AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

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

New Hampshire Fish and Game Department

is authorized to discharge from a facility located at

New Hampton State Fish Hatchery
204 Main Street
New Hampton, New Hampshire

to receiving water named

Dickerman Brook, Tributary to the Pemigewasset River
(Hydrologic Basin Code: 01070001)

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

This permit shall become effective on the data of signature.

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

This permit supersedes the permit issued on May 27, 2004.

This permit consists of 21 pages in Part I including effluent limitations, monitoring requirements, etc., and 25 pages in Part II including Standard Conditions.

Signed this 9th day of August, 2011

/s/ Signature on File

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Stephen S. Perkins, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency
Boston, Massachusetts

Part I.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge culture water and treated hatchery effluent, from outfall serial number 001 into Dickerman Brook, upstream of Dickerman Pond. Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the effluent.

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow (MGD)	Report	---	1/Week	Flow Meter or Weir Calculation[1]
TSS	Report lbs/day 10 mg/l	Report lbs/day 15 mg/l	1/Quarter[2]	24-Hour Composite
BOD_5	Report lbs/day Report mg/l	Report lbs/day Report mg/l	1/Quarter[2]	24-Hour Composite
Total Phosphorus as P[3]	Report lbs/day Report mg/l	Report lbs/day Report mg/l	1/Quarter[2] and as directed in Part I.C	24-Hour Composite
Total Ammonia as N	Report mg/l	Report mg/l	1/Quarter[2]	24-Hour Composite
Total Phosphorus as P[3]; Receiving water	-	Report mg/l	1/Month June - September	Grab
Chlorophyll-*a*; Receiving water	-	Report mg/l	1/Month June - September	Grab
pH Range[4]	6.5 to 8.0 standard units (see Part I.E.1.a)		1/Week	Grab
Fish Biomass on Hand[5], lbs	Report	---	1/Month	Calculation
Fish Feed Used, lbs	Report	---	1/Month	Calculation
Efficiency of Fish Feed Used[6], Percent	Report	---	1/Month	Calculation
Total Residual Chlorine[7] (when Chloramine-T in use), mg/l	0.011	0.019	1/Day	Grab
Hydrogen Peroxide (when in use), mg/l	---	0.7	1/Day	Grab

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Formalin Absent				
Dissolved Oxygen[8], mg/l	---	Report	1/Month	Grab
Dissolved Oxygen Saturation[8], Percent	---	Report	1/Month	Grab
Water Temperature[8], ˚F	---	Report	1/Month	Grab
Formalin Present				
Formaldehyde[9], mg/l	1.6	4.6	1/Week	Grab
Dissolved Oxygen[9], mg/l	---	Report	1/Week	Grab

NOTE: See pages 9 through 10 for explanation of the various footnotes.

Part I.
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge culture water and treated hatchery effluent from outfall serial number 002 into Dickerman Brook, upstream of Dickerman Pond. Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the effluent.

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow (MGD)	Report	---	1/Week	Flow Meter or Weir Calculation[1]
TSS	Report lbs/day 10 mg/l	Report lbs/day 15 mg/l	1/Quarter[2]	24-Hour Composite
BOD_5	Report lbs/day Report mg/l	Report lbs/day Report mg/l	1/Quarter[2]	24-Hour Composite
Total Phosphorus as P[3]	Report lbs/day Report mg/l	Report lbs/day Report mg/l	1/Quarter[2] except as directed in Part I.C	24-Hour Composite
Total Ammonia as N	Report mg/l	Report mg/l	1/Quarter[2]	24-Hour Composite
Total Phosphorus as P[3]; Receiving water	-	Report mg/l	1/Month June - September	Grab
Chlorophyll-*a*; Receiving water	-	Report mg/l	1/Month June - September	Grab
pH Range[4]	6.5 to 8.0 standard units (see Part I.E.1.a)		1/Week	Grab
Fish Biomass on Hand[5], lbs	Report	---	1/Month	Calculation
Fish Feed Used, lbs	Report	---	1/Month	Calculation
Efficiency of Fish Feed Used[6], Percent	Report	---	1/Month	Calculation
Total Residual Chlorine[7] (when Chloramine-T in use), mg/l	0.011	0.019	1/Day	Grab
Hydrogen Peroxide (when in use), mg/l	---	0.7	1/Day	Grab

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Formalin Absent				
Dissolved Oxygen[8], mg/l	---	Report	1/Month	Grab
Dissolved Oxygen Saturation[8], Percent	---	Report	1/Month	Grab
Water Temperature[8], ˚F	---	Report	1/Month	Grab
Formalin Present				
Formaldehyde[9], mg/l	1.6	4.6	1/Week	Grab
Dissolved Oxygen[9], mg/l	---	Report	1/Week	Grab

NOTE: See pages 9 through 10 for explanation of the various footnotes.

Part I.
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

3. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge culture water and treated hatchery effluent from outfall serial number 004 into Dickerman Brook, downstream of Dickerman Pond. Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the effluent.

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow (MGD)	Report	---	1/Week	Flow Meter or Weir Calculation[1]
TSS	Report lbs/day 10 mg/l	Report lbs/day 15 mg/l	1/Quarter[2]	24-Hour Composite
BOD_5	Report lbs/day Report mg/l	Report lbs/day Report mg/l	1/Quarter[2]	24-Hour Composite
Total Phosphorus as P[3]	Report lbs/day Report mg/l	Report lbs/day Report mg/l	1/Quarter[2] except as directed in Part I.C	24-Hour Composite
Total Ammonia as N	Report mg/l	Report mg/l	1/Quarter[2]	24-Hour Composite
Total Phosphorus as P[3]; Receiving water	-	Report mg/l	1/Month June - September	Grab
Chlorophyll-*a*; Receiving water	-	Report mg/l	1/Month June - September	Grab
pH Range[4]	6.5 to 8.0 standard units (see Part I.E.1.a)		1/Week	1/Week
Fish Biomass on Hand[5], lbs	Report	---	1/Month	Calculation
Fish Feed Used, lbs	Report	---	1/Month	Calculation
Efficiency of Fish Feed Used[6], Percent	Report	---	1/Month	Calculation
Total Residual Chlorine[7] (when Chloramine-T in use), mg/l	0.011	0.019	1/Day	Grab
Hydrogen Peroxide (when in use), mg/l	---	0.7	1/Day	Grab

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Formalin Absent				
Dissolved Oxygen[8], mg/l	---	Report	1/Month	Grab
Dissolved Oxygen Saturation[8], Percent	---	Report	1/Month	Grab
Water Temperature[8], ˚F	---	Report	1/Month	Grab
Formalin Present				
Formaldehyde[9], mg/l	1.6	4.6	1/Week	Grab
Dissolved Oxygen[9], mg/l	---	Report	1/Week	Grab

NOTE: See pages 9 through 10 for explanation of the various footnotes.

Part I.
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

4. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge from outfall serial numbers 003 and 005 routine maintenance water, rainwater, and snowmelt (conveys water from Dickerman Pond to the various rearing units in the lower hatchery) into Dickerman Brook, downstream of Dickerman Pond. Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the effluent.

This discharge shall be free of debris such as sticks, twigs, leaves, paper, plastics, dead aquatic animals, etc. Disposal of debris and aquatic organisms from this discharge shall be in accordance with Part I.A.11. on page 11 of this permit.

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Maximum	Maximum Daily	Measurement Frequency	Sample Type
Flow (MGD)	---	Report	Each Event	Estimate Total Daily
TSS	---	Report	Each Event	Grab
pH Range[4]	6.5 to 8.0 Standard Units (See Part I.E.1.a.)		Each Event	Grab
Discharge Event, days	Report	---	1/Month	Report Total Number of Days[10]

NOTE: See pages 9 through 10 for explanation of the various footnotes.

EXPLANATION OF FOOTNOTES APPLICABLE TO Parts I.A.1-4. on pages 2 – 8

(1) The effluent flow shall be continuously measured and recorded using a flow meter and totalizer. In lieu of an effluent flow meter, weir calculations may be used to report effluent flow. To obtain approval for flow measurement method(s) other than the designated method, the permittee shall submit a written description of the proposed method(s) to EPA-New England and receive written authorization via certified letter before proceeding.

(2) Once per quarter is defined as a sample collected once during each calendar quarter ending March 31st, June 30th, September 30th and December 31st each year. A sample is required each calendar quarter that a discharge occurs on more than one day. Analytical results shall be submitted with that month's DMR.

(3) The minimum level (ML) for phosphorus is defined as 10 micrograms per liter (µg/l). EPA defines the minimum level as the level at which the entire analytical system shall give recognizable signal and calibration points. This value is the minimum level for phosphorus using EPA approved methods found in the most currently approved version(s) of Standard Methods for the Examination of Water and Wastewater. One of these methods must be used to determine total phosphorus. Sample results less than 10 µg/l shall be reported as zero on the DMR.

(4) Limit is a State Certification Requirement.

(5) In addition to reporting fish biomass on hand, the permittee shall submit a written report with its monthly DMR of any significant import and/or export of fingerling or greater size fish which occurred during the reporting month. The report shall include the dates and quantities of each import and/or export. In lieu of a written report, the permittee is allowed to submit a copy of the permittee's appropriate in house "monthly reports form" as long as that form contains information relevant to any significant import and/or export of fingerling or greater size fish which occurred during the reporting month. This report excludes any fish mortality data as that is covered separately under Part I.A.9.

(6) Efficiency of Fish Feed Used = [Fish Weight Gain (lbs)/Fish Food Fed (lbs)] x 100%

(7) The minimum level (ML) for total residual chlorine is defined as 20 µg/l. For total residual chlorine, this is the minimum level for chlorine using EPA-approved Method 4500-Cl Methods E and G found in the most currently approved version(s) Standard Methods for the Examination of Water and Wastewater. One of these methods must be used to determine total residual chlorine. Sample results of 20 µg/l or less shall be reported as zero on the DMR, since compliance/non-compliance is determined based on the ML.

(8) Dissolved oxygen samples shall be collected from a discharge that is free of Formalin. Report the MINIMUM DAILY Dissolved Oxygen (DO) concentration for the month, and the corresponding DO percent saturation and effluent temperature associated with the minimum monthly DO sampling result.

(9) In order to capture the maximum concentration of Formaldehyde in the effluent, sampling for Formaldehyde shall occur as soon as possible after any application of Formalin to the hatchery's culture water, after accounting for its detention time through the raceways, tanks and piping networks to the outfall. The detention time calculation shall take into account dosage, injection point; facility flow (both velocity and volume), etc. where possible [See Part I.B.4.e.ii.]. A sample for DO shall be collected concurrently with that for Formaldehyde and reported under the appropriate DO column on the monthly DMR. Report the MINIMUM DAILY DO concentration sampling result for the month.

Formaldehyde shall be tested using Method 1667, Revision A, or 8315A. The ML for Formaldehyde is 50 µg/l. Alternate analytical method(s) shall be approved by EPA at the permittee's written request as long as the permittee utilizes method(s) that obtain MLs that are equal to or less than 50 µg/l. Such a request, if granted, will be considered a minor modification to the permit.

(10) Discharge event is the total number of days a discharge occurs during the month. The No Data Indicator Code (NODI) for no discharge ("C") shall be entered on the monthly DMR form when there is no discharge.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Continued)

5. The discharge shall not cause a violation of the water quality standards of the receiving water.

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

7. Toxic Controls

   a. No components of the effluent shall result in any demonstrable harm to aquatic life or violate any water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards, with the permittee being so notified.

b. The permittee shall not discharge into the receiving water any pollutant or combination of pollutants in toxic amounts.

8. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable standard or limitation promulgated or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the "CWA", if the effluent standard or limitation so issued or approved:

   a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

   b. Controls any pollutants not limited in the permit.

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

9. The permittee shall notify EPA and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) within 24 hours upon the occurrence of any mortality of greater than 25 percent in any aquatic species under culture at the facility (excluding larval fish and eggs) during a single mortality event in accordance with reporting requirements in Standard Conditions, Part II.D.1.e.

10. The permittee shall inform EPA and NHDES-WD in writing at least ninety (90) days before any change of the fish species to be raised or development stage to be attained at this facility, and before any increase in annual fish biomass greater than 20 percent.

11. At outfalls 003 and 005, all live fish and other aquatic organisms found in the discharge shall be returned to the natural habitat. In addition, all dead aquatic organisms, such as crayfish, fish, and frogs, etc. as well as all solid materials, such as sticks, twigs, leaves, paper, plastics, etc. found in the discharge shall be disposed of in accordance with all existing Federal, State, and/or local laws and regulations that apply to waste disposal. Such material shall not be discharged to the receiving water.

12. There shall be no direct discharge of "cleaning water." Cleaning water is defined as any water from the hatchery house, raceway, pond, canal, circular tank, etc. which contains settled solids that have accumulated on the bottom of such structures that is discharged, absent some form of solids removal, directly to the receiving water during periodic cleaning operations. The discharge of "cleaning water" to a settling pond, lagoon, empty raceway and/or clarifier for the purposes of settling solids including the temporary storage of those solids is allowed. The discharges of any decant water that accumulates above these solids and/or any water that flows slowly over these solids is allowed.

13. Any hypochlorite solution applied to the surface of any rearing equipment exposed to culture water must be neutralized prior to that equipment being exposed to culture water.

14. There shall be no discharge of iodine and/or phosphoric acid solution(s) to the receiving water.

15. The permittee shall use only those Aquaculture Drugs and Chemicals approved by the U.S. Food and Drug Administration (USFDA) and in accordance with labeling instructions or as allowed in Part I.B.1 immediately below. EPA will defer to the USFDA regarding whether or not a particular drug and/or chemical is used in accordance with appropriate USFDA requirements.

    Each year with the December Discharge Monitoring Report (to be postmarked by January 15th), the permittee shall certify in writing that all Aquaculture Drugs and Chemicals used at the hatchery during that calendar year were drugs approved by the USFDA and were used in accordance with FDA labeling or as allowed under Part I.B.1 "Drug Use."

B. NARRATIVE EFFLUENT LIMITATION REQUIREMENTS

1. Drug Use

    Except as noted below, the permittee must notify EPA and the NHDES-WD in accordance with the following procedures of any investigational new animal drug (INAD) or extra-label drug use which may lead to a discharge of the drug to waters of the United States as stipulated below. However, reporting is not required for any INAD or extra-label drug use that has been previously approved by the US Food and Drug Administration (USFDA) for a different species or disease if the INAD or extra-label use is at or below the approved dosage and involves similar conditions of use.

    a. The permittee must provide to EPA and NHDES-WD a written report of any impending INAD use within 7 days of agreeing or signing up to participate in an INAD study. The written report must identify the INAD to be used, method of use, the dosage, and the disease or condition the INAD is intended to treat.

    b. For INADs and extra-label drug uses, the permittee must provide an oral report to EPA and NHDES-WD as soon as possible, preferably in advance of use, but no later than 7 days after initiating use of that drug. The oral report must identify the drugs used, method of application, and the reason for using that drug.

    c. For INADs and extra-label drug uses, the permittee must provide a written report to EPA and NHDES-WD within 30 days after initiating use of that drug. The

written report must identify the drug used and include: the reason for treatment, date(s) and time(s) of the addition (including duration), method of application; and the amount added.

2. Structural Failure and/or Damage to Culture Units

The permittee must notify EPA and NHDES-WD in accordance with the following procedures when there is a "reportable failure" in, or damage to, the structure of an aquatic animal containment system (i.e., culture unit) or its wastewater treatment system that results in an unanticipated material discharge of pollutants to waters of the United States.

a. For this facility, a "reportable failure" applies only to active culture units (ones that contain fish and flowing water) and their ancillary components and refers to the collapse or damage of a rearing unit or its wastewater treatment system; damage to pipes, valves, and other plumbing fixtures; and damage or malfunction to screens or physical barriers in the system, which would prevent the rearing unit from containing water, sediment (e.g., settled solids), and the aquatic animals being reared. Wastewater treatment systems include ponds or settling tanks to which cleaning water is directly discharged and culture units which are used for the temporary storage of settled solids removed from active culture units.

b. The permittee must provide an oral report to EPA and NHDES-WD within 24 hours of discovery of any reportable failure as defined in item 2.a. or damage that results in a material discharge of pollutants. The report shall describe the cause of the failure or damage in the containment system and identify materials that have been released to the environment as a result of that failure.

c. The permittee must provide a written report to EPA and NHDES-WD within 5 days of discovery of the failure or damage documenting the cause, an estimate of the material released as a result of the failure or damage, and steps being taken to prevent a recurrence of such an event.

