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FAX

R.I. Department of Environmental Management
Office of Water Resources
Fax No. (401) 222-3564

DATE: 9/12/06

TO: David Pincumbe

OF: EPA 617-918-1505

FROM: Angelo Liberti

MESSAGE:

Number of pages including this cover sheet: _____

Please confirm receipt of fax (401) 222-4700, Ext. 4 YES NO

(please circle)

Telecommunication for the Deaf (401) 831-5508

RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401-222-4462

September 12, 2006

David Pincumbe
Municipal Permits Branch (CMP)
Office Of Ecosystem Protection
US Environmental Protection Agency
Congress Street, Suite 1100
Boston, MA 02114-2023

Re: Draft NPDES Permit for the North Attleborough WWTF No. MA0101036 and Attleboro Water Pollution Control Facility, NPDES Permit No. MA0100595

Dear Mr. Pincumbe:

The Rhode Island Department of Environmental Management (DEM) has reviewed the permit limits contained in the draft permits referenced above and determined that many of these limits will result in violations of Rhode Island Water Quality Standards in RI waters. The Environmental Protection Agency (EPA) established all water quality-based permit limits using background concentration of zero and by allocating 100% of the criteria. As a result, the limits for the Attleboro facility were based on the assumption that the entire pollutant load from the North Attleborough facility was eliminated from the water column before reaching the Attleboro facility. This assumption is not reflective of actual conditions and when coupled with allocation of the entire criteria, results in permit limits that cause violations of RI Water Quality Standards. In addition, EPA has utilized an instream hardness value of 100 mg/l to compute the water quality criteria for metals. This value is significantly higher than values typically observed in RI waters and results in higher water quality criteria than DEM would anticipate. Please provide information to support the use of this hardness value.

The table below, compares the instream concentrations at the MA/RI state line that result from the draft permit limits, to the RI Water Quality Standards (please note that for the sake of this analysis the hardness of 100 mg/l was utilized based on the assumption that EPA will provide justification for using this value). The concentrations that will result at the state line were computed from a mass balance using a 7Q10 flow at the state line of 14.4 cfs (or 2.71 cfs, based on flow data collected from USGS gauge # 01109403 after subtracting out historical WWTF flows), the WWTF flows and pollutant concentration limits contained in the draft permits and are artificially low as the EPA assumption of pollution concentrations of zero upstream of the North Attleborough WWTF was also used. Attached is a spreadsheet that contains the details of this analysis.

	Ten Mile River Concentration at the RI Border[1]	RI Water Quality Standard	% Exceedance of RI Water Quality Standards
Phosphorus	0.177 mg/l	0.025 mg/l[2]	606 %
Copper	10.5 ug/l	9.3 ug/l	12.9%
Lead	3.6 ug/l	3.2 ug/l	14.3%
Aluminum	98.5 ug/l	87 ug/l	13.2%
Zinc	135.5 ug/l	120 ug/l	13.1%
Cadmium	0.32 ug/l	0.27 ug/l	19.0%
Cyanide	5.2 ug/l	5.2 ug/l	0%

[1]As noted above predicted concentrations are artificially low since the EPA assumption of pollutant concentrations of zero upstream of the North Attleborough WWTF was utilized.

[2]Rule 8.D.(2) of the Rhode Island Water Quality Regulations establishes the following criteria for Nutrients:

> *"Average Total Phosphorus shall not exceed 0.025 mg/l in any lake, pond, kettlehole or reservoir, and average Total P in tributaries at the point where they enter such bodies of water shall not cause exceedance of this phosphorus criteria, except as naturally occurs, unless the Director determines, on a site-specific basis, that a different value for phosphorus is necessary to prevent cultural eutrophication."*

Determination of whether the water quality criterion of 25 ug/l is applicable to the Ten Mile River requires an evaluation of whether it flows into a lake, pond or reservoir (including whether run of the river impoundments constitute a lake, pond or reservoir). For the development of nutrient criteria, the EPA document titled *Nutrient Criteria Technical Guidance Manual: Lakes and Reservoirs: First Edition* has defined lakes as natural and artificial impoundments if they have a surface area greater than 10 acres and a minimum mean water residence time of 14 days. The Turner Reservoir on the Ten Mile Rivers meets both criteria and receives most of its flow from the Ten Mile River; therefore, the criterion of 25 ug/l must be met in the Ten Mile River at the point where it enters Turner Reservoir.

The table below is excerpt from the Final 2004 and the draft 2006 Rhode Island List of Impaired Waters ("303(d) list") and lists several waterbody segments that are impaired due to excessive metals and Phosphorus concentrations. As noted above the limits proposed by EPA would result in continued violation of many of these criteria even under the assumption that no other pollutant sources are present.

