

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act, as amended, (33 U.S.C. §§1251 et seq.; the “CWA”),

New Hampshire Fish and Game Department

is authorized to discharge from the facility (hatchery) located at

**408 North River Road
Milford, New Hampshire**

to receiving water named

Purgatory Brook (Hydrologic Basin Code: 01070006)

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on June 1, 2004.

This permit and the authorization to discharge expire at midnight, five (5) years from the effective date.

This permit supersedes the permit issued on July 30, 1975.

This permit consists of **12** pages in Part I including effluent limitations, monitoring requirements, etc., and **35** pages in Part II including General Conditions and Definitions.

Signed this 31st day of March, 2004.

/s/

SIGNATURE ON FILE

Linda M. Murphy, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency (USEPA)
EPA-New England
Boston, Massachusetts

Part I.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge from outfall serial number 001 treated fish hatchery wastewater from the East and the West In-Line Settling Ponds into Purgatory Brook. Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the effluent.

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>				<u>Monitoring Requirements</u>	
	<u>Average Monthly</u>	<u>Maximum Daily</u>	<u>Average Monthly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow; MGD	-----	-----	Report	-----	1/Week	Meter or other approved method ¹
TSS	216 lbs/day	324 lbs/day	10 mg/l	15 mg/l	1/Month ^{2,3}	Grab
BOD ₅	Report lbs/day	Report lbs/day	Report mg/l	Report mg/l	1/Month ^{3,4,5}	Grab
Total Ammonia Nitrogen as N	Report lbs/day	Report lbs/day	Report mg/l	Report mg/l	1/Month ^{3,4,5}	Grab
Total Phosphorus as P	Report lbs/day	Report lbs/day	Report mg/l	Report mg/l	1/Month ^{3,4,5}	Grab
TSS	Report lbs/day	Report lbs/day	Report mg/l	Report mg/l	Monthly	Calculation ⁶
BOD ₅	Report lbs/day	Report lbs/day	Report mg/l	Report mg/l	Monthly	Calculation ⁶
Total Ammonia Nitrogen as N	Report lbs/day	Report lbs/day	Report mg/l	Report mg/l	Monthly	Calculation ⁶
Total Phosphorus as P	Report lbs/day	Report lbs/day	Report mg/l	Report mg/l	Monthly	Calculation ⁶
Fish Biomass; lbs	Report	-----	-----	-----	Monthly	Calculation ⁷
Fish Feed; lbs	Report	-----	-----	-----	Monthly	Calculation
Efficiency of Fish Feed; percent	Report	-----	-----	-----	Monthly	Calculation
pH Range ⁸		6.5 to 8.0 Standard Units (See Part I.E.1.a.)			1/Week	Grab
Dissolved Oxygen ⁹ ; mg/l	-----	-----	-----	Report	1/Week (Formalin Absent)	Grab
Dissolved Oxygen Saturation ⁹ ; percent	----	-----	-----	Report	1/Week (Formalin Absent)	Calculation
Water Temperature ⁹ ;degrees Fahrenheit	----	-----	-----	Report	1/Week (Formalin Absent)	Grab
Formaldehyde ¹⁰ ; mg/l	-----	-----	1.61	4.58	1/Week (Formalin Present)	Grab
Dissolved Oxygen ¹⁰ ; mg/l	-----	-----	-----	Report	1/Week (Formalin Present)	Grab

NOTE: See pages 3 and 4 for explanation of the various footnotes.

