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

FACT SHEET

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

PUBLIC NOTICE START AND END DATES:

PUBLIC NOTICE NUMBER:

NPDES PERMIT NO.: **NH0110078**

NAME AND MAILING ADDRESS OF APPLICANT:

GreatBay Aquaculture, LLC
153 Gosling Road
Portsmouth, New Hampshire 03801

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

GreatBay Aquaculture, LLC
153 Gosling Road
Newington, New Hampshire 03801

RECEIVING WATERS:

Piscataqua River by way of the Public Service Company of New Hampshire Newington Station discharge canal.

CLASSIFICATION: **B (Hydrologic Unit Code: 01060003)**

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

The above named applicant[1], a concentrated aquatic animal production (CAAP) facility, has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of its NPDES permit to discharge into the designated receiving water. The facility's existing ("current") permit was issued on September 24, 1998, and expired on September 24, 2003. That permit has been administratively extended until a new permit can be issued since the applicant filed a complete application for permit reissuance within the prescribed time period as per 40 Code of Federal Regulations (CFR) Section 122.6.

GreatBay Aquaculture, LLC (GBA or the facility) hatches and rears marine fin fish in indoor tanks, including summer flounder, Atlantic cod, black sea bass, and cobia. Most of the fish are raised to fingerling size and sold, although GBA keeps some of the fingerlings and raises them to adulthood for use as broodstock. Broodstock are kept in large indoor tanks at the facility, where

[1] The applicant changed its name from GreatBay Aquafarms, Inc to GreatBay Aquaculture, LLC effective January 1, 2002.

environmental conditions are controlled to induce spawning at the desired time. The site of the facility's aquaculture operation is leased from Public Service Company of New Hampshire (PSNH) Newington Station, and discharges culture water, cleaning water, and filter backwash water to the Piscataqua River by way of the Newington Station (Newington Station or the Station) discharge canal, which is Outfall 001 in Newington Station's NPDES Permit No. NH0001601. The location of GBA Outfall 001, Newington Station's discharge canal, and the receiving water are shown in **Attachment A**.

II. Description of Discharge

GBA's March 2003 application for reissuance of its NPDES permit indicates that the facility's long term average discharge flow to the receiving water will be 150,000 gpd, the facility's maximum 30-day flow will be 250,000 gpd, and the maximum daily flow will be 360,000 gpd. The facility's discharge monitoring records indicate that actual flows for calendar years 2002 through 2005 have been lower, approximately 44,000 gpd, 69,000 gpd and 72,000 gpd respectively. Reductions in effluent flow rates are largely due to the facility raising fingerlings instead of adult fish.

All culture water discharged by the facility is treated using 40-micron drum filters followed by UV disinfection. Solids removed by the drum filters are stored in a solids holding tank for periodic removal by a septage hauler. Solids holding tank supernatant is returned to the drum filter influent for treatment, including UV disinfection, prior to discharge. The treated effluent passes through a heat exchanger that can be used to adjust the temperature of the incoming process water.

The schematic diagrams in **Attachment B** show facility operations, including the wastewater treatment systems.

Discharges from CAAP operations, such as GBA, typically contain organic and inorganic solids, nutrients, and may also contain chemicals used in the prevention and treatment of various diseases. Any of these constituents could impair the water quality in the receiving water. Solids in the discharge occur both in the dissolved and particulate form and result from fish feces and uneaten food particles, and nutrients such as phosphorus and nitrogen are associated with these solids. In sufficient concentration, solids and nutrients have the potential to cause or contribute to dissolved-oxygen deficits in receiving waters due to the decay of organic solids, and the presence of nutrients allow for excessive algal growth.

A quantitative description of significant effluent parameters for the facility's discharge to Outfall 001 is shown in **Attachment C**. These data were summarized from GBA's Discharge Monitoring Reports for the period January 2002 through December 2005. The draft permit contains effluent limitations and monitoring requirements for Flow, Total Suspended Solids (TSS), Five-Day Biochemical Oxygen Demand (BOD_5), Fecal Coliform, pH, Dissolved Oxygen (DO), Formaldehyde, and Total Chlorine, and monitoring-only requirements for Temperature, Enterococci, Total Ammonia Nitrogen as Nitrogen (N), Total Nitrogen, and Total Phosphorous. The effluent limitations and monitoring requirements apply to the GBA discharge prior to its commingling with the discharge from PSNH Newington Station.

III. Description of Receiving Water

The Piscataqua River is designated as Class B pursuant to RSA 485-A:8 of the New Hampshire Statutes and Chapter Env-Ws 1703.02(b) of the New Hampshire Surface Water Quality Regulations. Chapter 485-A:8 states that Class B waters shall be considered as being acceptable for fishing, swimming and other recreational purposes, and, after adequate treatment, for use as a water supplies**.** In addition, marine aquatic-life criteria apply because the Piscataqua River is a tidal river.

IV. Limitations and Conditions.

Effluent limitations, monitoring requirements, and any implementation schedule (if required) are found in PART I of the draft permit. The basis for each limit and condition is discussed in Section VII. 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 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. This draft NPDES permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and any applicable State administrative rules. During development, EPA considered the most recent technology-based and water-quality based criteria when developing permit limits. The regulations governing EPA's NPDES permit program are generally found in 40 CFR Parts 122, 124, 125 and 136. The general conditions of the Draft Permit are based on 40 CFR Section 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 CFR Section 122.41(j), Section 122.44(i), and Section 122.48

A. 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 CFR Part 125, Subpart A). Subpart A of 40 CFR 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 newly promulgated effluent limitations guidelines for fish hatcheries is, effectively, from date of permit issuance [40 CFR Section 125.3(a)(1)(ii)]. 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 CFR Part 451]. As defined at 40 CFR Section 122.24 and Appendix C of 40 CFR Part 122, a CAAP facility is "a hatchery, fish farm, or other facility which meets the criteria in appendix C of this part." This definition specifically includes facilities that discharge at least 30 days per year, but excludes those facilities which produce less than 20,000 lbs of harvestable weight of cold water fish species in a given year and which feed less than 5,000 lbs of food during the calendar month of maximum feeding, or which produce less than 100,000 lbs harvestable weight of warm water fish species in a given year [See 40 CFR Section 122.24 and Appendix C of Part 122].