3. Spills

In the event a spill of drugs, pesticides or feed occurs that results in a discharge to water of the United States, the permittee must provide an oral report of the spill to EPA and NHDES-WD within 24 hours of its occurrence and a written report within 5 days to the above Agencies. The report shall include the identity and quantity of the material spilled.

4. Best Management Practices (BMP) Plan

The permittee must implement and maintain a BMP Plan (hereafter referred to as the

"PLAN") upon the permit's effective date that describes how the following requirements will be achieved. The permittee will make the current version of that PLAN available to EPA and/or the NHDES-WD upon request. Within 90 days following the permit's effective date, the permittee shall certify in writing to EPA and NHDES-WD that a written PLAN has been developed in accordance with requirements listed in this part and must submit that certification with the appropriate DMR.

Further, the permittee shall amend the PLAN within 30 days following any change in facility design, construction, operation, or maintenance which affects the potential for the discharge of pollutants into surface waters or after the EPA and/or NHDES-WD determine certain changes are required following an event that results in non-compliance, a facility inspection, or review of the PLAN. The PLAN shall include a written documentation of each amended change along with a brief description stating the reason for the amendment; include the date the change triggering the amendment occurred. The permittee shall also document the date the amended PLAN was implemented.

The PLAN must address, at a minimum, the following requirements:

a. Solids Control

i. Employ efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth in order to minimize potential discharges of uneaten feed and waste products to waters of the United States.

ii. In order to minimize the discharge of accumulated solids from settling tanks, basins and production systems, identify and implement procedures for routine cleaning of rearing units and settling tanks, and procedures to minimize any discharge of accumulated solids during the inventorying, grading and harvesting of aquatic animals in the production system. Part I.A.12. prohibits the direct discharge of cleaning water absent some form of solids removal prior to discharge.

iii. If any material is removed from the rearing units and/or settling tanks, describe where it is to be placed and the techniques used to prevent it from re-entering the surface waters from any on-site storage. If the material is removed from the site, describe who received the material and its method of disposal and/or reuse.

iv. Remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the United States, except in cases where EPA and NHDES-WD authorizes such discharges in order to

benefit the aquatic environment.

b. Biological Control

i. Describe in detail the precautions that will be exercised by the facility to prevent aquatic organisms that are neither indigenous nor naturalized to New Hampshire waters from becoming established in the local surface waters.

ii. Provide a description for the storage and treatment of discharges to prevent biological pollution (non-indigenous organisms including fish parasites and fish pathogens and dead or dying fish) from entering the receiving water when the cultured fish population or a portion thereof are showing signs of stress.

c. Materials Storage

i. Ensure proper storage of drugs, pesticides, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides or feed to water of the United States.

ii. Implement procedures for properly containing, cleaning, and disposing of any spilled material.

d. Structural Maintenance

i. Inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.

ii. Conduct regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.

e. Recordkeeping

i. In order to show how representative feed conversion ratios were calculated; maintain records for aquatic animal rearing units documenting the feed amounts and estimates of the number and weight of aquatic animals.

ii. In order to show how the maximum concentration of Formaldehyde in the discharge was derived, maintain records by outfall of the approach/analyses used to determine the elapsed time from its dosage to its maximum (peak) effluent concentration.

iii. Keep records that document the frequency of cleaning, inspections, repairs and maintenance. In addition, records of all medicinal and chemical usage

(i.e., for each occurrence) at the facility shall be recorded and filed in the PLAN to include the dosage concentration, frequency of application (hourly, daily, etc.) and the duration (hours, days) of treatment, and the method of application.

f. Training

i. In order to ensure the proper clean-up and disposal of material, adequately train all relevant facility personnel in spill prevention and how to respond in the event of a spill.

ii. Train staff on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment.

g. Aquaculture Drugs and Chemicals Used for Disease Control and/or Prevention

List in the PLAN all aquaculture drugs and chemicals including all INAD and extra-label drugs and for each, identify:

i. Product name and manufacturer.

ii. Chemical formulation.

iii. Purpose/reason for its use.

iv. Dosage concentration, frequency of application (hourly, daily, etc.) and the duration (hours, days) of application.

v. The method of application.

vi. Material Safety Data Sheets (MSDS) and Chemical Abstracts Service Registry number for each active therapeutic ingredient.

vii. The method or methods, if any, used to detoxify the wastewater prior to its discharge.

viii. The persistence and toxicity in the environment.

ix. Information on the USFDA approval for the use of said medication or chemical on fish or fish related products used for human consumption.

x. Available aquatic toxicity data (vendor data, literature data, etc.); Lethal Concentration to 50 percent test organisms (LC_{50}) at 48 and/or 96 hours and No Effect Level (NOEL) concentrations for typical aquatic

organisms (salmon, trout, daphnia, fathead minnow, etc.).

5. General Definitions

a. Approved Dosage - the dose of a drug that has been found to be safe and effective under the conditions of a new animal drug application.

b. Aquatic Animal Containment System - a culture or rearing unit such as a raceway, pond, tank, net or other structure used to contain, hold or produce aquatic animals. The containment system includes structures designed to hold sediments and other materials that are part of a wastewater treatment system.

c. Drug - any substance defined as a drug in section 201(g)(2) of the Federal Food, Drug and Cosmetic Act (21 U.S.C. 321).

d. Extra-label Drug Use - a drug approved under the Federal Food, Drug and Cosmetic Act that is not used in accordance with the approved label direction, See 21 CFR Part 530.

e. Investigational New Animal Drug (INAD) - drug for which there is a valid exemption in effect under section 512(j) of the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. 360b(j), to conduct experiments.

f. New Animal Drug Application - defined in 512(b)(1) of the Federal Food, Drug, and Cosmetic Act [21 U.S.C. 360(b)(1)].

g. Pesticide - any substance defined as a "pesticide" in section 2(u)of the Federal Insecticide, Fungicide, and Rodenticide Act [7 U.S.C. 136(u)].

C. SPECIAL CONDITIONS

Ambient Monitoring of Dickerman Pond and Dickerman Brook

The permittee shall conduct ambient monitoring once per month from June through September each year for the duration of the permit at the following locations: a mid-stream location in Dickerman Brook upstream of Outfall 001 at a location representative of ambient conditions prior to mixing with effluent from the hatchery; at the point of greatest depth in Dickerman Pond; and a mid-stream location in Dickerman Brook downstream of Outfall 004 at a location representative of the receiving water after complete mixing of effluent from the hatchery. At all three locations, the permittee shall report total phosphorus, chlorophyll-*a*, dissolved oxygen concentration, percent dissolved oxygen saturation, and temperature. In Dickerman Brook, grab samples shall be collected for all parameters. In Dickerman Pond, a 3 meter depth-integrated composite

sample shall be collected for total phosphorus and chlorophyll-*a*. The permittee shall also obtain a Secchi disk reading in Dickerman Pond. Dissolved oxygen and temperature measurements shall be made at one foot intervals from one foot below the surface to approximately one foot off the pond bottom. The depth-integrated composite sample shall be collected from the pond's water surface to a point no closer than 3 feet above the pond's bottom sediments. If the depth at the deepest point does not allow for the collection of a 3 meter depth-integrated composite sample, collect a depth-integrated composite sample from the pond's water surface to a point 3 feet above the pond's bottom sediments recording the depth (in feet or meters) over which the depth-integrated water sample was collected. To the extent practicable, ambient monitoring shall be collected following a minimum of 72-hours with no precipitation (i.e., dry weather). Sampling for dissolved oxygen shall be collected between 10:00 am and 2:00 pm. Each year, results from all monitoring shall be reported with the DMRs for October which are due to the Agencies by November 15th.

For purposes of analysis and reporting, chlorophyll-*a* analysis shall be performed using ***Standard Methods for the Examination of Water and Wastewater, 20th*** or subsequent Edition(s), Method 10200 H Chlorophyll using a modification by **Strickland, J.D.H. and Parsons, T.R., *A Practical Handbook of Sea Water Analysis*, Fisheries Research Board of Canada, Bulletin No. 167, 1972, 310 pages** and total phosphorus shall be performed using a method with a ML of 10 µg/l. This ML is exactly the same ML used for analyzing total phosphorus in effluent samples [See footnote (3) on page 8 of this permit]. The modification to Method 10200 H utilizes an alternative filter medium (i.e., replaces glass fiber or membrane filter with a nitrocellulose membrane filter) and that modification can be found in the Standard Operating Procedures for chlorophyll-*a* performed by the NHDES-WD Limnology Center.

D. MONITORING AND REPORTING

1. For a period of one year from the effective date of the permit, the permittee may either submit monitoring data and other reports to EPA in hard copy form or report electronically using NetDMR, a web-based tool that allows a permittee to electronically submit discharge monitoring reports (DMRs) and other required reports via a secure internet connection. Beginning no later than one year after the effective date of the permit, the permittee shall begin reporting using NetDMR, unless the facility is able to demonstrate a reasonable basis that precludes the use of NetDMR for submitting DMRs and reports. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

    a. Submittal of Reports Using NetDMR

        NetDMR is accessed from: http://www.epa.gov/netdmr. Within one year of the effective date of this permit, the permittee shall begin submitting DMRs

and reports required under this permit electronically to EPA using NetDMR, unless the facility is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt-out request").

DMRs shall be submitted electronically to EPA no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA or to NHDES.

Notification required herein or in Part II shall be submitted to EPA and NHDES at the address listed in Part I.D.1.c below.

b. Submittal of NetDMR Opt-Out Requests

Opt-out requests must be submitted in writing to EPA for written approval at least sixty (60) days prior to the date a facility would be required under this permit to begin using NetDMR. This demonstration shall be valid for twelve (12) months from the date of EPA approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to EPA unless the permittee submits a renewed opt-out request and such request is approved by EPA. All opt-out requests should be sent to the following addresses:

U.S. Environmental Protection Agency
Water Technical Unit
Attn: NetDMR Coordinator
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912

and

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

c. Submittal of Reports in Hard Copy Form

Monitoring results shall be summarized for each calendar month and reported on separate hard copy DMRs postmarked no later than the 15th day of the month following the completed reporting period. All reports required under

the permit shall be submitted as an attachment to the DMRs. Signed and dated original DMRs and all other reports or notifications required herein or in Part II shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
Water Technical Unit (OES04-SMR)
5 Post Office Square - Suite 100
Boston, MA 02109-3912

Duplicate signed copies of all reports or notifications required above shall be submitted to the State at the following address:

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

2. Any verbal reports, if required in Parts I and/or II of this permit, shall be made to both EPA and to NHDES-WD.

E. STATE PERMIT CONDITIONS

1. The permittee shall comply with the following conditions which are included as State Certification requirements.

   a. The pH of the discharge shall be in the range of 6.5 to 8.0 standards units (s.u.) unless the upstream ambient pH in the receiving water is outside of this range, and is not altered by the facility's discharge or activities. If the permittee's discharge pH is lower than 6.5 S.U., the permittee may demonstrate compliance by showing that the discharge pH is either higher than, or no more than 0.5 S.U. lower than, the ambient upstream river water pH. For this demonstration, the upstream river water sample must be collected on the same day as the discharge pH is measured. The location where the upstream ambient pH sample is collected must be representative of the upstream conditions unaffected by the facility's discharge(s) or activities. Results of the ambient upstream river water pH sampling that are obtained to determine compliance with this limit shall be submitted as an attachment with the DMR.

   b. The permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification or interfere with the uses assigned to said water by the New Hampshire Legislature (RSA 485-A:12).

2. This NPDES Discharge Permit is issued by the EPA under Federal and State law. Upon final issuance by the EPA, the NHDES-WD may adopt this permit, including all terms and conditions, as a State permit pursuant to RSA 485-A:13. Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of the Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
EPA NEW ENGLAND
OFFICE OF ECOSYSTEM PROTECTION
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

FACT SHEET

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

PUBLIC NOTICE START AND END DATES: June 20, 2011 thru July 19, 2011

NPDES PERMIT NO.: NH0000752

NAME AND MAILING ADDRESS OF APPLICANT:

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

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Facility Location
New Hampton State Fish Hatchery
204 Main Street
New Hampton, NH

Mailing Address
New Hampton State Fish Hatchery
P.O. Box 306
204 Main Street
New Hampton, NH 03256

RECEIVING WATER: Dickerman Brook (HUC 01070001)

CLASSIFICATION: Class B

Table of Contents

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

The applicant, the New Hampshire Fish and Game Department (NHF&GD), has applied to the U.S. Environmental Protection Agency, New England Office (EPA) for reissuance of its NPDES permit for the discharge of culture water from its New Hampton State Fish Hatchery. This state owned and operated facility is engaged in rearing various species of trout (eastern brook, rainbow and brown) hatched from eggs either on-site or at other hatcheries. The hatched trout are reared to fingerlings, yearlings, 2-year old, and 3+ year old for stocking and/or broodstock purposes. This facility rears a portion of its eggs to fingerling stage for transfer to other state hatcheries, and produces a portion of its trout eggs from its own broodstock population. All fish from this facility are used for fisheries management (i.e., stocking) in selected rivers, streams and lakes throughout New Hampshire.

The New Hampton State Fish Hatchery's current permit was issued on May 27, 2004 and expired on May 27, 2009. The applicant has requested renewal of its NPDES permit to discharge hatchery wastewater 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 Code of Federal Regulations (C.F.R.) § 122.6 until a new permit can be issued.

II. Description of Facility and Discharge

The New Hampton State Fish Hatchery is located on State Highway 132 in New Hampton. The location of the New Hampton State Fish Hatchery, Outfalls 001, 002, 003, 004, and 005 and the receiving water (Dickerman Brook) are shown in Attachment A.

This hatchery was first established by the NHF&GD in 1919-1920. The hatchery complex consists of an upper hatchery and a lower hatchery (shown in Attachment B). The New Hampton State Fish Hatchery produces eggs, fingerlings, yearling, 2-year old, and 3+ year old Eastern brook trout, rainbow trout, and brown trout for fisheries management of selected water bodies located primarily in the central part of the state (referred to as Region -2, or Conservation District # 3 + #2). Additional special functions at the New Hampton State Fish Hatchery include "starting," rearing of Eastern brook trout and brown trout for transfer to other state facilities as fingerlings for grow out and yearling stocking the following year. They also manage three brood fish populations: EBT (Rome strain), EBT (Kennebago strain), and BT (Rome strain). They provide the EBT Kennebago strain fingerlings for stocking into remote ponds and beaver flowages.

According to NHF&GD, the annual production targets at New Hampton State Fish Hatchery are: 37,796 pounds (lbs) of eastern brook trout, 7,148 lbs of rainbow trout, and 3,960 lbs of brown trout for a total of 48,904 lbs.

The New Hampton State Fish Hatchery is designated as a concentrated aquatic animal production (CAAP) facility based on criteria found in 40 C.F.R. § 122.24(b) and 40 C.F.R. Part 122 Appendix C (a facility that contains, grows, or holds "cold water fish species or other cold water aquatic animals in ponds, raceways, or other similar structures which discharge at least 30 days per year but does not include facilities that produce less than 9,090 harvest weight kilograms (approximately 20,000 pounds) of aquatic animals per year; and facilities which feed less than 2,272 kilograms (approximately 5,000 pounds) of food during the calendar month of maximum feeding"). The facility also uses more than 5,000 lbs of food during the calendar month of maximum feeding. NHF&GD reported a production target of 48,904 lbs of harvestable fish and, in their permit application dated March 3, 2009, reported an estimated total of 9,724 lbs of food fed during the calendar month of maximum feeding for 2008. Based on their application and monthly Discharge Monitoring Reports (DMRs), the facility will continue to discharge more than 30 days in a given year and produce more than 20,000 lbs harvest weight of fish per year during the next permit cycle.