EXPLANATION OF FOOTNOTES APPLICABLE TO Part I.A.1. on page 2

- (1) In lieu of an effluent flow meter, the permittee may use an influent flow meter to report effluent flow when all flows discharge through one outfall. To obtain approval for a flow measurement method(s) other than an influent flow meter, the permittee shall submit a written description of the proposed method(s) to EPA-New England and receive written authorization via certified letter.
- (2) Each monthly sample for TSS analysis shall be collected on or about the 15th day of the month (plus or minus two days) so as to represent the average for that month, except for January and July 2005. For January and July 2005, the average monthly and maximum daily TSS results reported on the January and July Discharge Monitoring Report (DMR) will be derived from the samples as collected in footnote 3 immediately below.
- (3) 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.
- (4) During January 1st through December 31st, 2005, water samples shall be collected for chemical analyses according to the following schedules (timetables and parameters):

During the months of January and July, weekly samples for BOD₅, TSS, Total Ammonia (TNH₃) and Total Phosphorus (TP) shall be collected utilizing a grab sample each Wednesday (plus or minus one day) so as to represent the average for that week. Individual results for each parameter shall be tabulated and reported to EPA-New England and to the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) with (attached to) the appropriate DMR for January or July.

During the months of February through June and August through December, monthly samples for BOD₅, TNH₃ and TP shall be collected and all results determined from the grab sample collected for the monthly TSS determination (See footnote 2 above). Monthly samples shall be collected on or about the 15th day of each month (plus or minus two days) so as to represent the average for that month.

- (5) Beginning July 1, 2006 and lasting through the expiration date, water samples shall be collected for chemical analyses according to the following schedules (timetables and parameters):

During the months of January and July, monthly samples for BOD₅, TNH₃ and TP shall be collected and all results determined from the grab sample collected for the monthly TSS determination (See footnote 2 above). Monthly samples shall be collected on or about the 15th day of each month (plus or minus two days) so as to represent the average for that month.

- (6) Beginning on January 1, 2005, values for BOD₅, TSS, TNH₃ and TP shall be calculated using the fish metabolic by-product computer model known as *The Biological Method for the Prediction of Aquaculture Waste Outputs*.
- (7) The permittee shall submit a written report with its monthly DMR of any significant import and/or export of fingerling or greater size fish which occurred during the reporting month. The report shall include the dates and quantities of each import and/or export. In lieu of this written report, a Xerox copy of the hatchery's monthly operational form showing the imports and/or exports of various fish sizes will suffice. This report excludes any fish mortality data as that is covered separately under **Part I.A.6**.
- (8) Limit is a State Certification Requirement.
- (9) Each monthly sample for **Dissolved Oxygen (DO)** shall be collected on or about the 15th day of each month (plus or minus two days) to represent the average for the month. However, if formalin is discharged to the culture water within this sampling window, sample collection shall be performed after a minimum postponement of two days following cessation of the formalin discharge. For each sample of DO collected, the **Water Temperature** shall also be measured and the **Percent Saturation of DO** determined for each DO sample.
- (10) Sampling for **Formaldehyde** shall occur after any discharge of **Formalin** to the hatchery's culture water, to capture the maximum concentration of that application after accounting for its detention time through the raceways, tanks, piping networks and detention ponds. A sample for **DO** shall be collected concurrently with that for Formaldehyde and reported under the appropriate DO column on the monthly DMR. Formaldehyde shall be tested using Method 1667, Revision A, which has a minimum quantification level (ML) of 50 micrograms per liter (µg/l). In general, the ML is defined as "the level at which the entire analytical system shall give recognizable signal and acceptable calibration points." Specifically, it's defined as the concentration in a sample equivalent to the concentration of the lowest calibration standard analyzed in a specific analytical procedure assuming that all the method-specific sample weights, volumes, and processing steps have been followed.

Alternate analytical method(s) shall be approved by EPA-New England at the permittee's written request as long as the permittee utilizes method(s) that obtain MLs that are equal to or less than those referenced for Method 1667, Revision A, above. Such a request will be considered a minor modification to the permit.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Continued)

2. The discharge shall not cause a violation of the water quality standards of the receiving water.
3. The discharge shall be adequately treated to insure that the surface water remains free from

pollutants in concentrations or combinations that settle to form harmful deposits, float as foam, debris, scum or other visible pollutants. It shall be adequately treated to insure that the surface waters remain free from pollutants which produce odor, color, taste or turbidity in the receiving waters which is not naturally occurring and would render it unsuitable for its designated uses.

