

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND
1 CONGRESS STREET, SUITE 1100 (CMP)
BOSTON, MASSACHUSETTS 02114-2023

FACT SHEET

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

NPDES PERMIT NO. : **MA0100439**

NAME AND ADDRESS OF APPLICANT:

**Town of Webster Sewer Department
P.O. Box 793
Webster, MA 01570**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**Town of Webster Sewer Department
38 Hill Street
Webster, MA 01570**

RECEIVING WATER: **French River; Basin Code - 42**

CLASSIFICATION: **B warm water fishery
French & Quinebaug watershed**

I. PROPOSED ACTION, TYPE OF FACILITY, AND DISCHARGE LOCATION

The above named applicant has applied to the U.S. Environmental Protection Agency for re-issuance of its National Pollutant Discharge Elimination System (NPDES) permit to discharge into the designated receiving water. The facility's flow schematic and location are shown on Attachments A and B of this fact sheet. The existing permit will expire on November 28, 2005. This permit, after it becomes effective, will expire five years from the effective date.

The facility is engaged in the collection and treatment of domestic wastewater and also receives loadings from industrial users. The discharge is from an advanced wastewater treatment plant and the effluent is discharged into the French River.

The facility's discharge outfall is listed below:

Outfall: Description of Discharge: Outfall Location:

II. DESCRIPTION OF THE DISCHARGE

A quantitative description of the wastewater treatment plant discharge in terms of significant effluent parameters based on recent discharge monitoring reports (DMRs) is shown on **Attachment C** of this fact sheet.

III. LIMITATIONS AND CONDITIONS

The effluent limitations of the draft permit and monitoring requirements may be found in the draft NPDES permit.

IV. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION DERIVATION

A. PROCESS DESCRIPTION

The Webster Wastewater Treatment Plant is a 6 million gallon per day (MGD) advanced wastewater treatment plant which serves the towns of Webster and Dudley. The facility is engaged in the collection and treatment of municipal and industrial wastewater. The wastewater is treated and is discharged into the French River. The French River originates in Massachusetts, and flows into the state of Connecticut approximately one mile downstream of the Webster discharge. The French, Quinebaug, and Shetucket Rivers join together to form the Thames River, which flows south into Long Island Sound.

The Towns of Webster and Dudley entered into a Consent Agreement (District Court of Massachusetts, document #87-0084; date of entry, November 1988) to consolidate their separate wastewater treatment plants and upgrade to a regional advanced treatment plant. The regional plant is located on the eastern shore of the French River in Webster. Some portions of the former Dudley facility, located across the river, have been renovated and used for flow equalization. The regional plant has been on-line since September 1991.

The wastewater from the two towns are pumped separately into two areas of the facilities and then combined. The wastewater is then undergoes primary clarification, aeration (including nitrification), final settling, chlorine contact, and dechlorination. Solids are removed from the primary and secondary clarifiers, and are transported through a sludge mixing tank and gravity sludge thickeners. After the sludge is processed, it is transported by a licenced hauler to an off-site incineration facility. This treatment facility currently serves five significant industrial users.

B. OUTFALL 001 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Overview of Federal and State Regulations

Under Section 301(b)(1)(B) of the Clean Water Act ("CWA"), publicly owned treatment works ("POTWs") must have achieved effluent limitations based upon Secondary Treatment by July 1, 1977. The secondary treatment requirements are set forth at 40 C.F.R. 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 water.

Pursuant to 40 C.F.R. § 122.44 (d), permittees must achieve water quality standards established under Section 303 of the Clean Water Act (CWA), including state narrative criteria for water quality. Additionally, under 40 C.F.R. § 122.44 (d)(1)(i), "Limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." When determining whether a discharge causes, or has the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numeric criterion, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, and where appropriate, consider the dilution of the effluent in the receiving water.

