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26 March 2014

Mr. Wade Murphy  
Permit Section Manager  
Department of Environment and Conservation  
William R. Snodgrass Tennessee Tower  
312 Rosa L. Parks Ave., 11<sup>th</sup> Floor  
Nashville TN 37243

Subject: Pollution Concern for Tellico Reservoir – NPDES for Madisonville WWTP – TN0081612.APP

Dear Mr. Murphy:

I am writing on behalf of the Water Quality Improvement Committee (WQIC) of the Watershed Association of the Tellico Reservoir (WATeR). The WQIC is dedicated to protecting and improving water quality throughout the watershed of the Tellico Reservoir. The WQIC is composed primarily of engineers and scientists, most of whom have advanced degrees and years of experience in various aspects of water chemistry, laboratory analysis, water treatment processes, hydrology, reservoir dynamics, and related environmental processes. We strive to support and work cooperatively with government agencies and other organizations to achieve mutual environmental goals.

We are well aware of and support the need to improve the treatment of wastewater from Madisonville. However, we have concerns about the proposed plan as submitted to TDEC in the March 5, 2014 NPDES permit application. Several issues make this proposal unacceptable.

The proposed approach of piping the treated discharge from the plant to an outfall positioned on the bed of Tellico Reservoir is overly simplistic and reveals a lack of understanding or concern for the unique characteristics of Tellico Reservoir and the resulting degradation of water quality. First of all, the average retention time of the reservoir is relatively long compared to nearby Ft. Loudoun Reservoir of comparable size. This is especially true during summer months when the reservoir is at full pool and periods of higher flow rates are rare.

This condition of low flow rates is amplified by stratification of the downstream half of the reservoir during the summer and autumn. During full pool conditions of May through October, depths exceed 80 feet near Tellico Dam, but essentially all outflow from the reservoir is through a canal connecting Tellico Reservoir to Ft. Loudoun Reservoir with a depth of only 25 feet. As a result, a stagnant layer of cold water is trapped near the bottom for five months or longer during the summer. This condition was predicted in TVA Report WR28-1-65-100, *Computer Simulation of Hydrodynamics and Temperatures of Tellico Reservoir*, May 1980. This report stated that “temperatures cooler than

13 degrees C (55 degrees F) are predicted for September 30, while all inflows entering the reservoir since May 5 were warmer.”

This stratification pattern is confirmed by temperature profiles recorded by TVA in Tellico Reservoir showing temperatures at lower depths of even less than predicted. As a result of isolation for such an extended period, cold water trapped in the hypolimnion becomes nearly depleted of dissolved oxygen. TVA sampling reveals concentrations of dissolved oxygen as low as 0.03 mg/L in this zone in late summer. Additional wastewater discharges as proposed in this application will only accumulate in the hypolimnion and consume the remaining oxygen.

The region surrounding Tellico Reservoir represents the fastest growing area and a major tax base of both Monroe and Loudon Counties. WATeR is striving to restrict pollution from point and non-point sources as the region transitions from rural to suburban and industrial development. There are currently three outfalls in Tellico Reservoir from waste treatment plants already serving the communities located near the reservoir. These outfalls are located at River Miles 13.4, 16.1, and 18.6. These facilities must also serve future anticipated growth of both industry and population of this region. Another outfall at Mile 16.2 into this 5.2 mile corridor of the lake with the potential to degrade the water quality of Tellico will deter recruitment of clean, modern industry as well as residents to upscale communities. This will certainly reduce the tax base and employment of both counties.

After reviewing this NPDES application, the WQIC of WATeR unanimously supports selection of **Alternative 5** which proposes “Advanced Treatment Processes and Discharge to Bat Creek” at the current location. The recently installed pipeline from Madisonville to the TRDA treatment plant could then be used to collect waste water along this route and pump it to the new plant in Madisonville for treatment.

From our experience with water quality sampling of Bat Creek, we agree with McGill Associates who prepared this application for Madisonville that Bat Creek in this area is truly “a nasty little creek.” This creek apparently suffers from non-point source pollution as it approaches the current outfall from the treatment plant, but is far nastier immediately downstream. Discharge of advanced treatment of the effluent from this plant as described in Alternative 5 would significantly improve the water quality of Bat Creek within the city of Madisonville as well as the downstream 20 mile stretch of creek flowing through Monroe County. If the city would implement a plan to reduce pollution upstream of this station as well, then Bat Creek could be an asset to the community instead of “a nasty little creek.”

The WQIC congratulates Madisonville and TDEC for addressing this major pollution source in the watershed of Tellico Reservoir. However, we feel that the selection of Alternative 2 does not address degradation of water quality in Tellico Reservoir and the ensuing impact on current and future residents and industry surrounding the lake. The selection of this alternative was based strictly on a cost basis with little or no consideration of the impact on water quality.

Tellico Reservoir cannot become the dumping ground for problem treatment facilities. Madisonville's history of poor operation and frequent effluent violations does not inspire confidence in their desire or ability to maintain and operate within permit limitations. The NPDES application states that "the existing wastewater treatment facility is designed to meet the effluent limits in the current NPDES permit". However, the records show 61 recent documented violations resulting in at least 12 consecutive non-compliance quarters. The potential for disastrous environmental degradation of Tellico Reservoir is great. From our perspective of desiring to improve both discharger accountability and future regulatory compliance, an isolated discharge into a free-flowing stream with potential for natural restoration is much preferred to co-locating a new discharge point in the immediate vicinity of an existing permitted outfall in Tellico Reservoir.

Because of our stewardship role related to the Tellico Reservoir on behalf of the residents of Tellico Village, Rarity Bay and the surrounding area, we request an informal meeting to communicate our interests and concerns about the Madisonville situation and to dialog with people at TDEC to learn more about your approach and options to bring Madisonville's wastewater discharge into compliance. More specifically, we would like to discuss how and when the long-term compliance problems will be fixed and to present our concerns about what Madisonville has proposed in the recent permit application. We request such a meeting soon to allow our input to be considered in TDEC's process moving forward.

At the appropriate time in the permitting process, we invite you to explain the selected alternative at a public hearing in Tellico Village. We will arrange this public meeting for residents from throughout the surrounding area. Such a meeting should take place before any final decision is reached to allow our input to influence the selection. We are certain that there is extensive public interest in this project. The public is certainly entitled to know all aspects of this issue that can potentially affect so many people and the future of this area.

William R. Waldrop, Ph.D., P.E., P.H.  
Chairman, Water Quality Improvement Committee of WATeR

CC Randy McNally, TN State Senator  
Jimmy Matlock, TN State Representative  
Glenn Moser, Mayor Madisonville  
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