4. Toxic Controls
 - a. No components of the effluent shall result in any demonstrable harm to aquatic life or violate any water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards, with the permittee being so notified.
 - b. The permittee shall not discharge into the receiving water any pollutant or combination of pollutants in toxic amounts.
5. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable standard or limitation promulgated or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the "CWA", if the effluent standard or limitation so issued or approved:
 - a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - b. Controls any pollutants not limited in the permit.

If the permit is modified or reissued, it shall be revised to reflect all currently applicable requirements of the "CWA".

6. The permittee shall notify EPA-New England and the NHDES-WD within 24-hours upon the occurrence of a water quality induced mortality of greater than 25 percent in any aquatic species under culture at the facility in accordance with reporting requirements in General Conditions Part II.D.1.e.
7. Any change of the fish species to be raised at this facility or development stage to be attained will require written notification to EPA-New England and to the NHDES-WD and, possibly, a permit modification.
8. There shall be no discharge of cleaning wastewater (e.g. obtained from vacuum and/or mechanical-filtration system and/or bottom/standpipe drain system), treated or otherwise, obtained from the rearing units. Furthermore, there shall be no discharge of manure residuals (i.e., accumulated [settled] solids comprising uneaten fish food and fish feces associated with

aquaculture operations) that are removed from the bottom of the facility's treatment system (i.e., settling lagoons/ponds).

9. There shall be no discharge of water from either the West or the East In-Line Settling Pond during the removal of settled solids (manure residuals).
10. Any hypochlorite solution applied to the surface of any rearing equipment exposed to culture water must be neutralized prior to that equipment being exposed to culture water.
11. There shall be no discharge of iodine and/or phosphoric acid solution(s) to the rearing water or to the receiving water.
12. Medication
 - a. The permittee shall use only medications and disease control chemicals in dosages and combinations as approved by the U.S. Food and Drug Administration (USFDA), the U.S. Fish and Wildlife Service (USF&WS), the New Hampshire Fish and Game Department (NHF&GD) and the U.S. Environmental Protection Agency (USEPA).
 - b. The permittee shall use these medications and chemicals as needed to treat a disease or disease-causing conditions. The prophylactic use of disease control medications is prohibited. EPA-New England will defer to the rulings/guidelines of the USFDA in determining at what point in time a given use becomes prophylactic.
 - c. The permittee shall notify (in accordance with General Conditions Part II.D.1 of this permit) within 24 hours by telephone and within five days in writing to the Director, NPDES Permit Program in the Office of Ecosystem Protection at EPA-New England; the Director, NHDES-WD; the USF&WS; and the appropriate sections(s) within the NHF&GD of the emergency use or the immediate intended use of any medication and/or chemical not specifically identified in the implemented version of the Best Management Practices Plan (**PLAN**) described below. For each reportable situation, the permittee shall provide the information on each chemical and/or medication as required in **Part I.A.13.e.iv.** described below. Furthermore, this notification requirement shall also apply to any medication and/or chemical that exceeds its dosage concentration, and frequency and duration of application as specifically identified in the implemented version of said **PLAN** described below.
 - d. The USEPA will notify the permittee when the use of a specific chemical described in **Part I.A.12.c.** immediately above is unacceptable or that the dosage concentration or frequency level must be modified to protect the aquatic community in any downstream receiving waters such as Purgatory Brook and Souhegan River.
13. Best Management Practices (BMP) Plan

