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EPA NEW ENGLAND
OFFICE OF ECOSYSTEM PROTECTION
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FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

PUBLIC NOTICE START AND END DATES:

PUBLIC NOTICE NUMBER:

CONTENTS: Thirty pages including four Attachments A through D.

NPDES PERMIT NO.: NH0110001

NAME AND MAILING ADDRESS OF APPLICANT:

New Hampshire Fish and Game Department
11 Hazen Drive
Concord, New Hampshire 03301-6500

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Facility Location

Milford State Fish Hatchery
408 North River Road
Milford, New Hampshire

Mailing Address

New Hampshire Fish and Game Department
Milford State Fish Hatchery
c/o Superintendent
RR3, Box 122, North River Road
Milford, New Hampshire 03055

RECEIVING WATER: Purgatory Brook (Hydrologic Basin Code: 01070006)

CLASSIFICATION: Class B

Receiving waters designated as Class B in New Hampshire pursuant to RSA 485-A:8 are considered suitable for swimming and other recreational purposes, maintenance of shellfish and other fish life, and for use as a water supply after adequate treatment.

I. Proposed Action, Type of Facility and Discharge Location.

The applicant, New Hampshire Fish and Game Department (NHF&GD), has applied to the U.S. Environmental Protection Agency, New England Office (EPA-New England) for reissuance of its NPDES permit for the discharge of culture water from its Milford Fish Hatchery, a concentrated aquatic animal production (CAAP) facility. Presently, this state owned and operated facility is engaged in the hatching and rearing of various species of trout from eggs to yearlings, for fisheries management (stocking) in selected New Hampshire water bodies. Salmon are not currently reared, though the facility has the capacity to raise landlocked salmon. At this facility, the entire flow of fish culture water passes through settling ponds prior to discharge into the designated receiving water (Purgatory Brook) which, after a short distance, flows into Souhegan River, a tributary of the Merrimack River.

The EPA-New England is proposing an NPDES permit for this CAAP production facility which is defined in 40 Code of Federal Regulations (CFR) Section 122.24(b) to mean "a hatchery, fish farm, or other facility which meets the criteria in appendix C of this part, or which the Director designates under paragraph (c) of this section." Pertinent regulations in 40 CFR (Parts 122.24, 122.25 and Appendix C of Part 122) that give EPA authority to regulate discharges from fish hatcheries through the NPDES program are shown in **Attachment A**. This facility has been designated a CAAP facility because according to its application dated August 29, 2002, Milford produces more than 20,000 pounds of harvestable weight of fish in a given year and used more than 5,000 pounds of food during the calendar month of maximum feeding. They reported total yearly harvestable weight for trout of 144,000 pounds, with a maximum feeding rate of 17,855 pounds during October. See **Attachment A**, Appendix C to Part 122, Section (a)(1) and (2).

The Milford Hatchery's existing ("current") permit was issued on July 30, 1975, and expired on June 1, 1980. The applicant has requested renewal of its NPDES permit to discharge treated effluent into the designated receiving water and has submitted the proper application materials. Their current permit has been continued in force (administratively extended) as per 40 CFR Section 122.6 until a new permit can be issued.

The current permit authorizes a year round discharge from the in-line settling ponds and that same discharge period will be continued in the draft permit. Locations of the State's Milford Fish Hatchery, Outfalls 001 and 002, and the receiving water (Purgatory Brook) along with the Souhegan River into which Purgatory Brook empties are shown on a copy of a U.S. Geological Survey Topographic map (See **Attachment B**). The location of the discharge remains unchanged from that in the current permit.

II. Description of Facility Including Chemical/Drug Usage, Discharge and Current Permit.

Discharges from CAAP operations, such as Milford's Fish Hatchery, typically contain organic and inorganic solids, nutrients and also chemicals used in the prevention and treatment of various diseases. Any of these constituents could impair the water quality in the receiving water. Solids in the discharge occur both in the dissolved and particulate form and result from fish feces and uneaten food particles. Nutrients such as phosphorus and nitrogen are associated with these solids. In sufficient concentration, solids and nutrients have the potential to create dissolved-oxygen deficits in the receiving water due to the decay of organic solids, and the presence of nutrients allow for excessive growth of any or all of the three main algae types: phytoplankton (floating freely in water column), periphyton (attached to aquatic vegetation or other structures) and benthic (attached to bottom sediments).

The Milford State Fish Hatchery is located near the mouth of the Purgatory Brook drainage basin (See **Attachment B**) and was originally constructed in 1972. Milford produces between 122,000 and 144,000 pounds (lbs) of trout annually for use in stocking the public waters of New Hampshire. Annually, this breaks down to around 38,000 lbs of Eastern Brook Trout, 67,000 lbs of Rainbow Trout, 23,000 lbs of Brown Trout, and 3,500 lbs of Tiger Trout with yearly variations for each species of around ± 10 percent (%). In the past, salmon were raised at this facility for stocking purposes, but that was discontinued several years ago. Presently, the NHF&GD has a small number of salmon at Milford to test the economic viability of shifting salmon production from other State fish hatcheries to Milford in the future. Because both trout and salmon belong to the same family, *Salmonidae*, their similar metabolisms and habitat requirements allow them to coexist in the same stream, thus this draft permit allows for the growth of trout and salmon species at this facility.

Water for fish culture is obtained from two ground-water wells located on-site, thus assuring high quality water at the proper temperature for the growth of salmonides. One well, called the "Field Well", pumps about 625 gallons per minute (gpm) while the other, called the "River Well", pumps about 1,150 gpm. In their permit application, Milford reported a maximum 30-day discharge of 2.736 Million Gallons per Day (MGD) with a long-term average daily discharge of 2.59 MGD. Assuming a high ground-water table and newly cleaned well screens, the highest maximum daily pumping rate that can be attained from both wells is 2.88 MGD, according to hatchery personnel. Assuming the hatchery has no leaks in either the rearing units and/or the pipes that transmit water from unit to unit, system-water losses should be negligible; therefore, hatcheries may be viewed as non-consumptive water users (i.e., water that flows in flows out except for that lost to evaporation and to assimilation by fish which are both minimal). These losses are estimated to be around 1 % of the inflow.

Normally, fish hatched from eggs at Milford's Hatchery take between 15 to 18 months to grow out to the proper size of length/weight for stocking. According to Hatchery officials, the key to maintaining good fish health is to prevent pathogens from entering the hatchery and to maintain clean, healthy rearing units. However, when needed, U.S. Food and Drug Administration (FDA)-Approved chemicals/drugs are used as therapeutants to maintain fish health. Below is a list of all the chemicals/drugs currently used in the New Hampshire State Fish Hatchery system along with their intended use, followed by a subset of that list for those recently used at the Milford Hatchery. A review of the first eight chemicals/drugs in New Hampshire's overall list indicate they are all FDA

approved therapeutants and/or low regulatory priority aquaculture drugs. For the last three chemicals (hypochlorite solutions, oxygen gas and a solution of iodine and phosphoric acid), EPA-New England will not regulate these chemicals as long as any applied hypochlorite solution is neutralized with sodium thiosulfate prior to it being exposed to culture water, and the practice of not discharging any of the iodine and phosphoric acid solution to the hatchery's culture water is continued. The reader should note that the Milford hatchery does not use phosphoric acid. Adding oxygen gas to the culture water to increase its dissolved-oxygen concentration is always appropriate and can only lead to increased dissolved-oxygen concentrations in the discharged effluent, always a positive environmental outcome.

Chemicals, Drugs and Disinfectants Currently Used in the State's Fish Hatchery System

- **Calcium Chloride (Crystalline Form):** Added to culture water to increase total hardness of the water.

- **Formalin - 37 % Formaldehyde Gas in Water with 16 % Methanol:** Added as needed to culture water to control external parasites on fish and eggs. Used primarily to kill swimming zoospores and filamentous hyphae of common mold (fungus) that attach to eggs, gills and/or skin as well as other active parasitic infections. The FDA restricts the use of formalin solution to three products with the following trade names: Formalin-F, Paracide-F and Parasite-S. Formalin is used sparingly at all the State's Fish Hatchery's, except Powder Mill, where it is used regularly to control the *ich* parasite. Regular use of Formalin at Powder Mill is not considered prophylactic by the NHF&GD; however, the Agency will address whether that use is prophylactic upon the issuance of the Powder Mill permit.

- **Oxytetracycline Hydrochloride --Also called Terramycin (Crystalline Form):** Used as an antibiotic and added as needed to culture water to control pathogenic gill bacteria on fish.

- **Polyvinylpyrrolidone (Iodine in 10 % aqueous solution) --Also called Povidone Iodine:** Used as needed to disinfect fish eggs and hatchery equipment. Solution is *not* discharged to the culture water.

- **Potassium Permanganate (Crystalline Form):** Added as needed to the culture water to provide temporary increase in the concentration of dissolved oxygen.

- **Romet 30 (Contains 25 % Sulfadimethoxine and 5 % Oremetoprim):** Used as an antibiotic and, on an as need basis, mixed with fish food to control systemic bacterial pathogens.

- **Sodium Chloride (Crystalline Form):** Added as needed to culture water to reduce osmotic pressure gradient between fish and water for the absorption of dissolved oxygen by the gills.
- **Tricaine Methanesulfonate –Also called MS-222 (Crystalline Form):** Used as a fish anesthesia, but only in separate containers of culture water and is not added to any of the rearing units. Used as needed and the solution is *not* discharged to the culture water.

- **Calcium Hypochlorite (Crystalline Form)**:
- **Sodium Hypochlorite at 5.25 % (Ordinary Household Bleach in Liquid Form):** Both hypochlorite chemicals are used to disinfect hatchery equipment and the individual rearing units, as needed. Hypochlorite solutions used to disinfect hatchery equipment (nets, boots, brushes, foot bathes, rakes, transport tanks, etc.) *are* not discharged to the hatchery water and any hypochlorite solution remaining on that equipment is neutralized with sodium thiosulfate prior to its re-introduction into the culture water. In recent years, Milford has not needed to disinfect any rearing units, but if that proved necessary, the fish and culture water would first be removed followed by brushing down all surfaces in contact with the culture water with a hypochlorite solution. In turn, that would be followed by a brushing down with sodium thiosulfate to neutralize the chlorite ion followed by an on the spot test using phenolphthalein indicator solution to determine if neutralization has been completed. It is standard practice to use sodium thiosulfate to neutralize chlorine (i.e., a dechlorination agent) in NPDES permits.

