MEMORANDUM

To: John H. Adams

From: Peter Lehner, Senior Attorney

Re: Cornell Lake Source Cooling Project Permit

Date: December 8, 1998

Background

Several NRDC members who live near Cayuga Lake have recently raised concerns regarding the environmental impacts of Cornell University's proposed Lake Source Cooling Project ("Cooling Project"). We investigated because the issue involves implementation of the Clean Water Act (CWA) §303(d) total maximum daily load (TMDL) program, which is a Water Program priority.

In brief, Cornell proposes to supplement their current water chilling system by pumping 37.5 million cubic meters a year of cold water from the bottom of the middle of Cayuga Lake, over 250 feet deep, into a heat exchange facility and returning the used water to the southern end of the Lake at a depth of about 10 feet. On January 1, 1998, DEC issued State Pollutant Discharge Elimination System (SPDES) Permit No. 7-50-99-00009-00001 for the Project. As explained below, it appears that the Project SPDES permit was issued contrary to EPA regulations and should be rescinded.

TMDL Regulation

New York has classified Cayuga Lake as a class AA(T) waterbody. Pursuant to section 303(d) of the Clean Water Act, 33 U.S.C. §1313(d), New York has listed the southern portion of Cayuga Lake as a threatened water quality limited segment for silt and nutrient pollution. See New York Department of Environmental Conservation, Division of Water, New York State 1998 TMDL/303(d) List, Table F, April 1, 1998, at 42 (excerpt attached). This means, in essence, that Cayuga Lake already is subject to concentrations of discharges of silt and nutrients in excess of amounts that would allow it to be clean enough for its designated use. DEC data shows that total phosphorus loads in the ambient water of the southern portion of the Lake are 25-30 micrograms per liter, which exceeds the 20 micrograms/liter guidance value.[1] See Lake Source Cooling Project

[1] The Draft Environmental Impact Statement includes a table showing that the phosphorus values in the shallow Southern portion of the Lake are 30.8, 23.7, and 25.7 micrograms/liter in 1994, 1995, and 1996 respectively. See LSC DEIS at Table 2.3.3-14 (attached). The text, however, asserts that on the basis of this data, the "southern Cayuga Lake currently meets the ambient water quality guidance value for [total phosphorus] in ponded waters, since the summer average concentration is consistently below 20 [micrograms/liter]." See LSC DEIS at 2.3.3.3.2.1. The conclusion in the text flatly contradicts the actual data provided.

Draft Environmental Impact Statement ("LSC DEIS") at 2.3.3.3.2.1 & Table 2.3.3-14. Apparently, the stressed nature of this portion of the Lake is also evident in the abundant weeds and algae.[2]

EPA's TMDL regulations implementing section 303(d) prohibit the issuance of permits to "a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards." 40 C.F.R. §122.4(i); see also 40 CFR §123.25 (applying the new source prohibition at 40 C.F.R. §122.4(i) to state NPDES programs) (see provisions attached).

Violation of Water Quality Standard for Phosphorus

New York narrative water quality standards provide that phosphorus shall be limited to "[n]one in amounts that will result in algae, weeds and slimes that will impair the waters for their best usages." 6 N.Y.C.R.R. §703.2. The Lake currently faces environmental stress from phosphorus loading from point sources and from fertilizer runoff from nearby farming operations and lawns. See Julianne Basinger, "Cornell U. Pursues a $60-Million Plan to Cool its Campus with Cayuga's Water," The Chronicle of Higher Education, July 24, 1998, at A28; see also LSC DEIS at 2.3.3.1 (relevant excerpts attached). According to DEC estimates, the Cooling Project will measurably enhance current phosphorus loading into the Lake by 3-7 percent. See LSC DEIS at 2.3.3.3.1.1.4 (relevant excerpts attached). This increase will certainly "cause or contribute" to the abnormal algal growth that currently afflicts the lake in violation of state water quality standards. 40 C.F.R. §122.4(i).

Violation of Water Quality Standard for Silt

New York narrative water quality standards provide that suspended and settleable solids such as silt shall be limited to "[n]one . . . that will cause deposition or impair the waters for their best usages." 6 N.Y.C.R.R. §703.2. Turbidity also is a function of the silt load and New York regulations limit turbidity to "no increase that will cause a substantial visible contrast to natural conditions." Id. Project construction is almost certain to deposit substantial amounts of silt to the Lake. Indeed, in light of increased silt discharges from construction, DEC's FEIS states that Cornell must obtain both a section 404 permit and a stormwater permit for deposits resulting from project construction activities. See LSC DEIS at 1.7.1.3 & 1.7.2 (relevant excerpts attached).

TMDL Regulation Violation

As increased discharges of phosphorus from Project operation and increased discharges of silt from Project construction will "cause or contribute" to violations of New York's water quality standards, it appears that DEC's SPDES permit for the Project violates EPA's TMDL regulations at 40 C.F.R. §122.4(i). Although this regulatory provision has not been extensively litigated, its plain meaning is crystal clear. Moreover, the recent report of EPA's Federal Advisory Committee on the

[2] Although one could argue that the Project is only redistributing phosphorus, in fact the Project is moving phosphorus from the less stressed portion of the Lake's more stressed – and listed – Southern section. Thus, there appears to be a net increase in phosphorus in the water quality limited segment.