Typically, ELGs express effluent limitations in the form of numeric standards for specific pollutants, but this ELG expresses 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 (raising) 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; and "*Economic and Environmental Benefits Analysis of the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Industry Point Source Category*", June 2004 (EPA-821-R-04-013).

Because GBA meets the definition of a CAAP at 40 CFR Section 122.24(b), operates recirculating systems, and anticipates producing more than 100,000 pounds of aquatic animals per year, EPA- New England has determined that GBA is subject to promulgated ELGs found at 40 CFR Part 451.

Accordingly, the general reporting requirements detailed in 40 CFR Section 451.3 have been incorporated into the draft permit. They require the permittee to report drug usage, spills, structural failure and/or damage to rearing units as well as to develop, implement and maintain a best management practices (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 CFR 451.11, 451.12, and 451.13].

B. 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 CFR Section 122.44 (d)(1) and are implemented under 40 CFR Sections 122.45(d) and (f). Therefore, the Region establishes maximum daily and average monthly limits for chemical specific toxic pollutants based, in part, on a reasonable measure of the facility's actual 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, non-conventional, toxic and whole effluent toxicity) that is or may be discharged at a level that causes or has "reasonable potential" to cause or contribute to an excursion above any water-quality criterion. See CFR Section 122.44(d)(1). An excursion occurs if the projected or actual in-stream concentration exceeds the applicable criterion. In determining reasonable potential, EPA considers: (1) existing and planned controls on point and non-point sources of pollution; (2) pollutant concentration and variability in the effluent and receiving water as determined from permit's reissuance application, Monthly Discharge Monitoring Reports (DMRs), and State and Federal Water Quality Reports; (3) sensitivity of the species to toxicity testing; (4) statistical approach outlined in 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 administrative rules (Env-Ws 1705.02), the flow conditions used to calculate permit limits for discharges to tidal waters are those conditions that result in dilution that is exceeded 99 percent of the time. New Hampshire's Surface Water Quality Regulations found at Env-Ws-1700 became effective on December 10, 1999, and hereinafter, these regulations are referred to as the NH Standards.

C. Antibacksliding

The permit may not be renewed, reissued or modified with less stringent limitations or conditions than those conditions in the previous permit unless in compliance with the

antibacksliding requirement of the CWA [See Sections 402(o) and 303(d)(4) of the CWA and 40 CFR §122.44(l)(1 and 2)]. EPA's antibacksliding provision found in 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. Antibacksliding provisions apply to effluent limits based on technology, water quality, BPJ, and State Certification requirements. Relief from antibacksliding provisions can only be granted under one of the defined exceptions [See 40 CFR Part 122.44(l)(i)]. All limits included in the Draft Permit are at least as stringent as those in the previous permit, issued September 24, 1998.

D. 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 increases 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 CFR §124.53 and §124.55). EPA regulations pertaining to permit limits based upon water-quality standards and state requirements are contained in 40 CFR §122.44(d). This draft permit is being reissued with allowable effluent limits and parameter coverages that are the same as or more stringent than those in the current permit with no change in outfall location. EPA expects the State of New Hampshire to determine that there is no lowering of water quality and no loss of existing water uses and that no additional antidegradation review is warranted at this time.

VI. Effluent Limitations and Monitoring Requirements

A. Facility Information

GBA hatches and rears marine fin fish in indoor tanks, including summer flounder, Atlantic cod, black sea bass, and cobia. GBA anticipates producing up to 440,000 pounds (harvestable weight) of fish per year during the life of the draft permit. The facility currently operates well below this level (raising approximately 15,000 to 20,000 pounds of fish per year) because the majority of fish are sold as fingerlings, rather than raised to adult size. GBA keeps a portion of fingerlings and raises them to adulthood for use as broodstock, which are kept in large indoor tanks at the facility where environmental conditions are controlled to induce spawning at the desired time. Many of the fingerlings are sold to ocean-based net pen aquaculture facilities that raise them to marketable size. GBA believes that raising fish to marketable size at its facility will become viable during the term of the new permit. Accordingly, GBA’s reapplication indicates this increase in harvestable biomass.

GBA uses water from the Piscataqua River diverted from Newington Station's cooling water intake upstream from Newington Station's heat exchanger units. From January 2002 to December 2005, GBA diverted an average of approximately 44,000 gallons per day (gpd) for use at the facility. Treated effluent is returned to Newington Station's cooling water line downstream from the stations heat exchanger units and the combined stream (GBA discharge and Newington Station's cooling water) is then discharged back to the Piscataqua River through Newington Station's discharge canal. The discharge canal is approximately 400 feet long, with a submerged weir at the downstream end where the canal meets the Piscataqua River. The canal water level is influenced by tides in the Piscataqua River.

GBA operates a recirculating system that is entirely dependent upon Newington Station for its water supply. When Newington Station is generating power, water is continuously pumped through its heat exchangers at an average rate of approximately 325 million gallons per day and GBA withdraws its water from this flow. When Newington Station is off-line, that is, not generating power, water is not needed for its heat exchangers. During these periods, Newington Station maintains a continuous flow of approximately 400 gallons per minute through its cooling system, which is sufficient to maintain the fish hatchery.