- **Oxygen Gas:** Added to culture water to enhance fish respiration for life support as needed.

- **Solution of Iodine and Phosphoric Acid:** Used to disinfect hatchery equipment only at the New Hampton hatchery. Used as needed and solution is *not* discharged to the culture water.

Review of the material safety data sheets for the above listed materials indicate that only **Formalin - 37 % Formaldehyde Gas in Water with 16 % Methanol** requires an effluent limitation because it is the only one with a reasonable potential to cause an exceedance of the New Hampshire's Surface Water Quality Regulations. See section entitled "Formalin" later in this Fact Sheet.

Chemicals, Drugs and Disinfectants Routinely Used at the Milford Hatchery

- **Formalin - 37 % Formaldehyde Gas in Water with 16 % Methanol**
- **Oxytetracycline Hydrochloride --Also called Terramycin (Crystalline Form)**
- **Oxygen Gas**
- **Polyvinylpyrrolidone (Iodine in 10 % aqueous solution) --Also called Povidone Iodine**
- **Potassium Permanganate (Crystalline Form)**
- **Sodium Chloride (Crystalline Form)**
- **Sodium Hypochlorite at 5.25 % (Ordinary Household Bleach in Liquid Form**)

The hatchery has six main rearing operations: the indoor **Hatchery House**, outside **Nursery Tanks**, and a series of outside circular tanks and ponds collectively referred to as the **Upper Set Circular Tanks**, **Lower Set Circular Tanks**, and **East and West In-line Settling Ponds**. There are two main treatment operations: aeration/degassing columns to polish the intake water prior to its delivery to the rearing units, and three settling ponds (**Off-Line Settling Pond** and the **East and West In-line Settling Ponds**) to collect/trap solids in the rearing water just prior to its discharge to Purgatory Brook. A generalized water flow diagram showing the various rearing/treatment units at Milford's hatchery is shown in **Attachment C**. The reader is referred to this attachment for the water distribution scheme to the hatchery's various rearing and treatment units. Ground water pumped from the unconsolidated sands and gravel at the hatchery is treated in aeration/degassing units to

optimize the concentration of dissolved gases in the water column by decreasing the carbon dioxide content and increasing the oxygen content just prior to that water being distributed to the various rearing units.

At this facility, trout are grown from hatched eggs to fingerling (3 inches) size in the Hatchery House and from fingerling to yearling size (10 to 11 inches) or slightly greater in the outdoor tanks/ponds for later stocking. As mentioned earlier, solids in the culture water are generated from only two sources: fish feces and uneaten food particles. Water flows, on a continuous basis, through each of the various rearing units containing fish and entrains a portion of the fish feces and uneaten food particles in it; however, the bulk of these solids settle to the bottom of each rearing unit for later removal at regular intervals. Bottom cleaning is performed by staff standing either in the rearing unit or just outside it hand brushing settled solid towards bottom drain(s) located at the end of the raceways or in the center of the tanks. Normally fish remain in their rearing units during these routine bottom cleaning operations. Referring to **Attachment C**, "Overflow Water" is water that flows continuously through the rearing units that contains minor amounts of solids; whereas, "Cleaning Water" is a portion of the overflow water that has been periodically diverted during bottom cleaning and contains the settled solids brushed from the bottom of rearing units. Due to the piping network at the Hatchery, all solids contained in either the "Overflow Water" or the "Cleaning Water" are removed by settling in the various Off-/In-Line Settling Ponds prior to the effluent being discharged into Purgatory Brook.

Settled solids (residuals) removed from the three settling ponds are managed as manure by the New Hampshire Department of Agriculture. This regulatory determination was made by New Hampshire Department of Environmental Services, Water Division's (NHDES-WD) in a letter dated August 6, 2003, after samplings indicated that the residuals are non-hazardous and contain no domestic sewage components. In addition, settled solids removed from fish hatcheries are not regulated by EPA-New England as sludge. Settle solids removed from the rearing units will likely be land applied at the Milford hatchery.

The **Hatchery House** contains two main areas: an incubation room containing egg trays for hatching eggs and a rearing area containing tanks and raceways for growing the just-hatched eggs to fingerling size. Specific Pathogen Free eggs (i.e., green or eyed) are hatched in the incubation room. Eggs arrive at various times throughout the year depending on the strain and its subsequent survival rates; however, the bulk of the eggs are hatched from late July through January. Hatched eggs remain in that room until just before they reach the swim-up stage at which time they are transferred to the rearing area. The swim-up stage is the time feeding from food in the water column begins because the egg yolk sac has essentially been consumed by the hatchling. Culture water in the incubation room needs additional cooling over that available in the pumped ground water to optimize the hatching process. Therefore, a chiller is used to cool that culture water to slightly below 56 degrees Fahrenheit and a sump is used to collect and recycle about 90 percent of it to reduce power costs associated with the chilling operation. A side benefit to this recycling effort is that nearly all the chemicals, drugs and disinfectants used, if any, will remain in the egg incubation water. Occasionally, some eggs have been hatched directly in the raceways of the rearing area, but only when the hatchery receives more eggs than can be adequately handled in the incubator room.

Aside from the incubation room, the main portion of the hatchery house contains 20 raceways, 8 circular tanks and 6 square salmon tanks. As stated, fish hatched from eggs in the incubator room are brought out and placed in the raceways just prior to the swim-up stage. Once fingerling size is reached, those fish are transferred to the outside circular tanks. Within the hatchery house, fry (1 to 3 inches in length) are fed 4 to 5 times per day depending on water temperature and size/number of fish per raceway/tank by hand broadcasting to the water's surface. Normally, all the fingerlings raised in the Hatchery House are transferred to the outside tanks at Milford for grow out to stockable size, except for the Rainbows. Of the rainbows, about 75 % are transferred to other NHF&GD hatcheries for grow out to stockable size. Bottom cleaning operations in the rearing area are performed once daily by hand brushing settled solids towards bottom drains located at the end of the raceways or in the center of the tanks. Those solids along with approximately 500 gallons of water per raceway, 100 gallons per circular tank and 250 gallons per square salmon tank are directed to the In-Line Settling Ponds for final settling (See **Attachment C**). According to their application, chemical usage in the Hatchery House is limited to Formalin, Potassium Permanganate, Povidone Iodine and Sodium Hypochlorite.

The **Nursery Tanks** are a block of 10 circular tanks normally used for rearing small lots of fish from 1 to 6 inches in length before transfer to the Upper/Lower Outside Circular Tanks or the In-Line Settling Ponds. However, these tanks are presently being used to rear Brown Trout for the coastal sea-run Brown Trout program. These fish are fed 1 to 4 times per day depending on water temperature and size/number of fish per tank by hand broadcasting to the water's surface. These tanks are self cleaning with the water going directly to the In-Line Settling Ponds on a continuous basis (See **Attachment C**). According to their application, chemical usage in the Nursery Tanks is limited to sodium chloride, formalin and potassium permanganate.

The **Upper Set Circular Tanks** are a block of thirty 25-foot diameter circular tanks used to rear fish from 3 to 11 inches in length. The fish are fed 1 to 3 times a day depending on water temperature and size/number of fish per tank by hand broadcasting to the water's surface. Under regular use, overflow water discharges continuously from these tanks into the Lower Set Circular Tanks. However, during cleaning or flushing, which is limited to a maximum of five circular tanks at a time, approximately 1,000 to 3,000 gallons of water per circular tank flows to the Off-Line Settling Pond. Depending on the size and amount of fish present in each tank, bottom cleaning and/or flushing are done between 2 to 4 times per month by staff standing near the tank's center hand brushing settled solids towards each tanks bottom drain (See **Attachment C**). According to their application, chemical usage in the Upper Set Circular Tanks is limited to sodium chloride, formalin, potassium permanganate and terramycin.

The **Off-Line Settling Pond** mentioned in the previous paragraph is about 0.15 acres in size. All accumulated settled solids (residuals) were recently removed (March 2003). Future cleanings will be conducted on an as need basis. As stated, overflow water from this settling pond flows directly into the East In-Line Settling Pond (See **Attachment C**).

The **Lower Set Circular Tanks** are a block of thirty 25-foot diameter circular tanks used to rear fish from 3 to 15 inches in length. The fish are fed 1 to 3 times a day, depending on water temperature and size/number of fish per tank by hand broadcasting to the water's surface. Under regular use, overflow water discharges continuously from these tanks into the In-line Settling Ponds, and during cleaning or flushing, approximately 1,000 to 2,000 gallons of water per circular tank flows to the same In-Line Settling Ponds. Depending on the size and amount of fish present in each tank, bottom cleaning and/or flushing are done 1 to 2 times per month by staff standing near the tank's center and brushing settled solids towards each tanks bottom drain (See **Attachment C**). According to the permit application, chemical usage in the Lower Set Circular Tanks is limited to just sodium chloride.

The **East and West In-Line Settling Ponds** are two 1/3 acre rectangular lagoons about four feet deep, which are used to: (1) rear fish from 6 to 15 inches in length, and (2) act as final solids removal basins (See **Attachment C**) before discharge of the hatchery's effluent into Purgatory Brook. The fish are fed 1 to 2 times per day depending on water temperature and size/number of fish per pond by hand broadcasting to the water's surface. Both In-line Settling Ponds are fed by combined overflow and cleaning waters from the other rearing units and overflow from the Off-Line Settling Pond which discharges to the East In-Line Settling Pond. At this writing, the permittee plans to drain the In-Line Settling Ponds and remove accumulated manure residuals on an alternating two-year cycle, cleaning one pond each year. However, the cleaning frequency of once every two years could become either more or less frequent, depending on the rate of solids accumulation. According to the permit application, no chemicals are used in either the East or the West In-Line Settling Ponds.

A quantitative description of significant effluent parameters from the current permit's effluent-monitoring data collected for Outfall 001 during the 24-month period July 2000 through June 2002 show that Settleable Solids (SS) ranges from <0.01 to 0.01 milliliters per liter, that the average monthly flow ranges from 2.59 to 2.74 MGD, and that the resident fish biomass population ranges from a low of 16,000 pounds (lbs) in May/June to a high of 140,500 lbs in February/March just before the State's annual stockings. In State Fiscal Year (FY)-2001 (July 2000-June 2001), Milford produced 121,488 lbs of fish from 149,904 lbs of feed; whereas, in State FY-2002 (July 2001-June 2002), Milford produced 143,833 lbs of fish from 149,943 lbs of feed.

