UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I: NEW ENGLAND
ONE CONGRESS STREET
BOSTON, MASSACHUSETTS 02114-2023

FACT SHEET AND SUPPLEMENTAL INFORMATION

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

NPDES GENERAL PERMIT NOs.: MAG580000 AND NHG580000

I. Introduction

The Director of the Office of Ecosystem Protection, EPA-New England, is issuing the general permits for Publicly Owned Treatment Works (POTWs) and other treatment works treating domestic sewage to certain surface waters of the States of Massachusetts (including both Commonwealth and Indian Country Lands), and New Hampshire. Other treatment works treating domestic sewage may include but are not limited to those operating at schools, hotels, nursing homes and other facilities if they accept and treat sanitary wastewater. These surface waters are freshwater and marine waters that provide a dilution factor at least 50:1 to the treatment plant's discharge. These treatment works must provide secondary treatment to the sanitary wastewater. The general permits are organized as a single permit with the effluent limitations and specific conditions for minor facilities in Massachusetts and for minor and major facilities in New Hampshire. Attachments to the permit include the Toxicity Test Protocols, Historic Properties Guidance, Endangered Species Guidance, Sludge Compliance Guidance, and Standard Conditions. Requests for permit coverage are made using the notification requirements specified in the permit.

This fact sheet provides the principal facts and the significant factual, legal, and policy questions considered in the development of the draft permit. Attachments to the fact sheet provide the dilution factor calculations, potential facilities eligible for permit coverage, effluent limit calculations, and the toxicity strategy for municipal permits.

II. Coverage of General Permits

Section 301(a) of the Clean Water Act (the Act) provides that the discharge of pollutants is unlawful except in accordance with a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the Act. EPA's regulations authorize the issuance of "general permits" to one or more categories or subcategories of discharges (see 40 CFR §122.28). EPA may issue a single, general permit to a category of point sources located within the same geographic area whose discharges warrant similar pollution control measures.

A. The Director of an NPDES permit program is authorized to issue a general permit if there are a number of point sources operating in a geographic area that:

1. Involve the same or substantially similar types of operations;
2. Discharge the same types of wastes;
3. Require the same effluent limitations or operating conditions;
4. Require the same or similar monitoring requirements; and,
5. In the opinion of the Director, are more appropriately controlled under a general permit than under individual permits.

B. EPA is proposing these general permits because there are similar point source discharges from POTWs and other treatment works that require the same effluent limitations and monitoring requirements as described below. Please note that sources currently covered by an individual permit that meet the criteria for coverage under a General Permit may request to be covered by the General Permit rather than their existing individual permit as described in 40 CFR §122.28(b)(3)(v); or they may request coverage under the appropriate General Permit once their existing individual permit expires. When issued, the General Permit will enable facilities currently covered under administratively continued individual permits (expired permits) to obtain coverage under the General Permit which will enable the facilities to maintain compliance with the Clean Water Act; will extend new environmental and regulatory controls to these dischargers, and reduce EPA's permit issuance backlog of pending individual permit applications and expired permits. Violations of a condition of a general permit constitutes a violation of the Clean Water Act and subjects the discharger to the penalties in Section 309 of the Act.

III. Exclusions

EPA has determined that these general permits will not be available to the following sources and these discharges will need to obtain permit coverage by applying for an individual permit.

- Any facility that is not defined as a POTW or a treatment works treating domestic sewage;
- Any facility that does not provide secondary treatment to the discharge
- Any POTW with an EPA-approved industrial pretreatment program or any POTW required to develop an industrial pretreatment program;
- Any facility with a dilution factor of less than 50:1. The applicant should consult the state or EPA to confirm the appropriate dilution factor;
- Any facility that discharges to the territorial sea;
- Any facility that discharges to an outstanding natural resource water, or Area of

Critical Environmental Concern (ACEC) in Massachusetts, or to Class A or an outstanding resource water in New Hampshire;

- Any facility with Combined Sewer Overflows (CSOs);

- Any "New Source" discharges as defined in 40 CFR §122.2 due to the site specific nature of the environmental review for those facilities as required by the National Environmental Policy Act of 1969 (NEPA), 33 USC 4321 *et seq.* "New Sources" must comply with the New Source Performance Standards (NSPS) and are subject to the NEPA process in 40 CFR §6.600. [Note: New sources should not be confused with new dischargers which are eligible for General Permit coverage];

- Any facility whose discharge(s) may adversely affect threatened or endangered species or its critical habitat;

- Any facility which adversely affects properties listed or eligible for listing in the National Registry of Historic Places under the National Historic Preservation Act of 1966, 16 USC SS470 et.seq;

- Any facility whose new or increase discharge is not in compliance with the state's antidegradation policy;

- Any facility discharging to an impaired water included on the CWA section 303(d) listing for the state, where the discharge contains the pollutant/stressor causing the impairment according to the 303(d) listing; and,

- Any facility that the Director determines inappropriate for a general permit based on consideration of the following factors:
  (1) The variability of the pollutants or pollutant parameters in the effluent (based on chemical-specific information, the type of treatment facility, and the types of industrial contributors);
  (2) Existing controls on point or nonpoint sources, including total maximum daily load calculations for the water body segment and the relative contribution of the discharger;
  (3) Receiving stream characteristics, including possible or known water-quality impairment;
  (4) Recommendation from the state;
  (5) Other considerations (including but not limited to consultation with the state, a history of toxic impact or compliance problems at the facility) which the Director determines could cause or contribute to adverse water-quality impacts; or,
  (6) Facility discharges to a river designated as a Wild and Scenic River.

An initial review, of the data base for NPDES permits and individual NPDES permit files, indicates there are approximately 16 facilities in Massachusetts and 24 facilities in New Hampshire potentially eligible for coverage under the general permit based on the preceding exclusions. These facilities are listed in Attachment A. Additional facilities may become eligible following expiration of their individual permits or following treatment plant upgrades including outfall improvements.

The administrative aspects for a general permit are given in 40 CFR §122.28(b) and provide for requesting and requiring an individual permit. Any owner or operator authorized by a general permit may request to be excluded from coverage of a general permit by applying for an individual permit. This request may be made by submitting a NPDES permit application, consisting of Forms 2A, and 2S and providing reasons to support the request to the Director within 90 days after these general permits are published in the Federal Register. The Director may also require any person authorized by a general permit to apply for, and obtain, an individual permit as provided by 40 CFR §122.28(b)(3). Additionally, any interested person may petition the Director to take this action. However, individual permits will not be issued for sources covered by these general permits unless it can be clearly demonstrated that inclusion under the general permit is inappropriate. The issuance of individual permits may be required when:

(1) The discharger is not in compliance with the terms and conditions of the general permit;

(2) A change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants applicable to the point source;

(3) Effluent limitations guidelines are subsequently promulgated for the point sources covered by the general NPDES permit;

(4) A Water Quality Management plan or Total Maximum Daily Load containing requirements applicable to such point sources is approved;

(5) Circumstances have changed since the time of the request to be covered so that the discharger is no longer appropriately controlled under the general permit, or either a temporary or permanent reduction or elimination of the authorized discharge is necessary;

(6) The discharge(s) is a significant contributor of pollution or in violation of State Water Quality Standards for the receiving water;

(7) The discharge(s) adversely impacts any federal managed species for which Essential Fish Habitat has been designated; or,

(8) The point source(s) authorized to discharge under this General Permit no longer:
(a) Involves the same or substantially similar types of operations;
(b) Discharges the same types of wastes;
(c) Requires the same effluent limitations or operating conditions;
(d) Requires the same or similar monitoring; or,
(e) In the opinion of the Director, is more appropriately controlled under a general permit than under an individual NPDES permit.

In accordance with 40 CFR §122.28(b)(3)(iv), the applicability of the general permit to a specific discharger is automatically terminated on the effective date of the individual permit.

IV. Permit Basis and Other Conditions of the General NPDES Permits

A. Statutory Requirements

Section 301(a) of the Clean Water Act (CWA or the Act), 33 U.S.C. 1311(a), makes it unlawful to discharge pollutants to waters of the United States without a permit. Section 402 of the Act, 33 U.S.C. 1342, authorizes EPA to issue NPDES permits allowing discharges that will meet certain requirements, including CWA Sections 301, 304, and 401 (33 U.S.C. 1331, 1314, and 1341). Those statutory provisions state that NPDES permits must include effluent limitations requiring authorized discharges to: (1) meet standards reflecting specified levels of technology-based treatment requirements; (2) comply with State Water Quality Standards; and (3) comply with other appropriate requirements of state law imposed pursuant to § 401 of the CWA, 33 USC §1341.