Pursuant to 314 CMR 4.03(1) of the Massachusetts Water Quality Standards (MAWQS), the Division shall "provide a reasonable margin of safety to account for any lack of knowledge concerning the relationship between the pollutants being discharged and their impact on water quality"; and pursuant to 314 CMR 4.03(3) of the MAWQS, the Director "will determine the most severe hydrologic condition at which water quality criteria must be met. The Director may further stipulate the magnitude, duration and frequency of allowable excursions from criteria in order to prevent adverse impacts of discharges on beneficial uses. For rivers and streams, the lowest flow conditions at and above which criteria must be met is the lowest mean flow for seven consecutive days to be expected once in ten years. When records are not sufficient to determine this condition, the flow may be estimated by methods approved by the Director."

2. Water Quality Standards; Designated Use; Outfall 001

The French River has been classified as Class B by the Massachusetts Surface Water Quality Standards, 314 Code of Massachusetts Regulations ("CMR") 4.05(4)(a). The Massachusetts Surface Water Quality Standards describes Class B waters as having the following uses: (1) a habitat for fish, other aquatic life, and wildlife, (2) primary and secondary contact recreation, (3) a source of public water supply (i.e., where designated and with appropriate treatment), (4) suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses, and (5) shall have consistently good aesthetic value.

3. 7Q10 and Dilution Factor

The 7Q10 is the lowest observed mean river flow for 7 consecutive days recorded over a 10-year recurrence interval. For rivers and streams, Title 314 CMR 4.03(3)(a) requires that 7Q10 be

used to represent the critical hydrologic condition at which water quality criteria must be met.

The 7Q10 for the French River at gaging station 01125000, located in Webster, MA is 14.8 cfs with a drainage area of 84.0 sq. mi. The total drainage area at the plant's outfall, downstream of the gage, is calculated at 90.4 sq.mi.

$$7Q10 \text{ at outfall} = 14.8 \text{ cfs} \times (90.4 \text{ sq. mi} / 84.0 \text{ sq. mi}) = 16.0 \text{ cfs} = 16.0 \text{ cfs} \times 0.646272 \text{ MGD/cfs} = 10.34 \text{ MGD}$$

Plant Design Flow = 6.0 MGD

$$\begin{aligned} \text{Dilution Factor} &= (\text{Instream 7Q10} + \text{Design Flow}) / \text{Design Flow} \\ &= (10.34 + 6.0) / 6.0 = 2.7 \end{aligned}$$

4. **Effluent Limits**

OUTFALL 001 - CONVENTIONAL POLLUTANTS:

Biochemical Oxygen Demand (BOD) - The draft permit includes average monthly and average weekly limitations with average monthly percent removal (October 1 to March 31), which are based on the requirements set forth at 40 C.F.R. § 133.102(a)(1), (2), (3), and 40 CFR § 122.45(f). The draft permit also includes maximum daily monitoring requirements, average monthly mass limitations, and average weekly mass limitations, based on 40 C.F.R. § 122.45(f) and current state water quality certification requirements.

Carbonaceous Biochemical Oxygen Demand (CBOD) - Under 40 C.F.R. §133.102(a)(4), the permitting authority is allowed to substitute the BOD limitations with CBOD limitations - provided that the thirty (30) day average does not exceed 25 mg/l, and the seven (7) day average does not exceed 40 mg/l. The draft permit includes average monthly and average weekly CBOD limitations (i.e., April 1 - September 30), which are at least as stringent as the requirements set forth at 40 C.F.R. § 133.102(a)(4)(i) and (ii), and are based on water quality standards and anti-backsliding regulations. The draft permit also includes maximum daily monitoring requirements, average monthly mass limitations, and average weekly mass limitations, based on 40 C.F.R. § 122.45(f) and current state water quality certification requirements.

Total Suspended Solids (TSS) - The draft permit includes average monthly and average weekly TSS limitations (i.e., April 1 - September 30), which are at least as stringent as the requirements set forth at 40 C.F.R. § 133.102(b), and are based on water quality standards and anti-backsliding regulations. The draft permit also includes average monthly and average weekly TSS limitations (i.e., October 1 - March 31), and average monthly percent removal TSS limitations, which are based on the requirements set forth at 40 C.F.R. § 133.102(b)(1), (2), and (3). The draft permit also includes maximum daily monitoring requirements, average monthly mass limitations, and average weekly mass limitations, based on 40 C.F.R. § 122.45(f) and current state water quality certification requirements.

pH - The draft permit includes pH limitations which are required by state water quality standards, and are at least as stringent as pH limitations set forth at 40 C.F.R. § 133.102(c).