The reader should be aware that several effluent parameters in the current permit were deleted by EPA-New England (then Region I) in a letter dated August 28, 1975, in response to a request by the Nashua National Fish Hatchery for a permit modification to their permit issued on August 28, 1974. That letter deleted Ammonia, pH, and Total Suspended Solids (TSS) from all State and Federal Fish Hatchery permits in New Hampshire leaving only the SS parameter. However, a recent review of Milford's monthly discharge monitoring reports shows that in addition to reporting the required "SS", the hatchery also routinely reports "Flow" and "Fish Biomass" data that resulted from an earlier compliance inspection by the New Hampshire Department of Environmental Services, Water Division's (NHDES-WD) personnel.

In recent permit issuances in New Hampshire, EPA-New England has switched to TSS from using SS because the analytical test results for TSS as compared to SS provides a more comprehensive measure of the total suspended solids content actually present in the discharge. Therefore, the Agency has chosen to limit TSS in the draft permit, in lieu of SS. The Agency considers that replacement neither an antibacksliding nor an antidegradation issue.

III. Limitations and Conditions.

Effluent limitations, monitoring requirements, and any implementation schedule (if required) are found in PART I of the draft NPDES permit. The basis for each limit and condition is discussed in Section IV of this Fact Sheet.

IV. Permit Basis and Explanation of Effluent Limitations Derivation.

A. Basic Regulatory Framework --Applicable Federal and State Regulations

The Clean Water Act (ACT) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the ACT. The NPDES permit is the mechanism used to implement technology and water-quality based effluent limitations and other requirements including monitoring and reporting. The draft NPDES permit was developed in accordance with various statutory and regulatory requirements established pursuant to the ACT and any applicable State administrative rules. The regulations governing EPA's NPDES permit program are generally found in 40 CFR Parts 122, 124, 125 and 136. Many of these regulations consist primarily of management requirements common to all permits.

EPA is required to consider technology and water-quality based criteria in addition to the current permit conditions when developing permit limits. Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the ACT (See 40 CFR Part 125, Subpart A).

In the absence of published technology-based effluent guidelines, the permit engineer is authorized under Section 402(a)(1)(B) of the ACT to establish effluent limitations on a case-by-case basis using Best Professional Judgement (BPJ).

Water-quality based limitations are required in NPDES permits when EPA and the State determine that effluent limits more stringent than technology-based limits are necessary to maintain or achieve state or federal water-quality standards. See Section 301(b) (1)(C) of the ACT. A water-quality standard consists of three elements: (1) beneficial designated use or uses for a water body or a segment of a water body; (2) a numeric or narrative water-quality criteria sufficient to protect the assigned designated use(s); and (3) an antidegradation requirement to ensure that once a use is attained it will not be eroded. Receiving water requirements are established according to numerical and narrative standards in the state's water quality standards adopted under state law for each stream classification. When using chemical-specific numeric criteria to develop permit limits both the aquatic-life acute and chronic criteria, expressed in terms of maximum allowable in-stream pollutant concentration, are used. Aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific limits are allowed under 40 CFR Section 122.44 (d)(1) and are implemented under 40 CFR Sections 122.45(d) and (f). Therefore, the Region establishes maximum daily and average monthly limits for chemical specific toxic pollutants based, in part, on a reasonable measure of the facility's actual flow rate on a average monthly and a maximum daily basis for all production-based facilities, such as hatcheries, that have a continuous discharge. Also, the dilution provided by the receiving water is factored into this process. Furthermore, narrative criteria from the state's water-quality standards are often used to limit toxicity in discharges where: (1) a specific pollutant can be identified as causing or contributing to the toxicity but the state has no numeric standard, such as for formalin; or (2) toxicity cannot be traced to a specific pollutant.

The NPDES permit must limit any pollutant or pollutant parameter (conventional, non-conventional, toxic and whole effluent toxicity) that is or may be discharged at a level that causes or has "reasonable potential" to cause or contribute to an excursion above any water-quality criterion. See CFR Section 122.44(d)(1). An excursion occurs if the projected or actual in-stream concentration exceeds the applicable criterion. In determining reasonable potential, EPA considers: (1) existing and planned controls on point and non-point sources of pollution; (2) pollutant concentration and variability in the effluent and receiving water as determined from permit's reissuance application, Monthly Discharge Monitoring Reports (DMRs), and State and Federal Water Quality Reports; (3) sensitivity of the species to toxicity testing; (4) statistical approach outlined in **Technical Support Document for Water Quality-based Toxics Control**, **March 1991**, **EPA/505/2-90-001** in Section 3; and, where appropriate, (5) dilution of the effluent in the receiving water. In accordance with New Hampshire statutes and administrative rules (50 RSA 485-A:8, Env-Ws 1705.02), available dilution for discharges to freshwater receiving waters is based on a known or estimated value of the annual seven consecutive-day mean low flow at the 10-year recurrence interval (7Q10) for aquatic life or the long-term harmonic mean flow for human health (carcinogens only) in the receiving water at the point just upstream of the discharge. Furthermore, 10 % of the receiving water's assimilative capacity is held in reserve for future needs in accordance with New Hampshire's Surface Water

Quality Regulations Env-Ws 1705.01. The current set of these Regulations, newly revised, were adopted on December 3, 1999, and became effective on December 10, 1999. Hereinafter, these New Hampshire's Surface Water Quality Regulations are referred to as the NH Standards.

The permit may not be renewed, reissued or modified with less stringent limitations or conditions than those conditions in the previous permit unless in compliance with the antibacksliding requirement of the ACT [See Sections 402(o) and 303(d)(4) of the ACT and 40 CFR §122.44(l)(1 and 2)]. EPA's antibacksliding provisions found in 40 CFR §122.44(l) prohibit the relaxation of permit limits, standards, and conditions unless certain conditions are met. Therefore, unless those conditions are met the limits in the reissued permit must be at least as stringent as those in the previous permit.

The ACT requires that EPA obtain State Certification which states that all water-quality standards will be satisfied. The permit must conform to the conditions established pursuant to a State Certification under Section 401 of the ACT (40 CFR §124.53 and §124.55). EPA regulations pertaining to permit limits based upon water-quality standards and state requirements are contained in 40 CFR §122.44(d).

The conditions of the permit reflect the goal of the ACT and EPA to achieve and then to maintain compliance with the State's water quality standards. To protect the existing quality of the State's receiving waters, the NHDES-WD adopted Antidegradation requirements (Env-Ws 1708) in their NH Standards.

B. Effluent Limitations and Monitoring Parameters for Milford Hatchery

Available Dilution

Available dilution of the receiving water is determined using the hatchery's long-term average daily discharge along with the annual 7Q10 low flow of the receiving water just above the hatchery's outfall. The available dilution is reduced by 10 % to account for the State's reserve capacity rule. The State's requirement to reserve 10 % of the Assimilative Capacity of the receiving water for future needs is pursuant to New Hampshire's Surface Water Quality Regulations Env-Ws 1705.01 and was first included with the State's Surface Water Quality Regulations beginning with the April 1990 revisions. Inclusion of the State's reserve capacity rule is new to this draft permit for it was not included in the current permit.

Frequently, an exact value of the annual 7Q10 low flow at the outfall is not available; therefore, other methods are utilized such as determining an estimated annual 7Q10 low flow from gaged location either on the receiving water or on nearby river thought to have similar hydrologic characteristics as the receiving water, or regression equations such as the "Dingman Equation" that uses drainage area, mean basin elevation and percent of stratified drift to total drainage area. For Milford Hatchery's outfall on Purgatory Brook, the "Dingman Equation" regression equation was used by NHDES-WD to develop an estimated annual 7Q10 low flow value of 0.307 cubic feet per second (CFS). See **Attachment D** for "Dingman Equation" including the various inputs for that

equation's three variables.

In summary, available dilution (also referred to as dilution factor) in the receiving water was determined to be 1.0 using the facility's long-term average daily flow rate of 2.59 MGD (4.007 CFS), an estimated 7Q10 low flow of 0.307 CFS in Purgatory Brook just above the treatment plant's outfall, and a 10 % reserve of assimilative capacity for future needs in New Hampshire streams. See **Attachment D** for equation used to determine available dilution. The lack of variation in flow on a week to week basis was the reason that the long-tem average daily flow rate was chosen for use in determining maximum daily and average monthly limitations because the Agency believes it is the best estimate of the maximum daily and average monthly flow rates.

Conventional Pollutants

Biological Oxygen Demand (BOD_5) and Total Suspended Solids (TSS)

The Agency has not promulgated any effluent limitations guidelines (ELG) for wastewater discharges from concentrated aquatic animal production (CAAP) facilities, such as Milford's fish hatchery. However, the Agency proposed in the Federal Register (FR) on September 12, 2002 (67 FR 57872-57928) technology-based effluent limitation guidelines and standards for wastewater discharges associated with the operation of new and existing CAAP facilities that, if promulgated, would have applied to hatcheries with annual production levels similar to Milford's. As of this writing, that ELG has not been promulgated.

Review of the proposed ELG for CAAP facilities that produce between 100,000 to 475,000 lbs per year and have discharges from "Flow-Through Systems" in which all of the flow is treated using solids settling techniques prior to discharge show proposed TSS limits of 6 milligrams per liter (mg/l) for average monthly and 11 mg/l for maximum daily and no limits or monitoring requirements were placed on BOD_5. The BOD_5 was not limited because EPA believes that by limiting TSS, BOD_5 and nutrients will also be effectively controlled, thus effectively limiting their oxygen-demanding load on the receiving water. Quoting (*in italics*) directly from that proposed effluent guideline (67 FR dated September 12, 2002) on page 57891, *"....While the pollutants present in the wastewater from both systems (Editor's Note: 'both systems' refers to 'flow-through' and/or 'recirculating') are largely derived from the solids introduced by animal feed or feces, at flow-through systems the water is flowing through the facility so rapidly there is little opportunity for the solids to break down. Thus, EPA believes that controlling TSS effectively controls the other pollutants present in the wastewater...."* whose origin is fish feed and/or fish feces. Had these proposed effluent guidelines been promulgated, those limits would have applied to Milford's Hatchery, for it produced 121,488 and 143,833 lbs in State FY-2001 and 2002, respectively, and is operated has a "Flow-Through System" with three settling ponds.