Discharges from CAAP operations, such as the New Hampton State Fish Hatchery, typically contain organic and inorganic solids, nutrients, and chemicals used in the prevention and treatment of various diseases. Any of these constituents could impair the water quality in the receiving water. Dissolved and particulate solids in the discharge result from fish feces and uneaten food particles. Nutrients, such as phosphorus and nitrogen, are associated with these solids. The presence of nutrients can result in 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 macrophytes

(typically attached to bottom sediments). The decay of organic solids resulting from excessive concentrations of solids and nutrients can cause low levels of dissolved oxygen in the receiving water.

EPA will continue to authorize a year-round discharge to the waters of the United States with limits, monitoring requirements and Best Management Practices as described in this Fact Sheet and shown in the accompanying draft permit.

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

Normally, fish hatched from eggs in the State's hatchery system 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 used at the New Hampton State Fish Hatchery. A review of the first ten chemicals/drugs in New Hampshire's overall list indicates they are all FDA approved therapeutants and/or low regulatory priority aquaculture drugs, except for Chloramine-T, which is an investigational new animal drug (INAD). For the last four chemicals (hypochlorite solutions, oxygen gas and a solution of iodine and phosphoric acid), EPA will not regulate (limit their use) these chemicals as long as any applied hypochlorite solution is neutralized with sodium thiosulfate prior to it being exposed to culture water, and the facility continues to not discharge any of the iodine and phosphoric acid solution to the hatchery's culture water. 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.

- 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.

- 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 B 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 solution is not discharged in the culture water.

- Chloramine-T (N-chloro tosylamide sodium salt): Chloramine-T is an investigational new animal drug used to treat bacterial gill disease (caused by *Flavobacterium branchiophilium*) in salmonid fish species.

- 35% PEROX-AID® (hydrogen peroxide solution): Used as an external microbicide for the control of mortality in freshwater-reared finfish eggs due to *saprolegniasis,* in freshwater-reared salmonoids due to bacterial gill disease (*Flavobacterium branchiophilum*), and in freshwater-reared cool water finfish due to external columnaris disease (*Flavobacterium columnae*).

- Calcium Hypochlorite (Crystalline Form): See Sodium Hypochlorite.

- 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 baths, 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. If the hatchery needs to disinfect any rearing units, 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.

Chemicals, Drugs and Disinfectants Routinely Used at the New Hampton State Fish Hatchery

- Sodium Chloride (Crystalline Form)

- Formalin - 37 % Formaldehyde Gas in Water with 16 % Methanol

- Chloramine-T (N-chloro tosylamide sodium salt)

- 35% PEROX-AID®

- Polyvinylpyrrolidone (Iodine in 10 % aqueous solution) --Also called Povidone Iodine

- Sodium Chloride (Crystalline Form)

- Sodium Hypochlorite at 5.25 % (Ordinary Household Bleach in Liquid Form)

Review of drug and chemical usage practices at the hatcheries, and the material safety data sheets for the above listed materials indicates that Formalin - 37 % Formaldehyde Gas in Water with 16 % Methanol, Chloramine-T, and PEROX-AID require effluent limitation because they have a reasonable potential to exceed the New Hampshire's Surface Water Quality Regulations. The draft permit contains effluent limitations for total residual chlorine (when Chloramine-T is in use), hydrogen peroxide (when 35% PEROX-AID is in use), and formaldehyde (when formalin is in use). See sections entitled "Total Residual Chlorine," "Hydrogen Peroxide" and "Formalin" later in this Fact Sheet.

A quantitative description of significant effluent parameters from the current permit's effluent monitoring data collected for this facility from July 2005 through November 2010 (following elimination of discharge at all outfalls except Outfalls 001, 002, 003, 004, and 005) shows: average monthly flow ranged from 0.16 to 2.87 MGD; fish food fed ranged from 0.9 to 319 lbs/day; and the resident fish biomass population ranged from a low of 0.7 lbs/day to a high of 2030 lbs/day. Outfall 002 had the lowest long-term average flow, fish biomass, and food levels. Outfall 004 had the highest long-term average flow (2.1 MGD) and the highest long-term average fish biomass (1,068 lbs/day) and food (139 lbs/day).

III. Description of Receiving Water

Dickerman Brook, a tributary to the Pemigewasset River, is designated as Class B waterbody pursuant to RSA 485-A:8 of the New Hampshire Statutes. Class B waterbodies are considered suitable for fishing, swimming and other recreational purposes, and for use as a water supply after adequate treatment.

Dickerman Brook (Assessment unit NHRIV700010801-15) is not listed as impaired on NHDES's *Final 2010 Section 303(d) Surface Water Quality List* Submitted to EPA for Approval. Aquatic life, swimming, and boating uses were not assessed for this waterbody. New Hampton State Fish Hatchery discharges both upstream (at Outfalls 001 and 002), and downstream (at Outfall 004) of Dickerman Pond (Assessment unit NHIMP700010801-06). Dickerman Pond is not listed as impaired on NHDES's 2010 Section 303(d) List. For this waterbody, aquatic life use was not assessed, but swimming and boating are fully supported. For both waterbodies, fish consumption is listed as marginal non-support due to atmospheric deposition of mercury (a state-wide listing). The NHDES's 2010 Watershed Report Card indicates that a total maximum daily load (TMDL) has been completed.

Dickerman Brook is a tributary of the Pemigewasset River at Ayers Island Dam (Assessment unit NHIMP700010801-08). This waterbody is listed as impaired on NHDES's 2010 Section 303(d) List. The waterbody is impaired for pH (due to atmospheric deposition) and dissolved oxygen (resulting from flow modifications and municipal point source discharges). A TMDL for these impairments is a low priority for NHDES. However, the water quality sampling and modeling for the TMDL is currently being completed. The Watershed Report Card (from the 2010 303(d) list) also indicates

that, although data is currently insufficient, this waterbody may not be attaining standards for total phosphorous.

IV. 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 VI of this Fact Sheet.

V. Permit Basis: Statutory and Regulatory Authority.

The Clean Water Act (CWA) 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 CWA. The NPDES permit is the mechanism used to implement technology and water-quality based effluent limitations and other requirements including monitoring and reporting. During development, EPA considered the most recent technology-based treatment requirements, water quality-based requirements, and all limitations and requirements in the current/existing permit. The regulations governing the EPA NPDES permit program are generally found at 40 C.F.R. Parts 122, 124, 125, and 136. The general conditions of the draft permit are based on 40 C.F.R. § 122.41 and consist primarily of management requirements common to all permits. The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308(a) of the CWA in accordance with 40 C.F.R. § 122.41(j), § 122.44(i), and § 122.48.

1. Technology-based Requirements

Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (See 40 C.F.R. Part 125, Subpart A). Subpart A of 40 C.F.R. Part 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under Section 301(b) of the CWA, including the application of EPA promulgated effluent limitations and, in the absence of promulgated technology-based effluent guidelines, Best Professional Judgment (BPJ) for case-by-case determinations of effluent limitations under Section 402(a)(1)(B) of the CWA.

In general, statutory deadlines for meeting technology-based guidelines (effluent limitations) established pursuant to the CWA have expired. For instance, compliance with the effluent limitations guidelines for fish hatcheries is, effectively, from date of permit issuance [See 69 Federal Register 162, August 23, 2004 Part I.E]. Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA cannot be authorized by a NPDES permit. On August 23, 2004, the EPA promulgated new Effluent Limitations Guidelines and New Source Performance Standards (hereinafter referred to as ELGs) for CAAP facilities [See 40 C.F.R. Part 451].

Typically, ELGs express effluent limitations in the form of numeric standards for specific pollutants, but these ELG express effluent limitations in the form of narrative standards in order to achieve reduced discharges of total suspended solids (TSS) and other materials that are generated during the process of culturing fish. These new ELGs apply to the discharge of pollutants from facilities that produce 100,000 pounds or more of aquatic animals per year using flow-through, recirculating, net pen or submerged cage systems and became effective on September 22, 2004 [See Federal Register

(FR) on August 23, 2004 (69 FR 51892-51930)]. Additional information relating to development of the ELGs can be found in "*Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category (Revised August 2004)*", EPA 821-R-04-01.

The New Hampton State Fish Hatchery meets the definition of a CAAP at 40 C.F.R. § 122.24(b) and operates recirculating systems. However, this facility is not expected to produce more than 100,000 pounds of aquatic animals per year, and the ELGs found at 40 C.F.R. Part 451 do not apply. Even though the New Hampton State Fish Hatchery historically produces less than 100,000 lbs of aquatic animals per year, EPA has made a best professional judgment (BPJ) determination, consistent with other NHF&G hatcheries, to apply the ELG's for CAAPs to the New Hampton State Fish Hatchery. This determination was because the hatchery: (1) met the definition of a CAAP at 40 C.F.R. § 122.24(b); (2) operates flow-through type rearing units; and (3) has no available dilution from Dickenson Brook (applicable dilution factor is 1.0, see Section VI.2 of this Fact Sheet).

This determination resulted in the New Hampton State Fish Hatchery developing and implementing operational measures in the form of Best Management Practices (BMPs) to reduce the discharge of solids, the majority of which are uneaten fish food and feces, to Dickerman Brook. The BMPs specifically protect Dickerman Brook's minimal assimilative capacity particularly during low-flow periods. This determination is carried over to the draft permit in accordance to antibacksliding regulations found in 40 C.F.R. § 122.44(l).

Accordingly, the general reporting requirements detailed in 40 C.F.R. § 451.3 have been incorporated into the draft permit. They require the permittee to report INAD or extralabel drug usage, spills, structural failure and/or damage to rearing units as well as to develop, implement and maintain a BMP plan for the facility. The BMPs must address solids control, materials storage, structural maintenance of culture units and related equipment, recordkeeping and training at the hatchery. BMP plan requirements must represent best practicable control technology currently available, best available technology economically achievable, and best conventional technology as applicable and the permitting authority can modify BMP requirements based on its exercise of best professional judgment (BPJ) [See 40 C.F.R. §§ 451.11, 451.12, and 451.13].

2. Water Quality-based Requirements

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 CWA. A water quality standard consists of three elements: (1) beneficial designated use or uses for a waterbody or a segment of a waterbody; (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 C.F.R. § 122.44(d)(1) and are implemented under 40 C.F.R. §§ 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 or projected flow rates on an average monthly and a maximum daily basis for all production-based facilities 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; or (2) toxicity cannot be traced to a specific pollutant.

The NPDES permit must limit any pollutant or pollutant parameter (conventional, nonconventional, 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 C.F.R. § 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 Section 3 of the *Technical Support Document for Water Quality-based Toxics Control*, March 1991, EPA/505/2-90-001; 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. 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-Wq 1705.01. The New Hampshire Code of Administrative Rules Chapter Env-Wq 1700 Surface Water Quality Regulations were readopted and became effective on May 21, 2008. Hereinafter, these Regulations are referred to as the NH Standards.

3. Antibacksliding

EPA's anti-backsliding provision as identified in Section 402(o) of the Clean Water Act and at 40 C.F.R. § 122.44(l) prohibits the relaxation of permit limits, standards, and conditions unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued. Anti-backsliding provisions apply to effluent limits based on technology, water quality, BPJ and State Certification requirements. Relief from anti-backsliding provisions can only be granted under one of the defined exceptions [See 40 C.F.R. § 122.44(l)(2)(i)]. All limits included in the Draft Permit are at least as stringent as those in the previous permit, issued May 27, 2004.

4. Antidegradation

The New Hampshire Antidegradation Policy, found at Env-Ws 1708, applies to any new or increased activity that would lower water quality or affect existing or designated uses, including increased loadings to a waterbody from an existing activity. The antidegradation regulations focus on protecting high quality waters and protecting and maintaining water quality necessary to protect

existing uses. The CWA 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 CWA (40 C.F.R. §124.53 and §124.55). EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 C.F.R. §122.44(d).

This draft permit is being reissued with permit conditions and effluent limitations as stringent as or more stringent than the current permit; with the addition of effluent limits for chlorine (acute and chronic) and peroxide (acute). As discussed previously, the extensive rebuilding of the hatchery's outfall network has reduced the number of permitted outfalls from twenty-seven to five (Outfalls 001-005). See the Section VI.1 "Changes to the Facility Since the Last Permit Issuance" of this Fact Sheet below. Because the draft permit continues to authorize the discharge of culture water with the same limitations as the present permit; coupled with the addition of effluent monitoring for chlorine and peroxide, EPA expects the State of New Hampshire to indicate that there will be no lowering of water quality and no loss of existing uses as a result of this proposed reissuance. Accordingly, no additional antidegradation review is warranted at this time.

VI. Explanation of Effluent Limitations Derivation

1. Changes to Facility since Last Permit Issuance

In 2005, an extensive rebuilding project was initiated at the New Hampton State Fish Hatchery. The hatchery's original water flow plan allowed for rearing units to be individually drained directly to Dickerman Brook. Prior to 2005, when a rearing unit required cleaning, the unit was isolated from the cascading water flow, cleaned, and the cleaning water was discharged to Dickerman Brook. This process, however, constituted discharging an untreated effluent to the surface waters of the U.S. In 2005, when the current permit was issued, the direct discharge of cleaning water, absent treatment, to Dickerman Brook was prohibited.

In addition to prohibiting the discharge of untreated cleaning water, the present permit also required increased sampling for several additional effluent parameters at each outfall, which required more funds and man hours to accomplish. After the reissuing of the six State Fish Hatchery NPDES permits, the NHF&GD decided to initiate a program to consolidate outfalls at the State Hatcheries. This program resulted in the elimination of twenty-two of the twenty-seven permitted outfalls at the New Hampton State Fish Hatchery resulting in five remaining outfalls. The new drainage system installed at the hatchery directs the discharge from all the rearing units, pools and ponds to three common drain pipes. The common pipes discharge at Outfall 001 (formerly Outfall 006), 002 (formerly Outfall 008), and 004 (formerly Outfall 027) to Dickerman Brook. The NHF&GD has begun revising the hatchery's Best Management Practices (BMPs) to reflect this outfall consolidation. Outfalls 003 (formerly Outfall 009) and 005 (formerly Outfall 028) are for dewatering after cleaning when raceways are not in use, as well as discharge of snowmelt and rainwater. Refer to Attachment B for a generalized water-flow diagram that includes water sources, rearing units, and piping networks, including the outfalls. Water for all the rearing units is obtained from either free running springs, Dickerman Brook, or Dickerman Pond.

2. Available Dilution

Available dilution (also referred to as dilution factor) provided by the receiving water is determined using the hatchery's average daily discharge along with the annual 7Q10 low flow of the receiving water; Dickerman Brook. 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-Wq 1705.01.

All of the low flow in the small drainage basin in which New Hampton State Fish Hatchery is located is diverted either by the hatchery for use in fish culturing activities, or by the town for municipal water supply. These diversions complicate the determination of available dilution based on 7Q10 low flow. Upstream of the hatchery complex, Mountain Pond Reservoir diverts Dickerman Brook to supply public drinking water. At the hatchery, brook water is used in culture units through a combination of diverting spring water before it drains into Dickerman Brook or by diverting water directly from Dickerman Brook and/or Dickerman Pond. For example, culture water for Raceway A-5 is largely diverted spring water which is discharged to Dickerman Brook just upstream of Dickerman Pond. Culture water for Raceway C and Circular Tank C is water diverted directly from Dickerman Pond that was previously discharged from Raceway A-5. Therefore, EPA and NHDES have concluded that the 7Q10 flow of Dickerman Brook both upstream and downstream of Dickerman Pond is essentially zero for the purposes of providing dilution for any type of wastewater discharge.

3. Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD_5)

The current permit requires monthly monitoring and reporting of Total Suspended Solids (TSS) in lbs/day and average monthly and maximum daily numeric limits for TSS of 10 mg/l for and 15 mg/l, respectively. In addition, the current permit requires monitoring and reporting twice yearly of 5-Day Biochemical Oxygen Demand (BOD_5) in lbs/day and mg/l. At the time of issuance, there was no promulgated ELG for CAAP facilities, but technology-based effluent limitations guidelines and standards had been proposed for CAAP facilities (67 FR 57872-57928). The proposed ELG included numeric average monthly and maximum daily limits for TSS. EPA also reviewed numeric TSS limits included in other NPDES permits issued to freshwater fish hatcheries both in New England and in other regions. The average monthly TSS limit in the current permit (10 mg/l) was based on best professional judgment (BPJ) and is consistent with the average monthly TSS limits included in other hatchery permits. The maximum daily TSS limit in the current permit (15 mg/l) was based on BPJ to allow natural variability between the maximum and average monthly values, and to bring the difference in concentrations between the average monthly and maximum daily values in line with the proposed ELG (5 mg/l).

Since the issuance of the current permit in 2004, EPA has finalized a new rule establishing ELGs for CAAP facilities (40 CFR Part 451). The new rule does not include numeric limits for TSS, but rather establishes narrative best management practices (BMPs) for solids control. In the preamble to the final rule (see 69 Federal Register (FR), August 23, 2004), EPA explained that it was not promulgating numerical limitations for TSS or any other pollutants because a well-operated program to manage feeding, in conjunction with good solids management, is "a key element in achieving effective pollution control at CAAP facilities" (69 FR 51907). EPA further explained that, in the

reevaluation of the technological basis for the numeric TSS limits, the data showed wide variability among sites and over time, and that the data did not support uniform numeric TSS limits that would be appropriate under all conditions. BMPs, unlike wastewater treatment technologies based on physical or chemical treatment, may not have consistently predictable performance from site to site. For these reasons, EPA did not promulgate numeric TSS limits (69 FR 51907). EPA concluded that "a combination of settling technology and feed management control practices or rigorous feed management control and proper solids handling practices alone will achieve low levels of TSS" (69 FR 51908). However, EPA's decision not to establish numeric TSS limits does not restrict the permit writer's authority to impose site-specific numeric effluent limits on the discharge of TSS or other pollutants in appropriate circumstances (69 FR 51899).

As described in Section V.3 above, EPA's anti-backsliding provision at 40 CFR § 122.44(l) prohibits the relaxation of permit limits, standards, and conditions unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued. There are specific exceptions identified at 40 CFR § 122.44(l)(2)(i) that would allow a permit limit to be relaxed, including if "information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance." The exceptions listed specifically exclude relaxation of permit limits based on revised regulations, which EPA interprets here to include changes made between the issuance of a proposed and final rule. Therefore, the BPJ-based numeric TSS limits must be continued in the draft permit in accordance with antibacksliding regulation found in 40 C.F.R. § 122.44(l) in addition to requiring BMPs for solids control.

Since consolidation of outfalls, maximum daily TSS values have ranged from 0.0 to 6.0 mg/l with the highest long-term average (0.45 mg/l) occurring at Outfall 004, which is well below the numeric limits. Maximum daily BOD_5 ranged from 5.5 to 81.5 lbs/day with the highest long-term average (58.8 lbs/day) occurring at Outfall 004. The DMRs for New Hampton State Fish Hatchery did not report BOD concentrations in mg/l. EPA determined that the low reported values and extensive period of record warrant the reduction in monitoring frequency for TSS from monthly to quarterly. EPA and NHDES anticipate that the BMP prohibiting the direct discharge of cleaning water will ensure the range of pollutant concentrations discharged to the receiving water are protective of its existing and designated uses. The draft permit's numeric limits for TSS and continued monitoring of BOD_5 will enable EPA and NHDES to monitor the effectiveness of the BMPs for solids control.

4. pH

The pH range limits in the draft permit are based on Section Env-Wq 1703.18 of the New Hampshire Standards, which specifies that the pH of Class B waters shall be 6.5 to 8.0 standard units (S.U.), unless due to natural causes. Since the consolidation of outfalls, pH ranged from a minimum of 5.4 to a maximum of 7.6 S.U. The long-term average minimum pH at Outfalls 001, 002, and 004 between July 2005 and November 2010 was less than 6.5, and the long-term average maximum pH was less than 6.5 at Outfalls 001 and 002. At Outfall 005 pH ranged from 6.0 to 6.7 S.U. with a long-term average of 6.4 S.U. There was no discharge at Outfall 003 between July 2005 and November 2010.

The draft permit requires the hatchery effluent to be within the range of 6.5 - 8.0 S.U., unless the upstream ambient pH in the receiving water is outside of this range and is not altered by the facility's discharge or activities. In these cases, the permittee may perform sampling of the upstream receiving

water to determine whether or not the effluent discharge will significantly alter the pH of the receiving water. If the permittee's discharge is less than 6.5 S.U., compliance may be shown when the discharge pH either exceeds the upstream receiving water pH or is a maximum of 0.5 S.U. lower than the upstream water pH. All receiving water pH monitoring data must be submitted with the facility's monthly Discharge Monitoring Report.

5. Total Residual Chlorine

The facility uses hypochlorite solutions to clean/disinfect rearing units and hatchery equipment, but EPA and NHDES do not believe the use of hypochlorite solutions results in the presence of residual chlorine in the hatchery effluent. This is because hypochlorite solutions are not discharged directly 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.

The facility uses Chloramine-T, an investigational new animal drug (INAD), to treat bacterial gill disease caused by *Flavobacterium branchiophilium* (FDA INAD #9321 Objective B). Its use must follow the INAD study protocol, and the facility is required to notify EPA as described in Part I.B.1 of the draft permit. The facility has indicated that the use of Chloramine-T will allow it to reduce its use of formalin.

Treatment of diseased fish consists of three consecutive daily static bath treatments of one hour duration with 20 mg/L of Chloramine-T. Following each one hour treatment, the facility neutralizes the treatment solution using sodium thiosulfate, and measures the chlorine residual in the rearing unit to ensure that the chlorine has been neutralized before restarting flow through the system.

The draft permit includes total residual chlorine (TRC) limits to ensure that Chloramine-T use at the facility does not cause chlorine criteria violations in Dickerman Brook. There is no available dilution at the hatchery outfalls, and therefore the maximum daily and average monthly TRC limits are equal to the acute and chronic aquatic life criteria in the NH Standards (19 ug/l and 11 ug/l respectively). The chlorine residual effluent limits and daily monitoring requirement apply whenever Chloramine-T is in use at the facility.

6. Hydrogen Peroxide

The facility uses 35% PEROX-AID® (hydrogen peroxide solution) as an external microbiocide for the control of mortality in freshwater-reared finfish eggs due to saprolegniasis, in freshwater-reared salmonoids due to bacterial gill disease (*Flavobacterium branchiophilum*), and in freshwater-reared cool water finfish due to external columnaris disease (*Flavobacterium columnae*). 35% PEROX-AID® is an FDA-approved drug for freshwater-reared finfish, and its use must adhere to FDA label instructions. The facility has indicated that the use of 35% PEROX-AID® will allow it to reduce its use of formalin.

The facility uses three consecutive daily static bath or continuous flow treatments of 30 to 60 minutes each with 100 mg/l of 35% PEROX-AID® according to the manufacturer's instructions. Treatments are done one rearing unit at a time, and the tank water level is lowered to minimize the amount of chemical needed to achieve the desired dosage, and to minimize peroxide levels in the hatchery effluent.

The NH Standards do not include aquatic toxicity criteria for hydrogen peroxide, but the FDA has derived hydrogen peroxide water quality benchmarks for use by NPDES permitting authorities (*See "Environmental Assessment for the Use of Hydrogen Peroxide in Aquaculture for Treating External Fungal and Bacterial Diseases of Culture Fish and Fish Eggs", United State Geological Survey, 2006, p.72*). For freshwater aquatic life, the acute benchmark (criteria maximum concentration) is 0.7 mg/l. This acute water quality "benchmark" was determined using EPA guidance for deriving water quality critertia. The FDA determined that a corresponding chronic benchmark was unnecessary.

The draft permit includes a maximum daily effluent limit of 0.7 mg/l, and requires daily monitoring of hydrogen peroxide when PEROX-AID is in use at the facility. The facility monitors residual peroxide using Hach test kit HYP-T #2291700, which has a minimum detection limit of 0.2 mg/l.

7. Total Ammonia

The current permit does not require monitoring of ammonia nitrogen. However, ammonia can be toxic to aquatic life, and can also deplete oxygen concentrations. The aquatic life chronic criteria for ammonia as nitrogen (N) for the summer period (instream pH of 6.5 Standard Units and water temperature of 25°C) is 3.39 mg/l and for the winter period (instream pH of 6.5 Standard Units and water temperature of 10°C) is 6.67 mg/l to comply with NH WQS (early life stages of fish present) [See Env-Wq 1703.25]. Given the lack of dilution afforded by the receiving water at this facility and concern about dissolved oxygen impairments in the Pemigewasset River at Ayers Island Dam, EPA determined that ammonia nitrogen monitoring is necessary to determine if there is a reasonable potential to exceed aquatic life criteria. Because of the concern for dissolved oxygen downstream of the discharge and for ammonia concentrations to deplete dissolved oxygen or increase aquatic life toxicity, the draft permit requires quarterly monitoring and reporting of total ammonia as N.

8. Nutrients (Nitrogen and Phosphorus)

The NH Standards at ENV-Wq 1703.14 require that "Class B waters shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring." Further, "existing discharges containing either phosphorus or nitrogen which encourages cultural eutrophication shall be treated to remove phosphorus or nitrogen to ensure attainment and maintenance of water quality standards." There are presently no numeric nutrient criteria for nitrogen and phosphorus in the NH water quality standards, but these criteria are currently under development by NHDES.

Nutrients are a pollutant of concern in fish hatchery wastewater, and the current permit requires quarterly monitoring of total nitrogen and total phosphorus to provide data to evaluate the impact of these pollutants on the quality of the receiving water. From July 2005 through November 2010, the maximum total phosphorus as P effluent values have ranged from 0.01 to 1.10 mg/l; averaging 0.1 mg/l at Outfalls 001, 002, and 004. Maximum phosphorus concentrations were no greater than 0.08 mg/l except in August 2010 when reported levels were substantially higher (0.7 to 1.1 mg/l). Maximum total nitrogen as N has ranged from 0.0 to 0.08 mg/l at Outfalls 001 and 002, and from 0 to 0.8 mg/l at Outfall 004. Detectable levels of nitrogen in mg/l were reported on one occasion at Outfalls 001 and 002 (0.06 to 0.08 mg/l) and on 5 occasions at Outfall 004 (of 10 reported dates).

Other values were below detection and were reported as zero. Mass-based nitrogen values ranged from 0.3 to 17.8 lbs/day.

There are currently no national or New Hampshire state numeric criteria for nutrient levels to control eutrophication in rivers and streams. Phosphorus is the key nutrient controlling productivity and causing excess algal biomass in many freshwaters worldwide. According to EPA's *Quality Criteria for Water 1986* (Gold Book), the recommended phosphorus concentration for the prevention of nuisance algal growth in flowing waters is 0.1 mg/l, and the recommended level of phosphorus into rivers or streams entering impoundments is 0.05 mg/l. The DMR data summarized above and presented in Appendix C suggest that phosphorus concentrations in the effluent may exceed the recommended Gold Book concentration for impoundments. In addition, the phosphorus data from the last sample (August 2010) was higher than the Gold Book recommended concentration for flowing waters. According to NHDES-WD, phosphorus levels in the discharges upstream from Dickerman Pond are a concern, but existing sampling data are insufficient to determine if the pond is meeting numeric standards for dissolved oxygen or the narrative standard for nutrients. Additional ambient sampling data is needed to determine if the waterbody is meeting standards.

For freshwater systems, total nitrogen tends to be less critical for controlling productivity and causing excess algal biomass than total phosphorus. The NH Standards do not include numeric criteria for total nitrogen. EPA's *Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria; Rivers and Streams in Ecoregion VIII* (EPA 822-B-01-015, December 2001) suggests that a long-term average total nitrogen concentration representative of a minimally impacted waterbody in this ecoregion would be 0.38 mg/l. This long-term value was derived based on the median of the 25th percentile based on all seasons' data from 1990 through 2000. Based on DMR data for New Hampton State Fish Hatchery, total nitrogen levels at Outfalls 001 and 002 are well below this recommended value, and the concentration of total nitrogen at Outfall 004, while occasionally greater than the ecoregional value, would, in the long-term, be consistent with this recommendation. EPA concluded that monitoring of total nitrogen at New Hampton State Fish Hatchery is not warranted based on the DMR data. The draft permit instead requires the facility to monitor and report ammonia nitrogen as N. In this case, the elimination of the current monitoring requirement is based on information collected since the issuance of the last permit and is consistent with the exception from antibacksliding at 40 CFR § 122.44(l)(2)(i)(B)(1).

It is not clear that potentially elevated levels of phosphorus from the New Hampton State Fish Hatchery are potentially contributing to impairments of designated uses of the waterbody by encouraging growth of algae. To ensure that narrative water quality standards are being met in Dickerman Brook and Dickerman Pond, the draft permit requires ambient monitoring of total phosphorus, chlorophyll-*a*, dissolved oxygen, and temperature during the algae growing season. According to EPA's Nutrient Criteria Technical Guidance Manual: Rivers and Streams (June 2000, EPA-822-B-00-002), chlorophyll-*a* is a photosynthetic pigment and sensitive indicator of algal biomass, and is the primary biological response variable for nutrient-related problems. Enhanced algal growth (often associated with high temperatures) results in high rates of photosynthesis and respiration, which can lead to large variation in diurnal dissolved oxygen concentrations. Monitoring temperature, total phosphorus, chlorophyll-*a*, and dissolved oxygen concentrations upstream and downstream of the hatchery's discharge will provide valuable data which EPA can then use to determine if the levels of phosphorus in the effluent are sufficiently protective of designated uses in the receiving water and ensure that levels of total phosphorus will not contribute to high algal biomass.

EPA and NHDES continue to expect that the ban on direct discharge of cleaning waters coupled with efficient feed management and feeding strategies (fish food has a phosphorus content that varies from 1.0 to 1.2 %) will minimize nutrient discharges from these sources. The draft permit requires quarterly monitoring for total phosphorus as P between October and May, and monthly monitoring of total phosphorus at the outfall and ambient monitoring in the receiving water during the algal growing season (June through September).

9. Dissolved Oxygen

The NH Standards require that the instream dissolved oxygen content be at least 75 % of saturation, based on a daily average, and that the instantaneous minimum dissolved oxygen concentration be at least 5 mg/l for Class B waters. See Env-Wq 1703.07(b).

There are several factors which make effluent dissolved oxygen a special concern in this case. These are: (1) effluent flows from the hatchery make up the majority of the receiving stream's flow during low-flow periods, meaning that low effluent dissolved oxygen concentrations could significantly depress instream concentrations, and (2) the appearance of small reaeration potential in the stretch of receiving water between the upper and lower hatcheries, meaning that dissolved oxygen concentrations in Dickerman Pond could be significantly affected by the discharges from the upper hatchery, particularly if oxygen demand from effluent BOD_5 or degradation of formalin is significant. Dissolved oxygen in Dickerman Brook between the upper and lower hatcheries should also be of concern to the permittee given that this water is used as the intake water for the lower hatchery.

Dissolved oxygen levels of the New Hampton State Fish Hatchery's effluent between July 2005 and November 2010 have ranged from a minimum of 7.5 to 15.3 mg/l. Dissolved oxygen saturation has ranged from a minimum of 68.8 to 123.3 percent (%) saturation. Dissolved oxygen levels never exceeded the minimum of 5 mg/l required in the water quality standards (Env-Wq 1703.07(b)). Dissolved oxygen saturation was less than 75% five times at Outfall 001.

The draft permit continues to require monthly monitoring of the effluent for dissolved oxygen concentration and also requires special monitoring at all times when formalin is being used. The draft permit further requires that the percent saturation be calculated from the dissolved oxygen concentration to determine if the discharge causes or contributes to exceeding that part of the NH Standards.

10. 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 of 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. Because it is formulated to selectively kill or remove certain attached organisms, but not the finfish themselves when properly applied, formalin is more toxic to invertebrate species than to vertebrates. 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 invertebrate

species because they are more sensitive to the effects of formaldehyde. In the receiving waters, these invertebrates are an integral part of the food chain for finfish.

Formalin use must be consistent with U.S. Food and Drug Administration (FDA) labeling instructions as per 21 C.F.R. § 529.1030. While the prophylactic use of formalin (i.e., drugs and chemicals used to prevent specific disease(s) in the absence of their symptoms) is not mentioned in those FDA regulations, EPA will only allow its use under the extra-label provisions of the Federal Food, Drug and Cosmetic Act as a Best Management Practice (BMP) to control the excessive use of drugs.

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 Env-Wq 1703.21(a)(1)). EPA, therefore, will continue to apply the acute, 4.6 mg/l, and chronic, 1.6 mg/l, 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. EPA believes that because these criteria were developed in accordance with EPA's *Guidance for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses*, they are appropriate for the purpose of setting effluent limitations.

Additionally, the maximum daily (acute) limit, 4.6 mg/l, and average monthly (chronic) limit, 1.6 mg/l, aquatic-life criteria for formaldehyde are carried forward from the present permit to the draft permit in accordance with the antibacksliding requirements found in 40 C.F.R. § 122.44(1) since the permittee has been able to achieve consistent compliance with these limits. These limits apply at all times, but the monitoring requirements in the draft permit are "when-in-use," since formalin is only used sparingly throughout the year. During the course of the present permit, formaldehyde was used 15 times at Outfall 001, 5 times at Outfall 002, and 7 times at Outfall 004. It was most recently used in May 2009 at Outfall 004. The numeric effluent limits were exceeded on a total of 6 occasions. The hatchery has expressed interest in discontinuing the use of formalin in favor of chloramine-T and/or PEROX-AID, and the draft permit includes numeric limits for the pollutants associated with these chemicals. In addition, the draft permit continues the numeric limits and monitoring requirements for formaldehyde when formalin is used.

11. Best Management Practices (BMPs)

The ELGs contained in 40 C.F.R. § 451.11 are narrative limitations that describe BMPs to which the facility must adhere. These practices require the permittee to develop and employ methods for feed management, removal of accumulated solids, storage of drugs and pesticides, spill prevention, management of the wastewater treatment system, maintaining accurate records, and ensuring that all personnel receive proper training.

Three additional BMP Plan categories added to the current permit based on EPA's BPJ authority have been carried over to the draft permit consistent with the antibacksliding regulations found in 40 C.F.R. § 122.44(l). The categories are: (1) detailing precautions taken to prevent aquatic organisms that are neither indigenous nor naturalized to New Hampshire waters from becoming established in

local surface waters; (2) identifying and quantifying all aquaculture drugs and chemicals used at this facility; and (3) describing where settled solids are placed after removal from culture units. The EPA has retained these three additional requirements because they will continue to protect the receiving waters from release of non-indigenous species and characterize the use of aquaculture drugs and chemicals in the treatment of pathogens and their potential for discharge to the environment.

Further, based on antibacksliding regulations found in 40 C.F.R. § 122.44(l), EPA has retained the current permit's BPJ determination to prohibit the direct discharge of settled solids from active rearing units to receiving water absent any form of off-line settling or equivalent solids removal. This requirement is based on the BMP plan requirement, stipulated in 40 C.F.R. § 451.11(a)(2), that requires the permittee to implement procedures for the routine cleaning of rearing units and off-line settling basins to minimize the discharge of accumulated solids from settling ponds and basins and production systems.

12. Additional Requirements and Conditions

The effluent monitoring requirements in the draft permit, as shown in the following table, have been established to yield data representative of the discharge under the authority of Section 308(a) of the CWA in accordance with 40 C.F.R. §§§ 122.41(j), 122.44(i) and 122.48. It is the intent of EPA and NHDES-WD to establish minimum monitoring frequencies in all NPDES permits at permit modification and/or reissuance that sufficiently monitor an effluent discharge so both the environment and human health are protected. 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 feeding regimes at the hatchery.

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

Current and Draft Permit Comparison

M- Monitor Only, L-Limited

Parameter	CURRENT PERMIT		DRAFT PERMIT	
	Sampling Frequency	Sample Type	Sampling Frequency	Sample Type
Flow (M)	1/Week	Weir/ Calculation	1/Week	Flow meter or weir calculation
pH (L)	1/Week	Grab	1/Week	Grab
BOD_5 (M)	May and August	24-Hour Composite	1/Quarter	24-Hour Composite
TSS (L)	1/Month	24-Hour Composite	1/Quarter	24-Hour Composite

Total Ammonia as N (M)	**Not Required**	**Not Required**	**1/Quarter**	**24-Hour Composite**
Total Phosphorous as P (M)	May and August	24-Hour Composite	1/Quarter October to May; 1/Month June to September	24-Hour Composite
Chlorine (L) (When in Use)	**Not Required**	**Not Required**	**1/Day**	**Grab**
Peroxide (L) (When in Use)	**Not Required**	**Not Required**	**1/Day**	**Grab**
Dissolved Oxygen (M) (Formalin Absent)	1/Month	Grab	1/Month	Grab
Dissolved Oxygen Saturation (M) (Formalin Absent)	1/Month	Calculation	1/Month	Calculation
Water Temperature (M) (Formalin Absent)	1/Month	Grab	1/Month	Grab
Formaldehyde (L) (Formalin Present)	1/Week	Grab	1/Week	Grab
Dissolved Oxygen (M) (Formalin Present)	1/Week	Grab	1/Week	Grab
Fish Biomass on Hand (M)	Monthly	Calculation	Monthly	Calculation
Fish Feed Used (M)	Monthly	Calculation	Monthly	Calculation
Efficiency of Fish Feed Used (M)	Monthly	Calculation	Monthly	Calculation

VII. Endangered Species Act

The Endangered Species Act (16 USC 1451 et seq) requires the EPA ensure that any action authorized by the EPA is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat. Further, 40 CFR 122.49(c) requires the EPA to consult with the U.S. Fish and Wildlife Service (USFWS) to determine particular permit conditions when the regulations of the Endangered Species Act may apply.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, or plants to see if any such listed species might potentially be impacted by the issuance of this NPDES permit. There are no endangered species resident in Dickerman Brook or Pemigewasset River. The EPA, therefore, does not have to consult with the USFWS.

VIII. 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 C.F.R. § 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. 50 C.F.R. § 600.910(a).

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.

Dickerman Brook is a tributary of the Pemigewasset River, which is a tributary of the Merrimack River, and, as such, these streams are designated EFH for Atlantic salmon (*Salmo salar*) because the 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, the Pemigewasset River and its tributaries downstream of the Ayers Dam are stocked each year with Atlantic salmon sac fry. However, there is no stocking of Dickerman Brook or along the Pemigewasset River near Dickerman Brook. In addition, the NHF&GD indicates that there is no access for stocking lower Dickerman Brook and the short stretch between the hatchery and the Pemigewasset River has not been evaluated for habitat suitability.

The permit limitations and requirements in the draft permit as discussed in the Fact Sheet are designed to protect aquatic species; therefore, this authorized discharge is not likely to adversely affect the federally managed species, their forage, or their habitat in the receiving water. This is particularly true given that the direct discharge of settled solids from active rearing units to receiving waters absent any form of off-line settling or equivalent solids removal has been prohibited and the discharge of formalin, total residual chlorine, and peroxide are being regulated to assure that no toxics in toxic amounts are being released to any receiving water.

EPA considers the conditions in the draft permit to be sufficient to protect the EFH species of concern, namely Atlantic salmon; therefore, further mitigation is not warranted at this time. If adverse effects do occur in the receiving water 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. During the public comment period, EPA has provided a copy of the draft permit and fact sheet to both NMFS and USFWS.

IX. Monitoring and Reporting

The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308 (a) of the CWA in accordance with 40 C.F.R. §§ 122.41 (j), 122.44 (l), and 122.48.

The draft permit includes new provisions related to Discharge Monitoring Report (DMR) submittals to EPA and the State. The draft permit requires that, no later than one year after the effective date of the permit, the permittee submit all monitoring data and other reports required by the permit to EPA using NetDMR, unless the permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt-out request").

In the interim (until one year from the effective date of the permit), the permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR.

NetDMR is a national web-based tool for regulated Clean Water Act permittees to submit DMRs electronically via a secure Internet application to U.S. EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 C.F.R. § 122.41 and § 403.12. NetDMR is accessed from the following url: http://www.epa.gov/netdmr. Further information about NetDMR, including contacts for EPA Region 1, is provided on this website.

EPA currently conducts free training on the use of NetDMR, and anticipates that the availability of this training will continue to assist permittees with the transition to use of NetDMR. To participate in upcoming trainings, visit http://www.epa.gov/netdmr for contact information for New Hampshire.

The draft permit requires the permittee to report monitoring results obtained during each calendar month using NetDMR, no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA and NHDES as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA or to NHDES.

The draft permit also includes an "opt-out" request process. Permittees who believe they can not use NetDMR due to technical or administrative infeasibilities, or other logical reasons, must demonstrate the reasonable basis that precludes the use of NetDMR. These permittees must submit the justification, in writing, to EPA at least sixty (60) days prior to the date the facility would otherwise be required to begin using NetDMR. Opt-outs become effective upon the date of written approval by EPA and are valid for twelve (12) months from the date of EPA approval. The opt-outs expire at the end of this twelve (12) month period. Upon expiration, the permittee must submit DMRs and reports to EPA using NetDMR, unless the permittee submits a renewed opt-out request sixty (60) days prior to expiration of its opt-out, and such a request is approved by EPA.

Until electronic reporting using NetDMR begins, or for those permittees that receive written approval from EPA to continue to submit hard copies of DMRs, the draft permit requires that submittal of DMRs and other reports required by the permit continue in hard copy format. Hard copies of DMRs must be postmarked no later than the 15th day of the month following the completed reporting period.

X. 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 State Water Quality Standards or the Agency waives its right to certify as set forth in 40 C.F.R. § 124.53. The NHDES is the certifying authority within the State of New Hampshire. EPA has discussed this draft permit with staff at the NHDES and anticipates that the draft permit will be certified by the State.

Upon public noticing of this draft permit, EPA is formally requesting that the NHDES 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.

XI. 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 John Paul King; U.S. EPA; Office of Ecosystem Protection; Industrial Permits Branch (OEP 06-1), 5 Post Office Square, Suite 1100; Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the draft permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA 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. Within 30 days following the notice of the final permit decision, any interested person may submit a petition for review of the permit to EPA’s Environmental Appeals Board consistent with 40 C.F.R. § 124.19.

XII. EPA Contact

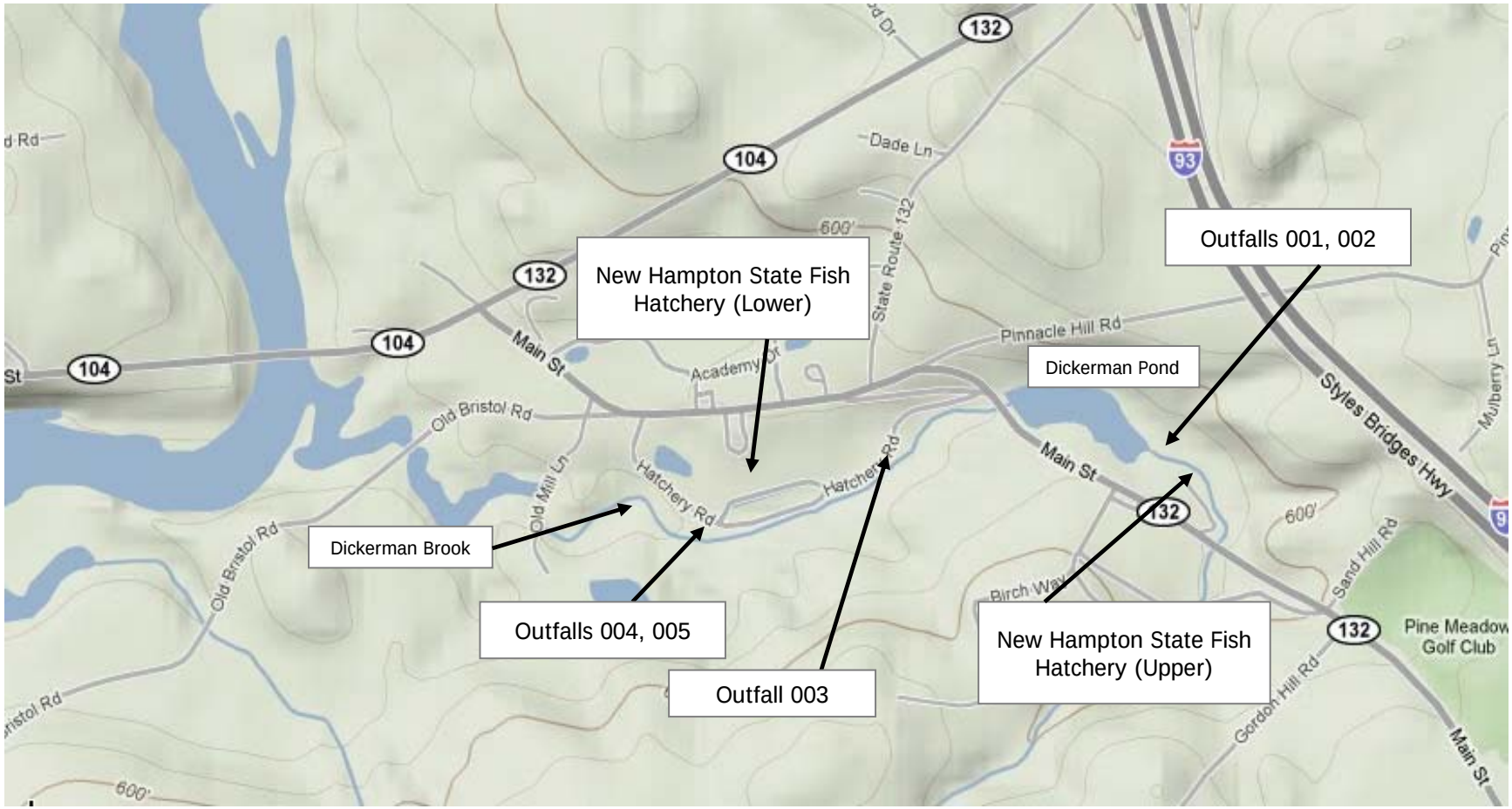
Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays from:

John Paul King
U.S. Environmental Protection Agency
Office of Ecosystem Protection
Industrial Permits Branch (OEP06-1)
5 Post Office Square, Suite 1100 (CIP)
Boston, MA 02109-3912
Telephone: (617) 918-1295

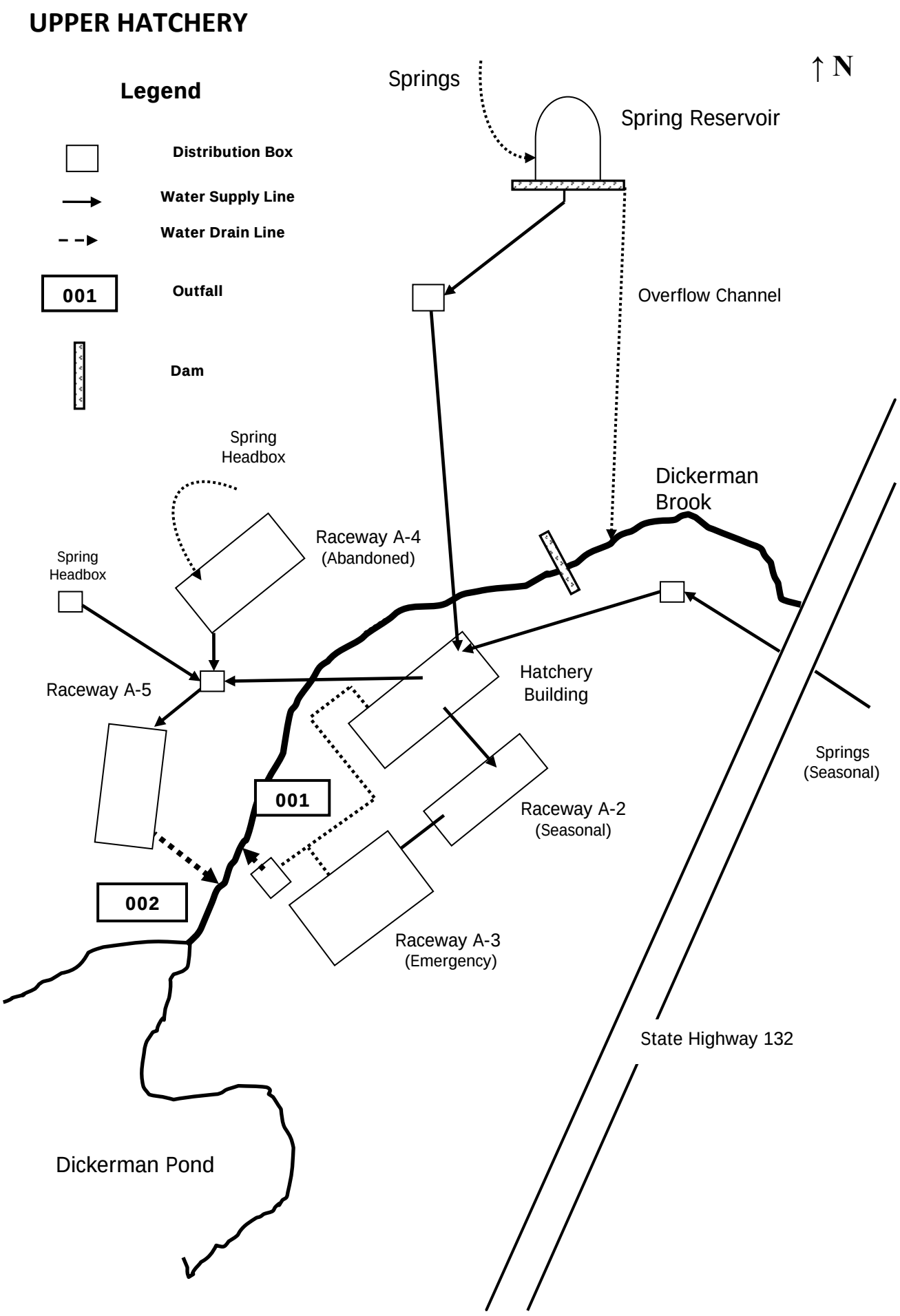
Date:

Stephen S. Perkins, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

Attachment A
Map Location of New Hampton Fish Hatchery



Attachment B
New Hampton Fish Hatchery Water Supply and Drain Diagram



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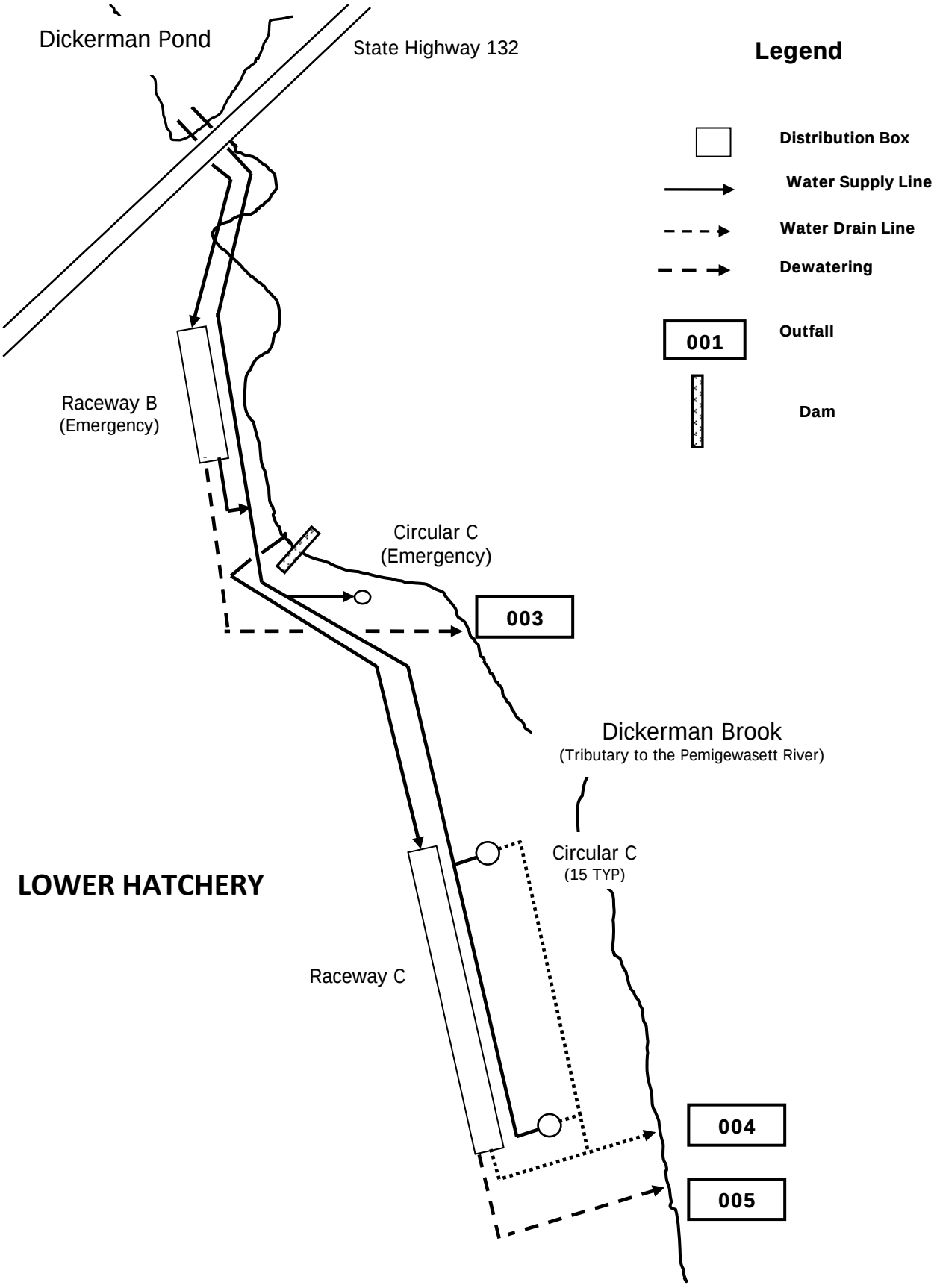
New Hampton Fish Hatchery Water Supply and Drain Diagram



Attachment C
Discharge Monitoring Report Summary
July 2005 – November 2010

Discharge monitoring summaries are presented for Outfalls 001 (formerly 006), 002 (formerly 008), 004 (formerly 027), and 005 (formerly 028). According to the DMRs, Outfall 003 (formerly 009) had no discharge during the permit cycle and no summary is reported. For each outfall, the first table (A) presents monitoring data collected on a weekly or monthly basis, and the second table (B) presents data collected twice yearly.

Abbreviations: ND = no discharge; CL = conditional limit (applied when Formalin in use)

(A) Outfall 001 (formerly Outfall 006)

	Fish food fed per day (lb/d)	Fish on hand (lb/d)	Flow (MGD)	Formaldehyde (mg/l)		DO (mg/l)	DO % Sat	pH (s.u.)		TSS (lb/d)		TSS (mg/l)		Temp (deg F)
Date	Mo Avg	Mo Avg	Mo Avg	Mo Avg	Daily Max	Daily Min	Daily Min	Min	Max	Mo Avg	Daily Max	Mo Avg	Daily Max	Daily Max
7/31/2005	77.48	354.40	0.66	CL	CL	CL	97.60	6.09	6.24	11.03	11.03	.	.	50.30
8/31/2005	91.16	490.83	0.95	2.50	2.50	9.53	101.80	5.94	7.50	0.00	0.00	.	.	53.78
9/30/2005	124.36	536.78	1.29	CL	CL	CL	93.30	5.50	6.14	21.44	21.44	.	.	52.88
10/31/2005	133.07	650.58	0.90	0.06	0.06	7.53	74.50	6.02	6.09	15.04	15.04	.	.	50.90
11/30/2005	108.69	753.79	1.08	0.80	1.70	9.00	78.90	5.94	6.14	18.06	18.06	.	.	49.10
12/31/2005	56.18	651.99	0.99	0.18	0.37	10.04	88.40	6.20	6.78	16.47	16.47	.	.	49.82
1/31/2006	26.18	336.08	0.36	0.18	0.18	9.96	95.0	6.05	6.36	6.05	6.05	.	.	48.56
2/28/2006	8.52	89.84	0.47	CL	CL	CL	98.20	6.08	6.28	7.89	7.89	.	.	47.84
3/31/2006	23.34	160.33	0.73	CL	CL	CL	101.60	6.02	6.48	12.18	12.18	.	.	48.74
4/30/2006	45.06	214.53	0.96	CL	CL	CL	111.80	6.05	6.15	16.08	16.08	.	.	51.44
5/31/2006	37.53	197.50	0.91	CL	CL	CL	112.60	6.00	6.09	15.16	15.16	.	.	52.52
6/30/2006	36.71	201.17	1.06	CL	CL	CL	118.10	6.00	6.14	17.73	17.73	.	.	50.90
7/31/2006	30.56	133.32	1.02	CL	CL	CL	118.50	5.93	6.01	17.03	17.03	.	.	51.26
8/31/2006	19.54	120.70	0.96	CL	CL	CL	120.30	6.13	6.40	15.97	15.97	.	.	51.26
9/30/2006	18.49	150.93	0.61	CL	CL	CL	105.70	6.13	6.24	10.14	10.14	.	.	50.90
10/31/2006	14.10	114.40	1.06	CL	CL	10.89	96.70	6.21	6.38	17.61	17.61	.	.	50.36
11/30/2006	16.02	293.23	1.55	1.48	2.20	10.53	91.80	6.09	6.25	25.89	25.98	.	.	51.26
12/31/2006	21.49	261.32	1.53	1.37	2.10	11.02	95.60	6.10	6.31	25.50	25.50	2.00	2.00	50.18
1/31/2007	17.39	206.50	1.53	1.20	1.90	11.21	94.00	6.05	6.20	25.51	25.51	.	.	49.64
2/28/2007	15.08	175.09	1.55	CL	CL	12.05	102.30	6.02	6.20	25.90	25.90	.	.	47.48
3/31/2007	37.65	209.45	1.50	CL	CL	14.05	120.00	6.01	6.19	25.10	25.10	.	.	49.10
4/30/2007	47.38	268.12	1.51	CL	CL	13.08	116.80	5.95	6.18	25.12	25.12	.	.	50.60
5/31/2007	57.57	346.44	1.41	CL	CL	11.22	97.80	6.05	6.41	23.54	23.54	.	.	52.40
6/30/2007	55.72	322.74	1.30	CL	CL	10.97	99.30	6.18	6.41	21.64	21.64	.	.	53.00
7/31/2007	62.49	334.28	1.25	CL	CL	9.22	85.20	6.05	6.33	20.92	20.92	.	.	53.30
8/31/2007	59.84	354.92	1.13	CL	CL	9.42	86.80	6.00	6.12	18.78	18.78	.	.	53.00
9/30/2007	64.71	421.46	1.14	CL	CL	8.97	81.50	6.00	7.03	18.99	18.99	.	.	52.16

Attachment C
Discharge Monitoring Report Summary
July 2005 – November 2010

	Fish food fed per day (lb/d)	Fish on hand (lb/d)	Flow (MGD)	Formaldehyde (mg/l)		DO (mg/l)	DO % Sat	pH (s.u.)		TSS (lb/d)		TSS (mg/l)		Temp (deg F)
Date	Mo Avg	Mo Avg	Mo Avg	Mo Avg	Daily Max	Daily Min	Daily Min	Min	Max	Mo Avg	Daily Max	Mo Avg	Daily Max	Daily Max
10/31/2007	25.35	410.06	1.16	CL	CL	8.69	75.80	6.00	6.10	19.43	19.43	.	.	51.08
11/30/2007	13.56	308.26	0.87	CL	CL	9.64	83.10	6.06	6.40	14.53	14.53	.	.	50.40
12/31/2007	16.15	295.71	0.65	CL	CL	10.47	86.60	6.24	6.43	10.78	10.78	.	.	46.40
1/31/2008	13.49	285.81	0.49	CL	CL	10.96	89.80	6.02	6.26	8.24	8.24	.	.	46.30
2/29/2008	22.35	206.02	0.44	CL	CL	11.53	98.90	6.04	6.10	7.29	7.29	.	.	44.40
3/31/2008	32.69	239.91	0.51	CL	CL	11.57	95.10	6.00	6.10	8.55	8.55	.	.	48.10
4/30/2008	52.42	317.02	0.84	CL	CL	10.49	95.70	6.03	6.32	13.96	13.96	.	.	53.20
5/31/2008	67.81	350.59	1.01	CL	CL	9.83	88.60	6.00	6.30	16.88	16.88	.	.	52.60
6/30/2008	71.48	370.87	1.05	CL	CL	11.35	101.70	6.10	6.32	17.47	17.48	.	.	53.00
7/31/2008	37.10	318.12	1.19	CL	CL	10.24	93.40	6.00	6.62	19.88	19.88	.	.	52.20
8/31/2008	53.40	358.75	1.19	CL	CL	9.19	84.70	5.85	6.83	19.88	19.88	.	.	52.90
9/30/2008	52.34	406.52	1.28	CL	CL	10.64	94.40	6.00	6.13	21.35	21.35	.	.	51.80
10/31/2008	24.46	397.48	1.29	1.10	1.10	10.32	91.30	6.01	6.16	21.59	21.59	.	.	52.00
11/30/2008	16.98	359.15	1.41	0.58	2.00	9.93	89.50	6.00	6.71	23.53	23.53	.	.	50.60
12/31/2008	22.34	335.41	1.34	1.15	1.40	10.04	87.50	6.00	6.04	22.33	22.33	.	.	49.50
1/31/2009	30.34	211.26	1.34	CL	CL	10.43	91.60	6.00	6.50	22.31	22.31	.	.	47.70
2/28/2009	48.10	275.87	1.30	CL	CL	10.22	89.00	6.25	6.32	21.69	21.69	.	.	47.80
3/31/2009	49.14	307.26	1.32	CL	CL	8.51	71.80	6.07	6.17	22.06	22.06	.	.	47.50
4/30/2009	66.37	373.21	1.25	CL	CL	9.79	86.50	6.00	6.04	20.80	20.80	.	.	50.70
5/31/2009	99.74	424.90	1.39	CL	CL	9.35	81.70	6.00	6.10	23.19	23.19	.	.	51.60
6/30/2009	83.78	331.26	1.45	CL	CL	8.82	76.60	6.00	6.12	24.19	24.19	.	.	51.30
7/31/2009	52.15	340.65	1.36	CL	CL	10.96	87.00	6.00	6.86	22.71	22.71	.	.	51.10
8/31/2009	60.99	418.19	1.38	CL	CL	9.51	85.20	6.00	6.30	45.91	45.91	4.00	4.00	50.80
9/30/2009	69.20	544.75	1.35	CL	CL	9.24	81.40	6.24	6.45	22.49	22.49	.	.	50.70
10/31/2009	32.50	497.78	1.31	CL	CL	8.92	80.70	6.31	6.54	21.88	21.88	.	.	52.70
11/30/2009	33.57	444.68	0.82	0.19	0.29	9.06	79.60	6.15	6.60	13.69	13.69	.	.	50.30
12/31/2009	32.61	204.11	1.16	0.50	0.79	9.63	82.00	6.03	6.40	19.40	19.40	.	.	51.90
1/31/2010	37.59	245.42	1.13	CL	CL	9.86	85.90	6.00	6.26	18.79	18.79	.	.	49.00
2/28/2010	42.00	315.94	1.19	CL	CL	9.98	83.80	6.02	6.69	19.78	19.78	.	.	50.20
3/31/2010	51.53	313.06	1.16	CL	CL	9.81	85.70	6.14	6.72	19.38	19.38	.	.	49.10
4/30/2010	79.24	353.37	1.32	CL	CL	9.89	87.60	6.06	6.57	21.95	21.95	.	.	50.10
5/31/2010	89.24	394.62	1.35	CL	CL	9.07	78.80	6.30	6.63	22.55	22.55	.	.	50.40
6/30/2010	87.76	416.66	1.51	CL	CL	9.07	81.00	6.50	6.72	25.21	25.21	.	.	52.10
7/31/2010	82.50	481.26	1.51	CL	CL	8.61	79.30	6.37	6.66	25.11	25.11	.	.	53.10
08/31/2010	88.78	518.91	1.25	CL	CL	9.1	82.7	6.15	6.58	20.88	20.88			54.5
09/30/2010	74.52	582.29	1.11	CL	CL	7.6	72.8	6.16	6.33	18.45	18.45			55.94
10/31/2010	45.03	556.06	1.13	CL	CL	7.78	68.8	6.08	6.2	18.88	18.88			53.06
11/30/2010	33.78	461.36	1.13	CL	CL	8.33	73.8	6.02	6.08	18.88	18.88			49.9