The water withdrawn from the Newington Station cooling water line is treated before it is used as culture water at GBA. The water is filtered at the Newington Station site using a three stage sand filter system that is owned and operated by GBA. The filtration system automatically backwashes periodically, and the backwash rinsewater is treated in settling tanks with gravity thickener. Solids are pumped by septic hauler (to be replaced by mechanical dewatering when expansion makes this option practical) to the regional compost facility, while filtrate is returned to the fish tank life support system water stream prior to the drum filter (see Attachment B). The filtration system does not use any water treatment chemicals. Filtered process water flows to the GBA site where it is heated or chilled to the desired temperature (ranging from 10 to 18 $^{\circ}$C) and stored in insulated header storage tanks. The water is sterilized using ultraviolet light before being circulated through the fish culture tanks.

The facility operates a recirculating system that includes one raceway, approximately 50 tanks, and six life support systems. Recirculating water is treated with 40 micron drum filters (microscreen filters) followed by biofiltration, oxygenation/aeration, foam fractionation, and ultraviolet disinfection before being returned to the culture tanks. "Make-up" water from the header storage tanks is continuously added to the recirculating stream at a rate that replaces approximately 20 percent of the tank volume each day. The addition of make-up water causes the surge tank on the downstream side of the drum filters to overflow, and this filtered water is discharged to Outfall 001.

The New Hampshire Department of Agriculture manages the disposal of settled solids collected by microscreen filtration as manure. This regulatory determination was made by the NHDES-WD in a letter dated August 6, 2003, after samplings indicated that the residuals are non-hazardous and contain no domestic sewage components. In addition, settled solids removed from fish hatcheries are not regulated by EPA as sludge.

Chemicals and Drugs Currently Used at GreatBay Aquaculture

The Food and Drug Administration, Center for Veterinarian Medicine (CVM) regulates animal drugs under the Federal Food, Drug, and Cosmetic Act (FFD&CA). Operators producing aquatic animals that are being produced for human consumption must comply with requirements established by the U.S. Food and Drug Administration (FDA) with respect to the drugs that can be used to treat their animals, the dose that can be used, and the withdrawal period that must be achieved before the animals can be harvested. Four categories of drugs are used in aquaculture.

(1) Approved New Animal Drugs

There are six commercial drugs currently approved for specific species, specific diseases, and at specific doses or concentrations. These "approved new animal drugs" are:

- Chorionic gonadotropin: (Chorulon®) an aquaculture spawning aid
- Oxytetracycline: (Terramycin®) an antimicrobial
- Sulfadimethoxine, ormetoprim: (Romet-30®) an antimicrobial
- Tricane methanesulfonate: (Finquel® and Tricaine-S) an anesthetic
- Formalin: (Formalin-F®, Paracide-F® and Parasite-S®) used for control of protozoa and parasites on finfish and control of fungus on finfish eggs
- Sulfamerazine®: used to treat furunculosis (a bacterial disease of salmonids)

(2) Investigational New Animal Drugs

Investigational new animal drugs are used under controlled conditions under an Investigational New Animal Drug (INAD) application. Investigational new animal drugs are those drugs for which FDA has authorized use on a case-by-case basis to allow a way of gathering data for the approval process.

(3) Extralabel Use of Drugs

The extralabel use of FDA-approved drugs is allowed under the provisions of the Animal Medicinal Drug Use Clarification Act of 1994 (AMDUCA). Extralabel drug use is restricted to use of FDA-approved animal and approved human drugs by or on the lawful order of a licensed veterinarian within the context of a valid veterinarian-client-patient relationship. Specific conditions governing the extralabel use of drugs are established in 21 CFR Part 530. These drugs must be for therapeutic uses.

(4) Low Priority Drugs

Drugs designated by FDA as low regulatory priority may be used at aquaculture facilities. These are compounds that have undergone review by FDA and have been determined to be new animal drugs of low regulatory priority. A list of low regulatory

aquaculture drugs and their uses is included in FDA Program Policy and Procedures Manual Guide 1240.4200 “Enforcement Priorities for Drug use in Aquaculture”.

For additional information on the use and regulation of drugs at aquaculture facilities, the reader is referred to Chapter 7 of the June 2004 EPA “Economic and Environmental Benefits Analysis of the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Industry Point Source Category” (EPA-821-R-04-013).

(5) The following drugs and chemicals are used at GBA:

Formalin (37 % formaldehyde gas in water with 10 - 15 % methanol) is an approved new animal drug that is used to control external parasites on fish and eggs. It is 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.

GBA uses Paracide-F to treat external parasites attached either to fish being reared at the facility or new brood stock just brought to the facility. Infected fish are placed for short time periods (less than one hour) in a treatment tank (50-100 gallons) containing water and Parricide-F at a concentration around 1:5,000. The facility anticipates employing this treatment regime approximately one to three times per year. Once treatment for a given parasitic incident is completed, the formaldehyde containing water will be discharged into the facility's sanitary sewer line. No formaldehyde from these treatment tanks will be discharged in the effluent, and therefore no effluent limit or monitoring-only requirement is needed for this activity in the draft permit. However, in addition to the above, the facility has indicated that its veterinarian recommends that the facility make provisions to treat fish by adding a relatively low dose (approximately 25 mg/l) of formalin to the flow-through rearing units, and the facility has requested that this use of formalin be incorporated into the permit. This activity may result in the presence of formalin in the facility’s discharge, and therefore the draft permit includes effluent limits and monitoring requirements that will apply when formalin is used in this way.

Oxytetracycline Hydrochloride (also called Terramycin) is an approved new animal drug that is used as an antibiotic. It is administered as a feed additive.

Florfenicol is used as an antibiotic, and its use is authorized as an investigational new animal drug. It is administered as a feed additive.

Sodium Hypochlorite (chlorine) solution is occasionally used to disinfect hatchery equipment and empty tanks. The solution is neutralized with sodium thiosulfate before being discharged to Outfall 001. Sodium hypochlorite is also used to disinfect batches of culture water used for growing algae, rotifers and artemia to be used as feed for larval fish. This water is dechlorinated before it is used as culture water.

Sodium Hydroxide is used to adjust the pH of the culture water to compensate for the carbon dioxide generated by fish respiration.

Oxygen Gas is added to culture water to enhance fish respiration for life support as needed.

Carbon Dioxide is used in the algae culture tanks. The algae is used as feed for larval fish.

Ozone is used to disinfect equipment and eggs.

B. Permitted Outfall

The Draft Permit allows discharge of culture tank water to Outfall 001. The source of water, used for culturing marine fin fish, is the Piscataqua River via Newington Station's intake. Effluent is discharged to the facility's Outfall 001, which combines with Newington Station's Outfall 001 downstream of the heat exchangers and ultimately flows into the Piscataqua River through Newington Station's discharge canal. The discharge contains only filtered and disinfected recirculating water displaced by make-up water in the stream. The discharge of untreated wastewater resulting from cleaning accumulated solids from microscreens, tanks, and associated equipment is prohibited by the Draft Permit.

C. Explanation of Effluent Limitations Derivation (Outfall 001).

The Draft Permit establishes effluent limitations and/or monitoring requirements for flow, biochemical oxygen demand (BOD5), TSS, Bacteria, pH, dissolved oxygen (DO), total residual chlorine (TRC), ammonia, nitrogen, and phosphorus. In addition, the Draft Permit includes narrative limitations that describe Best Management Practices (BMPs) to which the facility must adhere. The effluent limits and monitoring requirements are described below.

Flow

The average monthly and maximum daily flow limits in the draft permit are 250,000 gpd and 360,000 gpd, respectively. These flow limits are established to represent the operational needs at GBA during the life of the permit, and are based on flows reported in the facility's reapplication. These flow limits are nearly the same as in the current permit, which included average monthly and maximum daily flow limits of 252,000 gpd and 360,000 gpd respectively. Flow limits are necessary since water quality-based permit limits are established on the assumption that the discharge will have a certain flow. Flow must be measured with a flow meter and recorded continuously.

BOD_5 and TSS

The draft permit includes maximum daily effluent concentration limits for both BOD_5 and TSS equal to 50 mg/l, the same limits as in the current permit. Monthly monitoring for effluent TSS reported in GBA's monthly Discharge Monitoring Reports for the period from January 2002 to

December 2005 are summarized in **Attachment C**. During this period, average monthly TSS concentration ranged from <2 mg/l to 138 mg/l, with an average concentration of 33.6 mg/l. Maximum daily TSS ranged from 2 mg/l to 300 mg/l, with an average value of 53 mg/l. The TSS monitoring results from August 2003 through August 2004 were unusually high, with maximum daily values ranging from 76 to 300 mg/l. In September 2004, while working to find the cause of the high TSS values, the facility asked its contract laboratory to review their procedures for TSS analysis of seawater. GBA believes that the TSS monitoring results prior to their discussion with the laboratory may have been inaccurate due to insufficient rinsing of the TSS filter prior to drying. GBA believes that these tests included measurement of dissolved solids (salts) that should have been rinsed from the filter prior to drying. The 2005 DMRs indicate that the facility's average monthly TSS ranged from 2.5 to 14.3, with an average of 9.5 mg/l. Maximum daily TSS for this period ranged from 5 mg/l to 32 mg/l, with an average of 19.8 mg/l.

Monthly monitoring for effluent BOD_5 reported in GBA's monthly Discharge Monitoring Reports for the period from January 2002 to December 2005 are summarized in **Attachment C**. Average monthly BOD_5 ranged from 0.8 mg/l to 24.3 mg/l, with an average value of 7.3 mg/l. Maximum daily BOD_5 ranged from 2 mg/l to 56 mg/l, with an average value of 13.6 mg/l.

There were no ELGs applicable to this facility when its permit was issued in September 1998. The 2004 EPA-promulgated ELGs applicable to aquaculture facilities, as described above, include narrative requirements to implement BMPs that minimize TSS discharges through proper feed management and management of solids. These BMP requirements are included in the Draft Permit. Although concentration or loading limits for these pollutants are not included in the ELGs, maximum daily concentration limits of 50 mg/l for both BOD_5 and TSS contained in the current permit have been carried forward into the Draft Permit in accordance with the antibacksliding requirements found in 40 CFR §122.44(1).

The draft permit requires once per week (1/Week) grab sample monitoring of Outfall 001 for BOD_5 and TSS, the same sample type and frequency required by the current permit. This is more frequent monitoring than is required in other New Hampshire aquaculture facility permits, which generally require monthly (or less frequent) 24-hour composite sampling for BOD_5 and TSS. The effluent monitoring requirements in the current permit were based on the facility cleaning all of its tanks at the same time, once per week, and required that effluent BOD_5 and TSS grab samples be collected during the weekly cleaning event. The facility does not clean all of its tanks at the same time. It cleans the tanks on an as needed basis, with some tank cleaning usually occurring each day. Therefore, the draft permit requires the weekly effluent grab sample be collected immediately following a tank cleaning event. If there is no tank cleaning during the week, then the grab sample must be collected at a time that is representative of the discharge for the week.

Bacteria

The current permit includes average monthly and maximum daily fecal coliform limits equal to 14 colonies per 100 ml, which are based on state water quality requirements for facilities that

discharge into tidal waters used for growing or taking of shellfish for human consumption, which includes GBA.

New Hampshire State statute N.H. RSA 485-A:8,V. specifies that the bacteria standard for protection of shellfishing uses shall "... be in accordance with the criteria recommended under the National Shellfish Program Manual of Operation, United States Department of Food and Drug Administration." The recommended criteria for fecal coliform bacteria is 14 colonies per 100 milliliters of fecal coliform bacteria and includes a requirement that "... not more than 10 percent of the samples exceed a Most Probable Number (MPN) of 43 per 100 milliliters for a 5-tube decimal dilution test." The NHDES-WD has determined that the fecal coliform value of 14 colonies per 100 milliliters applies to NPDES permits as an "average monthly" limit and that permits should also include a maximum daily "report only" requirement. The report only requirement is needed to monitor the variation in fecal coliform data to properly access compliance with the "average monthly" limit (i.e., ensure not more than 10 percent of the samples exceed the MPN). The average monthly bacteria limit is determined by calculating the geometric mean of the daily sample values. The EPA considers this determination by NHDES to be "New Information." "New Information" is considered under Section 402(o)(2) of the CWA as one of the specific exceptions to the general prohibition against establishing less stringent effluent limitations. Therefore, antibacksliding requirements have been satisfied, and therefore the draft permit includes an average monthly limit of 14 colonies per 100 ml, and a maximum daily "report-only" requirement for fecal coliform.

The current permit requires compliance monitoring at a frequency of 1/week with a condition that allows EPA- New England to increase the monitoring frequency to up to 5/week if a fecal coliform violation occurs. The DMR data summarized in **Attachment C** indicate that the average monthly fecal coliform levels for 2002 through 2005 ranged from 0 to 4.8 colonies per 100 ml, and the maximum daily values ranged from 0 to 350. All of the average monthly results were below 14 colonies per 100 ml, and three maximum daily results exceeded 14 colonies per 100 ml.

According to New Hampshire State statute N.H. RSA 485-A:8,V, tidal waters used for swimming purposes shall not contain more than either a geometric mean of 35 enterococci per 100 mL based on at least 3 samples obtained over a 60-day period, or 104 enterococci per 100 mL in any one sample, unless naturally occurring. Although swimming and other recreational purposes are designated uses of the receiving water, EPA is not requiring a numerical enterococci bacteria limit in this permit, but is imposing a "report only" enterococci requirement. EPA believes this is appropriate in this case due to: 1) the site specific circumstances of this discharge (i.e., discharge to middle of the Piscataqua River which has a high level of maritime traffic and is not ordinarily used for recreational swimming); and, 2) the lack of site specific data needed in order to assess the reasonable potential for the facility to contribute to a bacteria violation of the receiving water.

The Lower Piscataqua River is on the State's list of impaired waters for enterococci bacteria, but the impairment is due to the presence of Portsmouth combined sewer overflows (CSOs) and not because of enterococci violations found during ambient sampling. Collecting bacteria data from the facility's effluent will allow EPA and NH DES to evaluate potential enterococci impacts

from the facility and ensure the receiving water is protected for designated uses, including swimming. In addition, the required fecal coliform limit, although established to protect shellfish beds, should ensure that the discharge is sufficiently disinfected to protect the receiving water for primary contact recreation.

pH

The pH limit (range) of 6.5 to 8.0 standard units included in the draft permit is based upon New Hampshire State Statute RSA 485-A:8 and is carried forward from the current permit in accordance with the antibacksliding requirements found in 40 CFR §122.44(1). Historically, the NHDES-WD has required pH limits to be satisfied at the end-of-pipe with no allowance for dilution. Therefore, in addition to antibacksliding requirements, these limitations are based on state certification requirements under section 401(d) of the CWA, and 40 CFR §§ 124.53 and 124.55.

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

Anticipating the situation where NHDES-WD grants a formal approval changing the pH limit(s) to outside the 6.5 to 8.0 Standard Units (S.U.), EPA has added a provision to this draft permit (See Special Conditions section). That provision will allow EPA to modify the pH limit(s) using a certified letter approach. See State Permit Conditions in the draft permit. However, the pH limit range cannot be less restrictive than 6.0 - 9.0 S.U. which is the pH range consistently applied in National Effluent Limitation Guidelines.

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

The compliance monitoring frequency for pH is set at once per day (Daily), the same frequency required under the current permit. The analytical method for pH requires that the sample type be a grab.

Dissolved Oxygen

The NH Standards require that the dissolved oxygen (DO) content of Class B waters 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 [Env-Ws 1703.07(b)].

The current permit includes a DO limit that requires the effluent DO to be greater than 5.0 mg/l at all times to ensure that DO levels in the effluent do not contribute to a lowering of DO in the receiving water. The DMR data summarized in Attachment C indicate that the facility has consistently complied with this permit limit, and DO measurements ranged from 5.2 mg/l to 8.4 mg/l, with an average of 7.1 mg/l. The minimum DO effluent limit has been carried forward into the draft permit in accordance with the antibacksliding requirements found in 40 CFR §122.44(1).

The draft permit requires compliance monitoring of DO at a frequency of once per week (1/Week), the same frequency required by the current permit.

Nonconventional and Toxic Pollutants

Water-quality based limits for specific toxic pollutants such as chlorine, ammonia, metals, etc. are determined from chemical specific numeric criteria derived from extensive scientific studies. The specific toxic pollutants and their associated toxicity criteria are popularly know as the "Gold Book Criteria" which EPA summarized and published in *Quality Criteria for Water*, 1986, EPA 440/5-86-001 (as amended). The State of New Hampshire adopted these "Gold Book Criteria", with certain exceptions, and included them as part of the State's revised Surface Water Quality Regulations which became effective on December 10, 1999. EPA uses these pollutant specific criteria along with available dilution in the receiving water to determine a specific pollutant's draft permit limit.

Available Dilution

As part of the 1998 permit issuance process, the dilution of GBA's effluent in the Newington Station discharge canal was determine to be 21:1 (chronic dilution factor) when GBA is discharging at a average monthly flow of 252,000 gpd (175 gallons per minute) and 2:1 (acute dilution factor) when GBA is discharging at a maximum daily flow of 360,000 gpd (250 gpm) using CORMIX3 (buoyant surface discharge) Model. These worst case dilution factors assume the Station is in off-line status (not making power), therefore, only pumping through its cooling system sufficient water on a continuous basis to meet the average monthly and maximum daily flows in GBA's draft permit, estimated at 400 gallons per minute.

Formalin

CAAP facilities commonly use biocides, the most common of which are formalin products such as Paracide-F, Formalin-F or Parasite-S which contain approximately 37 % by weight formaldehyde (gas) in water. Formalin is used for the therapeutic treatment of fungal infections and external parasites on finfish and finfish eggs. This means that formalin is more toxic to the invertebrate species than to vertebrates, for it is formulated to selectively kill certain attached organisms, but not the finfish themselves when properly applied. Based on the sensitivity of invertebrate species, it is more important to protect these species than vertebrate species when setting the necessary permit limits to protect the receiving water's aquatic environment from the effects of formalin in a discharge. In the receiving waters, these invertebrates are an integral part of the food chain for finfish.

Formalin use should be consistent with U.S. Food and Drug Administration (FDA) labeling instructions as per 21 CFR §529.1030. As an example of the formalin application rates for finfish to control external parasites, FDA labeling instructions allow applications up to one hour a day with concentrations up to 170 mg/l for tanks and raceways at water temperatures above 50 degrees Fahrenheit, and every other day indefinitely with concentrations that range from 15 to 25 mg/l for earthen ponds regardless of water temperature. Finfish eggs may be treated up to 15 minutes per day with concentrations not to exceed 2,000 mg/l. Note: These application rates are only presented as examples and any drug application should always be made in accordance with the container(s labeling instructions. 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 extralabel or INAD provisions of the Federal Food, Drug and Cosmetic Act as a (best management practice) 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 the N.H. Code of Administrative Rules, Chapter Env-Ws 1703.21(a)(1). Therefore, in the absences of specific formalin or formaldehyde aquatic-life acute and chronic criteria in the NH Standards, EPA has decided to impose formaldehyde limits in the draft permit based on acute and chronic aquatic-life criteria taken from the Derivation of Ambient Water Quality Criteria for Formaldehyde, Hohreiter, David W. and Rigg, David K., Journal of Science for Environmental Technology in Chemosphere, Vol. 45, Issues 4-5, November 2001, pgs. 471-486, thus ensuring Env-Ws 1703.21(a)(1) is satisfied. EPA believes that since these criteria were developed in accordance with the EPA's *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* they are appropriate for use in limit setting purposes. From that publication, the acute and chronic aquatic-life criteria for formaldehyde are 4.58 and 1.61 mg/l, respectively. [Note: To express formaldehyde aquatic-life criteria as formalin criteria divide formaldehyde criteria by 0.37 for formalin contains 37 % formaldehyde.] Since the effluent will be analyzed for the formaldehyde portion of formalin, average monthly and maximum daily permit limits will be expressed as formaldehyde. As explained above, the chronic and acute dilution factors for this facility are 21:1 and 2:1 respectively. The draft permit average monthly limit for formaldehyde is calculated by multiplying the chronic criteria (1.61mg/l) by the chronic dilution factor (21:1). The resulting average monthly limit is 34 mg/l. Likewise, the draft permit maximum daily limit is calculated using the acute criteria (4.98 mg/l) and acute dilution factor (2:1), and the resulting maximum daily permit limit is 73 mg/l. These limits apply at all times, but the monitoring requirements in the Draft Permit are (when-in-use), since formalin is used sparingly throughout the year.

For this permit, the minimum quantification level (ML) for formaldehyde is 0.050 mg/l or 50 µg/l as established in Method 1667, Revision A in accordance with EPA's *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991, p. 111. Any value below the ML shall be reported as zero until written notice is received by certified

mail from EPA indicating some value other than zero is to be reported for a given ML (i.e., between zero and the ML).

Total Residual Chlorine

Although GBA uses an ultraviolet (UV) light system to disinfect all process water entering the facility, chlorine solution is occasionally used to disinfect hatchery equipment and empty tanks, and to disinfect batches of culture water used for growing algae, rotifers and artemia, which are used as feed for larval fish. Approximately 4 to 6 times per year, the facility uses one of its culture tanks to disinfect hatchery equipment. The tank is filled with 2000 to 4000 liters of water and chlorinated to approximately 150 mg/l. Equipment is disinfected by leaving it in this solution overnight, then the residual chlorine is neutralized using sodium thiosulfate and the water is discharged to Outfall 001. Approximately once every 6 months, the facility disinfects its algae culture tubes (300 to 500 liters each) and rotifer/artemia tanks (approximately 1000 liters each) using chlorine solution. This water is also neutralized using sodium thiosulfate before it is discharged to Outfall 001.

Even though hypochlorite solution is neutralized at the facility and unlikely to exceed water quality criteria, the draft permit includes a total chlorine limit due to the potential for the presence of chlorine in the effluent. New Hampshire State Standards specify an acute chlorine limit of 13µg/l and chronic chlorine limit of 7.5 µg/l for the protection of aquatic life under Section Env-Ws 1703.21(b). Based on an acute dilution factor of 2:1, the permit includes a maximum daily limit of 0.19 mg/l. A chronic dilution factor of 21:1 results in an average monthly limit of 0.16 mg/l. These limits apply only when chlorine is in use at the facility. The draft permit requires the facility to dechlorinate and test each batch of chlorinated water, and to discharge it only if the test results comply with the limits specified in the draft permit. The permit condition also requires the facility to record the date, time and volume of these discharges and the corresponding total residual chlorine test results following dechlorination.

Ammonia

The daily maximum ammonia monitoring results reported on the facility's DMRs for the period from January 2002 to December 2005 ranged from 0.24 mg/l to 8.39 mg/l, with an average concentration equal to 1.41 mg/l. These values are below New Hampshire standards for chronic ammonia saltwater criteria, which range from 9.4 to 11 mg/l at a pH of 7.0 and temperature of 20°C depending on salinity [See Section Env-Ws 1703.29, 1703.30, and 1703.31]. Since the discharge is unlikely to cause or contribute to violations of the water quality criteria for ammonia, no limits are included in the draft permit. However, a monitoring-only requirement is needed to determine if the ammonia levels remain the same or increase as production at the facility increases.

The draft permit compliance monitoring frequency for ammonia is twice per month (2/Month). This frequency varies from the EPA/NHDES-WD Effluent Monitoring Guidance of twice per week (2/Week) which, for the most part, is reserved for permittees with an ammonia limit. In this case, the monitoring requirement is to verify that ammonia levels continue not to have reasonable potential to cause or contribute to ammonia violations in the receiving water.

Nutrients (Nitrogen and Phosphorus)

Section Env-Ws 1703.14 of the New Hampshire Standards requires that: "Class B waters shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring." The current permit requires quarterly monitoring and reporting of total phosphorus in GBA's discharge (see summary **in Attachment C**), but does not include any requirements for Total Nitrogen or effluent limits for phosphorus.

Nitrogen is usually the limiting nutrient for algal growth in marine waters, and therefore a total nitrogen (ammonia, organic, nitrate and nitrite) as N monitoring requirement has been included in the draft permit. The nitrogen and phosphorus monitoring requirements in the draft permit will provide data on nutrient loading from the GBA discharge.

The draft permit monitoring frequency for total nitrogen and total phosphorus is once per quarter (1/Quarter), the same as the phosphorus monitoring frequency in the current permit.

Best Management Practices (BMPs)

The ELGs contained in 40 CFR Section 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.

One of the BMP plan requirements stipulated in Section 451.11(a) 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. GBA uses drum screens as the primary means of removing solids in the culture tanks, and these solids are stored in an off-line tank for disposal. These practices fall under the treatment category "additional solids removal (or solids polishing)" evaluated by EPA, and exceed the treatment technology anticipated by the final ELGs. Even with intense solids filtration, the facility must implement the best management practices required under Section 451.11(a) to minimize the discharge of uneaten feed and identify and implement procedures for routine cleaning to minimize the build-up and subsequent discharge of solids from the rearing units.

In addition to the above, EPA has made a BPJ determination as allowed in 40 CFR Section 451.11 that the direct discharge of settled solids from active rearing units to a receiving water absent any form of off-line settling or equivalent solids removal does not constitute "good solids handling practice". The current permit includes a condition that prohibits the "discharge of untreated wastewaters resulting from cleaning accumulated solids in the culture tanks, screens and associated equipment". EPA has decided to continue this prohibition in the draft permit since the intent of these regulations and the CWA is to "...reduce the pollutant loads discharged to the receiving streams." The facility already treats all of its effluent using drum screens, so the prohibition on the discharge of untreated wastewater simply means that the facility must continue its practice of treating all effluent with drum screens.

In addition to these practices, 40 CFR Section 451.11 allows the permitting authority to modify the required BMP plan requirements based on its exercise of Best Professional Judgment (BPJ). Based on EPA's BPJ authority, several additions have been included in the BMP requirements in the Draft Permit: (1) detailing precautions taken to prevent aquatic organisms that are not indigenous nor naturalized to New Hampshire waters from becoming established in local surface waters**;** (2) describing where settled solids are placed after removal from culture units; (3) recording all medicinal and chemical usage and documenting all dechlorinated water discharges; and (4) identifying and quantifying all aquaculture drugs and chemicals used at this facility. Similar requirements have been incorporated in permits such as the Berlin State Fish Hatchery (NH0000621), and EPA believes they are needed to protect the receiving waters from release of non-indigenous species or harmful discharges, and to better understand the full range of aquaculture drugs and chemicals used at the facility and their potential for discharge to the environment.

D. Additional Requirements and Conditions

The effluent monitoring requirements in the draft permit have been established to yield data representative of the discharge under the authority of Section 308(a) of the CWA in accordance with 40 CFR §§ 122.41(j), 122.44(i) and 122.48. See Table 1 for a comparison of sampling frequencies and sample types in the current permit versus the new draft permit.

VII. Essential Fish Habitat.

Under the 1996 Amendments (PL 104-297) 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 actions, or proposed actions that EPA funds, permits, or undertakes, "may adversely impact any essential fish habitat." 16 USC § 1855(b). The Amendments broadly define essential fish habitat as, "... those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." 16 USC § 1802(10). Adverse effect means any impact which reduces the quality and/or quantity of EFH. 50 CFR § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id.

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

The 1996 Sustainable Fisheries Act broadly defined EFH as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Waters include aquatic areas and their associated physical, chemical, and biological properties. Substrate includes sediment, hard bottom, and structures underlying the waters. Necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem. Spawning, breeding, feeding, or growth to maturity covers all habitat types utilized by a species throughout its life cycle. Adversely affect means any impact which reduces the quality and/or quantity of

EFH. Adverse impacts may include direct (i.e. contamination, physical disruption), indirect (i.e. loss of prey), site specific or habitat wide impacts including individual, cumulative, or synergistic consequences of actions.

According to the *Guide to Essential Fish Habitat Designations in the Northeastern United States; Volume I: Maine and New Hampshire*, March 1999, the Piscataqua River has been designated as EFH for the species listed in **Attachment D**. EPA has concluded that the limits and conditions contained in this draft permit minimize adverse effects to EFH because the discharge is treated with a sophisticated support system to thoroughly filter and disinfect the water. The water discharged to Outfall 001 is overflow from the recirculating stream used to culture fish, thus it would be unlikely to cause adverse impact upon discharge. In addition, the permit prohibits the discharge to cause a violation of state water quality standards.

EPA believes the draft permit adequately protects EFH and therefore additional mitigation is not warranted. NMFS will be notified and an EFH consultation will be reinitiated if adverse impacts to EFH are detected as a result of this permit action or if new information is received that changes the basis for these conclusions.