Prior to the publication of the proposed ELG, EPA-New England established NPDES effluent limitations for various fresh-water fish (mainly trout) hatcheries in Massachusetts. The Five-Day Biochemical Oxygen Demand (BOD_5) and the TSS limits for those facilities were derived from a review of effluent data from several CAAP facilities located in Massachusetts, New Hampshire, as well as a review of general NPDES permits developed for similar facilities in Idaho, Oregon, and South Carolina. Beginning in late 2001, EPA-New England used Best Professional Judgement to establish permit limits for BOD_5 of 5 mg/l for average monthly and 10 mg/l for maximum daily, and for TSS of 10 mg/l for average monthly and 10 mg/l for maximum daily. These Massachusetts fish hatcheries are similar to the fresh-water ones in New Hampshire.

As discussed previously, there is no ELG for the Aquatic Animal Production Industry. Therefore, EPA-New England intends to implement a slightly different approach than one used to limit BOD_5 and TSS in the recently issued fish hatchery permits for Massachusetts. Specifically, EPA-New England has decided to revise the maximum daily TSS limit to allow for some natural variability between that limit and the average monthly TSS limit; therefore, has revised the maximum daily TSS limit upward by 50 % to15 mg/l for the fish hatchery permits issued in New Hampshire. This change brings the difference between the "average monthly" and "maximum daily" concentration in-line with that shown in the proposed effluent guideline (5 mg/l difference) as well as other promulgated effluent guidelines where TSS is regulated. In addition, EPA-New England believes it is not necessary to limit BOD_5 in this hatchery's permit because BOD_5 concentrations in the effluent are low as shown by results from sampling in September 2001 (7.8 and 10.8 mg/l) and August 2002 (4.0 mg/l). However, the Agency is concerned that existing concentrations of BOD_5 in the effluent do not increase above their present levels because the hatchery discharges to a small upland watershed with minimal streamflow available to dilute waste products present in the hatchery's large discharge. Therefore, the Agency intends to monitor BOD_5 concentrations through monthly sampling for a minimum of one year to see how well a computer model of the fishes's metabolic by-products predicts those concentrations in the effluent and, thereafter, 2/Year to verify that the modeled results continue to represent BOD_5 concentrations in the discharge. Results generated from this metabolic model presented to the Agency in the hatchery's reapplication materials shows that oxygen demand follows the TSS concentrations (See current permit application in EPA-New England files) as expected; therefore, by default, limiting TSS should control BOD_5.

Use of a computer model to predict BOD_5 for monitoring purposes, seems reasonable since on a day to day basis, the quantity of fish biomass does not change appreciably, except when stocking occurs, nor does the amount and timing of the fish food fed to this biomass (fish). According to FISHPRO, developer of the computer model, their model has an error band of ± 20 percent of the measured average monthly concentration for the pollutant BOD_5 as well as the other pollutants, such as Total Ammonia, Total Phosphorus and TSS, predicted by this model. In addition to predicting BOD_5 for this draft permit, this computer model will also be used to predict Total Ammonia and Total Phosphorus concentrations [See Nutrients (Nitrogen and Phosphorus] discussed later in this Fact Sheet as well as TSS. Once the model has been verified that it can reliably predict average monthly BOD_5 concentrations as well as those for Total Ammonia and Total Phosphorus for this hatchery it will be used to estimate the average monthly concentrations for those constituents for the remaining life of the permit. As a further check following the verification period, TSS will be calculated by the

model and if the monthly sampled and calculated TSS results compare favorably then it will be assumed that the model correctly predicts the other pollutant concentrations. In addition, BOD_5, Total Nitrogen and Total Phosphorus samples also will be collected at a 2/Year frequency in January and July to monitor how well the monthly sampled and modeled results compare as another check on the models continued accuracy. This metabolic computer model of the by-products of fish growth utilizes the quantities of fish feed and biomass (fish) fed each month to predict average monthly concentrations for BOD_5, TSS, Total Ammonia and Total Phosphorus.

Accordingly, EPA-New England has established in this draft permit, effluent limits for TSS at 10 mg/l for average monthly and at 15 mg/l for maximum daily and has established effluent monitoring requirements for BOD_5 for a minimum of one year to verify the predicted BOD_5 outputs shown by the metabolic computer model of fish by-products. In addition, 40 CFR Section 122.45(f) requires the Agency apply concentration-based limits as mass-based limits as well. Accordingly, the average monthly and maximum daily mass-based limits for TSS shown in the draft permit are based on the long-term average daily discharge (2.59 MGD) and the appropriate constituent concentration for the respective time period being limited. See **Attachment D** for the equation used to calculate each of these mass-based limits. For example, the Average Monthly TSS load of 216 lbs/day is based on the average monthly TSS concentration of 10 mg/l, the facility's long-term average daily pumpage of 2.59 MGD, and a conversion factor of 8.345 to convert mg/l and MGD to lbs/day. The long-term average daily flow rate of 2.59 MGD was chosen to calculate both average monthly and maximum daily loads because the Agency believes there will be negligible variation in and between daily flows given the facility's past operational practices and the fact that the facility does not have variable speed pumps. Furthermore, the draft permit requires the reporting of mass for all the average monthly and maximum daily BOD_5 concentrations reported.

<u>pH Limits Including Related Conditions</u>

The limits (range) in pH are based upon limits in the current permit in accordance with the antibacksliding requirements found in 40 CFR §122.44(1) since the permittee has been able to achieve consistent compliance with these limits. Historically, the NHDES-WD has required pH limits to be satisfied at end-of-pipe with no allowance for dilution. That concept was codified into the NH Standards at Env-Ws 1703.06(b); therefore, has become a State Water Quality Standard.

However, a change in the pH range in the draft permit due to in-stream dilution would be considered if the applicant can demonstrate, to the satisfaction of NHDES-WD, that the in-stream NH Standards for pH would be protected. Upon satisfactory completion of a demonstration study, the applicant or NHDES-WD may request in writing that the permit limits be modified by EPA-New England to incorporate the results of the demonstration.

Anticipating the situation where NHDES-WD grants a formal approval changing the pH limit(s) to outside the 6.5 to 8.0 Standard Units (S.U.), EPA-New England has added a provision to this draft permit (See SPECIAL CONDITIONS section). That provision will allow EPA-New England to modify the pH limit(s) using a certified letter approach. See STATE PERMIT CONDITIONS in the draft permit. However, the pH limit range cannot be less restrictive than 6.0 - 9.0 S.U. found in various National Effluent Limitation Guidelines.

If the State approves results from a pH demonstration study, this permit's pH limit range can be relaxed in accordance with 40 CFR 122.44(l)(2)(i)(B) because it will be based on new information not available at the time of this permit's issuance. This new information includes results from the pH demonstration study that justifies the application of a less stringent effluent limitation. EPA-New England anticipates that the limit determined from the demonstration study as approved by the NHDES-WD will satisfy all effluent requirements for this discharge category and will comply with NH Standards with regard to instream conditions.

Non-Conventional and Toxic Pollutants

Water-quality based limits for specific toxic pollutants such as chlorine, ammonia, metals, etc. are determined from chemical specific numeric criteria derived from extensive scientific studies. The specific toxic pollutants and their associated toxicity criteria are popularly know as the "Gold Book Criteria" which EPA summarized and published in Quality Criteria for Water, 1986, EPA 440/5-86-001 (as amended). The State of New Hampshire adopted these "Gold Book Criteria", with certain exceptions, and included them as part of the State's recently revised Surface Water Quality Regulations adopted on December 3, 1999. EPA-New England uses these pollutant specific criteria along with available dilution in the receiving water to determine a specific pollutant's draft permit limit, such as the fast acting toxicant chlorine or ammonia, metals, etc.

Total Residual Chlorine

Even though hypochlorite solutions are used at the Hatchery, EPA-New England does not believe their use as described earlier in this **Fact Sheet** under "Chemicals, Drugs, and Disinfectants Used Throughout New Hampshire's State Fish Hatcheries" will lead to its presence in the effluent, given that the hypochlorite solutions are not discharged into the culture water and any hypochlorite solution remaining on the equipment is neutralized with sodium thiosulfate prior to its exposure to that culture water. Also, if any residual hypochlorite solution should remain on the equipment following neutralization, it would dissipate in the final In-Line Settling Ponds prior to discharge. Therefore, EPA-England has determined that the Hatchery's discharge has no reasonable potential to cause, or contribute to an instream excursion above the numeric water-quality criteria for TRC in the NH Standards. However, if a TRC limit was ever needed, a maximum daily limit of 19 µg/l and an average monthly TRC limit of 11 µg/l would be established corresponding to the TRC acute and chronic aquatic-life criteria of 19 and 11 µg/l, respectively, in the NH Standards. Criteria values from the NH Standards would become the limits because the available dilution in the receiving water is only1.0.

Nutrients (Nitrogen and Phosphorus)

The permittee should be aware that EPA is developing Section 304(a) water-quality criteria for nutrients, such as Total Phosphorus and Total Nitrogen, as well as other response parameters, such as turbidity and chlorophyll *a*, to control the excessive levels of nutrients in discharges to the nation's surface waters. The expected criteria are being developed to cover four major types of waterbodies – lakes and reservoirs, rivers and streams, estuarine and coastal areas, and wetlands across the major Ecoregions of the United States. EPA's Section 304(a) criteria are intended to provide for the protection and propagation of aquatic life and recreation. As the reader can see, the Hatchery's discharge could be impacted by the criteria for the rivers and streams category. When these nutrient criteria are finalized by the Agency, the NHDES-WD has already indicated it intends to adopted nutrient criteria in its NH Standards to meet an EPA requirement that states develop and implement nutrient criteria, hopefully by the end of 2004. Published results to date from EPA's ***Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria for Rivers and Streams in Nutrient Ecoregion XIV*, EPA, Office of Water, EPA 822-B-00-022, December 2000**, indicate that for subecoregion 59 (Hatchery's location within Ecoregion XIV) criteria values around 0.008 mg/l for Total Phosphorus (dissolved plus particulate) as P and 0.32 mg/l for Total Nitrogen (ammonia, organic, nitrate and nitrite) as N are reasonable estimates for purposes of this discussion. If these criteria are established in the NH Standards, they will become the limits that the Hatchery's discharge must meet given its available dilution of 1.0 with the receiving water. In this approach, EPA proposes to establish two "casual" parameters, those for nitrogen and phosphorus, and two "response" parameters, those for chlorophyl a and a measure of water clarity - secchi disk for lakes and turbidity for other waterbodies such as rivers and streams.