- a. A BMP Plan, hereinafter called the **PLAN**, shall be developed which establishes Best Management Practices to be followed in operating the facility, cleaning the culture tanks/raceways, screens and other equipment and disposing of any solid waste. The purpose of the **PLAN** is to identify and to describe the practices which minimize the amounts of pollutants (biological, chemical and medicinal) discharged to surface waters.
- b. The **PLAN** shall be completed, signed and certified in accordance with General Conditions Part II.D.2. of this permit. The **PLAN** shall be developed and implemented by the permittee within 90 days of the permit's effective date. The **PLAN** shall be modified as necessary during the life of the permit and a current copy shall be maintained at the facility for inspection by the USEPA and/or the NHDES-WD. A current version of that **PLAN** shall be submitted to EPA and/or NHDES-WD upon their request.
- c. The permittee shall notify USEPA and the NHDES-WD in writing that the **PLAN** has been completed and addresses all required elements described in this permit. In that letter, the permittee shall include the specific date the **PLAN** was implemented. On that specific date, the **PLAN** becomes an enforceable element of the permit.
- d. The permittee shall amend the **PLAN** within 30 days following a change in facility design, construction, operation, or maintenance which affects the potential for the discharge of pollutants into surface waters or after the USEPA and/or the NHDES-WD determine certain changes are required following a permit limit/**PLAN** exceedance, facility inspection, or review of the **PLAN**. The permittee shall place in the **PLAN** written documentation of each amended change along with a brief description stating the reason for said amendment including the date the change triggering said amendment occurred. In that letter, the permittee shall also state the specific date the amended **PLAN** was implemented.
- e. The **PLAN** shall include, as a minimum, the following items:
 - i. During operations:
 - (1) A description of the pollution control equipment or methods used to enhance solids collection.
 - (2) A description of how excessive solids buildup will be identified to trigger more frequent cleaning of the culture tanks/raceways and equipment thereby preventing more suspended and dissolved materials in the discharge.
 - (3) A description of the feeding methods used to minimize the amount of feed residuals in the discharge.

- (4) A description of the preventative maintenance program for cleaning equipment so that delays in cleaning due to equipment failures are avoided.
- (5) A description of the analysis and model (if one is used) used to determine the time of maximum concentration based on dosage, injection point, facility flow, etc.

ii. Biological Pollution

- (1) 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.
- (2) 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.

iii. Cleaning of culture tanks/raceways and other equipment:

- (1) Describe in detail how the accumulated solids are to be removed, dewatered and disposed.
- (2) Describe where the removed material is to be placed and the techniques used to prevent it from re-entering the surface waters from any on-site storage. If the material is removed from the site, describe who received the material and it's method of disposal and/or reuse.

iv. Medications and chemicals used in the facility

- (1) List in the **PLAN** all medications and chemicals that are expected to be used in the culture tanks/raceways. For each medication or chemical, identify:
 - (a) Product name and manufacturer of the medication or chemical.
 - (b) The chemical formulation of the medication or chemical.
 - (c) The purpose or use of the chemical.

- (d) The dosage concentration, frequency of application (hourly, daily, etc.) and the duration (hours, days) of treatment.
 - (e) The method of application.
 - (f) Material Safety Data Sheets (MSDS), Chemical Abstracts Service Registry number for each active therapeutic ingredient.
 - (g) The method or methods used to detoxify the wastewater prior to discharge following application of chemical and/or medication.
 - (h) Information on the persistence and toxicity of each medication or chemical.
 - (i) Information on the USFDA approval for the use of said medication or chemical on fish or fish related products used for human consumption.
 - (j) Available aquatic toxicity data for each medication or chemical used (vendor data, literature data, etc.); LC_{50} at 48 and/or 96 hours and No Effect Level (NOEL) concentrations for typical aquatic organisms (salmon, trout, daphnia, fathead minnow, etc.).
- v. Personnel Training
- (1) Describe the training to be provided for employees to assure they understand the goals and objectives of the BMPs, the requirements of the NPDES permit and their individual responsibilities for complying with the goals and objectives of the **PLAN** and the NPDES permit.
- vi. BMP Records Maintenance
- (1) Records of the calculations done at the time of sampling must be included with the **PLAN** in order that EPA-New England and/or NHDES-WD employee/inspector can verify sampling was properly conducted. In addition, records of all medicinal and chemical usage (i.e., for each occurrence) at the facility shall be recorded and filed in the **PLAN** to include the dosage concentration, frequency of application (hourly, daily, etc.) and the duration (hours, days) of treatment, and the method of application.

