

**RESPONSE TO COMMENTS - DATED MARCH 30, 2004**  
**REISSUANCE OF NPDES PERMIT NO. NH0110001**  
**NEW HAMPSHIRE FISH AND GAME DEPARTMENT'S**  
**MILFORD FISH HATCHERY**

The U.S. Environmental Protection Agency (EPA-New England) and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) solicited public comments from February 2, 2004, through March 2, 2004, on the draft National Pollutant Discharge Elimination System (NPDES) permit to be reissued to the New Hampshire Fish and Game Department (NHF&GD) for its fish hatchery in Milford, New Hampshire. This permit is for the discharge of treated fish hatchery wastewater into Purgatory Brook.

EPA-New England made two wording changes to the issued (also referred to as final) permit for clarification purposes. In the public-noticed version, the word "*superscripts*" and the phrase "*Chief, NPDES Permit Unit*" were used. In the issued permit, these were changed to "*footnotes*" and "*Director, NPDES Permit Program*", respectively.

In addition, EPA-New England received one set of written comments during the public-notice (comment) period, that from the NHF&GD dated February 24, 2004. The following is a list of responses to those comments and any corrections made to the public-noticed permit as a result of those comments.

These six pages of responses and associated comments are complementary to the Fact Sheet and Draft Permit. For the reader to fully understand them, he or she should be familiar with the draft permit, the associated Fact Sheet, applicable federal National Pollutant Discharge Elimination System (NPDES) permit regulations and the State of New Hampshire's Water Quality Statutes, Administrative Rules and Surface Water Quality Regulations.

The effective date of this permit has been set at June 1, 2004, which is a little over 60 days from the anticipated date of issuance. The Agency's general rule for NPDES Permits with comments is to make them effective 60 days following the permit's effective date.

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**COMMENT NO. 1.**

We believe that the condition of the permit calling for sampling of two discharges is no longer appropriate, because as of February 18, 2004, the two pipes were connected into one discharge by adding a "T" connection. (Pictures are attached) Part 1 A EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (pages 2 & 3) should have only one part for DIS 001, since there is only one combined outflow from East and West In-Line Settling Ponds. Accordingly, page 3 could be eliminated.

**RESPONSE NO. 1:**

EPA-New England agrees. Page 2 of the final permit has been changed to show that discharges from the East and West In-Line Settling Ponds have been combined into one discharge pipe, outfall serial number 001. Accordingly, page 3 of the draft permit has not been carried forward into the final permit.

**COMMENT NO. 2.**

Page 4 the complexities of the explanation of superscripts applicable to part 1.A.1. should be simplified as it was in the previous draft.

**RESPONSE NO. 2:**

The present complexities are needed because the NHF&GD wants to use the fish metabolic by-product computer model known as *The Biological Method for the Prediction of Aquaculture Waste Outputs* (BMPAWO) to predict BOD<sub>5</sub>, Total Ammonia and Total Phosphorus for monitoring purposes in lieu of actual measurements. The use of computer model BMPAWO, which was not addressed in the previous draft, adds another layer of complexity to the permit and that is reflected in this section. This section describes the monitoring needed to verify that this model correctly predicts the above mentioned concentrations in the effluent.

Accordingly, the Agency believes the superscripts, now called footnotes, cannot be simplified in this permit and this section of the permit is being issued unchanged from that in the public-noticed version.

**COMMENT NO. 3.**

On page 4, superscript 4, the department feels “January” of 2006 should be the starting date for the second year. It is our understanding that after the first year verifying that the sample analysis tracks with the model predictions, we will sample for TSS and use the modeled values for BOD<sub>5</sub>, Total Ammonia and Total Phosphorus data.

**RESPONSE NO. 3:**

The Agency should have set the starting date in the draft permit as of July 1, 2006, because the 12-month model verification period ended with the December 2005 sampling and there is no need to perform additional verification sampling in January 2006. Beginning with 2006, the model is checked every six months, once in January and once in July each year as maintenance monitoring to ensure that it continues to accurately reflect operations at the hatchery. Accordingly, in the final permit, footnote 5 on page 3 now reads, “*Beginning July 1, 2006, and lasting ....*”

As to the permittee's comment, that after the first year verifying that the sample analysis tracks with the model predictions, they will only have to sample for TSS is correct, except for the months of January and July each year when samples will have to be collected for BOD<sub>5</sub>, TNH<sub>3</sub> and TP to ensure that the BMPAWO models continues to accurately reflect concentrations of these parameters in the effluent.

#### **COMMENT NO. 4.**

We also believe that the condition of using a 24-hour composite sampler is not necessary to obtain a "representative" sample coming out of the in-line settling ponds, and request that be changed to a grab sample or unspecified sampling method. The NHDES NPDES-Permit compliance inspectors do not understand why we would want to perform a composite sample, and have told our operators they would accept a grab.

Our logic for wanting to use a composite sampler was to obtain a more accurate and representative sample, to better match the reality we understand and have modeled. Fish fed is responsible for all non-chemical water quality degradation, and we control and measure the quantity going into the system. Based on the thermodynamic law "energy cannot be created nor destroyed, but can be changed into different forms", we believe the discharge quantity cannot be greater than the input quantity, and is in fact substantially and significantly less.

The permit writing process focuses on the worst case scenario, and uses that as "representative", all be it with the good intention of erring on the side of caution, however, that is unfair, if not excessively biased.

We would like to have the option to use composite sampling, provided we maintain the temperature between 0-4 degrees Centigrade, or use a grab as the default method. The issue is one of time, time frame, and cost burden. We are looking at all six permits the NHF&G Dept will need for our hatcheries. There are legitimate concerns raised about equipment function in 30-degree below zero weather, and there is the desire to keep it simple and workable in a practical sense. We want to be able to do what is mandated, and have what is mandated be reasonable and achievable.