Attachment C
Discharge Monitoring Report Summary
July 2005 – November 2010

(B) Outfall 001

	BOD (lb/d)		Nitrogen (lb/d)		Nitrogen (mg/l)		Phosphorus (lb/d)		Phosphorus (mg/l)	
Date	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX
8/31/2005	.	.	.	.	.	.	0.55	0.55	0.07	0.07
5/31/2006	22.73	22.73	3.79	3.79	.	.	0.23	0.23	0.03	0.03
8/31/2006	23.96	23.96	3.99	3.99	.	.	0.16	0.16	0.02	0.02
5/31/2007	35.31	35.31	5.88	5.88	.	.	0.47	0.47	0.04	0.04
8/31/2007	28.17	28.17	4.70	4.70	.	.	0.19	0.19	0.02	0.02
5/31/2008	25.31	25.31	4.22	4.22	.	.	0.59	0.59	0.07	0.07
8/31/2008	29.82	29.82	4.97	4.97	.	.	0.40	0.40	0.04	0.04
5/31/2009	34.79	34.79	5.80	5.80	.	.	0.70	0.70	0.06	0.06
8/31/2009	34.43	34.43	5.74	5.74	.	.	0.57	0.57	0.05	0.05
5/31/2010	33.82	33.82	0.68	0.68	0.06	0.06	0.68	0.68	0.06	0.06
8/31/2010	31.31	31.31	5.22	5.22	.	.	11.48	11.48	1.10	1.10

Attachment C
Discharge Monitoring Report Summary
July 2005 – November 2010

(A) Outfall 002 (formerly Outfall 008)

	Fish food fed per day (lb/d)	Fish on hand (lb/d)	Flow (MGD)	Formaldehyde (mg/l)		DO (mg/l)	DO % Sat	pH (s.u.)		TSS (lb/d)		TSS (mg/l)		Temp (deg F)
Date	Mo Avg	Mo Avg	Mo Avg	Mo Avg	Daily Max	Daily Min	Daily Min	Min	Max	Mo Avg	Daily Max	Mo Avg	Daily Max	Daily Max
7/31/2005	10.50	212.20	0.46	CL	CL	12.08	107.10	6.18	6.28	7.60	7.60			50.50
8/31/2005	22.16	212.46	0.54	3.90	5.20	12.41	109.10	5.62	7.27	0.00	0.00			54.86
9/30/2005	26.96	254.15	0.51			12.30	111.10	5.44	6.11	8.50	8.50			51.26
10/31/2005	30.50	316.97	0.40	0.24	0.24	9.34	84.40	5.96	6.04	6.74	6.74			50.18
11/30/2005	21.48	345.18	0.44	5.30	10.50	10.78	92.80	5.85	6.03	7.42	7.42			50.90
12/31/2005	11.69	196.03	0.45	4.03	8.20	11.06	95.40	6.10	6.54	7.43	7.43			49.10
1/31/2006	29.67	368.70	0.47	2.10	2.10	11.84	102.00	6.14	6.40	7.81	7.81			47.84
2/28/2006	17.39	132.98	0.60	CL	CL	12.59	107.20	5.99	6.16	9.94	9.94			49.28
3/31/2006	33.19	294.25	0.52	CL	CL	13.59	115.80	6.02	6.19	8.65	8.65			48.56
4/30/2006	26.53	236.22	0.49	CL	CL	14.64	128.20	6.00	6.02	8.09	8.09			50.36
5/31/2006	32.37	252.78	0.47	CL	CL	14.13	125.00	6.00	6.04	11.75	11.75	3.00	3.00	50.90
6/30/2006	29.66	258.44	0.42	CL	CL	13.52	117.40	5.96	6.24	6.99	6.99			50.36
7/31/2006	29.93	192.35	0.42	CL	CL	12.51	112.80	5.79	5.97	6.99	6.99			51.44
8/31/2006	19.75	185.54	0.38	CL	CL	13.62	121.90	6.06	6.16	6.27	6.27			51.98
9/30/2006	15.26	191.31	0.37	CL	CL	11.82	105.30	6.02	6.13	6.17	6.17			52.34
10/31/2006	10.70	183.39	0.52	CL	CL	11.82	104.60	6.06	6.20	8.65	8.65			51.44
11/30/2006	119.54	793.62	2.83	CL	CL	CL	94.10	6.39	6.67	47.25	47.25			51.44
12/31/2006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1/31/2007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2/28/2007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3/31/2007	0.86	1.53	0.28	CL	CL	13.64	118.10	5.96	6.06	CL	CL			48.38
4/30/2007	10.20	27.73	0.20	CL	CL	14.97	136.20	5.90	6.04	10.00	10.00	6.00	6.00	53.30
5/31/2007	13.76	49.79	0.26	CL	CL	12.25	112.50	6.10	6.28	4.36	4.36			55.60
6/30/2007	18.78	73.27	0.38	CL	CL	10.18	95.80	6.10	6.38	6.27	6.27			54.70
7/31/2007	12.90	47.20	0.42	CL	CL	10.47	97.30	6.06	6.18	6.94	6.94			54.00
8/31/2007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/30/2007	4.48	3.66	0.24	CL	CL	10.20	94.60	6.07	6.95	4.06	4.60			53.06
10/31/2007	7.06	34.58	0.20	CL	CL	10.22	89.20	6.01	6.08	3.34	3.34			52.52
11/30/2007	7.70	51.67	0.20	CL	CL	10.10	85.70	6.00	6.42	3.35	3.35			49.80
12/31/2007	7.43	55.20	0.16	CL	CL	10.56	86.90	6.29	6.34	2.74	2.74			46.10
1/31/2008	9.46	65.53	0.20	CL	CL	10.54	88.40	6.13	6.28	3.38	3.38			46.00
2/29/2008	13.22	85.43	0.23	CL	CL	11.85	100.90	5.97	6.07	4.40	4.40			47.70
3/31/2008	20.11	101.87	0.30	CL	CL	11.45	97.50	6.00	6.06	5.01	5.01			49.50
4/30/2008	21.51	101.18	0.28	CL	CL	11.95	101.60	6.03	6.10	4.61	4.61			54.80
5/31/2008	15.09	65.90	0.32	CL	CL	13.27	124.10	6.00	6.17	5.27	5.27			54.30
6/30/2008	13.86	52.35	0.38	CL	CL	13.35	121.90	6.00	6.06	6.30	6.30			54.20
7/31/2008	6.84	22.48	0.37	CL	CL	11.77	107.80	6.01	6.21	6.17	6.17			53.10
8/31/2008	8.85	31.21	0.37	CL	CL	11.61	104.30	5.81	6.70	6.17	6.17			53.10
9/30/2008	11.77	35.00	0.41	CL	CL	12.66	112.20	6.01	6.10	6.78	6.78			51.80

Attachment C
Discharge Monitoring Report Summary
July 2005 – November 2010

	Fish food fed per day (lb/d)	Fish on hand (lb/d)	Flow (MGD)	Formaldehyde (mg/l)		DO (mg/l)	DO % Sat	pH (s.u.)		TSS (lb/d)		TSS (mg/l)		Temp (deg F)
Date	Mo Avg	Mo Avg	Mo Avg	Mo Avg	Daily Max	Daily Min	Daily Min	Min	Max	Mo Avg	Date	Mo Avg	Mo Avg	Mo Avg
10/31/2008	15.29	15.29	0.42	CL	CL	10.11	90.00	6.01	6.17	6.94	6.94			51.20
11/30/2008	16.41	91.99	0.41	CL	CL	9.80	88.40	6.00	6.85	6.82	6.82			48.90
12/31/2008	16.90	94.26	0.41	CL	CL	10.24	84.30	6.01	6.02	6.84	6.84			48.70
1/31/2009	16.31	113.53	0.51	CL	CL	10.06	87.90	6.00	6.35	8.53	8.53			49.00
2/28/2009	29.25	160.09	0.62	CL	CL	9.91	89.00	6.10	6.74	10.40	10.40			48.60
3/31/2009	34.65	145.71	0.65	CL	CL	10.07	86.20	6.00	6.18	26.90	26.90	5.00	5.00	48.00
4/30/2009	27.47	61.62	0.53	CL	CL	10.73	95.40	6.01	6.02	13.35	13.35	3.00	3.00	50.50
5/31/2009	35.20	89.94	0.52	CL	CL	11.24	98.20	6.00	6.03	8.63	8.63			52.00
6/30/2009	29.04	50.28	0.55	CL	CL	10.53	94.50	6.00	6.17	9.10	9.10			51.50
7/31/2009	9.40	16.54	0.43	CL	CL	11.84	104.90	6.03	6.84	7.11	7.11			51.50
8/31/2009	7.04	15.72	0.59	CL	CL	11.43	102.00	6.02	6.30	9.91	9.91			50.60
9/30/2009	8.40	25.06	0.59	CL	CL	11.27	98.90	6.26	6.50	9.76	9.76			50.20
10/31/2009	8.97	34.89	0.51	CL	CL	10.37	93.30	6.16	6.63	8.52	8.52			51.40
11/30/2009	10.49	82.80	0.34	CL	CL	10.32	91.90	6.55	6.67	5.68	5.68			50.40
12/31/2009	11.36	52.45	0.53	CL	CL	10.83	97.70	6.03	6.65	8.91	8.91			49.60
1/31/2010	13.68	63.50	0.44	CL	CL	10.46	90.40	6.10	6.41	7.29	7.29			48.70
2/28/2010	19.52	92.76	0.42	CL	CL	10.38	87.30	6.00	6.45	7.05	7.05			47.10
3/31/2010	28.43	104.32	0.52	CL	CL	10.66	91.50	6.20	6.71	8.62	8.62	2.00	2.00	99.30
4/30/2010	31.88	111.74	0.57	CL	CL	10.79	95.10	6.36	6.60	9.46	9.46			49.60
5/31/2010	25.02	32.98	0.45	CL	CL	10.69	92.20	6.41	6.66	7.44	7.44			50.40
6/30/2010	0.92	0.67	0.37	CL	CL	11.23	107.10	6.51	6.65	6.21	6.21			54.80
7/31/2010	3.87	17.85	0.30	CL	CL	11.80	105.30	6.39	6.68	5.07	5.07			55.10
08/31/2010	8.47	29.1	0.22	CL	CL	10.63	92.30	6.28	6.62	3.65	3.65			56.3
09/30/2010	10.96	47.48	0.28	CL	CL	9.83	94.40	6.10	6.52	9.71	4.71			58.3
10/31/2010	14.38	62.42	0.46	CL	CL	10.29	91.20	6.06	6.14	7.71	7.71			55.22
11/30/2010	12.83	100.95	0.46	CL	CL	9.63	85.10	6.00	6.42	7.71	7.71			50.4

Attachment C
Discharge Monitoring Report Summary
July 2005 – November 2010

(B) Outfall 002

	BOD (lb/d)		Nitrogen (lb/d)		Nitrogen (mg/l)		Phosphorus (lb/d)		Phosphorus (mg/l)	
Date	Mo Avg	Daily Max	Mo Avg	Daily Max	Mo Avg	Daily Max	Mo Avg	Daily Max	Mo Avg	Daily Max
8/31/2005			.	.	.	.	0.18	0.18		
5/31/2006	11.75	11.75	1.96	1.96	.	.	0.20	0.20	.05	.05
8/31/2006	9.40	9.40	1.57	1.57	.	.	0.13	0.13	.04	.04
5/31/2007	6.54	6.54	1.09	1.09	.	.	0.13	0.13	.06	.06
8/31/2007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5/31/2008	7.90	7.90	1.32	1.32	.	.	0.11	0.11	.04	.04
8/31/2008	9.26	9.26	1.54	1.54	.	.	0.09	0.09	.03	.03
5/31/2009	12.94	12.94	2.16	2.16	.	.	0.22	0.22	.05	.05
8/31/2009	14.86	14.86	2.48	2.48	.	.	0.05	0.05	.01	.01
5/31/2010	11.47	11.47	0.30	0.30	0.08	0.08	0.07	0.07	.02	.02
8/31/2010	5.47	5.47	0.91	0.91	.	.	1.30	1.30	.71	.71

ND = No Discharge.

Attachment C
Discharge Monitoring Report Summary
July 2005 – November 2010

Outfall 004 (formerly Outfall 027)

	Fish food fed per day (lb/d)	Fish on hand (lb/d)	Flow (MGD)	Formaldehyde (mg/l)		DO (mg/l)	DO % Sat	pH (s.u.)		TSS (lb/d)		TSS (mg/l)		Temp (deg F)
Date	Mo Avg	Mo Avg	Mo Avg	Mo Avg	Daily Max	Daily Min	Daily Min	Min	Max	Mo Avg	Daily Max	Mo Avg	Daily Max	Daily Max
7/31/2005	1.74	118.32	0.51	CL	CL									
8/31/2005	50.76	295.75	0.55	CL	CL	11.61	111.40	6.30	6.30					54.20
9/30/2005	100.26	311.19	0.91	CL	CL	11.14	109.10	5.87	6.42	15.25	15.25	2.00	2.00	56.48
10/31/2005	101.62	461.47	1.06	CL	CL	10.95	93.10	6.16	6.35	17.75	17.75	2.00	2.00	55.22
11/30/2005	82.98	735.80	1.90	CL	CL	12.19	97.00	6.20	6.77	31.75	31.75			48.48
12/31/2005	111.27	1029.53	1.90	CL	CL	12.46	96.10	6.27	7.26	31.71	31.71			43.70
1/31/2006	89.23	1178.56	2.39	CL	CL	12.56	95.70	6.06	6.63	39.82	39.82			42.26
2/28/2006	90.45	1515.40	1.87	CL	CL	13.21	101.40	6.02	6.52	31.22	31.22			42.80
3/31/2006	125.45	1431.43	2.17	CL	CL	13.33	102.20	6.05	6.91	36.15	36.15			48.38
4/30/2006	178.81	1527.88	2.04	CL	CL	9.00	97.70	6.27	6.42	33.96	33.96	2.00	2.00	
5/31/2006	135.52	1198.18	1.54	CL	CL	12.26	113.00	6.25	6.35	38.51	38.51	3.00	3.00	52.88
6/30/2006	97.12	743.16	1.26	CL	CL	12.44	113.70	6.05	6.31	21.04	21.04			55.58
7/31/2006	78.87	472.91	2.06	CL	CL	11.64	110.90	6.06	6.24	68.89	68.89	4.00	4.00	58.82
8/31/2006	127.03	547.74	1.88	CL	CL	12.69	120.70	6.27	6.46	31.29	31.29			60.98
9/30/2006	162.31	776.69	2.19	CL	CL	11.91	110.20	6.16	6.46	36.53	36.53			53.96
10/31/2006	137.66	708.88	2.46	CL	CL	11.20	100.10	6.22	6.88	40.95	40.95			51.72
11/30/2006	119.54	793.62	2.83	CL	CL	11.55	94.10	6.39	6.67	47.25	47.25			51.44
12/31/2006	116.45	822.90	2.71	CL	CL	12.70	97.10	6.39	6.10	45.13	45.13			46.58
1/31/2007	127.81	955.42	2.60	CL	CL	12.93	98.20	6.37	6.54	43.41	43.41			41.36
2/28/2007	109.22	1070.07	2.64	CL	CL	13.21	102.90	6.24	6.61	44.10	44.10			39.02
3/31/2007	89.57	1054.85	2.69	CL	CL	14.77	121.00	6.12	6.68	44.94	44.94			44.42
4/30/2007	128.72	1243.05	2.87	CL	CL	15.30	123.30	6.12	6.38	47.87	47.87			48.90
5/31/2007	140.55	1229.72	2.12	CL	CL	10.89	96.60	6.32	6.66	35.36	35.36			65.00
6/30/2007	115.14	862.94	0.92	CL	CL	8.69	95.50	6.31	6.85	15.34	15.34			67.90
7/31/2007	124.28	671.58	2.57	0.61	0.61	9.87	94.20	6.23	6.34	64.42	64.42	3.00	3.00	66.40
8/31/2007	225.84	668.99	2.57	CL	CL	9.62	96.80	6.11	6.18	42.84	42.84			68.20
9/30/2007	254.94	895.06	2.43	CL	CL	9.00	92.40	6.06	7.02	40.57	40.57			58.20
10/31/2007	180.32	1093.13	1.94	CL	CL	11.91	103.40	6.08	6.22	32.30	32.30			58.10
11/30/2007	122.30	1249.01	1.81	1.28	2.50	11.47	90.90	6.00	6.48	30.12	30.12			46.60
12/31/2007	69.87	1230.86	1.95	CL	CL	11.54	88.80	6.47	6.64	32.53	32.53			39.50
1/31/2008	86.90	1389.19	1.97	CL	CL	11.79	89.30	6.24	6.40	32.80	32.80			39.50
2/29/2008	104.93	1549.76	1.83	CL	CL	12.33	94.20	6.18	6.52	30.44	30.44			39.70
3/31/2008	92.99	1561.32	1.95	CL	CL	12.64	97.40	6.13	6.34	32.60	32.60			42.20
4/30/2008	128.43	1735.21	2.25	CL	CL	12.28	97.80	6.07	6.40	37.57	37.57			51.60
5/31/2008	140.54	1517.64	2.10	CL	CL	10.50	100.80	6.08	6.56	34.95	34.95			59.00
6/30/2008	104.84	1225.70	2.53	CL	CL	11.12	104.70	6.00	6.25	42.17	42.17			57.00
7/31/2008	125.99	869.71	1.96	0.88	1.70	10.31	102.20	6.04	6.40	32.67	32.67			55.80
8/31/2008	176.66	711.40	2.60	CL	CL	9.82	96.90	6.00	6.67	108.36	108.36	5.00	5.00	57.60
9/30/2008	242.38	910.25	2.29	CL	CL	9.58	93.50	6.05	6.24	38.15	38.15			57.90
10/31/2008	233.32	1142.32	2.17	CL	CL	10.90	91.90	6.01	6.18	36.21	36.21			53.50

Attachment C
Discharge Monitoring Report Summary
July 2005 – November 2010

	Fish food fed per day (lb/d)	Fish on hand (lb/d)	Flow (MGD)	Formaldehyde (mg/l)		DO (mg/l)	DO % Sat	pH (s.u.)		TSS (lb/d)		TSS (mg/l)		Temp (deg F)
Date	Mo Avg	Mo Avg	Mo Avg	Mo Avg	Daily Max	Daily Min	Daily Min	Min	Max	Mo Avg	Mo Avg	Mo Avg	Mo Avg	Mo Avg
11/30/2008	139.22	1238.50	2.13	CL	CL	12.63	96.30	6.09	6.79	35.52	35.52			47.70
12/31/2008	83.53	1270.83	2.10	CL	CL	12.12	95.70	6.04	6.16	35.11	35.11			42.10
1/31/2009	104.76	1350.38	2.12	CL	CL	11.67	90.60	6.00	6.13	35.41	35.41			42.10
2/28/2009	108.88	1590.64	2.06	CL	CL	14.20	98.80	6.36	6.70	51.47	51.47	3.00	3.00	44.20
3/31/2009	91.96	1497.26	2.03	CL	CL	12.41	96.60	6.04	6.27	33.85	33.85			43.70
4/30/2009	130.25	1336.56	2.11	CL	CL	11.65	102.20	6.01	6.44	35.26	35.26			51.00
5/31/2009	121.20	725.58	2.42	5.59	11.00	9.39	89.60	6.00	6.54	40.40	40.40			56.20
6/30/2009	109.81	542.77	2.05	0.17	0.28	10.09	93.70	6.00	6.02	34.16	34.16			56.40
7/31/2009	147.15	390.12	1.76	0.32	0.32	10.94	101.20	6.00	6.97	29.29	29.29			58.40
8/31/2009	235.53	694.96	2.67	CL	CL	9.41	89.70	6.03	6.32	44.56	44.56	2.00	2.00	56.40
9/30/2009	318.88	1107.95	2.82	0.12	0.19	9.46	88.40	6.26	6.65	46.98	46.98			55.40
10/31/2009	237.40	1341.57	2.51	CL	CL	10.42	92.90	6.32	6.92	41.95	41.95			52.10
11/30/2009	192.53	1589.78	1.78	0.00	0.00	10.19	85.20	6.45	6.85	29.76	29.76			47.80
12/31/2009	145.32	1592.28	2.10	CL	CL	11.29	87.20	6.40	7.54	35.00	35.00			45.50
1/31/2010	109.24	1709.49	2.03	CL	CL	11.34	89.50	6.55	6.79	33.80	33.80			41.60
2/28/2010	129.68	2013.49	2.03	CL	CL	11.97	92.70	6.51	6.93	33.81	33.81			40.90
3/31/2010	181.39	2030.22	2.50	CL	CL	11.74	93.60	6.03	7.41	41.72	41.72			45.40
4/30/2010	174.15	1503.33	2.52	CL	CL	11.17	96.20	6.11	7.59	42.09	42.09			50.60
5/31/2010	129.97	1023.43	2.44	CL	CL	9.81	91.30	7.06	7.52	40.76	40.76			58.10
6/30/2010	163.74	625.76	2.38	CL	CL	9.60	91.80	7.20	7.51	39.62	39.62			59.20
7/31/2010	149.20	424.84	2.48	CL	CL	9.13	92.50	6.79	7.48	41.29	41.29			61.20
08/31/2010	183.95	663.84	2.33	CL	CL	8.96	92.6	6.68	7.09	38.84	38.84			62.30
09/30/2010	227.93	974.32	1.89	CL	CL	8.92	92.3	6.42	6.92	47.18	47.18			65.20
10/31/2010	205.52	1220.44	2.03	CL	CL	9.75	88.4	6.12	6.63	33.81	33.81			59.36
11/30/2010	191.57	1462.11	2.03	CL	CL	10.48	86.8	6.15	6.53	33.81	33.81			47.20

Attachment C
Discharge Monitoring Report Summary
July 2005 – November 2010

(A) Outfall 004

	BOD (lb/d)		Nitrogen (lb/d)		Nitrogen (mg/l)		Phosphorus (lb/d)		Phosphorus (mg/l)	
Date	Mo Avg	Daily Max	Mo Avg	Daily Max	Mo Avg	Daily Max	Mo Avg	Daily Max	Mo Avg	Daily Max
8/31/2005										
5/31/2006	38.51	38.51	6.42	6.42	.	.	0.90	0.90	0.07	0.07
8/31/2006	46.93	46.93	7.82	7.82	.	.	0.78	0.78	0.05	0.05
5/31/2007	53.03	53.03	8.84	8.84	.	.	0.71	0.71	0.04	0.04
8/31/2007	64.26	64.26	10.71	10.71	.	.	0.86	0.86	0.04	0.04
5/31/2008	52.42	52.42	10.48	10.48	0.60	0.60	1.05	1.05	0.06	0.06
8/31/2008	65.01	65.01	13.00	13.00	0.60	0.60	1.52	1.52	0.07	0.07
5/31/2009	60.60	60.60	10.10	10.10	.	.	1.62	1.62	0.08	0.08
8/31/2009	66.83	66.83	17.82	17.82	0.80	0.80	0.89	0.89	0.04	0.04
5/31/2010	81.52	81.52	1.02	1.02	.	.	1.02	1.02	0.05	0.05
8/31/2010	58.25	58.25	11.65	11.65	0.60	0.60	13.01	13.01	0.67	0.67

Attachment C
Discharge Monitoring Report Summary
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Outfall 005 (formerly Outfall 028)

	Duration of Discharge	Flow (mgd)	pH (s.u.)	TSS (mg/l)
Date	Monthly Average	Daily Maximum	Minimum	Maximum
7/31/2005	ND	ND	ND	ND
8/31/2005	ND	ND	ND	ND
9/30/2005	ND	ND	ND	ND
10/31/2005	ND	ND	ND	ND
11/30/2005	ND	ND	ND	ND
12/31/2005	ND	ND	ND	ND
1/31/2006	ND	ND	ND	ND
2/28/2006	ND	ND	ND	ND
3/31/2006	ND	ND	ND	ND
4/30/2006	ND	ND	ND	ND
5/31/2006	ND	ND	ND	ND
6/30/2006	ND	ND	ND	ND
7/31/2006	ND	ND	ND	ND
8/31/2006	ND	ND	ND	ND
9/30/2006	ND	ND	ND	ND
10/31/2006	ND	ND	ND	ND
11/30/2006	ND	ND	ND	ND
12/31/2006	ND	ND	ND	ND
1/31/2007	ND	ND	ND	ND
2/28/2007	ND	ND	ND	ND
3/31/2007	ND	ND	ND	ND
4/30/2007	ND	ND	ND	ND
5/31/2007	ND	ND	ND	ND
6/30/2007	ND	ND	ND	ND
7/31/2007	ND	ND	ND	ND
8/31/2007	0.03	0.08	6.03	0
9/30/2007	ND	ND	ND	ND
10/31/2007	ND	ND	ND	ND
11/30/2007	ND	ND	ND	ND
12/31/2007	ND	ND	ND	ND
1/31/2008	ND	ND	ND	ND
2/29/2008	ND	ND	ND	ND
3/31/2008	ND	ND	ND	ND
4/30/2008	ND	ND	ND	ND
5/31/2008	ND	ND	ND	ND
6/30/2008	ND	ND	ND	ND
7/31/2008	ND	ND	ND	ND
8/31/2008	ND	ND	ND	ND
9/30/2008	ND	ND	ND	ND
10/31/2008	ND	ND	ND	ND
11/30/2008	ND	ND	ND	ND
12/31/2008	ND	ND	ND	ND
1/31/2009	ND	ND	ND	ND

Attachment C
Discharge Monitoring Report Summary
July 2005 – November 2010

	Duration of Discharge	Flow (mgd)	pH (s.u.)	TSS (mg/l)
Date	Monthly Average	Daily Maximum	Minimum	Maximum
2/28/2009	ND	ND	ND	ND
3/31/2009	ND	ND	ND	ND
4/30/2009	ND	ND	ND	ND
5/31/2009	ND	ND	ND	ND
6/30/2009	ND	ND	ND	ND
7/31/2009	0.04	0.14	6.21	0
8/31/2009	ND	ND	ND	ND
9/30/2009	ND	ND	ND	ND
10/31/2009	ND	ND	ND	ND
11/30/2009	ND	ND	ND	ND
12/31/2009	0.06	0.23	6.71	0
1/31/2010	ND	ND	ND	ND
2/28/2010	ND	ND	ND	ND
3/31/2010	ND	ND	ND	ND
4/30/2010	ND	ND	ND	ND
5/31/2010	ND	ND	ND	ND
6/30/2010	ND	ND	ND	ND
7/31/2010	0.04	0.12	6.65	0
08/31/2010	ND	ND	ND	ND
09/30/2010	ND	ND	ND	ND
10/31/2010	ND	ND	ND	ND
11/30/2010	ND	ND	ND	ND

Outfall 005 Summary

		2005 Limits	Min	Max	Average
Duration of Discharge (d/mo)	Mo Avg	Report	0.03	0.06	0.04
Flow (mgd)	Daily Max	Report	0.08	0.23	0.14
pH (s.u.)	Minimum	Report	6.03	6.71	6.40
	Maximum	Report	6.03	6.71	6.40
TSS (mg/l)	Daily Max	Report	0.00	0.00	0.00

Attachment C
Discharge Monitoring Report Summary
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Summary of Culture Water Outfalls

			Outfall 001			Outfall 002			Outfall 004		
		2004 Limit	Min	Max	Average	Min	Max	Average	Min	Max	Average
Fish food fed per day (lb/d)	Mo Avg	Report	8.52	133.07	49.21	0.86	119.54	18.64	1.74	318.88	139.16
Fish on hand (lb/d)	Mo Avg	Report	89.84	753.79	343.43	0.67	793.62	118.79	118.32	2030.22	1068.11
Flow (MGD)	Mo Avg	Report	0.36	1.55	1.13	0.16	2.83	0.45	0.51	2.87	2.10
Formaldehyde	Mo Avg	Report	0.06	4.36	1.08	0.24	5.30	3.11	0.00	5.59	1.12
	Daily Max	Report	0.06	17.00	2.31	0.24	10.50	5.25	0.00	11.00	2.08
DO (mg/l)	Daily Min	Report	7.53	14.05	9.95	9.34	14.97	11.40	8.69	15.30	11.28
DO % Sat	Daily Min	Report	68.80	120.30	90.98	84.30	136.20	100.72	85.20	123.30	97.69
pH (s.u.)	Minimum	6.5	5.50	6.50	6.06	5.44	6.55	6.06	5.87	7.20	6.22
	Maximum	8	6.01	7.50	6.36	5.97	7.27	6.34	6.02	7.59	6.63
Temp (deg F)	Daily Max	Report	44.40	55.94	50.75	46.00	99.30	52.00	39.02	68.20	51.92
BOD (lb/d)	Mo Avg	Report	22.73	35.31	29.97	5.47	14.86	8.96	38.51	81.52	58.74
	Daily Max	Report	22.73	35.31	29.97	5.47	14.86	8.96	38.51	81.52	58.74
BOD (mg/l)	Mo Avg	Report									
	Daily Max	Report									
TSS (lb/d)	Mo Avg	Report	0.00	45.91	18.93	0.00	47.25	8.05	15.25	108.36	38.45
	Daily Max	Report	0.00	45.91	18.93	0.00	47.25	7.97	15.25	108.36	38.45
TSS (mg/l)	Mo Avg	10	0.00	4.00	0.10	0.00	6.00	0.35	0.00	5.00	0.45
	Daily Max	15	0.00	4.00	0.10	0.00	6.00	0.35	0.00	5.00	0.45
Nitrogen (lb/d)	Mo Avg	Report	0.68	5.88	4.50	0.30	2.48	1.33	1.02	17.82	9.79
	Daily Max	Report	0.68	5.88	4.50	0.30	2.48	1.33	1.02	17.82	9.79
Nitrogen (mg/l)	Mo Avg	Report	0.06	0.06	0.06				0.00	0.80	0.26
	Daily Max	Report	0.06	0.06	0.06				0.00	0.80	0.26
Phosphorus (lb/d)	Mo Avg	Report	0.16	11.48	1.46	0.05	1.30	0.25	0.71	13.01	2.24
	Daily Max	Report	0.16	11.48	1.46	0.05	1.30	0.25	0.71	13.01	2.24
Phosphorus (mg/l)	Mo Avg	Report	0.02	1.10	0.14	0.01	0.71	0.11	0.04	0.67	0.12
	Daily Max	Report	0.02	1.10	0.14	0.01	0.71	0.11	0.04	0.67	0.12