Waterbody ID	Waterbody Name	Cause
TEN MILE RIVER BASIN		
RI0004009L-01A	Turner Reservoir	LOW DO, Phosphorus, Lead (Pb), Copper (Cu)
		PATHOGENS
RI0004009L-01B	Turner Reservoir	LOW DO, Phosphorus, Lead (Pb), Copper (Cu)
		PATHOGENS
RI0004009L-02	Slater Park Pond	EXCESS ALGAL GROWTH/CHL-A, Phosphorus, PATHOGENS
RI0004009L-03	Omega Pond	Phosphorus, Lead (Pb), Copper (Cu)
RI0004009R-01A	Ten Mile River	Lead (Pb), Copper (Cu), Cadmium (Cd)
RI0004009R-01B	Ten Mile River	BIODIVERSITY IMPACTS, Copper (Cu), Lead (Pb)

As you know, pursuant to the NPDES regulations at 40 CFR 122.44(d) and 33USC Sec.1341(a)(2), NPDES limits must achieve compliance with water quality standards and limits must be included in permits where pollutants will cause, have reasonable potential to cause, or contribute to an exceedance of the State's water quality. As noted above the limits contained in the draft permit will result in violations of RI water quality standards and therefore, the limits must be revised using a Waste Load Allocation (WLA) strategy that includes an appropriate margin of safety to account for any lack of knowledge concerning the relationship between effluent limits and water quality, ensures an equitable distribution of pollutant loads and that at a minimum meets all Rhode Island water quality criteria at the state line.

Sincerely,

Angelo S. Liberti

Angelo Liberti
Chief of Surface Water Protection

enclosure

cc: Paul Hogan, MADEP

Commonwealth of Massachusetts

RIVERWAYS PROGRAM

Building Partnerships, Protecting Rivers

12 September, 2006

U.S. Environmental Protection Agency
One Congress Street, Suite 1100 (mail code: CIP)
Boston, MA 02114-2023
Attn: David Pincumbe

Public Notice Number: MA-047-06
Permit No: MA0101036 North Attleborough Wastewater Treatment Facility

Dear Mr. Pincumbe,

Staff at the Riverways Programs, MA Department of Fish and Game, have reviewed the draft NPDES permit for the North Attleborough Wastewater Treatment Facility discharging into the Ten Mile River. We appreciate the opportunity to review and comment on the draft NPDES permit. Protecting the health of the state's rivers, near coastal waters and estuaries is the driving force behind the Riverways Programs' work. The potential for point source pollution discharges to negatively impact our waterways heightens the role of NPDES permits in resource protection efforts.

The Fact Sheet in this draft permit packet presents a ample picture of water quality issues in the receiving water for this discharge and the probable or potential impact the discharge poses to interstate waters and important resource areas. We are pleased to see permit limits instituting limitations below secondary treatment standards and are especially pleased to see daily maximum limits for several of the pollutants. It is clear water quality based limits are needed if the Ten Mile River is to ever achieve water quality standards and the permit limits in this draft permit are a needed step.

Stricter limits on nutrients are especially welcome. With the negligible dilution available for this discharge and the known water quality issues, reductions in nutrient loads can not come quickly enough. The proposed limits are a positive step forward in reducing water quality impacts and we concur that the limits in this draft permit may prove inadequate and further reductions in loads may be required. We recognize the challenge nutrient reduction poses but the reductions called for in this permit are crucial to protecting the health and viability of the Ten Mile River and downstream waters in both Massachusetts and Rhode Island. Footnotes #8 and #10, asking the permittee to maximize treatment during the winter when less rigorous nutrient limits are in place, is another excellent addition to this permit and reflects the degraded conditions found in the receiving waters and the need to implement water quality based limitations.

The Ten Mile River is a severely impaired waterway. One of the water quality problems contributing to impairment is associated with low dissolved oxygen. The draft permit requires daily sampling of the effluent and a minimum concentration of 6.0 mg/l. Given the existing conditions in the river, this is a vital measure of the effluent quality. The permit does not provide guidance on when the dissolved oxygen daily grab sample should be taken. Should the dissolved oxygen concentration in the effluent naturally fluctuate, sampling during depressed DO times or matching the monitoring of the effluent with the typical low DO periods in the receiving water, (early morning) might provide more information on how the effluent could

impact, either enhance or exacerbate, oxygen levels in the Ten Mile River. If the concentrations are quite static than explicit requirements on the timing of the sampling is not appropriate.

The waterway is also listed as impaired for unknown toxicity. This impairment is troubling as it indicates serious aquatic health concerns. The Whole Effluent Toxicity test data for this facility appears to indicate regular compliance with permit limits suggesting the effluent is not a source of the unknown toxicity. We wonder if testing with one species is sufficient to fully capture the possible toxicity of the effluent in the receiving water. Generally *Ceriodaphnia dubia* is the more sensitive of WET test species but since all discharges are unique, we wonder if testing has been done on other species to ascertain which is the most sensitive species in this instance? If no other species have been used in prior test, (or if testing with other species was done many years ago and the quantity and/or characteristics of the effluent have changed) than we would advocate some additional testing with other species given the unknown toxicity impairment in the Ten Mile River and the extremely low dilution afforded the effluent.

The Riverways Programs staff appreciates the opportunity to review and participate in the NPDES permit renewal process and the efforts that went into crafting a sound NPDES permit for this facility. Please feel free to contact Riverways staff if there are any questions concerning these comments and observations.

Kind regards,

Cindy Delpapa, Stream Ecologist
MA Riverways Program
617/626-1545; cindy.delpapa@state.ma.us