#### **RESPONSE NO. 4:**

The Agency does not disagree with the main focus of the permittee's comment, that of changing to a grab sample, because both in-line settling ponds are at the most downstream point in this hatchery's operations and act as large settling ponds. The Agency believes that the waste characteristics and the flow rate of the effluent discharging from these ponds is relatively constant over a 24-hour period, therefore, a grab sample is appropriate. This is the sample type the Agency initially proposed for this discharge, but the NHF&GD requested the composite approach, presumably at the advice of its consultant. Accordingly, all references to composite sampling on pages 2 and 3 of the final permit have been changed to grab.

As to the permittee's desire to retain the option to use composite sampling, the Agency has added footnote 3 to page 3 of the final permit and renumbered the footnotes following that addition. The new footnote reads, "*To obtain approval for a change in sample type from "Grab" to "24-Hour Composite", the permittee shall submit a request to EPA-New England listing the months to which this change shall apply and receive written authorization via certified letter to proceed.*" Before requesting the switch, the Agency recommends that NHF&GD perform side-by-side comparison tests of grab versus composite sampling for each parameter to satisfy themselves that, for this facility, a grab is just as representative as a composite, thus saving themselves the added expense of time and money in taking composite samples.

In general, where the waste characteristics are relatively constant over time as to concentration and flow, then grab samples are appropriate, and where the waste characteristics vary significantly over time either as a result of flow or concentration or both then composite samples are appropriate. Both are designed to yield representative samples of the effluent flow for the day sampled. The time between consecutive samples is based on how much the Agency believes the effluent changes between those sampling events. In general, grab samples are less costly to collect and to process in terms of manpower and equipment than are composite samples. However, the Agency recognizes that there may be a slight sacrifice of representativeness for a grab as compared to a composite sample, but that's viewed as very minor and usually within the measurement error of the parameter being tested.

Presently, the permit compliance system that generates the Monthly Discharge Monitoring (DMRs) forms must designate the sample type on each preprinted form. Thus, if a permittee wishes to decide at sample collection what sample type will be performed, two separate sets of DMRs are needed for each outfall, one for grab and one for composite. EPA-New England is reluctant to agree to this approach due to the potential for submitting the wrong DMR form. However, the Agency would be amenable to continue the grab sampling during the late fall, winter and early spring months (suggest, November through April) to accommodate freezing conditions and to allow composite sampling during the remaining six months, should the permittee request that change after performing grab samples for one year.

For permits with relatively infrequent sampling, the sampling scheme will focus on sampling the worst-case discharge scenario, as a cost effective means of measuring permit compliance. The assumption behind this approach is if the results of that sampling meets the permitted limits, then permit limits will also be met at all other lesser conditions. Accordingly, the state's water quality standards will be met and the waters of the United States will be protected.

The Agency believes the permittee's comment that "Fish fed is responsible for all non-chemical water quality degradation" is basically true as long as the fish feces are adequately removed from the rearing units by some form of treatment such as settling pond/lagoon and/or vacuum siphon system.

**COMMENT NO. 5.**

Page 5 Item (6). Separate report writing seems excessive and redundant. Fish in and Fish out is recorded as biomass in the DMR. There will be quite a few busy months when separate written reports may be required: March, April, May, June, July, August, September, October, November, December. This information is reported on the monthly fish hatchery operational forms. We feel existing reports (DMR and hatchery operational forms) suffice to provide the necessary information and data.

**RESPONSE NO. 5:**

The Agency agrees with the permittee's comment and has added the following sentence to footnote 7 in the final permit. (Remember, superscript 6 in draft permit is now footnote 7 in the final permit due to the addition of new footnote number 3.) That sentence reads, *"In lieu of this written report, a Zerox copy of the hatchery's monthly operational form showing the imports and/or exports of various fish sizes will suffice."* The final permit has been changed accordingly.

**COMMENT NO. 6.**

Page 9 Item ii Biological Pollution. In item (1) we raise two species of trout not indigenous to the New England area, however, they have been naturalized, and are not considered "pollution". They are rainbow trout and brown trout, and we have been rearing these two species since the early 1900's. We can comply with this provision otherwise.

**RESPONSE NO. 6:**

The Agency agrees with the permittee's comment and has revised the public-noticed version to read as follows (sentence in italics) in the final permit. *"Describe in detail the precautions that will be exercised by the facility to prevent aquatic organisms that are not indigenous or naturalized to New Hampshire waters from becoming established in the local surface waters."*

**COMMENT NO. 7.**

Page 9 Item ii Biological Pollution. In item (2) we cannot comply with this provision, as we do not understand the rationale for this item. There is no untreated bypass. There is only one outfall: DIS 001. The term "Plant upsets" sounds like something that may happen in a sewage treatment plant, which is different from an AAP facility.

**RESPONSE NO. 7:**

The Agency agrees that this item as written in the public-noticed version is confusing and unclear. It was written for those facilities that raise non-native and non-naturalized species who also treat and recycle their culture water. To correct the confusion and make it relevant to the type of rearing units and fish reared at the Milford hatchery, that of the flow-through variety rearing naturalized species of trout, the Agency has revised the draft permit to read as follows (sentence in italics) in the final permit. *“A description for the storage and treatment of discharges to prevent biological pollution (non-indigenous organisms including fish parasites and fish pathogens and dead or dying fish) from entering the receiving water when the cultured fish population or a portion thereof are showing signs of stress.”*