EPA is required to consider technology and water-quality requirements when developing permit limits. 40 CFR Part 125 Subpart A sets the criteria and standards that EPA must use to determine which technology-based requirements, requirements under Section 301(b) of the Act and/or requirements established on a case-by-case basis under Section 402(a)(1) of the Act, should be included in the permit.

The 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. An excursion occurs if the projected or actual in-stream concentration exceeds the applicable criterion.

In determining reasonable potential, EPA considers: (1) existing controls on point and non-point sources of pollution; (2) pollutant concentration and variability in the effluent and receiving water as determined from permit's reissuance application, monthly Discharge Monitoring Reports (DMRs), and State and Federal Water Quality Reports; (3) sensitivity of the species to toxicity testing; (4) statistical approach outlined in Technical Support Document for Water Quality-based Toxics Control, March 1991, EPA/505/2-90-001, pages 47-66; and, where appropriate, (5) dilution of the effluent in the receiving water.

B. Antidegradation Provisions

The conditions of these permits reflect the goal of the CWA and EPA to achieve and maintain water quality standards. The environmental regulations pertaining to the State Antidegradation Policies which protect the State's surface waters from degradation of water quality are found in the following provisions: Massachusetts Surface Water Quality Standards 314 CMR 4.04 Antidegradation Provisions; and New Hampshire 50 RSA 485-A:8 and Surface Water Quality Regulations, Chapter 1700, Part Env-Ws 1708.

These general permits do not apply to any discharge to any outstanding national resource water (see state water quality regulations) or the territorial seas. These permits also do not apply to any new or increased discharge to other waters unless the discharge is shown to be consistent with the state's antidegradation policies. This determination shall be made in accordance with the appropriate State Antidegradation Implementation Procedures. EPA will not authorize these discharges under the general permits until it receives a favorable antidegradation review and certification from the States. The Commonwealth of Massachusetts will conduct antidegradation reviews for notices of intent to discharge, under the general permit, into Class A or SA waters.

C. Effluent Limitations

C.1. Technology Based Effluent Limitations (BOD_5, $CBOD_5$ and TSS)

Under §301(b)(1)(B) of the CWA, POTWs must achieve effluent limitations for Biochemical Oxygen Demand (BOD_5) or, alternatively, Carbonaceous Biological Oxygen Demand ($CBOD_5$) with the approval of EPA and the State; and Total Suspended Solids (TSS) based upon secondary treatment. The permittee may apply for $CBOD_5$ limitations, in place of BOD_5 limitations, with the Notice of Intent (NOI) submission. The technology-based secondary treatment requirements are set forth at 40 CFR Part 133. In addition, Section 301(b)(1)(C) of the CWA requires that effluent limitations based on water-quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving stream.

The Average Monthly and Average Weekly effluent limitations (concentration) for BOD_5 (or $CBOD_5$) and TSS in these general permits are based upon the secondary treatment standards in 40 CFR §133.102. In addition to concentration limitations, BOD_5 (or $CBOD_5$) and TSS are also expressed in terms of loading (mass) limitations as part of these general permits (see 40 CFR §122.45(f)(1)). These permits contain mass limitations in addition to concentration limitations because concentration limitations may not be sufficient to control the amount of mass discharged by the permittee or to prevent the permittee from discharging flows in excess of its design capacity.

The Maximum Daily concentration and mass limitations are State certification requirements for facilities in New Hampshire. The Maximum Daily concentration reporting requirement for facilities in Massachusetts is a State certification requirement. A State certification is required under Section 401 of the CWA. The NPDES permit regulations governing state certification requirements are set forth in 40 CFR §§124.53 and 124.55.

The Environmental Protection Agency has not developed technology-based effluent guidelines for treatment works treating domestic sewage other than POTWs. In the absence of national standards, EPA is authorized to use Best Professional Judgement (BPJ) to establish effluent limitations, in accordance with Section 402 (a)(1) of the CWA and 40 CFR §125.3. Since these treatment works treat the same type of waste (sanitary) and use the same type of technology to treat the waste, technology-based effluent limitations for these treatment works are established to

be equal to the POTW technology-based standards in 40 CFR §133.102, and mass limits pursuant to 40 CFR §122.45(f)(1).

C.2. Water-Quality-Based Effluent Limitations

Background

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(s) for a water body or a segment of a water body; (2) a numeric or narrative water-quality criteria sufficient to protect the assigned designated use(s); and (3) an antidegradation requirement to ensure that once a use is attained, it will not be eroded, and that higher quality waters will be protected. Receiving stream requirements are established according to numerical and narrative criteria in the state's water quality standards adopted under state law for each stream classification. The Massachusetts and New Hampshire water quality standards are found at 314 CMR Massachusetts Surface Water Quality Standards, and 50 RSA 485-A:8 and Chapter Env-Ws 1700 Surface Water Quality Regulations, respectively. These state water quality standards are individually referred to as the Massachusetts standards and New Hampshire standards in the remainder of this Fact Sheet.

When using chemical-specific numeric criteria to develop permit limits both the acute and chronic aquatic-life criteria, expressed in terms of maximum allowable in-stream pollutant concentration, are used. Where appropriate, the available dilution of the effluent in the receiving water is used with the pollutant specific criteria to determine a specific pollutant's permit limit. Acute aquatic-life criteria are considered applicable to daily time periods (maximum daily limit) and chronic aquatic-life criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific limits are allowed under 40 CFR §122.44 (d)(1) and are implemented under 40 CFR §122.45(d).

Water-quality-based effluent limits for specific toxic pollutants such as chlorine, ammonia, copper, etc. are determined from numeric chemical-specific criteria derived from extensive scientific studies. The specific toxic pollutants and their associated toxicity criteria are popularly known as the "Gold Book Criteria" which EPA summarized and published in Quality Criteria for Water, 1986, (EPA 440/5-86-001) as amended. Each criteria consists of two values--an acute aquatic-life criteria to protect against short-term effects, such as death, and a chronic aquatic-life criteria to protect against long-term effects, such as poor reproduction or impaired growth. New Hampshire adopted these "Gold Book Criteria", with certain exceptions and included them in their water quality standards (see Env-Ws 1703.21). The Massachusetts standards reference the recommended limits published by EPA for specific pollutants established pursuant to Section 304(a)(1) of the CWA as the allowable instream criteria. These specific pollutants could be reasonably expected to effect existing or designated uses.

The design flow of the treatment works is used to compute effluent limits for daily and monthly

time periods as well as weekly periods where appropriate. Also, the dilution provided by the receiving water is factored into this calculation. 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 States of Massachusetts, and New Hampshire both have narrative criteria in their water quality standards (See Massachusetts 314 CMR 4.05(5)(e) and New Hampshire Part Env-Ws1703.21(a)) that prohibit toxic discharges in toxic amounts. These General Permit do not allow for the discharge of pollutants in amounts which would produce a toxic effect to any aquatic life.

The availability of these General Permits is restricted to those POTWs and other wastewater treatment facilities discharging to receiving waters where the dilution factor is at least 50:1. With the minimum dilution factor at this magnitude, the reasonable potential for these discharges to exceed numeric water-quality criteria other than for chlorine does not exist. Chlorine is expected in the discharge since it is used in the wastewater disinfection process at most facilities. Typically in New England, municipal facilities discharging to low-dilution receiving waters may have the reasonable potential to cause exceedances of the ambient aquatic-life criteria for ammonia and certain metals. Low dilution is considered less than 50:1 and in most situations less than 20:1. The whole effluent toxicity test data, including the associated metals analyses that are required for these permits, will provide the data to support this reasonable potential determination.

