January 19, 2025

Re: Cargill's Application (0-9999-00075/00001) to Renew and Modify its Mined Land Reclamation Permit for the Cayuga Salt Mine

Dear Mr. Stercho,

I am a Professor of Civil & Environmental Engineering at Cornell University specializing in Environmental Fluid Mechanics. I am the Director of the DeFrees Hydraulics Laboratory and the past Faculty Director for Energy at the Cornell Atkinson Center for Sustainability. I have carried out numerous funded research and monitoring projects on Cayuga Lake that have included both field research studies and modeling studies, including three-dimensional modeling to assess the impacts of Cornell's Lake Source Cooling project on Cayuga Lake (the impact is negligible).

While I have not studied whether or not Cargill's flooding of the S3 Zone in the 6-level mine under the lake will weaken the yielding pillars due to the fact that Cargill's brine pumping system cannot handle fully-saturated brine, I believe this should be studied as part of any Environment Impact Statement for Cayuga Salt Mine and certainly before any permits are issued. DEC has required Cornell University to prove its minimal impact on Cayuga Lake every five years – and currently curtails Cornell from running Lake Source Cooling to its fullest capacity due to unproven concerns about Lake Source Cooling's internal circulation of phosphorus despite this working against New York States own Climate and Community Leaders Protection Act. It seems clear and obvious that Cargill should be held to the same if not higher standard as they can and will leave the community while Cornell is clearly here for the long haul and has a longterm interest in our community's lake, unlike Cargill.

The portion of Taughannock Park east of Route 89 is a delta that has no bedrock base and is about 45-acres in size. Cayuga Lake Environmental Action Now (CLEAN) has informed me that a mining panel known as U40B is located just east of the Taughannock Park Delta and is one of two mine panels under the lake that has been partly backfilled due to relatively high rates of ceiling to floor convergence. Apparently, such back-filling was done to lessen the likelihood of mine collapse in that area.

I strongly recommend that DEC require and manage a complete Environmental Impact Statement, to include modeling of all major failure pathways of Cargill's salt mines over the next 100 years that would be carried out prior to approving Cargill's current application for a mining permit modification.

Sincerely,

Edwin A. Cowen
Professor, School of Civil & Environmental Engineering
Director, DeFrees Hydraulics Laboratory
Faculty Fellow and past Faculty Director for Energy, Cornell Atkinson Center for Sustainability