Fecal Coliform Bacteria - The draft permit includes fecal coliform bacteria limitations which are required by state water quality standards for class B waters.

OUTFALL 001 - NON-CONVENTIONAL POLLUTANTS

Nutrients

Nitrogen :

The current permit includes average monthly, average weekly and maximum daily limitations for ammonia-nitrogen from April 1 - September 30 with a monitoring frequency of two per week, and monitoring requirements for ammonia-nitrogen from October 1 - March 31. The permittee is required to continue with the same limits and monitoring requirements in the draft permit based on water quality standards and anti- backsliding regulations. The beginning of winter month is changed from October 1 to November 1 in the draft permit.

The draft permit also includes year round monitoring requirements for TKN, nitrite and nitrate with a monitoring frequency one per month. These monitoring requirements are continued from the current permit and will help to determine loadings of total nitrogen to Long Island Sound. It has been determined that excessive nitrogen loadings are causing significant water quality problems in Long Island Sound, including low dissolved oxygen. The State of Connecticut has begun to impose nitrogen limitations on Connecticut discharges to Long Island Sound and its tributaries. The information submitted by the permittee will help to establish a database of nitrogen loadings, which can be used to quantitatively assess the impact of loading and transport of nitrogen to Long Island Sound. The monitoring data will provide a more sound decision making basis in the future relating to nitrogen loadings to the Sound.

Discharge Monitoring Reports (DMRs) from October 2002 to November 2004 indicate that ammonia - nitrogen varies between 0 - 5 mg/l during summer months and between 0.1 - 1.6 mg/l during winter months; TKN varies between 0 - 4.2 mg/l; nitrite varies between 0 - 0.09 mg/l and nitrate varies between 2.4 - 29 mg/l.

Phosphorus :

The French River is on the MADEP 2002 303(d) list of impaired waters for nutrients, organic enrichment/low DO, pathogens, taste, odor, and color. It is well documented that reaches along the French River suffer from eutrophication, a condition primarily caused by excessive nutrients entering and accumulating in the river (MADEP 2002). Phosphorus and other nutrients (i.e., nitrogen) promote the growth of nuisance algae and rooted aquatic plants. Typically, elevated levels of nutrients will cause excessive algal and/or plant growth resulting in reduced water

clarity and poor aesthetic quality. Also, through respiration, and the decomposition of dead plant matter, excessive algae and plant growth can reduce in-stream dissolved oxygen concentrations to levels that could negatively impact aquatic life and/or produce strong unpleasant odors.

EPA has produced several guidance documents which contain recommended total phosphorus criteria for receiving waters. The 1986 Quality Criteria of Water (“the Gold Book”) recommends in-stream phosphorus concentrations of 0.05 mg/l in any stream entering a lake or reservoir, 0.1 mg/l for any stream not discharging directly to lakes or impoundments, and 0.025 mg/l within the lake or reservoir.

In December 2000, EPA released “Ecoregional Nutrient Criteria,” (USEPA 2000) established as part of an effort to reduce problems associated with excess nutrients in water bodies located within specific areas of the country. The published criteria represent conditions in waters within each specific ecoregion which are minimally impacted by human activities, and thus are representative of waters without cultural eutrophication. Webster is within Ecoregion XIV, Eastern Coastal Plains (level III ecoregion 59). The recommended total phosphorus criteria for Ecoregion XIV is 24 ug/l (0.024 mg/l) and can be found in the *Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion XIV*.

More recently, Mitchell, Liebman, Ramseyer, and Card (in draft 2004), in conjunction with the New England States, developed potential nutrient criteria for rivers and streams in New England. Using several river examples representative of typical conditions for New England streams and rivers, they investigated several approaches for the development of river and stream nutrient criteria that would be dually protective of designated uses in both upstream reaches and downstream impoundments. Based on this investigation an instream total phosphorus concentration of 0.020 - 0.022 mg/l was identified as protective of designated uses for New England rivers and streams. The development of this New England-wide total phosphorus concentration was based on more recent data than the National Ecoregional nutrient criteria, and have been subject to quality assurance measures. Additionally, the development of the New England-wide concentration included reference conditions for waters presumed to be protective of designated uses.

