.

Prevent Work Stoppages and Increased Project Costs: NY-GEO kindly requests that the DEC consider an extension or variance process of at least 120 days for current projects. This would allow projects already undergoing drilling to continue while their permits are being processed, avoiding the significant costs associated with halting work.

Remove Uncertainty for Existing Projects: NY-GEO understands that the initial application review process may take longer as new procedures are implemented. However, we are concerned that this extended review period could create uncertainty for projects considering geothermal energy, potentially hindering their progress.

To mitigate this, we request the establishment of a process to accept pre-applications for projects scheduled to begin drilling within the first six months of 2026. This would apply to projects where the SPDES is completed, the GEIS has been reviewed, and no issues have been identified.

Provide Estimated Permit Review Periods: NY-GEO expresses concern that the section does not provide estimated review periods for drilling projects exceeding 500 feet. This lack of specificity regarding the permit review and approval process creates significant uncertainty for applicants regarding project timelines, as projects cannot begin without the necessary permit. This absence of information and the resulting uncertainty may inadvertently lead building owners to select less efficient heating and cooling systems for their properties.

Consider General Permit(s): NY-GEO requests that the DEC consider implementing a general permit for specific projects. We propose this general permit for projects that adhere to a defined

list of established standards, where the primary requirement for applicants would be pre-construction notification to the DEC.

Permit Process(es) Based on Building Type: Furthermore, we recognize that not all geothermal borehole drilling projects are the same. Therefore, we recommend a permitting process that distinguishes between various project types, such as single-family residential, large building, and TEN projects.

Section 561.2 Application Requirements and Permit Issuance

(a) Application Requirements (2): NY-GEO requests a modification to the section discussing the North American Datum of 1983. This section should be updated to include or reference technologies similar to cell phones that utilize GPS (Global Positioning System) technology for location determination. Cell phone GPS receivers acquire signals from orbiting satellites to calculate latitude and longitude coordinates, typically with an accuracy of a few meters. This process is independent of cellular and internet connections.

(a) Application Requirements (5): NY-GEO requests a modification to this section to exclude any requirement for "additional reports or information" to verify CLCPA compliance, since the very nature of a closed-loop geothermal borehole complies. Carbon reduction is central to the CLCPA. A closed-loop geothermal borehole significantly reduces carbon emissions when used to displace fossil fuels for heating and hot water, or offers greater electric efficiency compared to conventional air conditioning or air-source heat pumps. Below are examples of carbon reduction from a single 500 foot when displacing fossil fuels.

Avoided Emissions of a Single 500-foot Borehole:

Assumptions & Calculations for Baseline Geothermal Heat Pump System

- Albany, NY single-family home, 2,500 SF with a 4-ton GSHP System with one (1) 500-foot vertical closed loop borehole
- Geothermal System (GSHP) uses 6,732 kWh for the heating season @ 3.8 COP
- Grid contribution to emissions is 1,849 lbCO2e per year, using eGrid NYUP data of 275 lbs CO2e/MWh

Natural Gas to Geothermal

- Natural Gas Furnace uses 969 Therms @ 92% efficiency (11,332 lbCO2e per year)
- Avoided Emissions with GSHP system of 9,483 lbCOe per year

Propane to Geothermal

- Propane Furnace uses 1,060 gl of propane @ 92% efficiency (13,429 lbCO2e per year)
- Avoided Emissions with GSHP system of 11,581 lbCO2e per year

Oil to Geothermal

- Oil Furnace uses 756 gl of oil @ 85% efficiency (17,138 lbCO2e per year)
- Avoided Emissions with GSHP system of 15,289 lbCO2e per year

(a) Application Requirements (6): NY-GEO requests a detailed breakdown of "additional reports and information" required from applicants. This will help ensure compliance and prevent potential delays and unnecessary costs.

Setbacks 561.3 Borehole Siting

(a) General Setbacks: NY-GEO recommends that the responsibility for Dig Safe permits remain with the utilities, as it is currently managed through the Dig Safe system.

For new construction, NY-GEO recommends implementing a clause or waiver to acknowledge that the ground loop is typically the first utility installed.

Furthermore, we recommend that C448 and the Authority Having Jurisdiction (AHJ) mandate general setbacks to ensure proper installation and safety. We believe the efficiency with which exceptions or variances can be granted will be crucial, particularly in dense urban environments.

Section 561.4 Design and Construction

(b) Casing Requirements: NY-GEO understands that the primary goal is to prevent aquifer contamination and the transfer of fluids/hydrocarbons. The construction of a closed-loop borehole is not open from top to bottom and does not produce any fluid or other material. Casing is placed into the hole 50-75 feet into the bedrock, and a single plastic pipe loop with a U-bend (Ground loop – installed) is installed.

NY-GEO recommends that the casing cement portion be automatically waived in areas where there is limited risk, based on experience drilling to depths greater than 500 feet.

(c) Cement Specifications | (2) Grouting Specifications: Imposing additional requirements on geothermal drilling beyond 500 feet would significantly increase costs, potentially making geothermal energy less competitive in the market.

NY-GEO recognizes that the state's topography is diverse; therefore, recommends that in areas where the risk is greater, a stratigraphic borehole would be required to assess the potential impact, identify any potential aquifers, hydrocarbons, or brine, and develop a suitable construction plan.

The ability to drill beyond 500 feet for geothermal systems is crucial for buildings in New York State, particularly those in dense urban areas or with limited available land. This allows them to access highly efficient heating and cooling solutions.

However, imposing additional requirements on geothermal drilling beyond 500 feet would significantly increase costs, potentially making geothermal energy less competitive in the market.

It is important to note that there are cement and grout products available specifically designed to eliminate gas and brine migration in the borehole.

Due to the methodology and time required for the cement to yield, the rig remains idle, which incurs an estimated additional cost of $10,000 per hole for shallow aquifer installations. For deeper aquifer installations, this cost can exceed $20,000.

At this point, drilling has not yet exceeded 250'. The extended time required for cement to yield and the resulting standby time with an idle rig make this process cost-prohibitive. These factors would likely lead to geothermal being removed from consideration during a project's feasibility study.

(c) Closed Loop Geothermal Borehole Decommissioning Procedures: NY-GEO requests an update to the decommissioning procedure, specifically concerning the handling of piping left in place.

The current proposed rules state that piping must be filled with grout, cement, or another approved substance. However, we recommend that the language be updated to align with ANSI/CSA/IGSHPA C448. This standard includes an important exemption, stating: "*Where technically possible and financially feasible, the ground heat exchanger piping may be filled with an approved grout material.*"

NY-GEO recommends updating the procedure to reflect the language below to provide more flexibility and align with established industry standards.

PART 563 Stratigraphic Wells Closed-Loop Geothermal boreholes vs. Closed Loop Stratigraphic Wells

NY-GEO requests a variance/extension for projects where a test borehole could exceed the two-year threshold.

On behalf of the 280 NY-GEO geothermal member businesses that represent over 1,000 individuals employed in geothermal installation, thank you for your review and consideration.

Respectfully,

Christine Hoffer, Executive Director
John Ciovacco, Aztech Geothermal
Dave Hermantin, Brightcore Energy
Kevin Moravec, Moravec Geothermal
Zach Fink, ZBF Geothermal

About NY-GEO: The New York Geothermal Energy Organization (NY-GEO) is a non-profit trade organization representing geothermal heat pump (GHP) installers, manufacturers, distributors, drillers, consultants, and industry stakeholders from throughout New York State and beyond.