In December 2002, New Hampshire submitted to EPA-New England a document which proposes to pursue an approach to set "interim" criteria for "chlorophyll a" by waterbody type based on published studies where the level of "chlorophyll a" is set to reflect designated uses of the receiving water. EPA-New England has responded favorably to the State's submission. Therefore, phosphorus and to a lesser extent nitrogen have the potential to be regulated only to the extent necessary to comply with the "chlorophyl a" numeric criteria in the NH Standards set for the specific waterbody type to which the discharge occurs. Time frames for implementing this approach are estimated to be five to six years into the future.

Under current NH Standards, the only nutrient limited by a numeric criteria is ammonia. The criteria in their Standards is established to prevent ammonia toxicity in the receiving water rather than to prevent dissolved-oxygen deficits and/or benthic (excessive nuisance algae growth in water column and/or on bottom deposits) water-quality exceedances. Other limits for nitrogen and phosphorus are in narrative form in Env-Ws 1703.14(c) which reads, "Existing discharges containing either phosphorus or nitrogen which encourage cultural eutrophication shall be treated to remove phosphorus or nitrogen to ensure attainment and maintenance of water quality standards." Usually, limits developed for ammonia and phosphorus, necessary to prevent exceedances of the State's dissolved-oxygen criteria and narrative standards relative to excessive (nuisance species) water column and benthic growth, are obtained through application of a Total Maximum Daily Load Study.

These intensive studies are performed if EPA-New England and/or NHDES-WD believe the receiving water is experiencing or is about to experience exceedances of its dissolved-oxygen criteria or other plant and growth-related exceedances. At present, the State's revised 303(d) list published in late 2002 indicates no exceedances of those criteria in Purgatory Brook or Souhegan River downstream of where Purgatory Brook discharges.

However, the following discussion is presented because the Agency is concerned about the level of ammonia in the hatchery's effluent as well as to inform the permittee of the ammonia limits that might be imposed should this discharge show "reasonable potential" to cause or contribute to exceedances of the NH Standards. While a recent effluent sample collected as part of this permit reapplication on August 13, 2002, showed an ammonia concentration of 0.3 mg/l, two earlier effluent samples collected by the NHDES-WD on September 12 and 19, 2001 showed ammonia concentrations of 15.1 and 16.3 mg/l, respectively. This large disparity between ammonia concentrations within this short time period is the reason why the Agency needs to collect additional ammonia monitoring data as part of this permit reissuance. Should ammonia show reasonable potential to exceed NH Standards, the Agency would establish an average monthly ammonia limit of 3.39 mg/l as N for the summer period (May through October) and 6.67 mg/l as N for the winter period (November through April). Those limits would be based on the ammonia's chronic aquatic-life criteria for fish when early life stages are present as taken from EPA's updated ammonia criteria of December 1999 which the NH-Standards allow for its use [Env-Ws 1704.01(c)] and an available dilution of 1.0 in the receiving water. The aquatic-life chronic criteria for ammonia as N for the summer period (instream pH of 6.5 Standard Units and water temperature of 25 degrees Celsius) is 3.39 mg/l and for the winter period (instream pH of 6.5 Standard Units and water temperature of 10 degrees Celsius) is 6.67 mg/l to comply with NH Standards [See Env-Ws 1703.21 which contains Table 1703.1 and Env-Ws 1704.01(c)].

Accordingly, the draft permit requires monitoring of ammonia concentrations through monthly samplings for a minimum of one year to see how well the computer model of trout metabolic by-products predicts those concentrations in the effluent using the same approach as for BOD_5. Once the model is verified that it can reasonably predict average monthly ammonia concentrations it will be used to estimate the average monthly ammonia concentration for the remaining life of the permit. Furthermore, the draft permit requires the reporting of mass for all the average monthly and maximum daily BOD_5 concentrations reported.

Similarly, total phosphorus will be monitored in the same manner as total ammonia and BOD_5 as a cost-effective approach at obtaining phosphorus discharges to this small upland stream. This is necessary because the fish feed has a phosphorus content that ranges from 1 to 1.2 % depending on the fish's life stage and the efficient of the fish feed used by the hatchery.

Dissolved Oxygen

According to New Hampshire's Draft 2002 Section 303(d) list of Surface Water Quality Assessment found on NHDES's Watershed Management Bureau Web site (http://www.des.state.nh.us/wmb/) shows that Purgatory Brook is non-supporting of aquatic life due to impaired dissolved-oxygen levels from unknown source(s). In other words, dissolved-oxygen concentrations in the Brook do not meet the NH-Standards for Class B waters found in Env-Ws 1703.07(b). That standard requires instream dissolved-oxygen content to be at least 75 % of saturation, based on a daily average, and to have an instantaneous minimum dissolved-oxygen concentration of at least 5 mg/l. However, recent conversations with State officials indicate that the dissolved-oxygen impairment occurs well upstream of the hatchery's outfall.

Sampling of the hatchery's effluent on November 21-26, 2003, showed that dissolved-oxygen concentrations ranged from 8.1 to 9.1 mg/l which is clearly much higher than State's standard of 5 mg/l. However, percent saturations of dissolved oxygen in that same effluent ranged from 73.9 to 80.2 % for a water temperature of around 50 degrees Fahrenheit which could result in an exceedance of the State's 75 % saturation if the temperature in the receiving water and in the effluent discharge are similar. In addition, flows from the hatchery make up a considerable portion of the streamflow in Purgatory Brook during many periods of the year, particularly during low-flow times when streamflow below the hatchery's outfall is effluent dominated. For example, during 7Q10 low-flow periods, streamflow in the Brook just above the outfall is estimated to be 0.307 CFS while the discharge from the hatchery is estimated to be 4.007 CFS or 93 % of the Brook's flow just below the outfall is composed of hatchery water. In addition, the degradation of any formalin in the water column requires oxygen, thus the potential for an additional depletion of oxygen over that required in the degradation of fish feces and uneaten food particles in the effluent. Accordingly, the draft permit requires monitoring of the effluent for dissolved-oxygen concentration and convert those readings to percent saturation in the effluent for "formalin absent" and "formalin present" periods to see if this discharge causes or contributes to exceedances of the two part dissolved-oxygen standard in Env-Ws 1703.0-7(b) in Purgatory Brook.

Formalin

CAAP facilities commonly use biocides. The most common of which are formalin products such as Paracide-F, Formalin-F or Parasite-S which contain approximately 37 % by weight formaldehyde gas. Formalin is used for the therapeutic treatment of fungal infections on the eggs of finfish and to control certain external protozoa and monogenetic trematodes on all finfish species. This means that formalin is more toxic to the invertebrate species than to vertebrates, for it is formulated to selectively kill certain attached organisms, but not the finfish themselves when properly applied. Therefore, when setting the necessary permit limits to protect the receiving water's aquatic environment from the effects of formalin in a discharge, it is more important to develop limits to protect invertebrates species over the vertebrates species, for the former are more sensitive to the effects of formalin's active ingredient (formaldehyde). In the receiving waters, these invertebrates are an integral part of the food chain for finfish.
Formalin use should be consistent with U.S. Food and Drug Administration (FDA) labeling

instructions as per 21 CFR Section 529.1030. Per those instructions, formalin is to be used only 1-hour per day per raceway, tank and/or in-line settling pond for the treatment of finfish. Finfish eggs may be treated 15 minutes per day following FDA guidelines. Prophylactic use of formalin is strictly prohibited.

Existing toxicity data indicates that formalin is toxic to aquatic organisms at concentrations below FDA labeling guidelines. Currently there are no acute and chronic aquatic-life criteria for either formalin or formaldehyde in the NH Standards. However, New Hampshire law states that, "all surface waters shall be free from toxic substances or chemical constituents in concentrations or combination that injure or are inimical to plants, animals, humans, or aquatic life;...." (N.H. RSA 485-A:8, VI and the N.H. Code of Administrative Rules, PART Env-Ws 1703.21(a)(1). Therefore, in the absences of specific formalin or formaldehyde aquatic-life acute and chronic criteria in the NH Standards, EPA-New England has decided to impose formaldehyde limits in the draft permit based on acute and chronic aquatic-life criteria taken from the ***Derivation of Ambient Water Quality Criteria for Formaldehyde*, Hohreiter, David W. and Rigg, David K., Journal of Science for Environmental Technology in Chemosphere, Vol. 45, Issues 4-5, November 2001, pgs. 471-486**, thus ensuring Env-Ws 1703.21(a)(1) is satisfied. EPA-New England believes that since these criteria were developed in accordance with the United States Environmental Protection Agency's (USEPA's) ***Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses*** they are appropriate for use in limit setting purposes. From that publication, the acute and chronic aquatic-life criteria for formaldehyde are 4.58 and 1.61 mg/l, respectively. However, because formalin is a solution composed of 37 % formaldehyde, each acute and chronic aquatic-life criteria for formaldehyde needs to be divided by 0.37 to convert to its equivalent formalin acute and chronic aquatic-life criteria of 12.38 and 4.35 mg/l, respectively. Accordingly, since the effluent will be analyzed for formaldehyde, average monthly and maximum daily limits for formaldehyde of 1.6 and 4.6 mg/l, respectively, have been set in the draft permit. Because available dilution in the receiving water at 7Q10 flow is 1.0, or no dilution, the acute aquatic-life criteria becomes the maximum daily limit and the chronic aquatic-life criteria becomes the average monthly limit.

These limits apply at all times, but the monitoring requirements in the draft permit are "when-in-use", since formalin is used sparingly at the Milford hatchery. Specifically, their application shows typical usage is around 100 gallons per year with some years having no usage.