Each general permit includes a provision to require an individual permit for a discharge in violation of State water quality standards. An individual permit is also required for any facility discharging to an impaired water, where the discharge contains the pollutant/stressor causing the impairment according to the state's CWA section 303(d) listing. Such a facility requires an individual permits to ensure the attainment and maintenance of water quality standards and designated uses. Any facility that has an individual permit containing water quality-based effluent limits more stringent than, or not addressed by, this General Permit is not eligible for coverage consistent with the anti-backsliding requirements of CWA 402(o) and 40 CFR 122.44(l).

a. Bacteria (Escherichia coli, Total Coliform, Fecal Coliform, and Enterococci)

For Massachusetts facilities, the draft general permit proposes Fecal Coliform bacteria limits required by the Massachusetts water quality standards. Facilities discharging to Class B, SA, and SB waters, the Fecal Coliform bacteria limits as required by 314 CMR 4.05(3)(b)(4), 4.05(4)(a)(4)(b), and 4.05(4)(b)(4)(b), respectively. The Fecal Coliform limits shall not exceed a monthly geometric mean of 200 colony forming units (cfu) per 100 ml, nor shall they exceed 400 cfu per 100 ml as a maximum daily.

In Class SA and SB waters approved for open shellfish harvesting or for restricted shellfish harvesting the more restrictive Fecal Coliform criteria applies as required by 314 CMR

4.05(4)(a)(4)(a) and 4.05(4)(b)(4)(a). In Class SA Waters, the Fecal Coliform limits shall not exceed a monthly geometric mean of 14 colony forming units (cfu) per 100 ml, nor shall they exceed 43 cfu per 100 ml as a maximum daily. In Class SB Waters, the Fecal Coliform limits shall not exceed a monthly geometric mean of 88 colony forming units (cfu) per 100 ml, nor shall they exceed 260 cfu per 100 ml as a maximum daily. In these shellfishing waters more stringent regulations may apply according to the rules and regulations of the Massachusetts Division of Marine Fisheries, see 314 CMR 4.06(1)(d)(4). With the imposition of additional regulations on the discharge, the facility would be deemed inappropriate for the general permit and would be required to obtain an individual permit.

Fecal Coliform monitoring in Class B waters, and Class SA and SB waters not designated for shellfishing may be restricted to the period April 1 to October 1 if the facility receives authorization to utilized seasonal disinfection as explained in the section discussing Total Residual Chlorine. The Massachusetts water quality standards provide for seasonal disinfection in the cited bacteria criteria.

The Fecal Coliform limits for discharges to Class A waters shall not exceed a monthly geometric mean of 20 colony forming units (cfu) per 100 ml, nor shall they exceed 100 cfu per 100 ml as a maximum daily. In the event more stringent regulations apply (see 314 CMR 4.06(2)(d)1), the facility would be required to obtain an individual permit as mentioned above.

For New Hampshire facilities, the permit proposes Escherichia coli, Total Coliform or Fecal Coliform, and Enterococci bacteria limits as required by the New Hampshire standards and in accordance with the uses and criteria prescribed in the state statutes (RSA 485-A:8, II, and V). Escherichia coli limits apply to discharges to freshwater and these limits vary with the presence of a designated beach area. Total Coliform or Fecal Coliform, and Enterococci limits apply to discharges to marine waters and these limits are a function of the designated uses of shellfishing and swimming, respectively, for the receiving water. The notification requirements, described elsewhere in this document, contain the information to determine the applicable bacteria limits associated with the uses of the receiving water.

Calculation for compliance with the average monthly limit for Fecal Coliform, Total Coliform, a Escherichia coli and Enterococci shall be determined by using the geometric mean. Historically Massachusetts has required bacteria to be satisfied at the end-of-pipe with no allowance for dilution. This limitation is based on State certification requirements under Section 401(d) of the CWA, 40 CFR §§124.53 and 124.55. In New Hampshire, the bacteria criteria are applied at the end of the wastewater treatment facility's discharge pipe as specified in Env-Ws 1703.06(b). Additionally, the antibacksliding requirements apply to certain facilities where the proposed bacteria limits are identical to those limits in the individual permit.

b. pH

The pH water-quality criteria for freshwater and marine waters in the Massachusetts standards are found in 314 CMR 4.05(3)(a) and (b), and 4.05(4)(a) and (b), respectively. The pH criteria for Class A and Class B waters (freshwater) are 6.5 to 8.3 Standard Units (S.U.) and include

values within 0.5 units of the background range. The pH criteria for Class SA and Class SB waters (marine water) are 6.5 to 8.5 S.U. and include values within 0.2 units of the normally occurring range. The pH water-quality criteria for Class B waters in New Hampshire are found in Env-Ws 1703.18(b) and are 6.5 to 8.0 (S.U.) or as naturally occurs in the receiving water.

Since the mid 1990's individual NPDES permits for municipalities in New Hampshire have included a condition allowing for alternative pH limits to exceed the 6.5 to 8.0 range under specific circumstances. These circumstances are the naturally occurring conditions in the receiving water and the impact of the discharge on the receiving water pH according to a demonstration study. If this study indicated the naturally occurring receiving water pH is not significantly altered by the revised pH limit range, the pH limits were modified to be within the 6.0 - 9.0 S.U. range.

While the pH limits are typically applied at end-of-pipe, the narratives pertaining to the background conditions with the numeric pH criteria in each state's water quality standards provides flexibility to this approach as does the condition for alternative pH limits in New Hampshire. Based on this discussion, EPA is establishing the pH limit range at 6.0 to 9.0 S.U. for the category of discharges authorized by these permits. This pH range is consistent with secondary treatment regulations at 40 CFR §133.102 and it is protective of each state's ambient pH water-quality criteria based on the minimum dilution factor of 50:1 in the receiving waters.

c. Dilution Factor

The dilution factor initially determines if the facility meets one of the eligibility requirements for each general permit. The dilution factor is also used to compute the effluent limits for total residual chlorine and Whole Effluent Toxicity as described below. The available dilution at a specified critical flow condition in the receiving water and the treatment plant's design flow are used in computing the dilution factor.

For discharges to freshwater, the water quality standards for each state establish the lowest flow condition in the rivers and streams to meet the water-quality criteria as the 7Q10 low flow. This flow condition is found at 314CMR 4.03(3)(a) in the Massachusetts Standards and at Part Env-Ws 1705.02 in the New Hampshire regulations. Because 10 percent of the river's assimilative capacity is held for future needs in New Hampshire in accordance with Env-Ws 1705.01, 90 percent of the 7Q10 value is used in the dilution factor calculation.

For marine waters in Massachusetts, the critical hydrologic condition at which water-quality must be met is established on a case-by case basis. Existing uses are to be protected and the selected hydrologic condition is not to interfere with the attainment of designated uses (314CMR 4.03(3)(c). For discharges to tidal waters in New Hampshire, the low flow condition shall be equivalent to the conditions that result in a dilution that is exceeded 99 percent of the time (see Part Env-Ws 1705.02). Dilution factors are calculated by mixing zone modeling in accordance with the NHDES Mixing Zone Policy.

The equations used to calculate the dilution factor are provided in Attachment B of this Fact

Sheet. The state permitting authority or EPA must be contacted to confirm the annual 7Q10 low flow, design flow, and dilution factor for the facility prior to completing the Notification Requirements for the permit in Part III.M.

d. Total Residual Chlorine

The Massachusetts and New Hampshire water quality standards each specify the chronic and acute aquatic-life criterion for chlorine at 0.011 mg/l and 0.019 mg/l, respectively, for freshwater; and 0.0075 mg/l and 0.013 mg/l, respectively, for marine water. Chlorine and chlorine compounds, such as "oregano-chlorines", produced by the chlorination of wastewater can be extremely toxic to aquatic life. Section 101(a)(3) of the Act, Massachusetts standards at 314 CMR 4.05(5)(e), and New Hampshire standards at Env-Ws 1703.21(a) prohibit the discharge of toxic pollutants in toxic amounts. Therefore, to reduce the potential for the formation of chlorinated compounds during the wastewater disinfection process and to be protective of the States' narrative standards, EPA-New England has, historically, established a maximum Total Residual Chlorine (TRC) limitation of 1.0 mg/l for both the average monthly and the maximum daily limitations. These limitations may be more stringent, after considering the available dilution, than the limits determined using the States' numeric water quality criteria. The equations and example calculations to determine the TRC limits are in Attachment C of the Fact Sheet.

These General Permits establish TRC limitations based on either Best Professional Judgement or the State's water quality standards. The Average Monthly or Maximum Daily TRC limitations less than 1.0 mg/L are established as water-quality limits in the General Permits. The TRC limits of 1.0 mg/L are based on Best Professional Judgement (BPJ) which is allowed under the authority granted in Section 402(a)(1) of the Act and 40 CFR §125.3 for facilities without TRC limitations in their existing or expired individual permit and for facilities in New Hampshire. The BPJ limits are protective of the state's narrative standards.

