Attachment A

DECLARATION OF BARRY W. SULKIN, M.S.
Draft Total Maximum Daily Load for Phosphorus in Cayuga Lake

Qualifications

1. My name is Barry W. Sulkin. I am an expert in the field of environmental science and water quality and in all aspects of discharge permits under the federal Clean Water Act's National Pollutant Discharge Elimination System ("NPDES") and related state programs.

2. I am an environmental consultant and the Director of the Tennessee office of PEER ("Public Employees for Environmental Responsibility"), and I am working on behalf of the commenting parties in this matter.

3. I received my Bachelor of Arts in Environmental Science in 1975 from the University of Virginia, where I received a du Pont Scholarship. During my undergraduate years, I worked as a Lab Technician and Research Assistant at the University of Virginia and Memphis State University conducting water and soil/sediment analyses and sampling.

4. Following graduation from college, in 1976 I joined the staff of what is now the Tennessee Department of Environment and Conservation as a Water Quality Specialist. I worked in the Chattanooga, Knoxville, and Nashville field offices and the central office of the Division of Water Quality Control as a Water Quality Specialist and Environmental Manager, which included duties such as inspector, field scientist, enforcement coordinator, assistant field office manager, and assistant manager of the Enforcement Section. My work included compliance inspections of drinking water systems, wastewater systems under the NPDES permit program, and enforcement coordination for the water pollution and drinking water programs, as well as work with dam safety, underground storage tanks, and solid/hazardous waste programs. I also conducted investigations regarding fish kills, spills, and general complaints, including problems of stream alteration and pollution, as well as scientific/research investigations regarding water quality.

5. In 1984 I was promoted within the division to Special Projects Assistant to the Director, and in 1985 I became State-wide manager of the Enforcement and Compliance Section for the Division of Water Pollution Control. In this capacity I was responsible for investigating and preparing enforcement cases, supervising the inspection programs, participating in developing NPDES permits, monitoring permit compliance, and conducting field studies involving alterations and water quality of rivers, streams, and lakes.

6. While in this position, I received a joint State of Tennessee and Vanderbilt scholarship and took an educational leave to obtain my Masters of Science in Environmental Engineering, which I received in 1987 from Vanderbilt University. My thesis was "Harpeth River Below Franklin, Dissolved Oxygen Study," which was a field and laboratory study and computer modeling of water quality and impacts of pollutants from an NPDES permitted facility. I returned to my position as manager of the Enforcement and Compliance Section in 1987, where I remained until 1990.

7. Since 1990 I have engaged in a private consulting practice primarily specializing in water quality problems and solutions, regulatory assistance, permits, stream surveys, and various environmental investigations mainly related to water. My work as a consultant has included many projects related to Total Maximum Daily Loads ("TMDLs"). During my professional career,

I have had extensive experience and training regarding all aspects of TMDL creation and implementation. I have served as a consultant and expert witness in TMDLs and related matters in many states including Tennessee, Georgia, Alabama, Louisiana, Oklahoma, Kansas, Idaho, North Carolina, and Florida. In my TMDL work, I have reviewed and commented on proposed TMDLs, testified in legal proceedings, participated in the development of TMDLs as part of TMDL suit settlement, served on a technical committee with EPA, state officials, and academics involving development of sediment TMDL methodology in Georgia; and attended and conducted training seminars on various aspects of TMDLs.

8. An accurate copy of my curriculum vitae is attached to and incorporated into this Declaration as Exhibit 1.

9. I have reviewed and assessed the Draft Total Maximum Daily Load for Phosphorus in Cayuga Lake ("Draft TMDL") and various related documents.

10. This Declaration contains my expert opinions, which I hold to a reasonable degree of scientific certainty. My opinions are based on my application of professional judgment and expertise of sufficient facts or data, consisting specifically of a review of the regulations and documents related to the Draft TMDL. These are facts and data typically and reasonably relied upon by experts in my field.

11. In my expert opinion, the Draft TMDL fails to meet the regulatory requirements for Total Maximum Daily Loads as required by the Clean Water Act. The Draft TMDL fails to provide reasonable assurances that the Draft TMDL will resolve water quality impairments in Cayuga Lake.

Opinions

12. TMDLs require identification of the amount of loading of a particular pollutant that will lead to compliance with narrative and numeric water quality criteria and designated uses and prevent degradation. A TMDL must then allocate that pollutant load between point sources (Wasteload Allocation or WLA), nonpoint sources (Load Allocation or LA), a margin of safety, and future growth. The Clean Water Act requires a TMDL to set water quality-based effluent limits for all point sources for the pollutant(s) at issue. Under 40 C.F.R. § 130.2(i), "[i]f Best Management Practices (BMPs) or other nonpoint source pollution controls make more stringent load allocations practicable, then waste load allocations can be made less stringent." In order to allow less stringent wasteload allocations, EPA has determined that:

> when a TMDL is developed for waters impaired by both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur, the TMDL must provide "reasonable assurances" that nonpoint source control measures will achieve expected load reductions in order for the TMDL to be approvable.

Letter from Curtis Spalding, EPA Reg'l Adm'r, to Deborah Markowitz, Sec'y of Vt. Agency of Nat. Res. 8 (Jan. 24, 2011) ("Vermont TMDL"). EPA's guidance explains "[w]here there are not reasonable assurances, under the CWA, the entire load reduction must be assigned to point sources." EPA, *Guidance for Water Quality-Based Decisions: The TMDL Process* 1, 15 (1991) https://www.epa.gov/sites/production/files/2018-10/documents/guidance-water-tmdl-process.pdf.

13. The Draft TMDL fails to provide "reasonable assurances" that the nonpoint source reduction will be achieved. The Draft TMDL points to existing programs that have been operating for years and have been unable to stem the nonpoint source runoff polluting Cayuga Lake. The Draft TMDL provides no explanation of how these same voluntary programs will suddenly reduce Phosphorus runoff to a level where Cayuga Lake will attain applicable water quality standards.

14. For example, the Draft TMDL points to the 2010 New York State Dishwasher Detergent and Nutrient Runoff Law. That law went into effect on August 14, 2010, after being signed by Governor Paterson on July 15, 2010. It restricted the sale of detergents containing Phosphorus and the sale and use of Phosphorus-containing fertilizers on non-agricultural lawns and turf beginning on January 1, 2012. The Draft TMDL asserts "[t]hrough the implementation of this law, water quality will improve for recreational and other uses of the state's waters, including Cayuga Lake." Draft TMDL at 72. The Dishwasher Detergent and Nutrient Runoff Law has been in effect for almost a decade. Any reductions in stormwater runoff will have already been achieved. This law does not provide for any new reductions in Phosphorus from stormwater runoff.

15. The Draft TMDL's approach to "reasonable assurances" is similar to the approach Vermont used in its 2002 Lake Champlain Phosphorus TMDL. EPA ultimately rejected that TMDL, in part for its failure to provide reasonable assurances that the nonpoint source reductions would occur and water quality standards would be attained. *See* Vermont TMDL. EPA noted that the Vermont TMDL's implementation plan "contains descriptions of additional programs and a variety of recommended actions." *Id.* at 11.

16. Just like the Vermont TMDL's implementation plan, the Draft TMDL's implementation section has the fatal flaw that "[n]early all elements of the plan depend on both additional funding and entities' willingness to participate or cooperate voluntarily with the intent of the program..." Vermont TMDL at 11. For example, the Draft TMDL recognizes that "implementation relies upon voluntary installation of BMPs by local stakeholders and compliance with the conditions of the CAFO SPDES General Permits." Draft TMDL at 51. However, the Draft TMDL has assumed that none of the CAFOs contribute Phosphorus to the lake because their permits already prohibit discharges to the lake.

17. The Draft TMDL's implementation section copies its priority list nearly verbatim from the Harmful Algal Bloom (HAB) Action Plan for Cayuga Lake, with identical timeframes. The HAB Action Plan was finalized in 2018, meaning the priority actions for the first three years should be well underway. The fact that the Draft TMDL's implementation section parrots those same priority actions and timelines reflects the lack of progress on these actions to date. Without identifying new regulatory or financial drivers that will make implementation of these measures actually occur in 2021, even though they have not been completed when they were identified in 2018, the implementation plan does not provide "reasonable assurances" that these measures will be implemented and that Phosphorus reductions necessary to achieve water quality standards will occur.

