

**Division of Water Quality
Point Source Branch/NPDES Unit
June 7, 1999**

MEMORANDUM

To: Coleen Sullins
Through: Dave Goodrich
From: Tom Belnick
Subject: Trout Farm Permitting Policy for Lake Santeetlah
Little Tennessee River Basin (Subbasin 040404)
Graham County

Based on discussions with Water Quality staff in the Asheville Regional Office, the NPDES Unit, and Environmental Sciences Branch, the recurring algal blooms reported in various arms of Lake Santeetlah warrants the following NPDES permitting policy. This policy was developed specifically for trout farms discharging wastewater to tributary streams to the lake. This policy will remain in effect until reductions in phosphorus loading and downstream water quality improvements are documented, indicating that additional nutrient loading could be allowed.

BACKGROUND

Lake Santeetlah is located in western North Carolina in a mostly forested watershed. The lake is owned by Tapoca, Inc. and is used to generate hydroelectric power as well as for recreational purposes. The lake and its major tributaries (Cheoah River, Santeetlah Creek, West Buffalo Creek, and Snowbird Creek) all have a supplemental water quality classification of Trout waters with an applicable chlorophyll-a water quality standard of 15 µg/L (maximum).

Lake Monitoring Data. Periodic lake monitoring conducted by DWQ (1981, 1982, 1987, 1990, 1994) demonstrated that the main body of the lake continues to exhibit excellent water quality, with an oligotrophic rating, and fully supporting all of its designated uses. In contrast, elevated nutrient loading and resultant algal blooms have been reported in the West Buffalo Creek and Snowbird Creek arms of the lake. In the West Buffalo Creek arm, 280 acres are partially supporting the designated uses. In response to public concerns, an extensive study was conducted by DWQ in 1993 to determine the source and extent of nutrient loading into the lake (NCDEHNR 1994). During the 1993 study, algal blooms were observed in the West Buffalo Creek arm during the summer months, and the study results indicated that nutrient loading from the upstream trout farms were contributing to these blooms.

During the summer of 1998, the Asheville Regional Office received additional water quality complaints about algal blooms in the arms of the lake. DWQ's Intensive Survey Unit, in conjunction with the Asheville Regional Office, conducted additional sampling on June 25, 1998 and identified a bluegreen algal bloom (*Anabaena spiroides*) in the West Buffalo Creek arm. The chlorophyll-a concentration reported at the mouth of West Buffalo Creek (Station SL4A; 48 µg/L) exceeded the state standard of 15 µg/L, and total phosphorus concentrations were also elevated (ranging from 0.06 to 0.12 mg/l) at several stream stations downgradient of the trout farms. Additional DWQ monitoring is planned for Summer 1999.

Permitted Trout Farms. Within the Lake Santeetlah drainage, there are currently four trout farms with individual NPDES permits and two trout farms with general permits. In addition, there are at least three trout farms that are not permitted, since annual trout production is below the Federal threshold for permitting (i.e., 20,000 lbs/year per 40CFR122, Appendix C). Individual NPDES permits for the existing facilities will be up for renewal in 2002.

Lake Santeetlah Public Meeting. In response to water quality complaints about algal blooms and public requests for a public hearing regarding renewal for an individual trout farm permit, the Asheville Regional Office organized an informational public meeting at the Graham County Public Library in Robbinsville on March 23, 1999. Approximately 54 people were in attendance, including trout farmers, concerned citizens, and various agency staff. Trout farmers discussed recent measures implemented to decrease nutrient loading from their farms, which are projected to decrease total phosphorus effluent concentrations by 45-47%. The Asheville Regional Office discussed a proposed moratorium policy for future/expanding trout farm activities (see below).

Basinwide Plan. The Little Tennessee River Basinwide Water Quality Management Plan (NCDEHNR, 1997) recommends that 1) trout farm operations should be examined to determine whether cost-effective measures exist to reduce nutrient discharges to West Buffalo Creek and Snowbird Creek; and 2) consideration should be given to not allowing any additional farms on these streams until the water quality problem can be corrected.

PERMITTING POLICY

As a result of recurring algal blooms in various arms of Lake Santeetlah, the following NPDES permitting policy for trout farm activities within the Lake Santeetlah drainage will be implemented and remain effective until water quality improvements are documented:

- **Trout Farm NPDES Permit Moratorium.** No new permits for trout farms, or expansion of existing farms, will be allowed on any tributary to Lake Santeetlah.
- **Trout Farm General Permits.** General permits will be required for all trout farms with current annual production less than 20,000 lbs/year. Those trout farms currently unpermitted will be required to apply for general permit coverage.
- **Trout Farm Individual Permits.** Individual permits will be required for all trout farms with annual production greater than or equal to 20,000 lbs/year. Those trout farms currently under a General Permit will be required to apply for an Individual Permit, if production exceeds 20,000 lbs/year.
- **Non-Trout Farm NPDES Permits.** No new permits or expansions will be allowed that increase phosphorus loading to Lake Santeetlah.
- **Non-Nutrient Wastewater.** Discharges of non-nutrient wastewater may be allowed on a case-by-case basis.
- **Low-Phosphorus Trout Feed.** Members of the Graham County Trout Growers Committee recently incorporated low-phosphorus trout feed in their operations on a voluntary basis. During the current permit term, DWQ will evaluate the voluntary trout feed improvements being implemented, and will collect stream data to evaluate whether the voluntary measures are sufficient to improve water quality. If stream improvements are not adequate, additional measures may be required.

- Waste Management Practices. Permittees will be required to review their waste management practices during the current permit term. The Asheville Regional Office has requested all trout farmers (by letters dated 7/8/98 and 8/28/98) to voluntarily manage their waste as effectively as possible, and report on their current waste management practices and steps to improve manure handling. These voluntary measures will be reviewed during the permit renewal, and additional control measures are a possibility.
- Instream Monitoring. Currently there is no instream monitoring requirements for any trout farms. During the next permit renewal, the need for instream monitoring will be evaluated. If instream data is considered necessary, the formation of a coordinated monitoring program will be evaluated.

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