For this permit, the minimum quantification level (ML) for formaldehyde is established in Method 1667, Revision A is 0.050 mg/l or 50 µg/l. In accordance with EPA's ***Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991**, page 111, EPA New England is defining the compliance level in the permit as the minimum quantification level (ML).

Therefore, the limit at which compliance/non-compliance determinations will be judged is a ML of 50 µg/l and this ML value may be reduced by permit modification as more sensitive test methods are approved by EPA. Any value below the ML shall be reported as zero until written notice is received by certified mail from EPA-New England indicating some value other than zero is to be reported for a given ML (i.e., between zero and the ML).

Best Management Practices

Pursuant to Section 304(e) of the ACT and 40 CFR Sections 122.2 and 122.44(k), a Best Management Practices (BMP) Plan may be expressly incorporated into a NPDES permit, on a case-by-case basis, when necessary to carry out provisions of the ACT under Section 402(a)(1). Because the permittee conducts operations which could result in solids as well as biological, chemical, and medicinal pollutants reaching the receiving waters via the effluent, the draft permit requires the facility to develop a BMP Plan to prevent, control and abate the discharge of these pollutants to the greatest extent possible.

In essence, the BMP requirement in the draft permit directs the permittee to: (1) review its operating procedures; (2) describe its biological pollution control; (3) describe its cleaning of culture tanks, raceways, lagoons, and other equipment; (4) describe its training for employees, and (5) list all medications and chemicals used at the facility. This review should assure that, along with any on-site treatment, that all the numeric limits in the draft permit will be met at all times and that discharges of pollutants not limited in the permit are minimized. The objective of this review is to minimize the potential discharge of any pollutant due to facility design, human error or equipment failure.

The draft permit requires permittees to develop and to implement a BMP Plan no later than 90 days after the effective date of coverage under this permit. The BMP Plan, upon implementation, becomes a supporting element to the permit's numeric effluent limitations by minimizing the discharge of any pollutant (solids, biological, chemical, and medicinal) through the proper operation of the facility. Consequently, the BMP Plan is an equally enforceable as the permit's numeric limits.

C. Antidegradation

This draft permit is being reissued with allowable wasteloads and parameter coverages more stringent and comprehensive than in the current permit with no change in location for the existing outfall. The State of New Hampshire has indicated that there is no lowering of water quality and no loss of existing water uses and that no additional antidegradation review is warranted at this time.

D. Additional Requirements and Conditions

The effluent monitoring requirements in the draft permit, and shown in Table 1 on the next page have been established to yield data representative of the discharge under the authority of Section 308(a) of the ACT in accordance with 40 CFR §§§ 122.41(j), 122.44(i) and 122.48. Compliance monitoring frequency and sample type have been set after considering the intended purpose and use of the data, configuration of the physical plant including its flow and the feeding regimes at the hatchery. Normally, monitoring frequencies in NPDES permits issued in New Hampshire are set according to a EPA/NHDES-WD's Effluent Monitoring Guidance (EMG) mutually agreed upon and first implemented in March 1993 and last revised on July 19, 1999. However, because that guidance was developed for use in permitting Publicly Owned Treatment Works (POTWs) and industrial facilities, it is not applicable to hatcheries; therefore, has not been used to set monitoring frequencies in this draft permit. See Table 1 for a comparison of sampling frequencies and sample types in the current versus new draft permits.

It is the intent of EPA and NHDES-WD to establish minimum monitoring frequencies in all NPDES permits at permit modification and/or reissuances that make sense from both an environmental and human health perspectives.

The effluent monitoring requirements in the draft permit have been established to yield data representative of the discharge under the authority of Section 308(a) of the ACT in accordance with 40 CFR §122.41(j), §122.44(i) and §122.48.

The remaining conditions of the permit are based on the NPDES regulations 40 CFR, Parts 122 through 125, and consist primarily of management requirements common to all permits.

Table 1. Sampling Frequencies and Sample Types in the Current and Draft Permits. (Changes to Current Permit are highlighted under Draft Permit. In addition, a "M" or "L" below the Parameter indicates it's either "Monitored-Only" or "Limited" in the draft permit.)

PARAMETER	CURRENT PERMIT		DRAFT PERMIT	
	Sampling Frequency	Sample Type	Sampling Frequency	Sample Type
Settleable Solids	1/Month	3 Grabs	Eliminated	Eliminated
Flow (M)	Not Required	Not Required	1/Week	Meter or other approved method
pH (L)	Not Required	Not Required	1/Week	Grab
TSS (L)	Not Required	Not Required	1/Month except January and July 2005 when 1/Week	24-Hour Composite
BOD_5 (M)	Not Required	Not Required	During 2005, 1/Month for 10 months and 1/Week for 2 months; thereafter, 2/Year	24-Hour Composite
Total Ammonia (NH_3-N) (M)	Not Required	Not Required	During 2005, 1/Month for 10 months and 1/Week for 2 months; thereafter, 2/Year	24-Hour Composite
Total Phosphorus (as P) (M)	Not Required	Not Required	During 2005, 1/Month for 10 months and 1/Week for 2 months; thereafter, 2/Year	24-Hour Composite
Fish Biomass (M)	Not Required	Not Required, but are reporting	Monthly	Calculation
Fish Feed (M)	Not Required	Not Required	Monthly	Calculation
Efficiency of Fish Feed (M)	Not Required	Not Required	Monthly	Calculation
Dissolved Oxygen (M)	Not Required	Not Required	1/Week (Formalin Absent)	Grab
Dissolved Oxygen Saturation (M)	Not Required	Not Required	1/Week (Formalin Absent)	Calculation
Water Temperature (M)	Not Required	Not Required	1/Week (Formalin Absent)	Grab
Formaldehyde (L)	Not Required	Not Required	1/Week (Formalin Present)	Grab
Dissolved Oxygen (M)	Not Required	Not Required	1/Week (Formalin Present)	Grab

V. Essential Fish Habitat.

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.(1998)), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat." 16 U.S.C. § 1855(b). The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. 16 U.S.C. § 1802(10). Adversely impact means any impact which reduces the quality and/or quantity of EFH. 50 CFR § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id.

EFH is only designated for fish species for which federal Fisheries Management Plans exist. 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

EFH Species

Purgatory Brook is a tributary of the Souhegan River which, in turn, is a tributary of the Merrimack River, and as such both Purgatory Brook and the Souhegan River are designated EFH for Atlantic salmon (*Salmo salar*). Merrimack River has been designated EFH status for Atlantic salmon ".....including all tributaries to the extent they are currently or were historically accessible for salmon migration". According to the NHF&GD, each year the main stem of the Souhegan River from a dam in Greenville, New Hampshire (upstream of confluence with Purgatory Brook) to its mouth for a total of 11.3 river miles, except for a few isolated stretches, and three of its tributary streams (Blood, King and Stoney Brooks) are stocked with Atlantic salmon sac fry. However, no sac fry are stocked in Purgatory Brook because, according to a NHF&GD official, the Brook has no suitable habitat, that is not enough slope and too much sand and fines in the substrate. The NHF&GD uses volunteers to stock these sac fry (just over one inch in length) each spring when the water temperature reaches 48 degrees Fahrenheit, which usually happens around mid-April. All told, slightly less than 100,000 sac fry are stocked along the main stem Souhegan River with another 50,000 sac fry stocked in three of its tributary brooks. This stocking effort has been an ongoing activity for many years.

Analysis of Effects

This draft permit has been written to satisfy NH Standards which are considered by EPA- New England and the NHDES-WD to be protective of all aquatic species including those fish listed under EFH, in this case Atlantic salmon (*Salmo salar*), as well as other lesser aquatic organisms. Therefore, there should be no impacts to the water quality or the habitat of the receiving water or immediately downstream waters, such as the Souhegan River, as a result of this discharge for the EFH species of concern.

EPA-New England's Opinion of Probable Impacts

Based on the permit limitations and requirements identified in the draft permit and Fact Sheet that are designed to protect aquatic species, this authorized discharge is not likely to adversely affect the federally managed species, their forage or their habitat in waters downstream of Purgatory Brook. Within Purgatory Brook, there are no probably impacts because there is no identified juvenile habitat suitable for Atlantic Salmon. If adverse effects do occur downstream of Purgatory Brook as a result of this permit action, or if new information becomes available that changes the basis for this conclusion, then NMFS will be notified and consultation will be promptly initiated.

Mitigation

The EPA-New England considers the conditions in this draft permit to be sufficient to protect the EFH species of concern, namely Atlantic salmon (*Salmo salar*); therefore, does not consider further mitigation to be warranted at this time.

VI. State Certification Requirements.

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations and/or conditions contained in the permit are stringent enough to assure, among other things, that the discharge will not cause the receiving water to violate the State's Surface Water Quality Regulations or waives its right to certify as set forth in 40 CFR §124.53.

Upon public noticing of the draft permit, EPA-New England is formally requesting that the State's certifying authority make a written determination concerning certification. The State will be deemed to have waived its right to certify unless certification is received within 60 days of receipt of this request.

The NHDES-WD is the certifying authority. EPA-New England has discussed this draft permit with the staff of the Water Division and expects that the draft permit will be certified. Regulations governing State Certification are set forth in 40 CFR §§124.53 and 124.55.

The State's certification should include the specific conditions necessary to assure compliance with applicable provisions of the ACT, Sections 208(e), 301, 302, 303, 306 and 307 and with appropriate requirements of State law. In addition, the State should provide a statement of the extent to which each condition of the draft permit can be made less stringent without violating the requirements of State law. Since certification is provided prior to permit issuance, failure to provide this statement for any condition waives the right to certify or object to any less stringent condition which may be established by EPA-New England during the permit issuance process following public noticing as a result of information received during that noticing. If the State believes that any conditions more stringent than those contained in the draft permit are necessary to meet the requirements of either the ACT or State law, the State should include such conditions and, in each case, cite the ACT or State law reference upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition.
Reviews and appeals of limitations and conditions attributable to State Certification shall be made

through the applicable procedures of the State and may not be made through the applicable procedures of 40 CFR Part 124.

VII. Comment Period, Hearing Requests, and Procedures for Final Decisions.

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period to: Mr. Roger A. Janson, Director NPDES Permit Program, U.S. Environmental Protection Agency, One Congress Street, Suite 1100 (Mail Code: CPE), Boston, Massachusetts 02114-2023. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA-New England and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least 30 days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA-New England's Boston office.