The Massachusetts Surface Water Quality Standards (314 CMR 4.00) do not contain numerical criteria for total phosphorus. The narrative criteria for nutrients is found at 314 CMR 4.05(5)(c), which states that nutrients “shall not exceed the site specific limits necessary to control accelerated or cultural eutrophication.” The Water Quality Standards also require that “any existing point source discharges containing nutrients in concentrations which encourage eutrophication or the growth of weeds or algae shall be provided with the highest and best practicable treatment (HBPT) to remove such nutrients (314 CMR 4.04). MADEP has established that a monthly average total phosphorus limit of 0.2 mg/l represents highest and best practical treatment for POTWs.

In March 2002, MADEP developed “French & Quinebaug River Watersheds 2001 Water

Quality Reports”. The French River is impounded (approximately 0.5 miles) by the dam in Perryville (Webster/Dudley) located just upstream of the Massachusetts/Connecticut State line. Water quality problems in the Perryville Impoundment (downstream of the Webster WWTF) include : critically low concentrations of dissolved oxygen, high concentrations of nutrient and bacteria, and chronic toxicity, as well as heavy metal concentration in the sediment. Aquatic vegetation and filamentous green algae were abundant. Slight turbidity was observed in the water column and an odor of treated sewage was detected as well. The benthic community remained hyper-dominated by filter-feeding hydropsychids. Algal cover in this partial-canopy sampling reach was approximately 25%. Microscopic examination showed that the green algae, *Hydrodictyon* spp., was very abundant in the substrate sample. Historically, blooms of green and blue-green algae recurred during summer months in Perryville Impoundment (EPA 1986 and Beaudoin 2002). It is the best professional judgement of DWM biologists that the Aquatic Life Use be assessed as partial support for this impoundment. Impairment is most likely the results of organic enrichment from a combination of productive upstream impoundments, urban run-off and the municipal treatment plant. In the report total phosphorus concentration in the French River, upstream of the WWTF ranged between 0.016 - 0.05 mg/l and the concentrations presented in the New England-wide document ranged between (0.020 - 0.022 mg/l).

The current permit includes monthly average and maximum daily limitations of 1 and 1.5 mg/l respectively for total phosphorus from April 1 to September 30 and monitoring only requirements from October 1 to March 31. Discharge Monitoring Reports (DMRs) submitted by the permittee from October 2002 through November 2004 reported monthly average total phosphorus values ranging between 0.4 mg/l and 1.0 mg/l and maximum daily values ranging between 0.6 mg/l to 1.8 mg/l.

Based on the above discussions, EPA believes that at a minimum, the draft permit must contain limits based on HBPT (0.2 mg/l), since the available water quality information show that the discharge is contributing to eutrophication. The estimated instream concentration of total phosphorous which would result under 7Q10 stream flow at an effluent concentration of 0.2 mg/l was calculated to determine whether more stringent limits would be justified based on the available water quality criteria guidance. This calculation (see below) resulted in an estimated instream concentration of about 0.1 mg/l, which is about equal to the Gold Book recommendations for streams non entering lakes or impoundments.

$$RWC = \frac{(Q_r * C_r) + (Q_d * C_d)}{Q_r + Q_d}$$

Where Q_r = receiving water 7Q10 = 10.3 MGD

Q_d , = POTW design flow = 6 MGD

C_r , = upstream total phosphorous concentration = 0.05 mg/l (based on data in “French & Quinebaug River Watersheds 2001 Water Quality Reports”

Cd = effluent total phosphorus concentration = 0.2 mg/l
RWC = receiving water concentration of total phosphorus after mixing.

$$\begin{aligned} \text{RWC} &= \frac{(10.3 \times 0.05) + (6 \times 0.2)}{10.3 + 6.0} \\ &= \frac{0.515 + 1.2}{16.3} \\ &= \frac{1.71}{16.3} = 0.1 \text{ mg/l} \end{aligned}$$

Accordingly, a limit of 0.2 mg/l is included in the draft permit. Upon completion of a future TMDL, an updated water quality analysis, or adoption of numerical nutrient limit by MADEP this permit may be re-opened and modified to account for a more stringent limit or new state criteria.