18. EPA concluded that the Vermont TMDL's implementation plan "provides very little, if any, assurance that the recommended actions will occur, and provides no indication of the magnitude of Phosphorus reductions expected from these actions." Vermont TMDL at 11. Similarly, the Draft TMDL fails to provide reasonable assurances that it will achieve the 42% reduction of Phosphorus runoff from cultivated crops and 40% reduction of Phosphorus runoff from hay/pasture necessary to attain water quality under the Draft TMDL. *See* Draft TMDL at

40. EPA should likewise reject the Draft TMDL for similar failures with its implementation recommendations.

19. The Draft TMDL must maximize reductions of point source discharges of Phosphorus before relying on nonpoint source reductions. Allocations of pollutant loads to the point sources cannot exceed available loading capacity of the receiving waters, as the Draft TMDL proposes. Discussion of various unenforceable programs that could improve nonpoint sources does not make current Phosphorus capacity available to allocate.

20. The Draft TMDL's load allocations are highly problematic. The Draft TMDL relies on model predictions to recommend a 30% watershed-wide reduction in loading. However, this watershed-wide approach relies on the unproven assumption that all Phosphorus entering Cayuga Lake—even Phosphorus entering in the Northern end more than 30 miles away—contributes to the impairment in the Southern End, despite the fact that 40% of the lake's total inflow comes from the Southern End and that the lake is 38 miles long and drains to the North. The Draft TMDL's allocations fail to require a 30% reduction in Phosphorus loading to the Southern End. The Draft TMDL counts the existing Total Phosphorus load to the Southern End as 270 pounds per day and sets the TMDL allocation at 214 pounds per day, which is only a reduction of 21%, not the 30% the model predicts is necessary. The Draft TMDL only requires 2.1 pounds of Total Phosphorus reduction from the Wasteload Allocation, meaning less than 4% of the 56 pounds of required daily total Phosphorus reductions in the Southern End are expected from regulated point sources. In contrast, the Draft TMDL requires a reduction of 4 pounds per day of Phosphorus from forested lands draining to the Southern End. The Draft TMDL's approach of requiring only 21% of the overall load reduction necessary from the segment of the watershed that contributes 40% of the total inflow of the lake, with only 4% of those reductions coming from enforceable load reductions sets the TMDL up for failure because it will not lead to reductions necessary to meet water quality standards in Cayuga Lake.

21. The Draft TMDL should prohibit the use of general permits for construction activities and for industrial stormwater. Any facility requiring a construction stormwater permit or an industrial stormwater permit must be issued an individual permit with water quality-based effluent limits for Phosphorus and related parameters.

22. Each of the wastewater treatment facilities should be required to comply with an effluent concentration for Phosphorus that is protective of water quality. The Cayuga Heights wastewater treatment has a 0.35 mg/L Phosphorus permit limit. If that limit is feasible for Cayuga Heights, it is feasible for the other wastewater treatment facilities in the watershed, particularly since the lake is currently over allocated.

23. The Draft TMDL contains incorrect information regarding the Ithaca Area Wastewater Treatment Facility. *See* Draft TMDL at 23. The facility's permit, originally issued on June 1, 2000 and modified on August 1, 2001, established a Phosphorus limit of 40 pounds per day, on a 12-month rolling average. See SPDES for Ithaca Area Wastewater Treatment Facilities, Exhibit 2.The Ithaca Area Wastewater Treatment Facility's permit has been administratively renewed every five years, maintaining the 40 pound per day limit, even after the facility added tertiary treatment. See Administrative Renewal for Ithaca Area Wastewater Treatment Facilities SPDES permit, Exhibit 3. The latest administrative renewal letter is dated March 11, 2015. The website for the Ithaca Area Wastewater Treatment Facility maintains that the facility "currently discharges an average of less than 10 lbs/day of phosphorus; well below the allowed limit of 40 lbs/day." *Wastewater Treatment*, City of Ithaca, https://www.cityofithaca.org/331/Wastewater-Treatment (last visited June 29, 2021). The Draft TMDL lists the current load as 18 lbs/day. The

New York State Department of Environmental Conservation (DEC) must update the Ithaca Area Wastewater Treatment Facility's permit to reflect its current tertiary treatment technology and Phosphorus discharge level. Further, a limit based on a 12-month rolling average is no longer appropriate to comply with a daily load limit. The permit limits should reflect a water quality-based daily load with monitoring sufficient to assurance compliance with the permit limit.

24. The Draft TMDL allocates 6.4 lbs/day to Cornell's Lake Source Cooling permit. The Draft TMDL fails to demonstrate how this permit limit is water quality-based. In addition, the Lake Source Cooling permit, which was modified on June 1, 2020, contemplates facility expansion and Phosphorus offsets using BMPs. The Draft TMDL must set the facility's permit at a level necessary to attain water quality standards and prohibit increases in Phosphorus discharges.

25. The Draft TMDL fails to comply with EPA's guidance regarding stormwater discharges. Footnote 'c' to Table 11 states "MS4 loading is accounted for in the developed land load." Draft TMDL at 28. However, EPA has clarified that stormwater discharges, as point sources, must be given WLAs that are then used to establish water quality-based effluent limits and NPDES permit conditions. To comply with the law, the state must require all MS4s discharging to Cayuga Lake to obtain individual discharge permits, or at least a general permit with numeric limits based on the TMDL's available capacity and protective of water quality standards. These permits should not only require municipalities to monitor their discharges for Phosphorus but also set water-quality based numeric limits for Phosphorus. Numeric limits in stormwater discharges needed for compliance with TMDLs have occurred in some situations for more than twenty years. *See* Cal. Reg'l Water Quality Control Bd., *Trash Total Maximum Daily Loads for the Los Angeles River Watershed* (2007); *Los Angeles River Metals TMDL* (2006) ; The Draft TMDL's approach of giving MS4s a free pass from reducing Phosphorus discharges is unacceptable. The MS4 general permit's requirement of ensuring "no net increase of discharge" of Phosphorus is not a water quality-based effluent limit required under the Clean Water Act. *See* SPDES General Permit for Stormwater Discharges from MS4s at 12, https://www.dec.ny.gov/docs/water_pdf/ms4permit.pdf

26. The Draft TMDL identifies 33 CAFOs in the Cayuga Lake watershed, all of which operate under the ECL CAFO SPDES General Permit. The Draft TMDL's assumption that discharges from these CAFOs are zero is not supported by evidence in the document. Draft TMDL at 31. The DEC's assumption that every CAFO is in full compliance with the ECL CAFO SPDES General Permit and therefore contributes no Phosphorus to Cayuga Lake is unrealistic and unsupported by the general rate of noncompliance with environmental permits. For example, the ECL CAFO SPDES General Permit allows application of manure onto fields if at "agronomic rates." That is impossible to monitor, and even if manure is spread at "agronomic rates," rainfall occurring after a manure-spreading event can lead to significant Phosphorus-laden runoff. Likewise, the ECL CAFO SPDES General Permit allows CAFOs to spread manure on frozen or saturated grounds. The Quality Assurance Project Plan ("QAPP") recognized that "winter animal waste spreading[] . . . likely contributes a substantial fraction of the agricultural phosphorus load." Upstate Freshwater Institute, Inc., *Quality Assurance Project Plan for Phase 1: Monitoring and Modeling Support for a Phosphorus/Eutrophication Model for Cayuga Lake* 23 (2013) https://www.dec.ny.gov/docs/water_pdf/clmpqapp20130315.pdf. The QAPP asserted that "using watershed models CUBEE can quantify the fraction of the load linked to this practice and how much of the total phosphorus load can be reduced by diminishing this practice." *Id.* It appears this analysis was either never completed or was completed but not included in the Draft TMDL. Because the ECL CAFO SPDES General Permit allows wet weather and winter weather manure applications and these application methods can cause discharges even after agronomic applications, the permit does not ensure that there will be no nutrient runoff from CAFOs.

27. The ECL CAFO SPDES General Permit excludes agricultural stormwater discharges from its prohibition on discharges from a CAFO's production area. Under this exclusion, discharges are allowed if they are caused by precipitation following agronomic manure application. As noted above, precipitation following agronomic application can and does cause Phosphorus-laden runoff.

28. On March 7, 2021, a waste storage pit at Ashland Farm, a CAFO operating under the ECL CAFO General Permit in the Cayuga Lake watershed, overflowed, releasing an estimated 100,000 gallons of waste. Jeremy Boyer, *'Recipe for Disaster': State Cites Cayuga County Farm After Manure Overflows*, Auburn Citizen (Mar. 28, 2021), https://auburnpub.com/news/local/recipe-for-disaster-state-cites-cayuga-county-farm-after-manure-overflows/article_9f0416dd-4048-5601-a8e9-91f56dde4ed4.html. The waste entered a stormwater pipe that discharges to a tributary of Great Bully Brook, which is, in turn, a tributary of Cayuga Lake. Under the ECL CAFO SPDES General Permit, an overtopped CAFO waste storage facility must be reported to DEC, meaning DEC should have information regarding how often these overtopping incidents are happening and the magnitude of the overtopping. Given that DEC has information regarding overtopping incidents, it cannot reasonably assume that CAFOs do not contribute Phosphorus to Cayuga Lake.