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

VIII. EPA/State Contacts.

Additional information concerning the draft permit may be obtained between the hours of 9:00 A.M. and 5:00 P.M. (8:00 A.M. and 4:00 P.M. for the state), Monday through Friday, excluding holidays from:

Mr. Frederick B. Gay, Environmental Engineer
U.S. Environmental Protection Agency
Office of Ecosystem Protection
NPDES Permits Unit
One Congress Street
Suite 1100, Mail Code: CPE
Boston, Massachusetts 02114-2023
Telephone No.: (617) 918-1297
FAX No.: (617) 918-0297

_____ **Linda M. Murphy, Director**
Date: **Office of Ecosystem Protection**
U.S. Environmental Protection Agency

ATTACHMENT A

This attachment is for CAAP facilities regulations.

CAAP REGULATIONS ATTACHED BY STAPLE TO BACK OF THIS PAGE

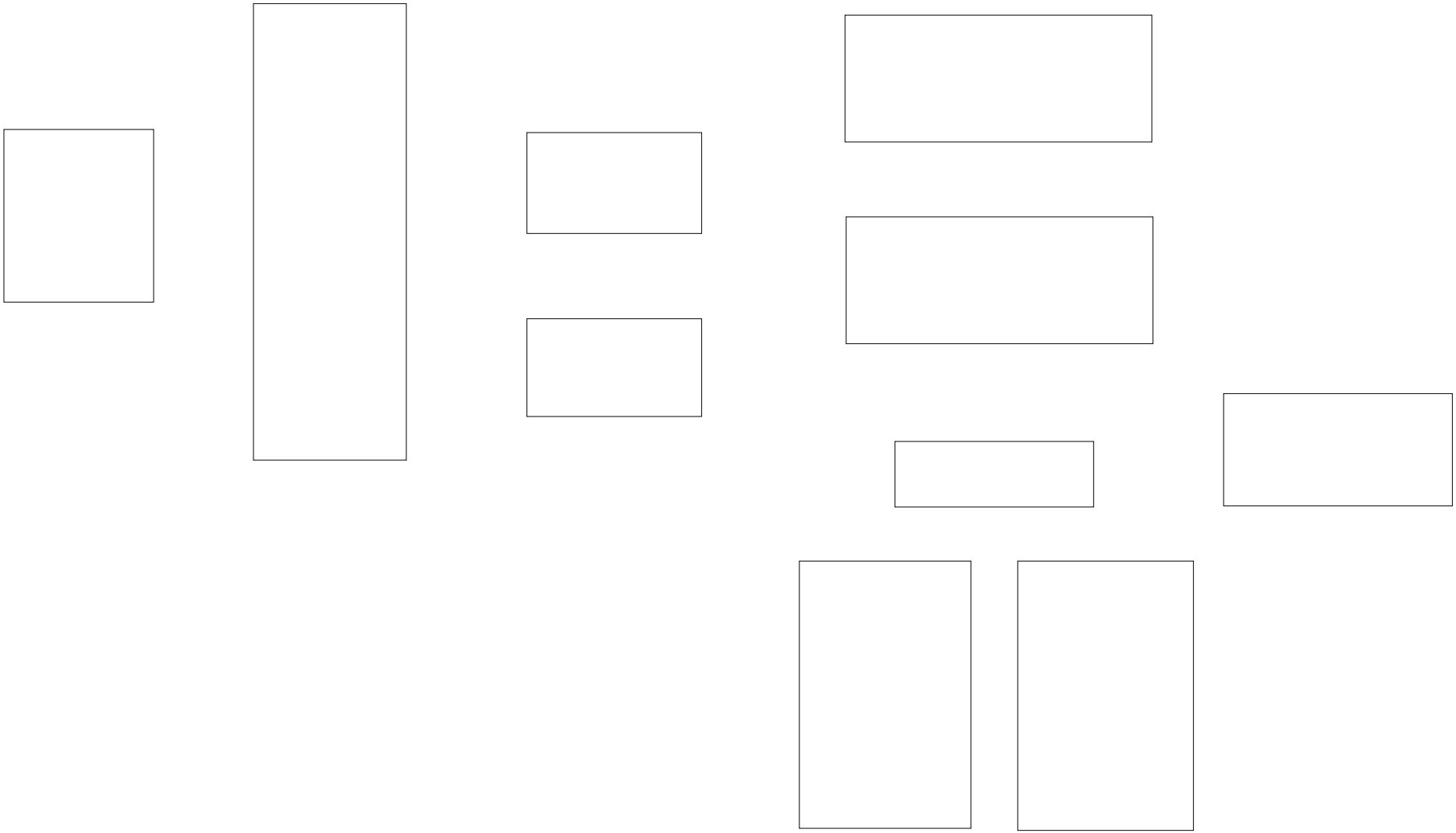
ATTACHMENT B

This attachment is for the overview map of the area–that is the USGS Topographic Map.

OVERVIEW MAP ATTACHED BY STAPLE TO BACK OF THIS PAGE

ATTACHMENT C

Generalized Water Flow Diagram Showing the Various Rearing/Treatment Units -- Milford Fish Hatchery



ATTACHMENT D

Annual 7Q10 Low Flow on Purgatory Brook Just Above Outfalls 001/002

"Dingman Equation" to compute the annual 7Q10 low flow at Outfalls 001/002

Equation 12 of "S. Lawrence Dingman & Stephen C. Lawlor, Estimating Low-Flow Quantiles from Drainage-Basin Characteristics in New Hampshire and Vermont, Journal of the American Water Resources Association, Vol. 32, No. 2, April 1995." Equation 12 in the original journal article was corrected by S. Lawrence Dingman in a letter dated June 19, 2000, to Dr. Christopher Lant, Editor, Journal of the American Water Resources Association. The correction changed the minus to a plus sign in the equation just prior to the stratified drift (D) term.

The corrected equation for annual 7Q10 low flow is as follows:

$7Q10 = 10^x$ where $x = 1.25\log_{10}A + 0.0004Y + 1.49D - 2.22$

where:

7Q10 = Cubic feet per second (CFS).
A = Drainage area, square miles (mi^2); or 12.82 mi^2 just upstream of Outfalls 001/002.
Y = Mean basin elevation, feet (ft); or 694.2 ft just upstream of Outfalls 001/002.
D = Ratio of stratified drift area* to total drainage area, in decimal percent; or 0.030. Stratified drift area is 0.379 mi^2 just upstream of Outfalls 001/002.

*Stratified drift areas taken from Ground-Water Availability Maps published at a scale of 1:125,000 by U.S. Geological Survey in 1975, 1976 and 1977 for New Hampshire.

Available Dilution Factor at Outfalls 001/002

$$DF = \frac{(Q_{001}) + (Q_{HDF} \times 1.547)}{Q_{HDF} \times 1.547} \times 0.90$$

where:

DF = Dilution Factor
Q_{001} = Annual 7Q10 low flow at Outfalls 001/002, in CFS.
0.90 = Factor to reserve 10 percent assimilative capacity.
Q_{HDF} = Hatchery's long-term average daily flow, in MGD.
1.547 = Factor to convert MGD to CFS.

ATTACHMENT D (Continued)

Maximum Allowable Loads

Equation used to calculate mass limits for TSS is:

$$L = C * Q_{HDF} * 8.345$$

where:

L = Maximum allowable load, in lbs/day, rounded to three significant figures.
C = Maximum allowable effluent concentration for reporting period, in mg/l. Reporting periods are "average monthly" and "maximum daily".
Q_{HDF} = Hatchery's long-term average daily flow, in MGD. For TSS limits, a flow of 2.59 MGD was used assuming that all the hatchery waters discharge through a single outfall pipe.
8.345 = Factor to convert effluent concentration, in mg/l, and the hatchery's long-term average daily flow, in MGD, to lbs/day.

The above equation can also be used to calculate loads for TSS, BOD_5, Total Nitrogen and Total Phosphorus that are part of the required monitoring under Part I.A.l. on page 2 of the permit.

Aquatic-Life Criteria Limits from NH Standards

Equations used to calculate "Average Monthly" and "Maximum Daily" potential limits for Total Residual Chlorine and/or Total Ammonia. Acute aquatic-life criterion is used for computing a "Maximum Daily" limit (MDL) and chronic aquatic-life criterion is used for computing a "Average Monthly" limit (AML). Criteria values are expressed either as µg/l or mg/l with 1,000 µg/l equal to 1.0 mg/l.

*MDL = Dilution Factor * Aquatic-Life Acute Water-Quality Criteria*

*AML = Dilution Factor * Aquatic-Life Chronic Water-Quality Criteria*

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Harry T. Stewart, P.E., Director
Water Division
New Hampshire Department of Environmental Services
P.O. Box 95
Concord, NH 03302-0095

Dear Mr. Stewart:

Enclosed is a copy of the following draft permit prepared pursuant to 40 Code of Federal Regulations (CFR), Section 124.6. This permit was prepared jointly by our respective staffs.

Permit Number	Name of Permittee
NH0110001	**New Hampshire Fish and Game Department - Milford Hatchery**

The U.S. Environmental Protection Agency (EPA) may not issue a permit until a state certification is granted or waived in accordance with the Clean Water Act (CWA), Section 401(a)(1) and pursuant to 40 CFR Section 124.55. By transmittal of the above draft permit, we are requesting that the State make a determination concerning certification. The State will be deemed to have waived its right to certify unless certification is received within 60 days of receipt of this request.

This certification should include the specific conditions necessary to assure compliance with applicable provisions of the Clean Water Act, Sections 208(e), 301, 302, 303, 306 and 307 and with appropriate requirements of State law. In addition, you should provide a statement of the extent to which each condition of the draft permit can be made less stringent without violating the requirements of State law. Failure to provide this statement for any condition waives the right to certify or object to any less stringent condition which may be established by EPA during the permit issuance process. If you believe that any conditions more stringent than those contained in the draft permit are necessary to meet the requirements of either the CWA or State law, you should include such conditions and, in each case, cite the CWA or State law reference upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition.

Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through the applicable procedures of 40 CFR Part 124.

The enclosed draft permit has been sent out on public notice for comment by the public. The period for public comment will expire on . Upon review of the public comments and receipt of your certification or waiver thereof, EPA proposes to issue or deny this permit.