The average monthly and maximum daily limitations for TRC are 1.0 mg/l for Massachusetts facilities discharging to freshwater with dilution factors of 100:1 or greater and for facilities discharging to marine waters with dilution factor of 133:1 or greater. These limits are based on the Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters, dated February 23, 1990, (Massachusetts Toxic Pollutant Policy) and the antibacksliding requirements found in 40 CFR §122.44(1). Most facilities have been able to achieve consistent compliance with this limitation.

The effluent limitations for each draft permit contain the TRC limits established for the allowable range in dilution factors in Massachusetts and New Hampshire in a tabular format. These TRC limits are computed using the dilution factor and the chronic and acute chlorine criteria for freshwater (0.011 and 0.019 mg/l) or for marine water (0.0075 and 0.013 mg/l), respectively.

The Massachusetts draft permit includes requirements concerning the operation of the facility's chlorine dosing system. Reporting requirements are proposed for interruptions or malfunctions

of the chlorine dosing system relating to inadequate chlorine levels to achieve effective disinfection, or interruptions or malfunctions of the dechlorination system relating to excessive levels of chlorine in the final effluent. The report includes time of the interruption or malfunction, nature of the problem, and time estimate of reduced levels of chlorine or dechlorination chemicals. This report is to be submitted with the monthly DMRs.

At some small facilities in Massachusetts, the effluent flows typically diminish during the late evening and early morning hours. To limit the excessive discharge of chlorine during low effluent flows, the draft permit proposes the installation of a flow-paced chlorination system or continuous TRC sampling. A compliance schedule in accordance with the Massachusetts Water Quality Standards may be issued if the facility is unable to comply with this permit requirement within the time period specified in the permit.

Freshwater Limits For facilities discharging to freshwater with a dilution factor between 50:1 and 90:1, the monthly average TRC limitations are computed using the dilution factor and the water-quality criteria for freshwater. For example, with a dilution factor of 50:1, the TRC limits are 0.95 mg/l maximum daily and 0.55 mg/l monthly average; and with a dilution factor of 70:1, the TRC limits are 1.0 mg/l (based on BPJ) maximum daily and 0.77 mg/l monthly average.

Marine Limits For facilities discharging to marine waters with a dilution factor between 50:1 and 76:1, the TRC limitations are computed using by the dilution factor and the marine chlorine criteria. For example, with a dilution factor of 50:1, the TRC limits are 0.65 mg/l maximum daily and 0.38 mg/l monthly average; and with a dilution factor of 70:1, the TRC limits are 0.91 mg/l maximum daily and 0.53 mg/l monthly average.

Alternate Disinfection Methods Facilities, using alternate methods of disinfection such as ultraviolet light or ozone in place of chlorine, provide this information with their notification requirements (see NPDES Form 2A Application, question A.11). In this case, "no discharge" is reported for the TRC parameter on the Discharge Monitoring Reports.

Facilities, in Massachusetts, using chlorination to disinfect the wastewater are eligible on a case-by-case basis to utilize seasonal disinfection based on uses of the receiving water. The Massachusetts Toxic Pollutant Policy includes annual and seasonal disinfection requirements. Factors to be considered by EPA and the MADEP before allowing seasonal disinfection at a facility include location of a public water supply or shellfishing area, and presence of water-related recreational activities. The draft permit provides for seasonal disinfection requirements which will be implemented during review of the notification requirements which includes requests for seasonal disinfection. Seasonal variation in the disinfection process is described in the notification process. A facility discharging chlorine during the period April 1 to October 31 is not eligible for seasonal disinfection.

e. Whole Effluent Toxicity

EPA's Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991, recommends using an "integrated strategy"to achieve and maintain water

quality standards. For the protection of aquatic life, the integrated strategy involves the use of three control approaches: the chemical-specific control approach, the whole effluent toxicity (WET) control approach, and the biological criteria/bioassessment and biosurvey approach. For the protection of human health, chemical-specific assessment and control techniques should be employed. EPA-New England adopted this "integrated strategy" on July 1, 1991, for use in permit development and issuance. These approaches are designed to protect aquatic life and human health. Pollutant specific approaches such as those using the "Gold Book Criteria" and State water quality standards address individual chemicals; whereas, WET approaches evaluate interactions between pollutants thus rendering an "overall" or "aggregate" toxicity assessment of the effluent. Furthermore, WET measures the "Additive" and/or "Antagonistic" effects of individual chemical pollutants which pollutant specific method do not; thus, the need for both. In addition, the presence of an unknown toxic pollutant can be discovered and addressed through this process.

The NPDES regulations at 40 CFR §122.44(d)(1)(v) require WET limits in a permit when a discharge has a "reasonable potential" to cause or contribute to an excursion above the State's narrative criterion for toxicity. The Massachusetts standards include the narrative statement "All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife." in 314 CMR 4.05(5)(e). The New Hampshire standards state that, "all 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..." in Env-Ws 1703.21(a).

EPA-New England modified the "integrated strategy" described above so that its strategy is cost effective as well as accurate. Toxicity testing is required in all municipal permits with the type of WET test (acute and/or chronic) and effluent limitations (LC50 and/or C-NOEC) based on the dilution factor. EPA-New England's current policy (March 2, 1994) includes toxicity testing for major and minor municipal facilities. The WET effluent limits established in these draft permits are based upon this policy and are in accordance with antibacksliding requirements found at 40 CFR §122.44(l).

Based on the above toxicity discussion, each general permit's WET LC50 limit is set either equal to or greater than 50 percent effluent concentration or at the 100 percent effluent concentration. The LC50 is defined as the percentage of effluent that would be lethal to 50 percent of the test organisms during an exposure of 48 hours. In other words, a 50 percent limit means that a sample of 50 percent or greater effluent shall cause no greater than a 50 percent mortality rate in that effluent sample.

The associated testing requirements and WET limits for various dilution factors are provided in Attachment D which summarizes EPA's toxicity policy. WET testing and limits are not required for minor facilities with a dilution factor greater than 1000:1. Minor dischargers, with a dilution factor greater than 50:1 and less than 1000:1, are required by these general permits to conduct one (1) toxicity test per year. Major dischargers, with a dilution factor of less than 100:1, are required to conduct WET testing four times per year (one every quarter) and major dischargers

with a dilution factor greater than 100:1 are required to conduct WET testing twice (2) per year (every six months).

WET testing for facilities required to sample once per year is during the calendar quarter ending September 30th. The toxicity test results are to be submitted by October 15th. Facilities required to sample twice per year are required to complete testing during the calendar quarters ending March 31st and September 30th each year. Facilities required to conduct quarterly toxicity tests samples shall be collected and tests completed during the calendar quarters ending March 31st, June 30th, September 30th, and December 31st each year. Toxicity test results are to be submitted by the 15th day of the month following the end of quarter sampled. For example, test results for the quarter January through March are to be submitted to EPA-New England and the state by April 15th.

The two test species for freshwater discharges include the Daphnid (Ceriodaphnia dubia) and Fathead Minnow (Pimephales promelas). For marine dischargers, the two species to be tested are Inland Silverside (Menidia beryllina) and Mysid Shrimp (Mysidopsis bahia). The toxicity test procedures and protocol are provided in the permits. The WET testing requirements for each State are provided below.

Minors facilities discharging to freshwaters in Massachusetts are to perform annual WET testing for the duration of the permit using one test specie, the Daphnid. The most sensitive test specie is used for this WET testing based on the toxicity testing results collected since implementation of the Massachusetts Toxic Pollutant Policy in 1990. For marine waters, discussions are underway to determine if a single test specie is appropriate for WET testing.

Facilities located in New Hampshire are to perform WET testing using two species. If the results of these WET tests are consistently negative during the four most recent sampling events, the monitoring frequency and testing requirements may be reduced. As a special condition of this draft general permit, the frequency of testing may be reduced by a certified letter from EPA. This permit condition anticipates the permittee may wish to request a reduction in WET testing. After completion of a minimum of four consecutive WET tests, all of which must be valid tests and must demonstrate compliance with the permit limits for whole effluent toxicity, the permittee may submit a written request to the EPA seeking a review of the toxicity test results. The EPA will review the test results and other pertinent information to make a determination. The frequency of toxicity testing may be reduced to as little as once per year. The permittee is required to continue testing at the frequency specified in the permit until the permittee receives a certified letter from the EPA indicating a change in the permit conditions.

f. Nutrients

Nutrients have been identified as impacting several watersheds in Massachusetts. In order to obtain data on the possible sources of these nutrients, New Hampshire facilities are required to monitor for Total Ammonia and Massachusetts facilities include monitoring requirements for Ammonia, Total Kjeldahl Nitrogen, Total Nitrate, Total Nitrite, and Total Phosphorus. In New Hampshire, the ammonia monitoring requirement is satisfied by chemical analyses for the WET

testing .

D. Sludge

Section 405(d) of the CWA requires that EPA develop technical standards regulating the use and disposal of sewage sludge. These regulations became effective on March 22, 1993.

Domestic sludges which are land applied; disposed of in a surface disposal unit; or fired in a sewage sludge incinerator are subject to 40 CFR Part 503 technical requirements and to the New Hampshire Sludge Management Rules Env-Ws 800. Part 503 regulations have a self-implementing provision; however, Section 405(f) of the CWA requires the inclusion of sewage sludge use or disposal requirements in any NPDES permit issued to a POTW or a treatment works treating domestic sewage. Domestic sludges which are disposed of in municipal solid waste landfills are in compliance with 40 CFR Part 503 (Standards for the Use or Disposal of Sewage Sludge) regulations provided the sludge meets the quality criteria of the landfill and the landfill meets the requirements of 40 CFR Part 258 (Criteria for Municipal Solid Waste Landfills).

Disposal of sewage sludge in a municipal solid waste landfill unit, as defined in 40 CFR §258.2, and which complies with the requirements in 40 CFR Part 258, constitutes compliance with Section 405(d) of the CWA. The draft permits have been conditioned to ensure that sewage sludge use and disposal practices meet the CWA Section 405(d) Technical Standards. In addition, the EPA Region I, NPDES Permit, Sludge Compliance Guidance Document dated November 4, 1999 is included with these draft permits for use by the permittee in determining their appropriate sludge conditions for their chosen method of sludge disposal.

Each year the permittee is required to submit to EPA-New England and to the State authority by February 19th, an annual report containing the information specified in the Sludge Compliance Guidance Document for the permittee's chosen method of sludge disposal.

E. Industrial Users

Dischargers required to administer industrial pretreatment programs are not allowed coverage under these general permits. However, the draft permits contain conditions that are necessary to allow EPA-New England, MADEP and NHDES-WD to insure that pollutants from industrial users will not pass through the facility and cause water quality standards violations and/or sludge use and disposal difficulties or cause interference with the operation of the treatment facility. The permittee is required to notify EPA-New England, MADEP and NHDES-WD whenever a process wastewater discharge to the facility from a primary industrial category (See 40 CFR §122 Appendix A for list) is planned or if there is any substantial change in the volume or character of pollutants being discharged into the facility by a source that was discharging at the time of the effective date of permit coverage. The permits also contain the requirements to: (1) report to EPA-New England, MADEP and NHDES-WD the name(s) of all industrial users subject to Categorical Pretreatment Standards under 40 CFR §403.6 and 40 CFR Chapter I,

Subchapter N (Parts 405-415, 417-436, 439-440, 443, 446-447, 454-455, 457-461, 463-469, and 471 as amended) and/or New Hampshire Pretreatment Standards (Env-Ws 904) who commence discharge to the POTW after the effective date of permit coverage, and (2) submit copies of Baseline Monitoring Reports and other pretreatment reports submitted by industrial users to EPA-New England, MADEP, and NHDES-WD.

F. Monitoring and Reporting Requirements

Effluent limitations and monitoring requirements in these general permits describe the requirements to be imposed on the facilities. The facilities covered by the final general permits will be required to submit to the EPA New England Region, Massachusetts Department of Environmental Protection, and the New Hampshire Department of Environmental Services a monthly Discharge Monitoring Report (DMR) containing effluent data and WET test report at the required frequency.

The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308(a) of the Act and 40 CFR §§122.41(j), 122.44(i) and 122.48, and as certified by the State. The monitoring frequencies are specific to the requirements of each State.

These general permits include the reporting of selected parameters determined from the chemical analysis during the WET testing from a sample of effluent. Specifically, Hardness (for dischargers to freshwater), Total Organic Carbon, Ammonia Nitrogen (as Nitrogen); and Total Aluminum, Cadmium,, Chromium, Copper, Lead, Nickel and Zinc are included in the parameters to be reported on the appropriate DMR for entry into EPA's Permit Compliance System (PCS) database. EPA-New England does not consider these reporting requirements to be an unnecessary burden as reporting these constituents is required with the submission of each toxicity report. This reporting condition is new to most of the facilities. Consistent with the WET test sampling frequency adjustment for New Hampshire facilities, sampling for these parameters will be reduced to correspond with revised WET test frequency.

The Massachusetts permit requires monitoring for Kjeldahl Nitrogen, Nitrate, and Nitrite at the frequency of WET testing. Total Phosphorous is to be monitored quarterly except for marine dischargers. These parameters will be used in conjunction with additional water-quality data to evaluate these nutrients and their potential impacts on the receiving waters.

G. Endangered Species Act

Background: The general permits contain proposed limits and conditions that are sufficiently stringent to ensure the regulated discharges are protective of species that are listed under the Endangered Species Act (ESA) as endangered or threatened (known as "listed species") and listed species habitat that is designated under the ESA as "critical habitat". Coverage under the general permits is limited to POTWs that are not required to have industrial pretreatment programs and other treatment works (i.e., schools, hotels, nursing homes) that treat domestic

sewage. The general permits prohibit the discharge of pollutants in amounts that would be toxic to aquatic life and it prohibits any discharge from violating State or Federal water quality standards. Further, the permits contain provisions that require permittees to conduct toxicity testing. Finally, general permit coverage is not available to a facility whose discharge(s) may adversely affect threatened or endangered species or its critical habitat. EPA is requesting written concurrences from the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), jointly referred to as the Services, indicating that except for the species and areas listed below, the effluent limitations established in the permits ensure the protection of human health and aquatic life and the maintenance of the receiving water as an aquatic habitat.

Prior to obtaining general permit coverage, all applicants must meet the ESA eligibility provisions of these permits (Part III.K.4.) using the Endangered Species Guidance document which is Attachment D to the permit. The eligibility requirements are summarized below. EPA strongly recommends that applicants, with discharges in the areas identified below by the Services, follow this guidance document at the earliest possible stage to ensure that measures protecting listed species and critical habitat can be certified in the applicant's request for coverage under the General Permit's notification requirements.

List of Species and Areas, by County and State, Subject to Consultation: The Services have identified the areas where listed endangered species may be present but have not designated these areas as "critical habitat". The USFWS has requested that it review and comment on all discharges , that may affect the federally-listed endangered dwarf wedgemussel (*Alsmidonta heterodon*),

1. Connecticut River from Northumberland to Dalton, NH, and in North Thetford, Vermont.
2. Connecticut River from Lebanon to Charlestown, NH
3. Ashuelot River downstream of the Surry Mountain Dam to Keene, NH
4. South Branch of Ashuelot River in East Swanzey, NH
5 Mill River in Whately and Hatfield, MA
6. Mill River Diversion in Northampton, MA

The National Marine Fisheries Service has requested that it review and comment on all discharges that may adversely affect the federally-listed endangered shortnose sturgeon (*Acipenser brevirostrum*) in certain areas of the Merrimack and Connecticut Rivers in Massachusetts. Specifically, the sturgeon is in the Connecticut River (main stem) downstream of Turners Falls, MA and in the Merrimack River (main Stem) below the Essex Dam in Lawrence MA.

Section 7 of the ESA requires that Federal agencies consult with the Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) to insure that any Agency action, including the issuance of NPDES permits, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The

ESA regulations provide for two types of consultation, formal and informal. Informal consultation is an optional process that includes discussion, correspondence, etc. between the Services and a Federal Agency or a designated non-Federal representative (NFR) to determine whether a Federal action is likely to have an adverse effect on listed species or critical habitat. Federal permit applicants frequently play a key role in informal consultation. The ESA regulations, at 50 §CFR 402.08, provide for permit applicants, where designated, to carry out informal consultations as an NFR, which enables them to work directly with the Services. EPA has designated applicants for this general permit a non-Federal representatives for the purpose of carrying out informal consultation (see Part III.K.4. Limitations on Coverage). Applicants with discharges to the areas subject to consultation must conduct informal consultation as a non-Federal representative and must notify both EPA-New England and the appropriate Service office in writing of that decision.

Conditions to Protect Listed Species: The Region has initiated informal consultations with the Services on the adoption of these General Permits. The Region expects that the Services will concur that these general permits are unlikely to adversely affect any threatened or endangered species or its critical habitat except for discharges to the waterways previously identified, where the dwarf wedgemussel and shortnose sturgeon, both listed species, are known to occur. We anticipate that the USFWS will indicate that discharges located on the Connecticut River in areas where the dwarf wedgemussel does occur are not likely to adversely affect the species. When discharges would occur along these waterways, permit coverage is not automatic. Rather, permit coverage is available only if the permit applicant contacts the Services to determine: (1) if the discharge would occur in designated critical habitat; (2) if listed species are present in the vicinity of the discharge; and, (3) whether the applicant's discharges and discharge related activities are likely to affect listed species and/or critical habitats. Coverage under the general permit is available only if informal consultation with the Services under Section 7 of the Endangered Species Act has been concluded which addresses the effects of the applicant's discharges on listed species and critical habitat and the consultation results in a written concurrence by the Service(s) on a finding that the applicant's discharges are not likely to adversely affect listed species and critical habitat. Permit applicants must submit a copy of the Service's written concurrence with their Notice of Intent submittal. Applicants are required to certify eligibility for coverage under the General Permit on their Notice of Intent submittal (see Parts III.M.G.1.h and G.2.k). The permits require preparation and implementation of conditions imposed under ESA eligibility requirements in a Discharge Management Program. Any supporting documentation for the Services' determination is maintained in this Program. Permit applicants that cannot certify compliance with the applicable ESA requirements must submit individual permit applications to the permitting authorities.

Services Contact Information: USFWS, New England Field Office, 70 Commercial Street, Suite 300, Concord, NH 03301-5087; Telephone: 603-223-2541; NMFS, National Marine Fisheries Service, Northeast Region, Attn: Endangered Species Coordinator, Protected Resources Division, One Blackburn Drive, Gloucester, Massachusetts 01930; Telephone: 978-281-9112.

H. Standard Permit Condition

Requirements which must be in all NPDES Permits are in the regulations at 40 CFR §§122.41 and 122.42. Part III Common Elements for all Permits in New Hampshire and Massachusetts; and Part IV, Standard Conditions include these requirements.

I. State (Section 401) Certification

Section 401 of the CWA provides that no Federal license or permit, including a NPDES permit, to conduct any activity that may result in any discharge into navigable waters, shall be granted until the State in which the discharge originates certifies that the discharge will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the CWA. The Section 401 certification process is being implemented in Massachusetts and New Hampshire. In addition, EPA and the Commonwealth of Massachusetts jointly issue the final permit. The sludge conditions implementing section 405(d) of the CWA are not subject to the 401 certification requirements.

For lands held by federally-recognized tribes in Massachusetts, EPA will provide the necessary certification. Currently, the only federally recognized tribe is the Wampanoag Tribe of Gay Head (Aquinnah) on the Island of Martha's Vineyard.

J. Coastal Zone Management Act

The Coastal Zone Management Act (CZMA), l6 U.S.C. 145l et seq., and its implementing regulations [15 CFR Part 930] require that any federally licensed activity affecting the coastal zone with an approved Coastal Zone Management Program (CZMP) be determined to be consistent with the CZMP. In the case of general permits, EPA has the responsibility for making the consistency certification and submitting it to the state for concurrence. EPA has requested the Executive Office of Environmental Affairs, MACZM, 251 Causeway Street, Suite 800, Boston, MA 02114; and the NHDES Coastal Program, PO Box 95, 29 Hazen Drive, Concord, NH 03302-0095, to provide a consistency concurrence that the proposed general permit is consistent with the Massachusetts and New Hampshire Coastal Zone Management Program, respectively.

K. Environmental Impact Statement Requirements

The general permits do not authorize discharges from any new sources as defined under 40 CFR §122.2. Therefore, the National Environmental Policy Act, 33 U.S.C. 4321 et seq., does not apply to the issuance of these general NPDES permits.

L. National Historic Preservation Act of 1966

Facilities which adversely affect properties listed or eligible for listing in the National Registry of Historic Places under the National Historic Preservation Act (NHPA) of 1966, 16 U.S.C. 470 et. seq. are not authorized to discharge under these General Permits. The draft permits require

new or increased dischargers to certify compliance with the requirements of the NHPA and includes coordination or consultation requirements that are to be followed before these discharges will be authorized. These requirements are included and implemented in the Discharge Management Program for the facility. The Historic Properties Guidance document is included as Attachment C with this draft permit to allow the applicant to determine if the discharge has the potential to affect a property that is either listed or eligible for listing on the National Register of Historic Places.

M. Essential Fish Habitat

Under the 1996 Amendments (Public Law 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 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). Adverse impact means any impact which reduces the quality and/or quantity of EFH 50 CFR 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative or synergistic consequences of actions. Essential Fish Habitat 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. In a letter addressed to EPA-New England, dated October 10, 2000, the NMFS confirmed that for projects authorized through the NPDES permit process, notification for purposes of EFH consultation can be accomplished in the EFH Section of the permit fact sheet or Federal Register notice.

Resources: The general permits are not available to any discharge into territorial seas. These permits include effluent limitations and monitoring requirements for facilities that discharge into freshwaters and other marine waters. Therefore, our EFH assessment considers all 39 federally-managed species with designated EFH in the coastal and inland waters of Massachusetts and New Hampshire. EPA has identified one potential applicant would discharge into marine waters in Massachusetts, one facility on the North Shore. There are three discharges to marine waters (Piscataqua River and Squamscott River) in New Hampshire. These facilities are included in Attachment A.

The Saco, Cocheco, Lamprey, Merrimack, Connecticut Rivers, and certain tributaries to these Rivers are designated EFH for Atlantic salmon (*Salmo salar*). There are several facilities in Massachusetts and New Hampshire that are in the Connecticut and Merrimack River Basins. Of these, 15 facilities eligible for permit coverage are discharging directly to the Connecticut or Merrimack Rivers.

Analysis of Effects and EPA's Opinion of Potential Impacts: Coverage under the general permit is limited to POTWs that are not required to have industrial pretreatment programs and to

other treatment works that treat domestic sewage. All these treatment facilities are further restricted to those discharging to receiving waters where the dilution factor is at least 50:1. The reasonable potential for discharges from these facilities to exceed numeric water-quality criteria other than for chlorine does not exist. The Total Residual Chlorine limits in the permits are adequate to protect aquatic-life criteria for chlorine in the States' water quality standards. The general permits prohibit the discharge of pollutants in amounts that would be toxic to aquatic life. The proposed limits for these general permits are sufficiently stringent to assure that state water quality standards will be met. The effluent limitations established in these permits ensure protection of aquatic life and maintenance of the receiving water as an aquatic habitat. The Region finds that issuance of the proposed general permits will not adversely affect any fish or shellfish currently listed with a Fisheries Management Plan or its habitat. EPA will seek written concurrence from the National Marine Fisheries Service on this assessment.

Proposed Mitigation: Mitigation for unavoidable impacts associated with issuance of the permit is not warranted at this time because it is EPA's opinion that impacts will be negligible if each permit's conditions are followed. Authorization to discharge under the general permit can be revoked if any adverse impacts to Federally-managed or protected species or their habitats do occur either as a result of noncompliance or from unanticipated effects from this activity. Further, the general permits contain provisions that require the applicant to perform scheduled whole effluent toxicity testing and an individual permit can be issued if actual environmental conditions are not adequately covered by either general permit. Should new information become available that changes the basis for EPA's assessment, then consultation with NMFS under the appropriate statute(s) will be reinitiated.

N. Notification Requirements for General Permit Coverage

Specific application requirements are provided for general permit coverage. Facilities classified as minor facilities in Massachusetts and minor or major facilities in New Hampshire are eligible for permit coverage. For purposes of these general permits, major dischargers include facilities with design flows equal to or greater than one mgd and certain facilities that discharge to rivers with water-quality concerns. The remaining facilities are minor dischargers. The specific eligibility requirements are provided elsewhere in this fact sheet and in Parts III.K. and L. of each permit. Any facility with a complete permit application on file with EPA New England may elect to use that information with the additional applicable supplemental information detailed in the general permits.

The notification requirements include:

(1) Permit coverage request with the specific General Permit identified (for example, Massachusetts General Permit MAG580000, Part I.A, Minor facilities discharging to Freshwater);

(2) Information on the NPDES Form 2A Application Form Part A, and B completed for at least one sampling event for a Minor facility. In addition to the preceding requirements, a Major facility completes NPDES Form 2A Application Form Parts B, D, and E for at least one sampling event;

(3) Supplemental information for each facility;
(4) The BOD_5 (or $CBOD_5$) and TSS mass loading limitations. Examples are shown in Attachment C of the Fact Sheet. Please note that each facility must confirm the annual 7Q10, design flow and dilution factor, mass loading limitations for their facility with the appropriate state agency; and,
(5) Additional information for those dischargers involving the Endangered Species Act and the National Historic Preservation Act.

A facility located in New Hampshire must complete the Notice of Intent form required by the NHDES. EPA-New England will accept the complete NHDES's NOI form, in lieu of the notification information mentioned above, for any facility in New Hampshire. However, the effluent sampling and specific supplemental information stated in the permit is required.

General permit coverage is obtained after a facility submits a complete NOI to EPA and the appropriate State Agency requesting permit coverage and receives written notification from EPA that it is covered by the appropriate general permit.

V. Other Legal Requirements

A. Executive Order 12866

EPA has determined that these general permits are not a "significant regulatory action" under the terms of Executive Order 12866 and is therefore not subject to OMB review.

B. Paperwork Reduction Act

The information collection requirements of these permits were previously approved by the Office of Management and Budget under the provisions of the Paperwork Reduction Act. 44 U.S.C. 3501 et seq., and assigned OMB control number 2040-0086 (NPDES permit application) and 2040-0004 (Discharge Monitoring Reports).

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA), 5 U.S.C. 601 et seq., requires that EPA prepare a regulatory flexibility analysis for rules subject to the requirements of 5 U.S. C. 553(b) that have a significant impact on a substantial number of small entities. The permits issued today, however, are not a "rule" subject to the requirements of 5 U.S.C. 553(b) and is therefore not subject to the Regulatory Flexibility Act.

D. Unfunded Mandates Reform Act

Section 201 of the Unfunded Mandates Reform Act (UMRA), Public Law 104-4, generally requires Federal agencies to assess the effects of their "regulatory actions" (defined to be the same as "rules" subject to the RFA) on tribal, state and local governments and the private sector. The permits issued today, however, are not a "rule" subject to the RFA and is therefore not subject to the requirements of UMRA.

September 30, 2004
Date

Robert W. Varney
Regional Administrator

ATTACHMENT A

FACILITIES ELIGIBLE FOR GENERAL PERMIT COVERAGE IN MASSACHUSETTS AND NEW HAMPSHIRE

MINOR FACILITIES IN MASSACHUSETTS

Facility Name	NPDES Permit Number	Expiration Date	Design Flow* (mgd)	Dilution Factor *	Receiving Water
Publically Owned Treatment Works (POTWs)					
Charlemont Sewer District WWTP	MA0103101	09/30/2007	0.05	833:1	Deerfield River
Hadley WWTP	MA0100099	09/30/2005	0.54	2,049:1	Connecticut River
Hardwick WPC-Wheelwright	MA0102431	09/30/2005	0.043	222:1	Ware River
Hatfield WWTP	MA0101290	09/30/2005	0.5	2,189:1	Connecticut River
Huntington WWTP	MA0101265	09/29/2003	0.2	56:1	Westfield River
Merrimac WWTF	MA0101150	09/30/2006	0.45	1,358:1	Merrimack River
Northfield WWTF	MA0100200	09/30/2005	0.275	3,568:1	Connecticut River
Royalston Waste Water Treatment	MA0100161	09/30/2007	0.039	388:1	Millers River
Russell Village WWTF	MA0100960	09/29/2003	0.24	61:1	Westfield River
Shelburne Falls WWTF	MA0101044	09/30/2007	0.25		Deerfield River
Sunderland WWTF	MA0101079	09/30/2005	0.5	2,225:1	Connecticut River
Woronoco Village WWTF	MA0103233	09/30/2003	0.02	776:1	Westfield River
				148:1	
Treatment Facilities Treating Domestic Sewage					
Northfield Mt Hermon School	MA0032573	09/30/2005	0.45	2181:1	Connecticut River
River Terrace Health Care	MA0025763	11/11/2000	0.006	1,218:1	North Nashua River
Groton School	MA0033324	09/30/2005	0.07	425:1	Nashua River
Shore Cliff - Deaconess	MA0027391	10/29/2004	0.004	100:1 E	Massachusetts Bay

ATTACHMENT A

MINOR AND MAJOR FACILITIES IN NEW HAMPSHIRE

Facility Name	NPDES Permit Number	Expiration Date	Type	Design Flow * (mgd)	Dilution Factor *	Receiving Water
Allenstown POTW	NH0100714	01/29/2006	Major	1.05	362:1	Merrimack River
Antrim POTW	NH0100561	02/08/2001	Minor	0.21	57.6:1	Contoocook River
Bethlehem Village District POTW	NH0100501	07/29/1991	Minor	0.34	53.6:1	Ammonoosuc River
Bristol POTW	NH0100021	08/23/2004	Minor	0.5	166:1	Pemigewassett River
Charlestown POTW	NH0100765	08/20/2004	Major	1.1	534:1	Connecticut River
Cheshire County Home WWTF	NH0100391	03/15/2000	Minor	0.04	15,130:1	Connecticut River
Gorham POTW	NH0100927	01/19/2000	Minor	0.75	1,070:1	Androscoggin River
Groveton POTW	NH0100226	03/05/1989	Minor	0.37		Upper Ammonoosuc River
Hanover POTW	NH0100099	10/14/2004	Major	2.3	85.0:1	Connecticut River
Hinsdale POTW	NH0100382	09/19/2004	Major	0.3	198:1	Ashuelot River
Hooksett POTW	NH0100129	10/02/2004	Major	1.1	92.0:1	Merrimack River
Hopkinton POTW	NH0100579	02/08/2000	Minor	0.12	342:1	Contoocook River
Lancaster Grange POTW	NH0101249	10/02/2004	Minor	0.0035	193:1	Otter Brook
Lisbon POTW	NH0100421	09/19/2000	Minor	0.32	329:1	Ammonoosuc River
Merrimack County WWTF	NH0100935	09/28/2000	Minor	0.08	4,005:1	Merrimack River
Newfields POTW	NH0101192	07/17/2001	Minor	0.117	85.0:1	Squamscott River
Newington POTW	NH0101141	10/30/2004	Major	0.29	100:1	Piscataqua River
Northumberland Village POTW	NH0101206	07/20/1989	Minor	0.06	100:1	Connecticut River
Pease Development Authority	NH0090000	09/07/2005	Major	1.2	2,519:1	Piscataqua River
Piermont POTW	NH0101231	07/21/2004	Minor	0.007	100:1	Eastman Brook
Plymouth POTW	NH0100242	10/30/2004	Major	0.7	100:1	Pemigewassett River
Stratford Village POTW	NH0100536	04/12/2005	Minor	0.056	98.4:1 1,790:1	Connecticut River
Winchester POTW	NH0100404	12/24/1990	Minor	0.28		Ashuelot River
Woodsville POTW	NH0100978	05/28/2004	Minor	0.33	86.2:1 1,207:1	Connecticut River

* During processing and review of the applicant's notification information, the Design Flow and Dilution Factor values may be updated to reflect new information. Design flow values are in million gallons per day (mgd).

E means estimated.

ATTACHMENT B

Dilution Factor Calculations for Massachusetts and New Hampshire

The calculations provided below are for your information and use in calculating and determining your effluent limitations; however, please confirm your exact Dilution Factor with your State. Please note that in New Hampshire, the Dilution Factor is calculated using two different equations based on the use of the receiving water as the applicant's public water supply.

Massachusetts:

Equation used to calculate the dilution factor at the treatment plant's outfall.

$$\text{Dilution Factor} = \frac{Q_R + (Q_P \times 1.55)}{Q_P \times 1.55}$$

where:

- Q_R = Estimated 7Q10 low flow for the receiving water at the plant's outfall, in cubic feet per second (cfs).
- Q_P = Treatment plant's design flow, in million gallons per day (mgd).
- 1.55 = Factor to convert mgd to cfs.

EXAMPLE

Q_R = 325 cfs

Q_P = 3.2 mgd

$$\text{Dilution Factor} = \frac{Q_R + (Q_P \times 1.55)}{Q_P \times 1.55} = \frac{325 + (3.2 \times 1.55)}{3.2 \times 1.55} = 66.5$$

For New Hampshire:

Method 1: When the water supply is from outside the drainage basin.

Equation used to calculate the dilution factor at the treatment plant's outfall.

$$\text{Dilution Factor} = \frac{Q_R + (Q_P \times 1.55)}{Q_P \times 1.55} \times 0.9$$

where:

- Q_R = Estimated 7Q10 low flow for the receiving water at the plant's outfall, in cubic feet per second (cfs).
- Q_P = Treatment plant's design flow, in million gallons per day (mgd).
- 1.55 = Factor to convert mgd to cfs.
- 0.9 = Factor to reserve of 10 percent of river's assimilative capacity.

ATTACHMENT B

EXAMPLE
Q_R = 325 cfs
Q_P = 3.2 mgd

Dilution Factor = $\frac{Q_R + (Q_P \times 1.55)}{Q_P \times 1.55} \times 0.9 = \frac{325 + (3.2 \times 1.55)}{3.2 \times 1.55} \times 0.9 = 59.9$

<u>Method 2</u>: When the water supply is from the drainage basin.

Equation used to calculate the dilution factor at the treatment plant's outfall.

$$\text{Dilution Factor} = \frac{Q_R}{Q_P \times 1.55} \times 0.9$$

where:

Q_R	=	Estimated 7Q10 low flow for the receiving water at the plant's outfall, in cubic feet per second (cfs).
Q_P	=	Treatment plant's design flow, in million gallons per day (mgd).
1.55	=	Factor to convert mgd to cfs.
0.9	=	Factor to reserve of 10 percent of river's assimilative capacity.

EXAMPLE
Q_R = 325 cfs
Q_P = 3.2 mgd

Dilution Factor = $\frac{Q_R}{Q_P \times 1.55} \times 0.9 = \frac{325}{(3.2 \times 1.55)} \times 0.9 = 59.0$

ATTACHMENT C

Mass Loading Calculations for Effluent Limitations

These example calculations are intended to initially guide the applicant in completing the notification requirements for general permit coverage. Please note that these loadings must be verified by the appropriate State agency before submitting them in your Notification Requirements for permit coverage.

Equation used to calculate mass loads for BOD_5 and TSS.

$$\mathbf{L = C \times Q_P \times 8.34}$$

where:

- L = Maximum allowable load, in lbs/day, rounded to nearest 1 lbs/day.
- C = Maximum allowable effluent concentration for reporting period, in mg/l. Reporting periods: Average Monthly, Average Weekly and Maximum Daily.
- Q_P = Treatment plant's design flow, in mgd.
- 8.34 = Factor to convert effluent concentration in mg/l, and plant's design flow, in mgd to lbs/day.

EXAMPLE FOR EFFLUENT LIMITATIONS

- Q_P = Plant Design Flow = 3.2 mgd.
- C_{ML} = Monthly Effluent BOD_5 or TSS Concentration Limitation (30 mg/l)
- C_{WL} = Weekly Effluent BOD_5 or TSS Concentration Limitation (45 mg/l)
- C_{DL} = Daily Effluent BOD_5 or TSS Concentration Limitation (50 mg/l)

Monthly Mass Load for BOD_5 or TSS

$L_M = C_{ML} \times Q_P \times 8.34 = 30$ mg/l x 3.2 mgd x 8.34 = 801 lb/day

Weekly Mass Load for BOD_5 or TSS

$L_W = C_{WL} \times Q_P \times 8.34 =$ 45 mg/l x 3.2 mgd x 8.34 = 1201 lb/day

Daily Mass Load for BOD_5 or TSS

$L_D = C_{DL} \times Q_P \times 8.34 =$ 50 mg/l x 3.2 mgd x 8.34 = 1334 lb/day

A facility with $CBOD_5$ effluent limitations would use the following effluent concentration values for $CBOD_5$ in the above calculations.

- C_{ML} = Monthly Effluent $CBOD_5$ Concentration Limitation (25 mg/l)
- C_{WL} = Weekly Effluent $CBOD_5$ Concentration Limitation (40 mg/l)
- C_{DL} = Daily Effluent $CBOD_5$ Concentration Limitation (45 mg/l)

ATTACHMENT C

Mass Loading Calculations for Monthly Reports

MONTHLY REPORTS (DMRs)

Following notification of general permit coverage, there are specific instructions to complete the monthly Discharge Monitoring Reports (DMRs). Example calculations to complete the DMRs are provided in these instructions that are updated annually and can be found at the Region's web site. This document for 2004 is the NPDES permit Program Instructions for the Discharge Monitoring Report Forms (DMRs) Report Year 2004 and it is available at the web site: http://www.epa.gov/ne/enforcementandassistance/dmr.html

Total Residual Chlorine Limitations Example Calculations

Equation used to calculate average monthly and maximum daily limits.

Effluent Limit = [Dilution Factor] x (Water-Quality Criterion)

EXAMPLE 1 - Discharge to Freshwater
Dilution Factor = 75
Freshwater acute criterion = 0. 019 mg/l
Freshwater chronic criterion = 0.011 mg/l

Maximum Daily Limit = (Dilution Factor x acute criterion) = (75 x 0. 019 mg/l) = 1.425 mg/l or 1.42 mg/l

Since the calculated limit is greater than the maximum TRC effluent limit of 1.0 mg/l, the limit of 1.0 mg/l is used in place of the water-quality-based limit as explained in the fact sheet.

Monthly Average Limit = (Dilution Factor x chronic criterion) = (75 x 0.011 mg/l) = 0.825 mg/l or 0.83 mg/l

EXAMPLE 2 - Discharge to Marine Water
Dilution Factor = 60
Marine acute criterion = 0. 013 mg/l
Marine chronic criterion = 0.0075 mg/l

Maximum Daily Limit = (Dilution Factor x acute criterion) = (60 x 0.013 mg/l) = 0.78 mg/l

Monthly Average Limit = (Dilution Factor x chronic criterion) = (60 x 0.0075 mg/l) = 0.45 mg/l

ATTACHMENT D

EPA Toxicity Policy for Major and Minor Municipal Facilities

	HIGH RISK	MED-HIGH RISK	MED-LOW RISK	LOW RISK	VERY LOW RISK
Dilution Factor	<10:1	10:1-20:1	20:1-100:1	>100:1	>1000:1
# of Sampling Events Per Year	4 (1/3 Months)	4 (1/3 Months)	Majors: 4 (1/3 Months) Minors: 1 (1/year)	Majors: 2 (1/6 months) Minors: 1 (1/year)	Majors: 2 (1/6 months) Minors: None
Toxicity Tests: Fresh Water Marine Water	Chronic[1] Chronic & Acute	Chronic[1] Chronic & Acute	Acute Acute	Acute Acute	Acute Acute
Number of Species: Fresh Water Marine Water	2 3	2 3	2 2	2 2	2 2
Permit Limits	LC50 ≥100% C-NOEC[2] ≥RWC[3]	LC50≥100%	LC50≥100%	LC50≥50%	LC50≥50%
Test Species: Fresh Water	Daphnid[1] (*Ceriodaphnia dubia*) Fathead Minnow[1] (*Pimephales promelas*)		Daphnid (*Ceriodaphnia dubia*) Fathead Minnow (*Pimephales promelas*)		Daphnid (*Ceriodaphnia dubia*) Fathead Minnow (*Pimephales promelas*)
Marine Water	Inland Silverside[1] (*Menidia beryllina*) Mysid Shrimp (*Mysidopsis bahia*) Sea Urchin (*Arbacia punctulata*)		Inland Silverside (*Menidia beryllina*) Mysid Shrimp (*Mysidopsis bahia*)		Inland Silverside (*Menidia beryllina*) Mysid Shrimp (*Mysidopsis bahia*)

[1] 7-Day Chronic/Modified Acute.

[2] C-NOEC is Chronic No Observed Effect Concentration.

[3] RWC is Receiving Water Concentration, in percent, as determined from dividing one by the dilution factor all multiplied by 100.