The total phosphorus limit (0.2 mg/l) is a seasonal limit in effect from April through October. The 0.2 mg/l total phosphorus limit for the month of April is a median limit and for May-October is a 30 day monthly average limit. In addition, the maximum daily value must be reported for each month.

In addition to the seasonal total phosphorus limit of 0.2 mg/l, the draft permit contains a total phosphorus monthly average limit of 1.0 mg/l during November through March. The winter period limitation on phosphorus is necessary to ensure that the higher levels of phosphorus discharged in the winter period do not result in the accumulation of phosphorus in the sediments. The limitation assumes that the dissolved fraction of the total phosphorus will pass through the system given the short detention time of the impoundments and the lack of plant growth during the winter period. A monitoring requirement for ortho phosphorus has been included for the winter period in order to determine the particulate fraction.

The permit contains a compliance schedule for meeting the total phosphorus limits (see Section I.F. of the permit.)

OUTFALL 001 - TOXIC POLLUTANTS

Chlorine:

Chlorine and chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. The river may not provide sufficient dilution of these compounds discharged by the WWTF to meet the EPA recommended instream criteria for acute and chronic toxicity levels specified in the water quality criteria document. The National Recommended Water Quality Criteria:2002 includes freshwater aquatic life chronic total residual chlorine (TRC) criteria of 11 ug/l and acute TRC criteria of 19 ug/l.

The following is a calculation of the chlorine limits:

Acute Chlorine WQC = 19 ug/l

Chronic Chlorine WQC = 11 ug/l

7Q10 = 16 cfs **

Dilution Factor = 2.7**

Daily Maximum Chlorine Limit = (2.7) x (19 ug/l) = 51.3 ug/l

Average Monthly Chlorine Limit = (2.7) x (11 ug/l) = 29.7 ug/l

The current permit also has daily maximum and monthly average limits of 51.3 ug/l and 29.7 ug/l respectively. These limits will continue in the draft permit.

Metals:

Certain metals in water can be toxic to aquatic life. There is a need to limit toxic metal concentrations in the effluent where aquatic life may be impacted. The present permit contains water quality based limits for copper and lead. An evaluation (see below) of the reasonable potential of toxicity on the concentration of metals in the effluent shows that there is reasonable potential of toxicity for copper and lead and no reasonable potential for nickel and zinc.

Calculation of reasonable potential for copper, lead, zinc and nickel :

All effluent metals data are taken from the Toxicity Reports from the period September 2001 to September 2004.

Hardness of the French River (as used in the current permit, sampled at a nearby location, upstream of the discharge) = 45 mg/l

Allowable Receiving Water Concentration, $C = \text{Criteria (Tot. Rec.)} \times \text{Dilution Factor}$

Criteria from National Recommended Water Quality Criteria:2002 are used with a hardness of 45 mg/l.

Copper :	Chronic	$C = 4.53 \times 2.7 = 12.23 \text{ ug/l}$ which is less than the monthly average effluent concentration range of 27 - 99 ug/l. So, reasonable potential exists.
	Acute	$C = 6.33 \times 2.7 = 17.10 \text{ ug/l}$ which is less than the maximum effluent concentration of 99 ug/l. So, reasonable potential exists.
Lead :	Chronic	$C = 1.04 \times 2.7 = 3.81 \text{ ug/l}$ which is less than the monthly average effluent concentration range of 2.6 - 11.0 ug/l. So, reasonable potential exists.

	Acute	$C = 26.81 \times 2.7 = 72.38 \text{ ug/l}$ which is greater than the maximum effluent concentration of 11.0 ug/l. So, reasonable potential does not exist.
Zinc :	Chronic	$C = 60.06 \times 2.7 = 162.2 \text{ ug/l}$ which is far greater than the monthly average effluent concentration range of 44-63 ug/l. So, reasonable potential does not exist.
	Acute	$C = 60.06 \times 2.7 = 162.2 \text{ ug/l}$ which is far greater than the maximum effluent concentration of 63 ug/l. So, reasonable potential does not exist.
Nickel :	Chronic	$C = 26.47 \times 2.7 = 71.47 \text{ ug/l}$ which is far greater than the monthly average effluent concentration range of 3.0-12.0 ug/l. So, reasonable potential does not exist.
	Acute	$C = 238.2 \times 2.7 = 643.14 \text{ ug/l}$ which is far greater than the maximum effluent concentration of 12.0 ug/l. So, reasonable potential does not exist.

Based on the above evaluation copper is limited to both monthly average and maximum daily, lead is limited to monthly average.

Derivation of Permit Limits :

The limits for copper and lead are calculated based on National Recommended Water Quality Criteria:2002, with a hardness of 45 mg/l and a dilution factor of 2.7.

Water Quality Criteria for hardness-dependent metals, see equations below :

$$\text{Acute Criteria (dissolved)} = \exp\{m_a[\ln(\text{hardness})] + b_a\} (\text{CF})$$

Where: m_a = pollutant-specific coefficient
 b_a = pollutant-specific coefficient
 h = Hardness = 45 mg/l as CaCO_3
 \ln = natural logarithm
 CF = pollutant-specific conversion factor (CF is used to convert total recoverable to dissolved metal)

$$\text{Chronic Criteria (dissolved)} = \exp\{m_c[\ln(\text{hardness})] + b_c\} (\text{CF})$$

Where: m_c = pollutant-specific coefficient
 b_c = pollutant-specific coefficient
 h = Hardness = 45 mg/l as CaCO_3

ln = natural logarithm

CF = pollutant-specific conversion factor (CF is used to convert total recoverable to dissolved metal)

Calculation of acute limit for copper :

$$m_a = 0.9422 \quad b_a = -1.7 \quad CF = 0.96$$

$$\text{Acute criteria (dissolved)} = \exp\{0.9422[\ln(45)] - 1.7\} (.96) = 6.33 \text{ ug/l}$$

$$\text{Dilution Factor} = 2.7$$

$$\text{Effluent Limitation:} = 2.7 \times 6.33 \text{ ug/l} = 17.10 \text{ ug/l (dissolved)}$$

$$\text{Total Recoverable} = 17.10 / CF = 17.10 / 0.96 = 17.8 \text{ ug/l} *$$

* Inverse conversion factor is used to determine total recoverable metal. EPA Metals Translator : Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion (EPA-823-B-96-007) is used as the basis for using the criteria conversion factor. National guidance requires that permit limits be based on total recoverable metals and not dissolved metals. Consequently, it is necessary to apply a translator in order to develop a total recoverable permit limit from a dissolved criteria. The translator reflects how a discharge partitions between the particulate and dissolved phases after mixing with the receiving water. In the absence of site specific data on how a particular discharge partitions in the receiving water, a default assumption that the translator is equivalent to the criteria conversion factor is used in accordance with the Translator Guidance.

Therefore the acute (maximum daily), water quality based limitation for Total Recoverable Copper is 17.8 ug/l.

Calculation of chronic limit for copper :

$$m_c = 0.8545 \quad b_c = -1.7 \quad CF = 0.96$$

$$\text{Chronic criteria (dissolved)} = \exp\{0.8545[\ln(45)] - 1.7\} (.96) = 4.53 \text{ ug/l}$$

$$\text{Dilution Factor} = 2.7$$

$$\text{Effluent Limitation:} = 2.7 \times 4.53 \text{ ug/l} = 12.23 \text{ ug/l (dissolved)}$$

$$\text{Total Recoverable} = 12.23 / CF = 12.23 / 0.96 = 12.7 \text{ ug/l} *$$

Therefore the chronic (monthly average), water quality based limitation for Total Recoverable Copper is 12.7 ug/l.