B. SPECIAL CONDITIONS

pH Limit Adjustment

The permittee may submit a written request to the EPA-New England requesting a change in the permitted pH limit range to be not less restrictive than 6.0 to 9.0 Standard Units. The permittee's written request must include the State's approval letter containing an original signature (no copies). The State's letter shall state that the permittee has demonstrated to the State's satisfaction that as long as discharges to the receiving water from a specific outfall are within a specific numeric pH range the naturally occurring receiving water pH will be unaltered. That letter must specify for each outfall the associated numeric pH limit range. Until written notice is received by certified mail from the EPA-New England indicating the pH limit range has been changed, the permittee is required to meet the permitted pH limit range in the respective permit.

Year Verification Period for the Fish Metabolic By-Product Computer Model

If a comparison between any of the TSS, BOD₅, TNH₃ and TP concentrations as determined from the analytical procedures and from the fish metabolic by-product computer model known as *The Biological Method for the Prediction of Aquaculture Waste Outputs* (BMPAWO) yields an estimate that is outside the model's error band of ± 20 percent of the actual parameter result on an average monthly basis, the permittee shall submit a written report to EPA-New England and the NHDES-WD detailing the probable cause for that difference as well as any changes made to the feeding and/or sampling regimes and/or BMPAWO to bring that difference to within 20 percent. As a result of any changes to the feeding and sampling regimes and/or calibration of the BMPAWO computer model, EPA-New England reserves the right to extend sampling for BOD₅, TNH₃ and/or TP to verify that any changes made have brought the difference between the actual and modeled results to within ± 20 percent. The permittee will be notified by certified letter from EPA-New England as to the months and parameter(s) that sampling needs to continue.

C. MONITORING AND REPORTING CONDITIONS

Monitoring results shall be summarized for each calendar month and reported on separate Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15th day of the month following the completed reporting period.

1. Signed and Dated original DMRs and all other reports or notifications required herein or in **Part II**, shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114-8127

2. Duplicate signed copies of all reports required in Section 1. immediately above shall be submitted to the State at:

New Hampshire Department of Environmental Services
Water Division
Wastewater Engineering Bureau
29 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302-0095

All verbal reports required in **Parts I** and **II** of this permit shall be made to both EPA-New England and to NHDES-WD.

D. REOPENER CLAUSE

This permit may be modified, or alternatively, revoked and reissued if, in the future: (1) an analysis of a Total Maximum Daily Load (TMDL) or any other water-quality study of Purgatory Brook and/or Souhegan River performed by NHDES-WD and/or EPA-New England demonstrates the need for more stringent pollutant limits; and (2) nitrogen and/or phosphorus monitoring data (not modeled results from the [BMPAWO]) demonstrates a reasonable potential to equal or exceed federal and/or state surface water-quality regulations either currently existing or those adopted in the future. Section 301(b)(1)(C) requires that a permit include all limits necessary to protect federal and state surface water-quality regulations. Results from a TMDL or any other water-quality study, not available at the time of permit reissuance, are considered "New Information" and the permit may be modified as provided in 40 Code of Federal Regulations (CFR) Section 122.62 (a)(2).

E. STATE PERMIT CONDITIONS

1. The permittee shall comply with the following conditions which are included as State Certification requirements.
 - a. The pH range of 6.5-8.0 Standard Units (S.U.) must be achieved in the final effluent unless the permittee can demonstrate to NHDES-WD: (1) that the range should be widened due to naturally occurring conditions in the receiving water or (2) that the naturally occurring receiving water pH is not significantly altered by the permittee's discharge. The scope of any demonstration project must receive prior approval from NHDES-WD. In no case, shall the above procedure result in pH limits outside of the range of 6.0 to 9.0 S.U., which is the federal effluent limitation guideline regulation for pH for secondary treatment and is found in 40 CFR §133.102(c).
 - b. The permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification or interfere with the uses assigned to said water by the New Hampshire Legislature (RSA 485-A:12).
2. This NPDES Discharge Permit is issued by the EPA-New England under Federal and State law. Upon final issuance by the EPA-New England, the NHDES-WD may adopt this permit, including all terms and conditions, as a State permit pursuant to RSA 485-A:13.

Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of the Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation.