EXHIBIT L

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

February 17, 2005

Peter D. Colosi
Assistant Regional Administrator
Habitat Conservation Division
National Marine Fisheries Service
One Blackburn Drive
Gloucester, MA 01930-2298

Dear Mr. Colosi:

On February 14, 2005, the U.S. Environmental Protection Agency, New England Office (EPA) released for public comment the draft discharge permit and fact sheet for the City of Portsmouth Wastewater Treatment Plant, in Portsmouth, New Hampshire. The Clean Water Act (CWA) prohibits the discharge of pollutants into the waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless the discharge is otherwise authorized by the CWA. As the federal agency charged with authorizing the discharge from this facility, EPA is hereby initiating consultation with the National Marine Fisheries Service (NOAA Fisheries) under section 305(b)(2) of the Magnuson-Stevens Act for essential fish habitat (EFH).

The following is an assessment of the potential and predicted impacts to EFH and related resources from discharges regulated under this permit. Our review considered both the facility's existing design and the planned outfall modifications that will be completed during the five-year life of this permit.

DESCRIPTION OF PROPOSED ACTION

The City of Portsmouth is seeking a variance from secondary treatment requirements through the re-issuance of its NPDES discharge permit. The plant, which has operated under such a variance since the permit was last issued in 1985, discharges approximately 4.8 million gallons per day (mgd) of treated waste into the Piscataqua River. The present location of the outfall is approximately 75 yards off Peirce Island, which is less than one mile upstream from Portsmouth Harbor. The plant operates as a chemically enhanced primary treatment facility. In addition to the plant's discharge, up to four combined sewer overflows (CSOs) may discharge a combination of stormwater and untreated sanitary wastewater. Two CSOs discharge directly into the Piscataqua River and two into South Mill Pond, which flows into the Piscataqua. A more complete description of the plant's permit history, the 301(h) variance, plant design, and exact locations of CSOs is provided in the enclosed Fact Sheet (Enclosure 2).

EFH Species

The following is a list of the EFH species and their applicable lifestage(s) for the area that includes Great Bay, Piscataqua River, and the marine waters in and adjacent to Portsmouth Harbor:

Species	Eggs	Larvae	Juveniles	Adults
Atlantic salmon (*Salmo salar*)			X	X
Atlantic cod (*Gadus morhua*)	X	X	X	X
haddock (*Melanogrammus aeglefinus*)	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 (*Pseudopleuronectes 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

According to EFH life history information provided in applicable Fishery Management Plan documents, 11 of the 17 species listed are generally classified as demersal species, however, some species like whiting, cod, and pollack are known to utilize the entire water column. The remaining fish species are more pelagic in nature during the lifestages that they are expected to be present in this area, but can be found foraging near the bottom as juveniles and adults. One exception is Atlantic sea herring which tend to spawn over gravel substrate, and release eggs that are demersal and adhesive. The Atlantic sea scallop, the only mollusk listed for this area, spends

most of its life on the seafloor, except during its pelagic larval phase. Adult scallops are fairly mobile for mollusks, and can move considerable distances to find preferable habitat, or to escape predators.

ANALYSIS OF EFFECTS

Pollutants

There are a number of pollutants that may be associated with treated and untreated municipal wastewater that could potentially impact EFH. Specific pollutants, categories of pollutants (e.g. metals), and pollutant parameters of concern for this facility are listed below. A more thorough description of these pollutants and how they will be regulated through this permit are included under Section V of the Fact Sheet (Enclosure 2).

1. Settleable and suspended solids
2. Chlorine
3. Biochemical oxygen demand (BOD)
4. Bacteria (Fecal Coliform and Enterococci bacteria)
5. pH
6. Pesticides (demeton, guthion, malathion, mirex, methoxychlor, and parathion)
7. Nutrients (ammonia nitrogen as nitrogen)
8. Metals (Al, Cd, Cr, Cu, Pb, Ni, Zn)
9. Whole effluent toxicity

Potential Impacts to EFH

Impacts to EFH species and their habitats from the discharge of treated and untreated waste can be broadly divided into water column and benthic effects. It should be noted that these impacts are often interconnected. For example, the discharge of excessive nutrients into the water column can cause or contribute to enhanced algae growth. This can result in reduced water transparency, which, if chronic, can impair the growth of sub-aquatic vegetation.

The potential for pollutants discharged from a wastewater treatment facility to adversely impact EFH is based in large part on the following factors: 1) The types and quantities of pollutants being received by the facility, 2) the level of treatment the wastewater receives prior to discharge, 3) the volume of the wastewater effluent compared to the natural flow or volume of the receiving waters, 4) the location and design of the outfall, 5) the dilutive and assimilative capacity of the receiving waters, 6) the existing water quality conditions in the receiving waters; and 7) the proximity of sensitive habitats, as well as the types and lifestages of EFH species, that may be found within the discharge plume's area of influence.

Water column effects

The discharge of pollutants from a wastewater treatment facility or CSO can potentially impact EFH within the water column in a number of ways, including the following:

1. exposure to toxic pollutants resulting in acute or chronic toxicity to organisms passing through the effluent plume (e.g., from chlorine compounds, pesticides, whole effluent toxicity);
2. exposure of EFH species or their forage to bacteria and other infectious pathogens;
3. alteration of critical water quality parameters (e.g., depressed DO, pH) resulting in habitat avoidance or impedance to migration;
4. alteration of the plankton community caused by excessive nutrient loading. This can cause or contribute to harmful algae blooms that can be toxic, and cause fish kills or habitat avoidance. Increased algae production can also reduce water transparency and impair growth of SAV, and a die-off of massive algal blooms can depress DO levels in the water column and on the seafloor; and
5. the disruption of fish endocrine systems associated with the exposure to discharged chemicals that mimic fishes's natural hormones.

Benthic effects

The discharge of pollutants from a wastewater treatment facility or CSO can potentially impact EFH on or within the benthos in the following ways:

1. the uptake by EFH species of, or physical exposure to, metals and other toxic pollutants that have accumulated in sediments, benthic infauna, or other forage organisms; and
2. The accumulation of settleable solids, which can alter benthic habitat and the affected biological community. The accumulation of organic matter can also result in a reduction of dissolved oxygen in the sediments, which can impact benthic infauna and reduce forage opportunities for EFH species. Eggs of EFH species exposed to low DO conditions for extended periods could die, or be impaired.

EPA's OPINION ON PROBABLE IMPACTS

Water column effects

1. **Toxic pollutants:** The draft permit establishes a zone of initial dilution (ZID) which provides the minimum area necessary for the discharge plume to thoroughly mix with the receiving waters. Within the ZID, pollution parameters are allowed to exceed state water quality standards as long as organisms passing through the ZID are protected from acute lethality. It should be noted that the ZID is considerably smaller in area than otherwise would be allowed under the State of New Hampshire's mixing zone policy. In fact, the mixing zone allowed under the state policy would provide a dilution of 400:1 versus EPA's more restrictive zone that provides only

177:1 dilution. The ZID for the existing outfall is calculated to be 18,870 square feet. The ZID for the improved outfall is calculated to be 41,203 square feet, just under one acre. While the new ZID is significantly larger, the effluent will be diffused much more rapidly under the new outfall design.

The draft permit proposes two sets of permit limits: one set for the facility as it now exists, and another that will take effect following the planned extension of the facility's outfall. The extension of the outfall approximately 200 feet, combined with the addition of a 20-port diffuser, is expected to increase dilution from its present ratio of 30:1 to 177:1. At this increased rate of dilution, EPA expects the facility to meet all applicable water quality standards. If effluent monitoring detects pollutants at concentrations which reasonably could be expected to cause or contribute to a violation of state water quality standards, then EPA can modify this permit to include numeric limits for those pollutants.

Tier I limits and reporting requirements have been established in the draft permit to regulate pollutants from the facility's outfall as it is presently configured. These limits are consistent with secondary treatment performance standards for a facility with the dilution ratio of 30:1 (See pg. 2 of draft permit, Enclosure 1). The permit requires that the effluent be monitored for the presence and concentration of certain pollutants that could cause toxicity to aquatic organisms, and maintains a numeric limit on chlorine. The pollutants to be monitored include copper, lead, zinc, cadmium, nickel, aluminum, and chromium. See enclosures 1 and 2 for a more complete description of the permit limits. Tier II limits and reporting requirements will take effect following the construction of the new diffuser.

Soon after this permit is issued, EPA intends to modify an existing consent decree with the City of Portsmouth to ensure the outfall extension project is completed and operational by March 2007. The modified consent decree will include interim permit limits that the treatment plant is capable of meeting now. See the enclosed 310(h) Decision Document for a more thorough discussion of how this permit is designed to meet or exceed state water quality standards (Enclosure 3)

In addition to the required water quality monitoring of the specific pollutant parameters of concern, testing for chronic and acute whole effluent toxicity (WET) will be required quarterly to ensure the aggregate of known or unknown pollutants in the effluent are not toxic to aquatic organisms. Specific numeric limits have been set for both acute and chronic toxicity. For acute toxicity, the test species include one invertebrate (mysid shrimp *(Mysidopsis bahia)*) and one fish species (inland silverside [*Menidia beryllina*]). Chronic toxicity testing will be conducted on inland silverside and purple sea urchin (*Arbacia punctulata)*, an invertebrate. Also, testing for pesticides and other toxic pollutants will be required annually in July.

2. **Bacteria:** New Hampshire State Water Quality Standards do not allow dilution as a means of meeting bacteria standards. Therefore, the fecal coliform limit must be met at the end of the treatment plant, just prior to discharge. In addition, monitoring for the presence of Enterococci

bacteria will also be required.

3. **Critical water quality parameters:** The plant has historically been able to routinely meet water quality parameters such as dissolved oxygen, turbidity, and pH. Limits have been established in the draft permit for pH, BOD, and total suspended solids to ensure the discharge meets state water quality standards.

4. **Nutrients:** The draft permit requires effluent monitoring for ammonia nitrogen during the quarterly WET tests. Nutrient enrichment has historically not been a water quality concern in this section of the Piscataqua River, as evidenced by healthy eelgrass meadows in Portsmouth Harbor, downstream from the outfall.

5. Endocrine disruptors: EPA New England has never issued a permit which regulated potential endocrine disrupting pollutants due to an incomplete understanding of their effects on aquatic organisms. While some potential endocrine disrupting pollutants are associated with domestic sewage (e.g., estrogenic steroids), others are generated only from industrial sources. This plant receives no effluent from industrial sources. The enhanced dilution that will be provided by the new outfall structure combined with the hydrodynamics of the Piscataqua River are likely to rapidly disperse endocrine disrupting pollutants similar to other pollutants of concern. Under these conditions, EPA believes it is unlikely that there would be significant impacts to aquatic organisms from endocrine disrupting pollutants discharged from this plant.

Benthic effects

Studies conducted in 1994 and again in 2002 of benthic conditions revealed no evidence of accumulated pollutants associated with this facility in proximity to the existing outfall, nor any statistically significant difference between the benthic community near the discharge and a reference location. The general absence of fine sediments, and prevalence of cobble and armored substrate, is indicative of the river's strong tidal currents in this area. Pollutants discharged from the outfall are rapidly diluted and transported downcurrent, which varies with the tide. The draft permit requires additional benthic sampling and analysis be conducted to confirm previous monitoring that adverse impacts to the benthic community in the area of the discharge are not occurring. See the enclosed 301(h) decision document for a more detailed discussion of benthic monitoring. (Enclosure 3)

CSO Discharges

As previously stated, this draft permit authorizes intermittent wet-weather discharges from up to four CSOs. While the CWA does not require secondary treatment for CSO discharges, the draft permit includes the following conditions and limitations designed to minimize impacts to water quality.

(1) Proper operation and regular maintenance programs for the sewer system and the

combined sewer overflow points;

(2) Maximum use of the collection system for storage;
(3) Review and modification of industrial pretreatment program requirements to assure CSO impacts are minimized;
(4) Maximization of flow to the POTW for treatment;
(5) Prohibition of dry-weather overflows from CSOs;
(6) Control of solid and floatable materials in CSO discharges;
(7) Pollution prevention programs that focus on contaminant reduction activities;
(8) Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts; and
(9) Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

The draft permit and fact sheet provide a thorough description of permit conditions and limitations (Enclosures 1 and 2).

CONCLUSION

Based on the high dilution provided in the Piscataqua River, the nature of the effluent (i.e., no industrial sources are contributing), and permit limits and monitoring requirements that have been developed to ensure state standards will be protected, EPA believes EFH within the water column will be no more than minimally affected, and those impacts will be limited to areas within close proximity to the outfall. There should be no impediment to fish migration, no lethality or impairment to eggs and larvae passing through the mixing zone, and no avoidance of the area, except perhaps very close to the outfall.

Similarly, EPA believes benthic impacts to EFH associated with the discharge of pollutants from this plant (both organic and those potentially toxic) will be minimal due in large part to the dispersive nature of the discharge area. While benthic impacts have been negligible near the existing outfall, the planned 20-port diffuser should further enhance dispersal of material that might settle out on the riverbed.

Impacts to EFH from CSO discharges are expected to be spatially and temporally limited due to permit conditions that are designed to minimize adverse environmental effects and protect water quality standards, including prohibiting discharges except during wet weather events. EPA is continuing to work with New Hampshire Department of Environmental Services and the City of Portsmouth to eliminate existing CSOs through the development of a long-term CSO control plan.

PROPOSED MITIGATION

This NPDES permit should sufficiently protect EFH resources from the discharge of pollutants such that additional mitigation is not warranted. If adverse impacts to EFH species or their habitats do occur either as a result of non-compliance, or from unanticipated effects from this

activity, the permit may be modified. Additionally, if such an incident occurs, or if new information becomes available that changes the basis for our determination, then consultation with NMFS will be reinitiated.

We look forward to your review and response to this assessment. Please feel free to contact me or Eric Nelson of my staff at 617-918-1676 with any questions related to this letter.

Sincerely,

Melville P. Cote, Jr., Chief
Ocean and Coastal Protection Unit

Enclosures:

1. Draft NPDES permit for the City of Portsmouth Wastewater Treatment Plant (Permit No. NH100234), February 2005
2. Draft Fact Sheet for the City of Portsmouth Wastewater Treatment Plant, February 2005
3. Tentative Decision Document , Analysis of the Application for Section 301(h) Secondary Treatment Variance for City of Portsmouth Wastewater Treatment Plant, November 2004

cc: NPDES Permit File NH0100234