29. The ECL CAFO SPDES General Permit does not require DEC or public review of a CAFO's nutrient management plan (NMP) before the CAFO can obtain coverage under the permit. Without DEC and public oversight, it is impossible to ensure that CAFO NMPs will prevent Phosphorus discharges.

30. The ECL CAFO SPDES General Permit does not require any DEC monitoring of potential discharges from CAFO production areas or land application areas, so it is difficult to know whether CAFOs are complying with the permit's prohibition on discharges.

31. Because CAFOs in the Cayuga Lake watershed are point sources discharging to an impaired waterbody, they must be subject to permits that will ensure the waterbody attains water quality standards. DEC must require CAFOs in the Cayuga Lake watershed to obtain permits under the Clean Water Act CAFO SPDES General Permit or individual Clean Water Act permits that set phosphorus discharge limits at zero and provide for robust monitoring and inspection to enforce the limits.

32. The Draft TMDL's heavy reliance on nonpoint source reductions in lieu of point source reductions from wastewater treatment plants, the Cornell Lake Cooling facility, the MS4s, CAFOs, and construction stormwater appears to be a function of the modeling scenarios run. Draft TMDL App. D at D1 tbl.D1. It appears that the model did not examine a scenario that reduced permitted discharges from Point Source Loads and the Lake Source Cooling. Further, the modeled scenario of reducing point source discharges only reflects reducing point source discharges to 1 mg/L, which is neither a water quality-based nor a technology-based effluent standard, with no changes to CAFO or MS4 discharges. Further, three model runs considered reducing the Lake Cooling discharge to 4.8 lbs/day of Phosphorus, but those reductions were not examined in conjunction with other point source reductions. The modeling should have examined the nonpoint source reductions needed once point source reductions in Phosphorus are maximized.

33. The Draft TMDL selects a water quality target that will not attain water quality standards. Recreational uses in the Southern End of Cayuga Lake are impaired by periodic algal blooms

and dense aquatic plant growth along the shoreline. Draft TMDL at 11. DEC has determined that Phosphorus is the cause of the impairment of the Southern End of Cayuga Lake and the reason the segment fails to meet New York's narrative nutrient standard. Because New York does not have a numeric water quality standard, the TMDL attempts to "translate[] the narrative water quality standard for nutrients into the numeric water quality targets for Chlorophyll-a (Chl-a) for each segment in Cayuga Lake." Draft TMDL at 5. The numeric target should represent the point at which the water segment will attain its designated uses and will no longer be impaired.

34. The Draft TMDL selects 6 µg/L Chl-a as the water quality target for the impaired Southern End segment of the Lake. The Draft TMDL justifies its selection of 6 µg/L Chl-a based on the relationship between Chl-a and the potential production of disinfection by-products in finished drinking water. *See* Draft TMDL at 26. However, the water is impaired for excessive plant and algae growth harming recreation. The Draft TMDL fails to demonstrate a correlation between Total Phosphorus—which it claims is driving plant and algae growth in Cayuga Lake—and Chl-a in Cayuga Lake that would justify a Chl-a water quality target in order to attain the narrative nutrient water quality standard.

35. The observed Chl-a data at open water sampling locations for the Southern End segment, as included in the Draft TMDL, reflect that the segment is already meeting the 6 µg/L Chl-a water quality target and is still impaired. Specifically, the average observed Ch-a for years 1998–2013 was 5.3 µg/L, below the 6 µg/L target. *See* Draft TMDL at 36 tbl.15. The segment had Chl-a levels below 6 µg/L for 12 of the 16 years the DEC shared observed data. Draft TMDL at 36 tbl.15. DEC should have selected a numeric water quality that is ***below*** the level the impaired segment is already meeting.

36. Picking a numeric water quality target that the segment is already achieving even though the segment is still impaired means that the TMDL fails to meet the regulatory requirement that "TMDLs shall be established at levels necessary to attain and maintain the applicable narrative and numerical [water quality standards]" as the Clean Water Act requires. 40 C.F.R. § 130.7(c)(1).

37. The Draft TMDL relies on summer mean concentrations gathered from open water locations without demonstrating how these conditions reflect the reality of Phosphorus and Chl-a concentrations through shoreline areas of the lake that are plagued by overgrowth of plants and algae. Further, by using summer mean concentrations, the Draft TMDL ignores seasonal spikes in Phosphorus levels that could indicate the role played by agricultural practices.

38. Recent studies from the Chesapeake Bay warn that mid-channel sampling results related to phosphorus and Chl-a may or may not reflect nearshore water quality conditions related to those parameters; the results are highly site-specific. Concentrations of Phosphorus and Chl-a in open water of Cayuga Lake do not reflect Phosphorus and Chl-a concentrations at the shoreline areas experiencing excessive plant and algal growth. Recent data reports from the Citizens Statewide Lake Assessment Program ("CSLAP") show drastic differences in the Chl-a values in open water and along the shoreline. *See* CSLAP, *Report Site 2 (S)* (2017), https://nysfola.org/wp-content/uploads/CSLAP/Cayuga_S_2017CSLAPReport.pdf. For example, those data reflect two Chl-a measurements above 6 µg/L (8.9 and 6.9) along with one very low Chl-a measurement from September 18, 2017 of 2.5 µg/L. *Id.* That 2.5 µg/L measurement lowered the long term Chl-a average to 3.4, even though the open water sampling site measured about 6 µg/L twice during eight sampling events. The report also demonstrates the noted difference between Chl-a measurements in open water versus measurements taken at the shoreline. While each of the eight 2017 Open Water Algae Samples all measure below 10

µg/L, the 2017 Shoreline Algae Samples range between 10 µg/L and 10,000 µg/L, with five of the ten samples reaching approximately 1,000 µg/L or above. *See Id.*

2017 Open Water Algae Samples

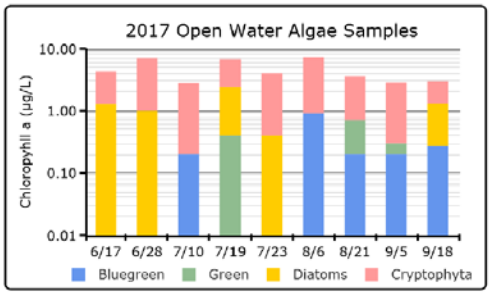

Figure 1: 2017 Open Water Algae Samples. CSLAP 2017 at 2.

2017 Shoreline Algae Samples

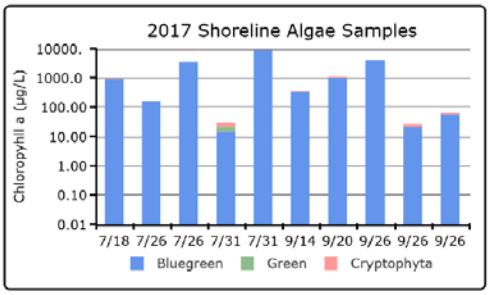

Figure 2: 2017 Shoreline Algae Samples. *Id.*

Similarly, data from the 2018 and 2019 CSLAP Reports reflect open water measurements of Chl-a below 10 µg/L, while Shoreline algae samples show almost all but two samples exceeding 10 µg/L, with other samples ranging up to 10,000 µg/L. *See* CSLAP, *Report Cayuga Lake (S3)* (2018), https://www.dec.ny.gov/docs/water_pdf/cslrpt18cayugal3.pdf; CSLAP, *Report Cayuga Lake (S2)* (2019); CSLAP, *Report Cayuga Lake (S3)* (2019).

HABs Status Open water Algae

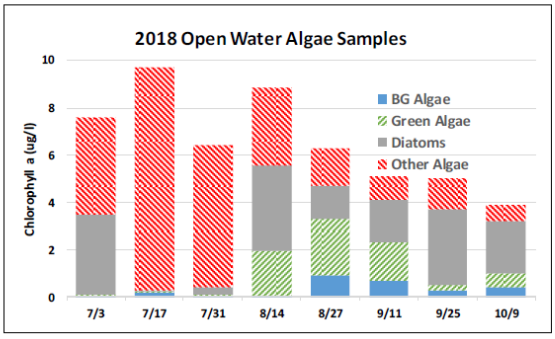

Figure 3: 2018 Open Water Algae Samples. CSLAP 2018 at 2.

Shoreline Algae

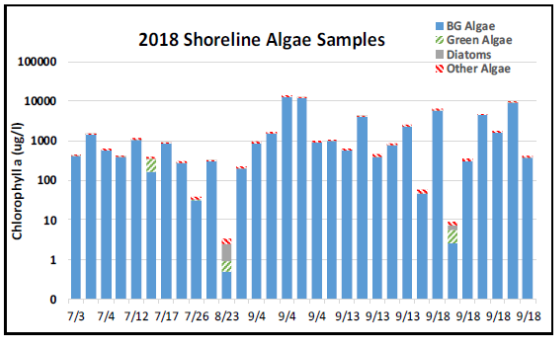

Figure 4: 2018 Shoreline Algae Samples. *Id.*

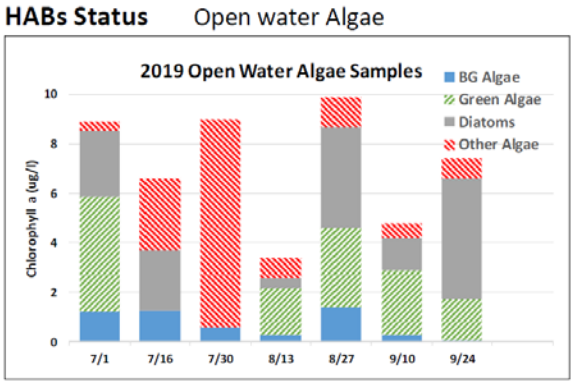

Figure 5: 2019 Open Water Algae Samples. CSLAP (S3) 2019 at 2.

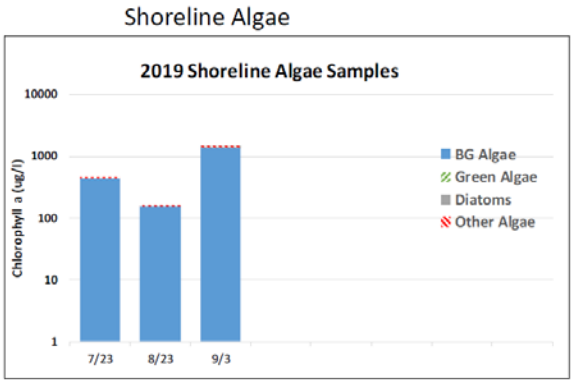

Figure 6: 2019 Shoreline Algae Samples. *Id.*

These differences in observed Chl-a between the open water and shoreline sampling locations suggest that the Draft TMDL's approach of relying on open water sampling sites to establish baseline conditions fails to reflect the actual impairments in the lake. Further, the Draft TMDL's goal of achieving a 6 µg/L Chl-a standard in open water sampling locations will not address the abundance of algae growth at the shoreline currently impeding recreation in Cayuga Lake.

39. The Draft TMDL's failure to account for climate change is a fundamental flaw in the document. Climate change will result in increased precipitation in the region and warming weather, two factors that could greatly affect Cayuga Lake's nutrient impairment. It is likely that increased precipitation would exacerbate agricultural and stormwater runoff, and increased temperatures will foster additional plant and algae growth. The Lake Champlain Basin SWAT Climate Response Modeling used various climate models to predict the effect climate change will have on the Lake Champlain SWAT model. Tetra Tech, Inc., *Lake Champlain Basin SWAT Climate Response Modeling* (2015), https://www.epa.gov/sites/production/files/2015-09/documents/swat-climate-response-modeling.pdf. The results were that "[t]he different climate scenarios are in agreement on an increase in annual flow volumes, peak flows, and pollutant loads . . . " *Id.*at 13. DEC must revisit the Draft TMDL and consider climate change impacts on the impairment and the reductions needed to meet and attain water quality standards.

40. The Draft TMDL relies on a hydrothermal/transport sub-model it claims was "validated" with observations from the 1998-2012 period. Draft TMDL App. B at B1. The Draft TMDL compares the observed Chl-a to the modeled Chl-a in Table 15. Draft TMDL at 36. The Draft TMDL includes only one value per year: "summer mean epilimnetic TP and Chl-a." Draft TMDL at 36. This value appears to reflect not only the mean value observed on a bi-weekly basis from late-April to late-October, but also the mean of several sampling sites within the Southern End. Providing a mean value of not just the entire summer, but also averaging multiple sampling sites within the Southern End segment obscures peaks in the values that would occur during certain portions of the summer. This approach ignores any wintertime loading and also misses early spring loading, when farms may be most likely to spread manure or other fertilizer on their fields and when the area receives the most rain. This approach fails to satisfy Clean Water Act regulations mandating that TMDLs "shall be established at levels necessary to attain and maintain the applicable narrative and numerical [water quality standards] with seasonal variations . . . ." 40 C.F.R. §130.7(c). This approach also obscures any information about whether one or more sampling sites had higher numbers on a consistent basis than the others.

41. The Draft TMDL relies on a data set containing data from more than 20 years ago. While historic Phosphorus loading data can be critical to understanding lake dynamics when a lake is subject to internal loading from sediments, the Draft TMDL makes clear that this condition is not applicable to Cayuga Lake. The Draft TMDL has failed to demonstrate that these historic conditions reflect the existing conditions within Cayuga Lake.

42. The Draft TMDL fails to adequately explain how reductions of Phosphorus in the very north end of a lake that drains north can be relied on to improve water quality in the Southern End segment. The Draft TMDL's vague assertions that circulation patterns "link the water quality between the Main lake and the Southern End" fail to demonstrate that the reductions in Phosphorus from the Northern segments will necessarily lead to improvements in the South. Draft TMDL at 19. Further, while reductions of Phosphorus inputs across the whole lake will likely benefit water quality within the lake, the Draft TMDL fails to demonstrate how relying on reductions from the two Northern segments will ensure water quality is attained in the Southern End segment.

43. The Draft TMDL's Margin of Safety appears to merely add allocation to the total load in addition to the reductions the model determined were necessary to meet the Chl-a water quality target. For example, if the modeling determined that the water quality target is met under a scenario where point sources maintain their existing permit limits and nonpoint sources are reduced by 30%, the TMDL should quantify the Phosphorus loading associated with those reductions, then subtract the 10% margin of safety before allocating load to WLA and LA. To implement the Margin of Safety, the point sources would actually need to reduce discharges below their current permit limits and nonpoint source reductions would need to be *greater* than 30% to provide a Margin of Safety. It appears that the Draft TMDL allocated the LA and WLA according to its modeled scenario and then added 10% to the load as a so-called "Margin of Safety" to achieve the total load. However, that approach actually makes the total load greater than the model reflects is necessary to achieve the water quality target.

44. The Draft TMDL fails to set out timelines when reductions will occur. It also fails to establish a monitoring and reporting plan to gauge the success of TMDL application or a plan to modify the TMDL if water quality is not improving.

This 2nd day of July, 2021

Barry W. Sulkin

Exhibit 1

BARRY SULKIN
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CURRICULUM VITA

EDUCATION

1987 M.S., **Vanderbilt University** - Nashville, Tennessee
Major: Environmental Engineering
Master's Thesis: "HARPETH RIVER BELOW FRANKLIN DISSOLVED OXYGEN STUDY"- Field and lab study, QUAL2E computer modeling of river hydrology, water quality, and impacts of a sewage treatment plant.

1975 B.A., **University of Virginia** - Charlottesville, Virginia
Major: Environmental Science

Additional undergraduate courses: math and engineering at University of Tennessee - Knoxville 1982-1984

HONORS

Conservationist of the Year, 2011, Wild South's Roosevelt-Ash Society, Ashville, NC, March 23, 2012
River Hero Award, River Network 2006
Lifetime Achievement Award, Tennessee Environmental Council, 1990
Water Conservationist of the Year, Tennessee Conservation League, 1989
State of Tennessee/Vanderbilt University
Environmental Engineering Graduate School Scholarship, 1985 - 1987
duPont Scholarship, University of Virginia, 1971 - 1975
Eagle Scout, 1967

PROFESSIONAL EXPERIENCE - CURRENT

Sept. 1990 - Present **Environmental Consultant**
Self-employed

Investigator, consultant, and scientist serving clients such as attorneys, environmental/citizen organizations, cities, individuals, businesses, media, and sub-contractor for other consultants/engineers. Activities include research projects, field studies, sampling, testing, site evaluations, stream/wetland determinations, permit negotiations, information and file research, photography, and expert witness presentations concerning water quality, NPDES, CAFO, TMDL, erosion, landfills, NEPA, FERC, NRC, and other environmental issues; also TN Director of Public Employees for Environmental Responsibility (PEER). Employed by EPA as special expert for Federal Advisory Committee for Detection and Quantitaion and Uses in the Clean Water Act (June 2005- Dec 2007).

PROFESSIONAL EXPERIENCE - PREVIOUS

1987-June 1990 and 1985 **Manager**
Enforcement and Compliance Section
Division of Water Pollution Control
Tennessee Dept. of Health and Environment
Nashville, Tennessee

Responsibilities: Statewide manager of enforcement investigations and legal referrals for water pollution programs under the federal Clean Water Act and the Tennessee Water Quality Act; witness for hearings before the Water Quality Control Board, and local and state courts; data processing and analysis for wastewater permit discharges; field research projects regarding water quality problems, as well as field work involving various stream, river, lake, and wetland issues.

1989 **Instructor**
Graduate School of Engineering
University of Tennessee, Knoxville (Nashville campus)

Responsibilities: Assistant instructor for graduate course in environmental engineering- wastewater treatment.

Sept.-Nov.1986 and 1981 **Assistant Manager**
Regional Field Office
Division of Water Pollution Control
Tennessee Dept. of Health and Environment
Nashville, Tennessee

Responsibilities: Coordinated inspections, complaint investigations, field studies, and enforcement for wastewater programs in 41 county region.

Sept. 1985 - Aug. 1986 Education leave to attend graduate school

1984-1985 **Special Projects Assistant**
Director's Office - Elmo Lunn, Director
Division of Water Pollution Control
Tennessee Dept. of Health and Environment
Nashville, Tennessee

Responsibilities: Provided statewide coordination and technical assistance on deep well waste injection regulations, clear- cutting forestry problem investigations, animal waste problems, public relations and media presentations, state planning and policy, enforcement and field office coordination.

1982-1984 **Enforcement Coordinator**
Regional Field Office
Division of Water Pollution Control
Tennessee Dept. of Health and Environment
Knoxville, Tennessee

Responsibilities: Coordinated enforcement action in municipal and industrial drinking water and wastewater programs in 24 county region, including fish kills, spills, complaint investigations, and stream studies.

1981-1982 **Assistant Manager**
Enforcement Section
Division of Water Pollution Control
Tennessee Dept. of Health and Environment
Nashville, Tennessee

Responsibilities: Coordinated statewide investigations and legal actions for drinking water, wastewater, and safe dam programs.

1977-1981 **Water Quality Specialist**
Regional Field Office
Division of Water Pollution Control
Tennessee Department of Health and Environment
Nashville, Tennessee

Responsibilities: Inspected drinking water, and municipal and industrial wastewater systems for 41 county area; investigated spills, underground storage tanks, fish kills, and citizen complaints; conducted stream studies; coordinated enforcement program.

1976-1977 **Water Quality Specialist**
Regional Field Office
Division of Water Pollution Control
Tennessee Dept. of Health and Environment
Chattanooga, Tennessee

Responsibilities: Inspected public drinking water systems for nine county area; investigated spills and citizen complaints.

1975 **Research Assistant/Lab Technician**
Department of Environmental Science
University of Virginia
Charlottesville, Virginia

Responsibilities: Analyzed soil and sediment from Chesapeake Bay and marsh/wetland sites for Corps of Engineers dredge spoils study.

1974 **Research Assistant**
Department of Environmental Science
University of Virginia
Charlottesville, Virginia

Responsibilities: Weather research project data processing.

1974 **Research Assistant/Lab Technician**
Department of Civil Engineering
Water Quality Lab
Memphis State University
Memphis, Tennessee

Responsibilities: Field sampling and lab analyses of water for study of urbanization impacts of watershed streams.

PROFESSIONAL/CIVIC ORGANIZATIONS & CERTIFICATIONS (Past & Present)

Community Engagement Committee, Nashville Planning Department, 2013 to 2015

Beaman Park to Bells Bend Conservation Corridor community organization,
Board of Directors, 2012 to present

Certified Erosion Prevention and Sedimentation Control Professional (TN), Aug. 2004

Davidson County Grand Jury, Oct. - Dec. 1998, Nashville, TN

Nashville and Davidson County - Floodplain Review Committee, Oct. - Dec. 1998

National Environmental Health Association
*Registered Environmental Health Specialist,*1994

State of Tennessee - *Registered Professional Environmentalist*, 1982

American Society of Civil Engineers

Water Environment Federation

Tennessee Environmental Council, *Board of Directors & Advisory Board, 1994 to present*

International Erosion Control Association

Tennessee Scenic Rivers Association

American Water Resources Association

Alaska Clean Water Advocacy, *Advisory Board*

ADDITIONAL TRAINING

"Fundamentals of Erosion Prevention and Sediment Control" certification course by the University of Tennessee and the Tennessee Department of Environment and Conservation, August 26, 2004; Recertification October 9, 2007

ABASINS Training@ short course of EPA supported computer mapping and water quality modeling techniques, Utah State Univ., Logan UT, August 6 - 10, 2001

"Wetland Mitigation Techniques" Tennessee Tech. Univ., Cookeville, TN April 26, 1999

"Pulp and Paper Cluster Rule and Clean Water Act Permits", Clean Water Network with EPA, Seattle, Washington, February 18-19, 1998

"Bioengineering Techniques for Streambank and Lakeshore Erosion Control", by Wendy Goldsmith, International Erosion Control Association, April 27, 1995

"Fundamentals of Hydrogeology, Karst Hydrogeology, and the Monitoring, Containment, and Treatment of Contaminated Ground Water", by Albert Ogden and Gerald Cox, January 6-7, 1994

"Ground Water Hydrogeology and Dye Tracing in Karst Terrains", James Quinlan, April 2, 1992

"NPDES Permit Writers Course" by the Environmental Protection Agency (EPA), April 1988

"Sediment Oxygen Demand Workshop", by EPA, U.S. Environmental Research Laboratory, Gulf Breeze, Florida, September, 1987

"Compliance Monitoring for NPDES Permits", by EPA, October, 1978

"Hazardous Materials Tactical Workshop", by Tennessee Civil Defense, April 1978

"Troubleshooting O & M Problems at Municipal Wastewater Treatment Facilities", by EPA, March, 1978

PRESENTATIONS/PUBLICATIONS

November 2015

"*Evidence For Leaking Of Two Coal Ash Storage Ponds To Local Surface Water And Groundwater In Tennessee*", Harkness, Jennifer S.[1], Sulkin, Barry[2] and Vengosh, Avner[1], ([1]Division of Earth and Ocean Sciences, Nicholas School of the Environment, Duke University, Durham, NC; [2]Environmental Consultant, Nashville, TN); Abstract & Presentation at 2015 Geological Society of America Annual Meeting in Baltimore, MD

October 2010 & January 2015

Water Quality Sampling & Testing for Litigation Uses, Western Carolina University, Environmental Chemistry Class, Cullowhee, NC

April 2014 & March 2015

Environmental Regulatory Programs in State and Federal Government, Middle Tennessee State University, Murfreesboro, TN

June 2013

NPDES Permits & Cases Presentation at International WaterKeeper Alliance annual meeting, Calloway Gardens, Pine Mountain, GA

October 2012

Appalachian Public Interest Environmental Law Conference, University of Tennessee College of Law, *"Transportation Planning for the 21st Century"* panel, Knoxville, TN

March 2012

Alabama Rivers Alliance – *"How Winning Is Possible"* Keynote address for annual conference awards, Fairhope, AL

May 2001 – May 2013

River Rally, annual national conference in: California, North Carolina, Washington, Virginia, Colorado, New Hampshire, Ohio, Maryland, Utah, South Carolina, Oregon; taught various seminars each year on: Clean Water Act, NPDES Permits, Anti-degradation, Stormwater, TMDLs, Enforcement, Wetlands & Mitigation; by River Network based in Portland, OR

July 2005

"The Clean Water Act Owner's Manual", second edition, contributing writer & editor, River Network, Portland, OR

December 2003

"Stream Flow and the Clean Water Act", Atlanta, GA, with River Network, Portland, OR

February 2003 & December 2004

"Clean Water Act - Train the Trainer", Denver, CO & Madison, WI, with River Network, Portland, OR

May 2002

"Tracking TMDLs", contributing writer & editor, National Wildlife Federation, Montpelier, VT & River Network, Portland, OR

February 2002

"A Protocol for Establishing Sediment TMDLs", contributing writer & editor, developed for the Georgia Conservancy & University of Georgia Institute of Ecology by the Sediment TMDL Technical Advisory Group, Athens, GA

March 2001

"The Ripple Effect - How to Make Waves in the Turbulent World of Watershed Cleanup Plans", contributing writer & editor, Clean Water Network, Washington, D.C.

October 1999 - April 2001

"Clean Water Act Workshop", presenter for three-day training conferences - Vermont, Georgia, Tennessee, Colorado, New Mexico, Ohio, and Alaska, with River Network, Portland, OR

October 2000

"TMDL Workshop", presenter for training in San Diego, CA, with River Network, Portland, OR

April 1999

"*U.S. Environmental Laws & Regulations Compliance - Understanding Your Obligations Under the Clean Water Act*", session on Clean Water Act for course sponsored by Government Institutes, Inc. of Rockville, MD, given in Nashville, TN

March 1999

"*NPDES and State Water Quality Permits*" and "*The TMDL Process*", presentations at the Tenn. Clean Water Network conference; March 27, 1999, Bethany Hills Camp, Kingston Springs, TN

March 1999

"*State of the Rivers: Tennessee*" presentation at World Wildlife Fund "*State of the Rivers Conference*", March 15, 1999, Chattanooga, TN, with co-author of Tenn. section of "*A Conservation Potential Assessment of the Mobile and Tennessee/Cumberland River Basins in Alabama, Georgia, and Tennessee*" by WWF

December 1998

"America's Animal Factories", contributing writer & editor, National Resources Defense Council, Washington, D.C.

December 1998

"*The TMDL Process*", presentation with NRDC attorney at national Sierra Club state leaders conference, Santa Fe, New Mexico, December 11,1998

October 1998

"*Clean Water Act Permits, Modeling, and TMDLs*" presentation at national conference of clean water organizations & attorneys, by Clean Water Network/NRDC, Oct. 16, 1998, Washington, DC

May 1998

"*Impacts of State Route 840 Upon the Human and Biophysical Environment"* NEPA, ISTEA, and Public Participation in Transportation Projects, Dept. of Environmental Geography guest lecture, Austin Peay State University, May 1, 1998, Clarksville, TN

March 1998

"*The State, EPA, Citizens - How the System Works*" Tennessee Clean Water Conference, Opening Plenary Presentation, March 28, 1998, Nashville, TN

March 1998

"*Total Maximum Daily Loads (TMDL) The Science, Process, & Controversy*" American Water Resources Association 1988 Tennessee Conference; paper presentation as part of panel with EPA representatives on TMDLs, March 3, 1998, Nashville, TN.

February 1997

International Erosion Control Association, on panel of speakers for session on practical applications of erosion controls at annual IECA national conference, Nashville, TN

October 1994

"*Stream Ecology, BMPs, and Compliance"*, environmental impacts of road building, Sierra Club Southern Appalachian Highlands Ecosystem Taskforce, Transportation Workshop, Banner Elk, NC

June 1994

"*Fundamentals of Tennessee Environmental Law*", presentation on Water Pollution Control and Compliance Strategies, for course sponsored by Government Institutes, Inc. of Rockville, MD, given in Knoxville, TN

June 1994

University of Tennessee Law School, guest lecture on water pollution and the related state and federal laws, Knoxville, TN

October 1992

"*Storm Water Regulations for Saw Mills*" - Seminar sponsored by the Tennessee Association of Forestry and the Univ. of TN, Nashville.

August 1992

"*Storm Water Regulations for Industry*" - Seminars sponsored by the Tennessee Association of Business and the Univ. of TN, Chattanooga, Knoxville, Jackson, and Nashville.

July 1992

Storm Water in Tennessee - A Training Manual for Manufacturers, University of Tennessee Center for Industrial Services

April 1992

"*Dissolved Oxygen Study - Sewage Treatment Impacts and Assessments*", VA Water Pollution Control Assoc. 46th Annual Conference, Roanoke, VA

October 1990

"*The Tainted Waters of the Cumberland*"; Cumberland Journal, v.1, no. 1, pp. 16-20; Nashville, Tennessee.

November 1988

"*A Rapid Bioassessment of Richland Creek, Davidson County*", by M. Browning, B. Sulkin, T. Merritt, TN Div. of Water Pollution Control

June 1988

"*Assimilative Capacity of the Obed River at Crossville, Tennessee*"; U.S. Geological Survey 1st Annual Hydrology Symposium, Nashville, TN

March 1987 - 1994

Vanderbilt University Graduate School of Engineering and Law School; guest lectures on water quality topics and computer modeling of river waste assimilative capacity.

July 1983

Testimony on the pollution at the Oak Ridge nuclear weapons facilities before Congressional hearing chaired by Congressman Albert Gore.

Exhibit 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

State Pollutant Discharge Elimination System (SPDES)
DISCHARGE PERMIT

Special Conditions (Part 1)

Industrial Code:	9200	SPDES Number:	NY - 0026638
Discharge Class (CL):	05	DEC Number:	7-5007-00012/00001
Toxic Class (TX):	T	Effective Date(EDP):	June 1, 2000
Major Drainage Basin:	07	Expiration (ExPD):	June 1, 2005
Sub Drainage Basin:	05	Modification Dates:	August 1, 2001
Water Index Number:	ONT-66-12-P296	Attachment(s): General Conditions (Part II) Date: 11/90	

This SPDES permit is issued in compliance with Title 8 of Article 17 of the Environmental Conservation Law of New York State and in compliance with the Clean Water Act, as amended, (33 U.S.C. §1251 et. seq.)(hereinafter referred to as "the Act").

PERMITTEE NAMES AND ADDRESSES

Name: **City of Ithaca** Attention: **William J. Gray, P.E.**
Street: **108 East Green Street** **City Engineer**
City: **Ithaca** State: **NY** Zip Code: **14850**

Name: **Town of Ithaca** Attention: **Catherine Valentino**
Street: **126 East Seneca Street** **Town Supervisor**
City: **Ithaca** State: **NY** Zip Code: **14850**

Name: **Town of Dryden** Attention: **Mark Varvayanis**
Street: **65 East Main Street** **Town Supervisor**
City: **Dryden** State: **NY** Zip Code: **13053**

is authorized to discharge from the facility described below:

FACILITY NAME AND ADDRESS

Name: **Ithaca Area Wastewater Treatment Facilities**
Location (C,T,V): **City of Ithaca** County: **Tompkins**
Facility Address: **525 Third Street**
City: **Ithaca** **State: NY** Zip Code: **14850**
NYTM -E: NYTM - N:
From Outfall No.: **001** at Latitude: **42** ° 28 ′ 00 ″ & Longitude: 76 ° 30 ′ 50 ″
into receiving waters known as: Cayuga Lake Class: A
and; (list other Outfalls, Receiving Waters & Water Classifications) (Continued on next page)

in accordance with the effluent limitations, monitoring requirements and other conditions set forth in Special Conditions (Part I) and General Conditions (Part II) of this permit.

DISCHARGE MONITORING REPORT (DMR) MAILING ADDRESS

Mailing Name: **Ithaca Area Wastewater Treatment Facilities**
Street: **525 Third Street**
City: **Ithaca** State: **NY** Zip Code: **14850**
Responsible Official or Agent: Phone: **607-273-8381**

This permit and the authorization to discharge shall expire on midnight of the expiration date shown above and the permittee shall not discharge after the expiration date unless this permit has been renewed, or extended pursuant to law. To be authorized to discharge beyond the expiration date, the permittee shall apply for permit renewal not less than 180 days prior to the expiration date shown above.

DISTRIBUTION:

US EPA, Region II
Water Division, Region 7
R. Hannaford, Division of Water, Albany
Tompkins County Health Department

Permit Administrator: Michael K. Barylski

Address: 1285 Fisher Ave.
Cortland, NY 13045

Signature: Michael K. Barylski Date: 8/15/01

Additional Discharge Locations

Outfall	Description	Latitude	Longitude	Receiving Waters	Class
002	STP Influent Bypass	42° 26' 11"	76° 30' 15"	Cascadilla Creek	C
003	Lake St. & Kline Rd. P.S.	42° 27' 22"	76° 30' 11"	Fall Creek	B
004	Ferris Pl. & Quay St. P.S.	42° 26' 15"	76° 30' 40"	Six Mile Creek	D
005	Cherry St. & Clinton St. P.S.	42° 26' 11"	76° 31' 04"	Flood Control Channel	D
006	321 Elmira Rd. P.S.	42° 25' 34"	76° 30' 42"	Relief Channel	D

Discharges from these outfalls are subject to Section 11.2 of the SPDES Permit General Conditions (Part II) concerning Bypasses.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning August 1, 2001 and lasting until June 1, 2005
the discharges from the permitted facility shall be limited and monitored by the permittee as specified below:

LIMITATIONS APPLY: [X] All Year [ ] Seasonal from _____ to _____

Outfall Number 001

EFFLUENT LIMITATIONS

[X] Flow	30 day arithmetic mean	13.1	[X] MGD [ ] GPD	
[X] BOD, 5 - Day	30 day arithmetic mean	30 mg/l	and 2502	lbs/day(1)
[X] BOD, 5 - Day	7 day arithmetic mean	45 mg/l	and 3753	lbs/day
[X] Solids, Suspended	30 day arithmetic mean	30 mg/l	and 2502	lbs/day(1)
[X] Solids, Suspended	7 day arithmetic mean	45 mg/l	and 3753	lbs/day
[X] Effluent disinfection required: [X] All Year [ ] Seasonal from _____ to _____				
[X] Coliform, Fecal	30 day geometric mean shall not exceed 200/100 ml			
[X] Coliform, Fecal	7 day geometric mean shall not exceed 400/100 ml			
[X] Chlorine, Total Residual	Daily Maximum		0.1	mg/l
[X] pH	Range		6.0 - 9.0	SU
[X] Solids, Settleable	Daily Maximum		0.3	ml/l
[X] Phosphorus	12 month rolling average (TMRA) (3)		40.0 lbs/day as P	
[X] Temperature	Daily maximum		90 Degrees F	

MONITORING REQUIREMENTS

Parameter	Frequency	Sample Type	Sample Influent	Location Effluent
[X] Flow, [ ] MGD [ ] GPD	Continuous	Record		X
[X] BOD, 5 - Day, mg/l	2/Week	24-hr. Comp.	X	X
[X] Solids, Suspended, mg/l	2/Week	24-hr. Comp.	X	X
[X] Coliform, Fecal, No./100 ml(2)	2/Week	Grab		X
[X] Nitrogen, TKN (as N), mg/l	1/Month	24-hr. Comp.	X	X
[X] Ammonia (as NH_3), mg/l	1/Month	24-hr. Comp.	X	X
[X] pH, SU (standard units)	3/Day	Grab	X	X
[X] Solids, Settleable, ml/l	3/Day	Grab	X	X
[X] Chlorine, Total Residual, mg/l(2)	3/Day	Grab		X
[X] Phosphorus, Total (as P), mg/l	2/Week	24-hr. Comp.		X
[X] Temperature, Deg. F	3/Day	Grab	X	X

NOTES:

(1) and effluent value shall not exceed 15 % and 15 % of influent values for BOD_5 & TSS respectively.

(2) Monitoring of these parameters is only required during the period when disinfection is required

(3) The 12 month rolling average shall be calculated by averaging the current reporting period's value with the previous 11 months values.

SCHEDULE OF COMPLIANCE

a) The permittee shall comply with the following schedule.

Action Code	Outfall Number(s)	Compliance Action	Due Date
	001	Annual Sewer System Operation and Maintenance Report The Permittee shall prepare an annual report for the period January 1 to December 31 that describes the sewer inspection and maintenance activities for the period and assesses the effectiveness of that program. The report shall also assess the effectiveness of the approved I/I elimination program. The report must be submitted to the Department no later than 60 days following the close of each reporting period.	

The above compliance actions are one time requirements. The permittee shall comply with the above compliance actions to the Department's satisfaction once. When this permit is administratively renewed by NYSDEC letter entitled "SPDES NOTICE/RENEWAL APPLICATION/PERMIT", the permittee is not required to repeat the submission. The above due dates are independent from the effective date of the permit stated in the letter of "SPDES NOTICE/RENEWAL APPLICATION/PERMIT."

b) The permittee shall submit a written notice of compliance or non-compliance with each of the above schedule dates no later than 14 days following each elapsed date, unless conditions require more immediate notice under terms of the General Conditions (Part ll), Section 5. All such compliance or non-compliance notification shall be sent to the locations listed under the section of this permit entitled RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS. Each notice of non-compliance shall include the following information:

1. A short description of the non-compliance;
2. A description of any actions taken or proposed by the permittee to comply with the elapsed schedule requirements without further delay and to limit environmental impact associated with the non-compliance;
3. A description or any factors which tend to explain or mitigate the non-compliance; and
4. An estimate of the date the permittee will comply with the elapsed schedule requirement and an assessment of the probability that the permittee will meet the next scheduled requirement on time.

c) The permittee shall submit copies of any document required by the above schedule of compliance to NYSDEC Regional Water Engineer at the location listed under the section of this permit entitled RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS **and to the Bureau of Water Permits, Room 314, 50 Wolf Road, Albany, N.Y. 12233-3505**, unless otherwise specified in this permit or in writing by the Department.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning June 1, 2000

and lasting until June 1, 2005

the discharges from the permitted facility shall be limited and monitored by the permittee as specified below:

Outfall Number & Effluent Parameter	Discharge Limitations Daily Avg.	Daily Max.	Units	Minimum Monitoring Requirements Measurement Frequency	Sample Type
001 - Final Effluent					
Trichloroethylene	4.2	Monitor	lbs/day	1/month	Grab
Tetrachloroethylene	1.0	1.3	lbs/day	1/month	Grab
Cadium, Total	Monitor	2.2	lbs/day	1/month	24-hr. Comp.

ACTION LEVEL REQUIREMENTS

The parameters listed below have been reported present in the discharge but at levels that currently do not require water quality based limits. Action levels have been established which if routinely or excessively exceeded will result in reconsideration of water quality based limits. Routine action level monitoring results, if not provided for on the Discharge Monitoring Report (DMR) form, shall be appended to the DMR for the period during which the sampling was conducted.

If discharges of any substance exceed their respective action level:

(1) for four of six consecutive samples.
(2) for two of six consecutive samples by 20% or more.
(3) for any 1 sample by 50% or more.

the permittee shall undertake a short-term, high-intensity monitoring program for this parameter. Samples identical to those required for routine monitoring purposes shall be taken on each of three consecutive operating days and analyzed. Results shall be expressed in terms of both concentration and mass, and shall be submitted no later than the end of the third month following the month when any of the criteria listed above was met. Results may be appended to a DMR or transmitted under separate cover to the same address. If levels higher than the action levels are confirmed, the result shall constitute a revised application and the permit shall be reopened for consideration of revised action levels or effluent limits.

The permittee is not authorized to discharge any of the listed parameters at levels which may cause or contribute to a violation of water quality standards.

Outfall No. 001

Effluent Parameter	Action Level	Units	Minimum Monitoring Requirements Measurement Frequency	Sample Type
Chloroform	0.8	lbs/day	4/year	Grab
Trans-1,2-Dichloroethylene	0.8	lbs/day	4/year	Grab
Methylene Chloride	1.9	lbs/day	4/year	Grab
Bis(2-ethylhexyl)Phthalate	1.8	lbs/day	4/year	Grab
Copper, Total	5.6	lbs/day	4/year	24-hr. Comp.
Lead, Total	4.6	lbs/day	4/year	24-hr. Comp.
Nickel, Total	8.2	lbs/day	4/year	24-hr. Comp.
Silver, Total	1.8	lbs/day	4/year	24-hr. Comp.
Zinc, Total	10.8	lbs/day	4/year	24-hr. Comp.

Definition of Daily Average and Daily Maximum

The daily average discharge is the total discharge by weight or in other appropriate units as specified herein, during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required by this permit, the daily average discharge shall be determined by the summation of all the measured daily discharges in appropriate units as specified herein divided by the number of days during the calendar month when the measurements were made.

The daily maximum discharge means the total discharge by weight or in other appropriate units as specified herein, during any calendar day.

Monitoring Locations

Permittee shall take samples and measurements to meet the monitoring requirements at the location(s) indicated below: (Show locations of outfalls with sketch or flow diagram as appropriate).

Monitoring for fecal coliform, total chlorine residual, and effluent temperature shall be performed at the dechlorination building sampling station. Monitoring for other effluent parameters may be performed at a convenient location after the combination of the wastewater treatment facilities effluent, cogeneration cooling water, and plant effluent system and prior to the discharges to Cayuga Lake. Influent monitoring shall be performed at a convenient location prior to the primary settling tank.

PRETREATMENT PROGRAM IMPLEMENTATION REQUIREMENTS

A. The permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's pretreatment program submission entitled, Development of an Industrial Pretreatment Program, City of Ithaca, dated June 1983, approved by EPA on September 10, 1984, and the General Pretreatment Regulations (40 CFR 403). At a minimum, the following pretreatment implementation activities shall be undertaken by the permittee:

(1) Enforce categorical pretreatment standards promulgated pursuant to Section 307(b) and (c) of the Act, prohibitive discharge standards as set forth in 40 CFR 403.5, and local limitation specified in Section 2 of the City of Ithaca Local Law Number 1 of 1984, Section 2 of the Town of Ithaca Local Law Number 1 of 1984, and Section 2.4 of the Town of Dryden Local Law Number 2 of 1984 whichever are more stringent or apply at the time of issuance or modification of an industrial discharge permit. Locally derived limitations shall be defined as pretreatment standards under Section 307(d) of the Act and shall not be limited to categorical industrial facilities.