I would appreciate receiving your certification as soon as possible, but no later than 60 days of receipt of this letter. If you have any questions, please contact Mr. Frederick B. Gay of my staff at (617) 918-1297.

Thank you for your cooperation.

Sincerely yours,

Brian Pitt, Team Leader
NPDES Permit Unit
Office of Ecosystem Protection

Enclosures

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Lee E. Perry, Executive Director
New Hampshire Fish and Game Department
11 Hazen Drive
Concord, New Hampshire 03301-6500

Re: Public Notice
NPDES Application No. NH0110001
(for) Milford State Fish Hatchery

Dear Mr. Perry:

In accordance with Section 402 of the Clean Water Act, as amended, the U.S. Environmental Protection Agency (EPA), New England Region intends to issue a National Pollutant Discharge Elimination System (NPDES) permit to your facility in the near future.

The enclosed draft permit, developed by this office and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) contains effluent limitations and conditions to assure that the discharge receives adequate treatment and will not violate State water-quality standards. Also, enclosed is the Statement of Basis or Fact Sheet which briefly describes the basis for the permit conditions. You are encouraged to closely review all terms and conditions contained in this draft.

If you have any questions or concerns regarding this draft permit or if you believe the draft permit does not accurately describe your discharge or contain a reasonable compliance schedule (where appropriate), you should notify each office, in writing, no later than the last day of the public comment period. Particular attention should be given to three sections in Part I of the draft permit. They are Section A. --Effluent Limitations and Monitoring Requirements including all superscripts (footnotes) and Best Management Practices Plan, Section B. --Special Conditions and Section D. --Reopener Clause because they were tailored to protect the receiving water (Purgatory Brook) from pollutants in the hatchery's discharge. The remaining sections, Section C. --Monitoring and Reporting Conditions and Section E.--State Permit Conditions, are typical boiler plate conditions placed in every permit. In addition, Part II (General Conditions and Definitions) of the draft permit is a compilation of regulations excerpted from 40 Code of Federal Regulations, Parts 122 and 503; therefore, review of that part is unwarranted. Materials in Part II are common to all issued NPDES permits.

The law requires public notice to be given of the preparation of a draft permit to allow opportunity for public comments and, if necessary, a public hearing. Concurrently with this letter EPA and the NHDES-WD have proceeded to publish the public notice of the proposed issuance of this permit. In order to preserve the right to a formal hearing to contest provisions in a final permit, all persons, including the applicant, who believe any condition of the draft is inappropriate must raise all reasonably ascertainable issues and submit all reasonable available arguments supporting their position by the close of the public comment period (40 Code of Federal Regulations, Section 124.13). Following the close of the public comment period, your final permit will be issued provided no new substantial questions are raised. If new questions develop during the comment period, it may be necessary to draft a new permit, revise the Statement of Basis or Fact Sheet, and/or reopen the public comment period.

If you have any questions or would like to discuss any of the conditions contained in this draft permit, do not hesitate to contact Mr. Frederick B. Gay at (617) 918-1297.

Sincerely,

Brian Pitt, Team Leader
NPDES Permit Unit
Office of Ecosystem Protection

Enclosures: Draft Permit and Fact Sheet with related Attachments

cc: NHDES-WD
Mr. Robert S. Fawcett, Supervisor Fish Hatcheries, New Hampshire Fish and Game Department, 11 Hazen Drive, Concord, New Hampshire 03301-6500
Mr. Richard Prunier, Superintendent Milford Fish Hatchery, New Hampshire Fish and Game Department, RR3, Box 122, North River Road, Milford, New Hampshire 03055
Ms. Terra McParland, FISHPRO Consulting Engineers & Scientists 5201 South Sixth Street Road, Springfield, Illinois 62703-5143
Mr. Paul L. Adams, 23 Kelleys Corner Road, Chichester, NH 03234

PERMIT ROUTING SHEET FOR NEW HAMPSHIRE PERMIT
PUBLIC NOTICE - STATE CERTIFICATION

PERMIT NAME: New Hampshire Fish and Game Department, Milford Hatchery

PERMIT NUMBER: NH0110001

MAJOR/MINOR: Minor (Issued July 30, 1975 and Expired on June 1, 1980)

COMMENTS: None.

NAME	INITIALS	DATE IN	DATE OUT
Permit Engineer: **FREDERICK B. GAY**			
Brian Pitt[1], QA Review			
Jay Pimpare, Pretreatment (if necessary)			
Thelma Murphy, Sludge (if necessary)			
Joy Hilton, NH Compliance			
Norma Mason, Compliance - PCS			
Permit Engineer[2]: **FREDERICK B. GAY**			
Shelley Puleo/Sybil Anderson, Mail Public Notice, Certification Request Letter			

[1] - Eric Nelson may be consulted at this time regarding EFH issues if necessary.
[2] - Permit Engineer to confirm that all necessary concerns of NHDES-WD and the permittee (as necessary) have been addressed to the extent possible with respect to the Fact Sheet and the draft permit prior to Public Noticing.

NEW HAMPSHIRE DEPARTMENT OF
ENVIRONMENTAL SERVICES
WATER DIVISION
P.O. BOX 95
CONCORD, NEW HAMPSHIRE 03302-0095

U.S. ENVIRONMENTAL PROTECTION AGENCY
EPA-NEW ENGLAND
OFFICE OF ECOSYSTEM PROTECTION
ONE CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

JOINT PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO THE WATERS OF THE UNITED STATES UNDER SECTIONS 301 AND 402 OF THE CLEAN WATER ACT (THE "ACT"), AS AMENDED, A REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE ACT, AND AN ISSUANCE OF A STATE SURFACE WATER PERMIT UNDER NH RSA 485-A:13, I(a).

DATE OF NOTICE:

PERMIT NUMBER: NH0110001

PUBLIC NOTICE NUMBER:

NAME AND MAILING ADDRESS OF APPLICANT:

New Hampshire Fish and Game Department
11 Hazen Drive
Concord, New Hampshire 03301-6500

NAME, MAILING ADDRESS AND LOCATION OF FACILITY WHERE DISCHARGE OCCURS:

Facility Location

Milford State Fish Hatchery
408 North River Road
Milford, New Hampshire

Mailing Address

New Hampshire Fish and Game Department
Milford State Fish Hatchery
% Superintendent
RR3, Box 122, North River Road
Milford, New Hampshire 03055

RECEIVING WATER: Purgatory Brook, a tributary to the Souhegan River

RECEIVING WATER CLASSIFICATION: Class B

PROPOSED ACTION, TYPE OF FACILITY AND DISCHARGE LOCATION:

The applicant, New Hampshire Fish and Game Department (NHF&GD), has applied to the U.S. Environmental Protection Agency, New England Office (EPA-New England) for reissuance of its NPDES permit for the discharge of culture water from its Milford Fish Hatchery, a concentrated aquatic animal production (CAAP) facility. They are regulated as a CAAP as defined at 40 Code of Federal Regulations, Section 122.24. Presently, this state owned and operated facility is engaged in the hatching and rearing of various species of trout from eggs to yearlings, for fisheries management (stocking) in selected New Hampshire water bodies. Salmon are not currently reared, though the facility has the capacity to raise landlocked salmon. At this facility, the entire flow of fish culture water passes through settling ponds prior to discharge into the designated receiving water (Purgatory Brook) which, after a short distance, flows into Souhegan River, a tributary of the Merrimack River.

The proposed permit contains numeric discharge limitations for Total Suspended Solids (TSS), Formaldehyde and pH which are necessary to control the discharge of culture water at this facility and are consistent with the State's Surface Water Quality Regulations and other ACT regulations. The proposed permit also contains other effluent limitations and conditions such as a Best Management Practices (BMP) Plan necessary to prevent, control and abate the discharge of solids as well as biological, chemical, and medicinal pollutants from reaching the receiving water. This combination of numeric limits and the BMP Plan will ensure that the State's Class B water-quality standards are maintained in the receiving water. Additional monitoring requirements in the proposed permit are: Flow, Five-Day Biochemical Oxygen Demand, Total Ammonia Nitrogen, Total Phosphorus, Dissolved Oxygen, Water Temperature, Percent Dissolved Oxygen Saturation, Fish Biomass, Fish Feed and Efficiency of Fish Food.

The permit will expire five years from the effective date of its issuance.

PREPARATION OF THE DRAFT PERMIT:

The U.S. Environmental Protection Agency, Region I (EPA-New England) and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) have cooperated in the development of a draft permit for the above identified facility. The effluent limits and permit conditions imposed have been drafted to assure that State’s Surface Water Quality Regulations and provisions of the Clean Water Act will be met. EPA-New England has formally requested that the State certify the draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

INFORMATION ABOUT THE DRAFT PERMIT:

A fact sheet or a statement of basis (describing the type of facility; type and quantity of wastes; a brief summary of the basis for the draft permit conditions; and significant factual, legal and policy questions considered in preparing the draft permit) may be obtained at no cost by writing or calling EPA-New England's contact person named below:

Mr. Frederick B. Gay
U.S. Environmental Protection Agency
Office of Ecosystem Protection
NPDES Permit Unit
One Congress Street
Suite 1100 (Mail Code: CPE)
Boston, Massachusetts 02114-2023
Telephone No.: (617) 918-1297
FAX No.: (617) 918-0297

The administrative record containing all documents relating to the draft permit is on file and may be inspected at the EPA-New England's Boston office mentioned above between 9:00 a.m. and 5:00 p.m., Monday through Friday, except holidays.

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of the draft permit is inappropriate, must raise all issues and submit all available arguments and all supporting material for their arguments in full by , to the U.S. Environmental Protection Agency, Mr. Roger A. Janson, Director NPDES Permit Program, One Congress Street, Suite 1100 (Mail Code: CPE), Boston, Massachusetts 02114-2023. Any person, prior to such date, may submit a request in writing to EPA-New England and the State Agency for a public hearing to consider the draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA-New England's Boston office.

FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

HARRY T. STEWART, P.E., DIRECTOR
WATER DIVISION
NEW HAMPSHIRE DEPARTMENT OF
ENVIRONMENTAL SERVICES

LINDA M. MURPHY, DIRECTOR
OFFICE OF ECOSYSTEM PROTECTION
U.S. ENVIRONMENTAL PROTECTION AGENCY
EPA-NEW ENGLAND