VIII. Endangered Species Act

The Endangered Species Act (16 U.S.C. 1451 et seq), Section 7, requires the EPA to ensure, in consultation with the U.S. Fish and Wildlife Service (USFWS) and/or NMFS, as appropriate, that any action authorized by EPA is not likely to jeopardize the continued existence of any endangered or threatened species, or adversely affect its critical habitat**.** EPA has reviewed the federal endangered or threatened species of fish, wildlife, or plants to determine if any listed species might potentially be impacted by the re-issuance of this NPDES permit. The only listed species that may be present in the vicinity of GBA is the shortnose sturgeon (*Acipenser brevirostrum*).

The shortnose sturgeon was placed on the original endangered species list in 1967 [32 Fed. Reg. 4001 (1967)] by the USFWS. Currently, NMFS has authority over this species under Section 4(a)(2) of the ESA, 16 U.S.C. Section 1533(a)(2). At present, there are 19 recognized distinct population segments (Shortnose Sturgeon Recovery Plan, NMFS, 1998), which all remain listed as endangered. The Shortnose Sturgeon Recovery Plan states that "There are no known shortnose sturgeon populations in the rivers between the Androscoggin and Merrimack rivers." However, information contained in the NMFS Protected Resources website lists the shortnose sturgeon as occurring in the Piscataqua River. In addition, the Atlantic States Marine Fisheries Commission, *Atlantic Sturgeon Stock Assessment, Peer Review Report*, March 1998, reported that "An occasional Atlantic sturgeon (Hoff 1980) has been captured in the Piscataqua River and two captures of shortnose sturgeon have been documented (New Hampshire Fish & Game 1989)."

Discharge from the facility has been filtered and supports culturing of fish through the recirculating system. This feature, along with effluent limitations and other permit conditions included in the Draft Permit, will minimize any adverse effects should there be any unanticipated incidental contact with shortnose sturgeon or any other listed species that may enter the

Piscataqua River. Therefore, EPA has determined that GBA's operating conditions along with the limits and conditions in the Draft Permit are not likely to jeopardize the existence of listed species or their critical habitats. A copy of the Draft Permit and Fact Sheet has been provided to NMFS for review and comment as part of the notification required under ESA.

VIII. State Certification Requirements.

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

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

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

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

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

IX. 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 the U.S. Environmental Protection Agency, Office of Ecosystem Protection, Industrial Permits Branch, Mail Code CIP, One Congress Street, Suite 1100, Boston, Massachusetts 02114-2023. Any person, prior to such

date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

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

X. EPA- New England/State Contacts.

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

Danielle Gaito, EPA - Region I
One Congress Street Suite 1100, Mail Code: CMU
Boston, Massachusetts 02114-2023
Telephone No.: (617) 918-1297 Fax No. 617-918-1505

_____
Date

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

ATTACHMENT A

OVERVIEW MAP

ATTACHMENT B

FACILITY SCHEMATICS

ATTACHMENT C

CONCENTRATIONS OF SELECTED EFFLUENT CHARACTERISTICS
OUTFALL 001

The following selected effluent characteristics were derived from analysis of discharge-monitoring data for Outfalls 001 during the 3-year period from January 2002 through December 2005. These values were extracted from monthly Discharge Monitoring Reports (calendar month reporting period) submitted by GBA.

To fully understand the statistics presented in the table below, the reader should be thoroughly familiar with the definitions of average monthly, and maximum daily in Part II, General Conditions and Definitions, on pages 13, 14 and 18, respectively. In the table, some range values were rounded for ease of presentation.

Effluent Characteristic	Summary of Jan. '02 to Dec. '05 DMR Data.				
	Arithmetic Mean of Average Monthly	Range of Average Monthly	Arithmetic Mean of Maximum Daily	Range of Maximum Daily	Number of Violations
Flow, mgd	0.044	0.017 - 0.69	0.057	0.028 - 0.072	0
BOD_5, mg/l	7.3	0.8 - 24.3	13.6	2.0 - 56	2[a]
TSS, mg/l	33.6	<2 - 138	53	2 - 300	15[b]
Dissolved Oxygen, mg/l	—	—	7.1	5.2 - 8.4	0
pH	—	—	—	6.5 - 8.0	0
Fecal Coliform	0.6	0 - 4.8	10	0 - 350	3[a]
Ammonia as N	—	—	1.4	0.24 - 8.39	0
Total Phosphorus (as P)	—	—	0.4	0.04 - 1.04	0

a Violation of maximum daily limit only.
b Of the 15 maximum daily TSS limit violations between August 2003 and December 2004, 9 instances also included average monthly limit violations.

ATTACHMENT D

LIST OF EFH SPECIES LOCATED IN THE VICINITY OF GREATBAY AQUACULUTRE, LLC.

Species	Eggs	Larvae	Juveniles	Adults
Atlantic Salmon (*Salmo salar*)			X	X
Atlantic cod (*Gadus morhua*)	X	X	X	X
haddock (*Melanogrammus aelgefinus*)	X	X		
pollock (*Pollachius virens*)	X	X	X	X
whiting (*Merluccius bilinearis*)			X	X
red hake (*Urophycis chuss*)	X	X	X	X
white hake (*Urophycis tenuis*)	X	X	X	X
winter flounder (*Pleuronectes americanus*)	X	X	X	X
yellowtail flounder (*Pleuronectes ferruginea*)		X		X
windowpane flounder (*Scopthalmus aquosus*)	X	X	X	X
American plaice (*Hippoglossoides platessoides*)				X
Atlantic halibut (*Hippoglossus hippoglossus*)	X	X	X	X
Atlantic sea scallop (*Placopecten magellanicus*)	X	X	X	X
Atlantic sea herring (*Clupea harengus*)		X	X	X
bluefish (*Pomatomus saltatrix*)			X	X
Atlantic mackerel (*Scomber scombrus*)	X	X	X	
bluefin tuna (*Thunnus thynnus*)				X