(2) Issue industrial discharge permits to all significant industrial users. Industrial discharge permits shall contain limitations, sampling protocols, compliance schedule if appropriate, reporting requirements, and appropriate standard conditions.

(3) Maintain and update, as necessary, records identifying the nature, character, and volume of pollutants contributed by significant industrial users. Records shall be maintained in accordance with Part II. 10.3.a.

(4) Carry out inspections, surveillance, and monitoring activities on significant industrial users to determine compliance with applicable pretreatment standards. Records shall be maintained in accordance with Part II. 10.3.a.

(5) Enforce and obtain remedies for non-compliance by any significant industrial users with applicable pretreatment standards and requirements.

B. Pursuant to 40 CFR 403.5(e), whenever, on the basis of information provided to NYSDEC or the Water Division Director, U.S. Environmental Protection Agency, it has been determined that any source contributes pollutants in the permittee's treatment works in violation of Pretreatment Standards Existing Sources, New Source Pretreatment Standards or National Pretreatment Standards: prohibited discharges, subsections (b), (c) or (d) of Section 307 of the Clean Water Act, respectively, notification shall be provided to the permittee. Failure by the permittee to commence an appropriate investigation and subsequent enforcement action within 30 days of this notification may result in appropriate enforcement action against the source and permittee.

C. Sampling

The permittee shall comply with all sampling requirements contained in this permit.

D. Reporting

All pretreatment reporting requirements shall be submitted to the following offices:

Department of Environmental Conservation
Regional Water Engineer - Region 7
615 Erie Boulevard West
Syracuse, New York 13204-2400

Department of Environmental Conservation
Chief, Compliance Section
Bureau of Wastewater Facilities Operations
50 Wolf Road
Albany, New York 12233-0001

Dr. Richard Baker
Permits Administration Branch
Planning & Management Division
USEPA Region II
26 Federal Plaza
New York, New York 10278

Tompkins County Department of Health
"H" Building
1287 Trumansburg Road
Ithaca, New York 14850

E. The permittee shall notify NYSDEC 60 days prior to any major proposed change in sludge disposal method. NYSDEC may require additional pretreatment measures or controls to prevent or abate an interference incident relating to sludge use or disposal.

F. The permittee shall provide to NYSDEC an annual report that briefly describes the permittee's program activities over the previous 12 months. The permittee shall also report on the pretreatment program activities of the Town of Ithaca and the Town of Dryden. The report shall cover the period from March 1 to February 28 or 29. The NYSDEC may modify, without formal notice, this reporting requirement to require less frequent reporting if it is determined that the data in the report does not substantially change from period to period. The report shall be submitted to the above addresses within 28 days of the end of the reporting period and shall include:

(i) An updated industrial survey, as appropriate.

(ii) Results of wastewater sampling at the treatment plant as specified in Part I.

(iii) Status of Program implementation to include:

(a) Any proposed substantial modifications to the pretreatment program as originally approved by USEPA to include but not be limited to; local limitations, special agreements and staffing and funding updates.

(b) Any interference, upset or permit violations experienced at the POTW directly attributable to industrial users.

(c) Listing of significant industrial users issued industrial discharge permits.

(d) Listing of significant industrial users inspected and/or monitored during the previous reporting period and summary of results.

(e) Listing of significant industrial users planned for inspection and/or monitoring for the next reporting period along with inspection frequencies.

(f) Listing of significant industrial users notified of promulgated pretreatment standards, local standards and any applicable requirements under Section 405 of the Act and Subtitle C and D of the Resource Conservation and Recovery Act, as required in 40 CFR Part 403.8(f)(2)(iii).

(g) Listing of significant industrial users notified of promulgated pretreatment standards or applicable local standards who are on compliance schedules. The listing should include for each facility the final date of compliance.

(h) Planned changes in the implementation program.

(iv) Status of enforcement activities to include:

(a) Listing of categorical industrial users, who failed to submit baseline reports or any other reports as specified in 40 CFR 403.12 and in Section 4.3 of the City of Ithaca Local Law Number 1 of 1984, the Town of Ithaca Local Law Number 1 of 1984, and the Town of Dryden Local Law Number 2 of 1984.

(b) Listing significant industrial users not complying with federal or local pretreatment standards as of the final compliance date.

(c) Summary of enforcement activities taken or planned against non-complying significant industrial users. The permittee shall provide public notice of significant violators as specified in 40 CFR Part 403.8(f)(2)(vii).

MONITORING, RECORDING AND REPORTING

a) The permittee shall also refer to the General Conditions (Part II) of this permit for additional information concerning monitoring and reporting requirements and conditions.

b) The monitoring information required by this permit shall be:

☐ Summarized, signed and retained for a period of three years from the date of sampling for subsequent inspection by the Department or its designated agent.

☒ Summarized and reported by submitting completed and signed Discharge Monitoring Report forms once every one month(s) to the locations specified below. Blank forms available at department offices listed below.

The first report will be due no later than EDP + 58 days.

Thereafter, reports shall be submitted no later than the 28th of the following month(s): each month.

Department of Environmental Conservation
Regional Water Engineer, Region 7
615 Erie Boulevard West
Syracuse, New York 13204-2400

Tompkins County Department of Health
"H" Building
1287 Trumansburg Road
Ithaca, New York 14850

Department of Environmental Conservation
Division of Water
50 Wolf Road,
Albany, New York 12233

☐ (Applicable only if checked)

_____, Chief
Permit Administration Branch
Planning & Management Division
USEPA Region II, 26 Federal Plaza
New York, New York 10278

c) If so directed, Monthly Wastewater Treatment Plant Operator's Reports should be submitted to the Regional Engineer and County Health Department or County Environmental Control Agency specified above.

d) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

e) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR 136 or as specified in the permit, the results of this monitoring shall be included in the calculations and recording of the data on the Discharge Monitoring Reports.

f) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.

g) Unless otherwise specified, all information recorded on the Discharge Monitoring Report shall be based upon measurements and sampling carried out during the most recently completed reporting period.

h) On or after April 1, 1984, any laboratory test or sample analysis required by this permit for which the State Commissioner of Health issues certificates of approval pursuant to section five hundred two of the Public health Law shall be conducted by a laboratory which has been issued a certificate of approval. Inquires regarding laboratory certification should be sent to the Laboratory Certification/Quality Assurance Group, New York State Health Department Center for Laboratories and Research, Division of Environmental Sciences, The Nelson A. Rockefeller Empire State Plaza, Albany, New York 12201.

Attachment 3

New York State Department of Environmental Conservation
Division of Environmental Permits
NYSDEC HEADQUARTERS
625 BROADWAY
ALBANY, NY 12233
(518) 402-9167

SPDES PERMIT RENEWAL

3/11/2015

MICHAEL THORNE
CITY OF ITHACA
525 THIRD ST
ITHACA NY 14850

Permittee Name: CITY OF ITHACA
Facility Name: ITHACA AREA WASTEWATER TREATMENT FAC
Ind. Code: 4952 County: TOMPKINS
DEC ID: 7-5007-00012/00001 SPDES No.: NY0026638
Permit Effective Date: 6/1/2015
Permit Expiration Date: 5/31/2020

Dear Permittee,

The State Pollutant Elimination System (SPDES) permit renewal for the facility referenced above is approved with the new effective and expiration dates. This letter together with the previous valid permit for this facility effective on 06/01/2010 and any subsequent modifications constitute authorization to discharge wastewater in accordance with all terms, conditions and limitations specified in the previously issued permit(s).

As a reminder, SPDES permits are renewed at a central location in Albany in order to make the process more efficient. All other concerns with your permit, including applications for permit modification or transfer to a new owner, a name change, and other questions, should be directed to:

Deputy Regional Permit Administrator
NYSDEC REGION 7 CORTLAND SUB-OFFICE
1285 FISHER AVE
CORTLAND, NY 13045-1090
(607) 753-3095

If you have already filed an application for modification of your permit, it will be processed separately by that office.

If you have questions concerning this permit renewal, please contact LINDY SUE CZUBERNAT at (518) 402-9167.

Sincerely,

Stuart M. Fox

Stuart M. Fox
Deputy Chief Permit Administrator

cc:

RPA	RWE	BWP
BWC	File	EPA