Chronic Lead Limit

	mc	bc	CF	Dissolved Criteria. (ug/l)	Limit (dissolved) (ug/l)	Limit (total rec) (ug/l)
Lead, Chronic	1.273	- 4.705	0.90	1.04	2.81	3.1

OUTFALL 001 - TOXICS CONTROL

Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on water quality standards. The Massachusetts State Surface Water Quality Standards include the following narrative statement and requires that EPA criteria established pursuant to Section 304(a)(1) of the CWA be used as guidance for interpretation of the following narrative criteria:

All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

National studies conducted by the EPA have demonstrated that domestic sources, as well as industrial sources, contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Based on the potential for toxicity from domestic and industrial contributions, the state narrative water quality criterion, the level of dilution at the discharge location, and in accordance with EPA national and regional policy and 40 C.F.R. § 122.44(d), the current permit has a whole effluent acute toxicity limitation (LC50) and a chronic no observed effluent concentration (C-NOEC) monitoring requirement, four times per year with Daphnid (*Ceriodaphnia dubia*). (See also "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants", 49 Fed. Reg. 9016 March 9, 1984, and EPA's "Technical Support Document for Water Quality-Based Toxics Control", September, 1991.)

The Massachusetts Department of Environmental Protection's Division of Watershed Management has a current toxics policy which requires toxicity testing for all major dischargers such as Webster. In addition, EPA feels that toxicity testing is required to assure that the synergistic effect of the pollutants in the discharge does not cause toxicity, even though the pollutants may be at low concentrations in the effluent. Thus, the draft permit will continue to include a whole effluent toxicity limitation requirement for the 001 outfall, to assure that Webster does not discharge combinations of toxic compounds into the French River in amounts which would affect aquatic or human life.

The draft permit includes a requirement for a 7-day Chronic and a Modified Acute toxicity test using the daphnid, *Ceriodaphnia dubia* only. A C-NOEC limit of 37% or greater [$1/(\text{Dilution Factor}) \times 100 = (1/2.7) \times 100 = 37\%$] and LC₅₀ of 100% or greater are established in the draft permit. The tests must be performed in accordance with the test procedures and protocols specified in **Attachment A** of the permit, and the tests will be conducted four times a year as stated in the draft permit.

OUTFALL 001 - NUMERICAL EFFLUENT LIMITATIONS FOR TOXICANTS

EPA and the MADEP may use the results of the quarterly toxicity tests and chemical analyses conducted by the permittee, required by the permit, as well as national water quality criteria, state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants.

C. SLUDGE CONDITIONS

Section 405(d) of the CWA requires that EPA develop technical standards regarding the use and disposal of sewage sludge. On February 19, 1993, EPA promulgated technical standards. These standards are to be implemented through permits. The conditions in the permit satisfy this requirement.

D. DEVELOPMENT OF LIMITATIONS FOR INDUSTRIAL USERS

The permittee is required to identify, in terms of character and volume of pollutants, any significant indirect dischargers into the POTW subject to pretreatment standards under Section 307(b) of the Clean Water Act and 40 CFR part 403.

E. INDUSTRIAL PRETREATMENT PROGRAM

The permittee is required to administer a pretreatment program based on the authority granted under 40 C.F.R. § 122.44(j), 40 C.F.R. § 403 and section 307 of the ACT. Since issuance of the previous permit, Federal Pretreatment Regulations in 40 C.F.R. § 403 were amended in October 1988, and again in July 1990. Those amendments established new requirements for implementation of pretreatment programs. Through issuance of this NPDES permit, the permittee is obligated to modify, if necessary, its pretreatment program plan, to be consistent with current Federal Pretreatment Regulations. The permittee is also required to implement its pretreatment program in accordance with the requirements at 40 C.F.R. Part 403 (General Pretreatment Regulations). These requirements are necessary to ensure continued compliance with the POTW's NPDES permit and its sludge use or disposal practices. Those activities that the permittee must perform include, but are not limited to, the following: (1) develop and enforce EPA approved specific effluent limits (technically-based local limits); (2) issue industrial user discharge permits, (3) conduct compliance monitoring activities (e.g., sampling and inspections at industrial users), and (4) initiate enforcement actions against non-complying industrial users.

Lastly, the permittee must submit an annual pretreatment report on November 30, which describes the permittee's pretreatment program activities over its pretreatment reporting period of October 1 - September 30.

F. MONITORING AND REPORTING

The permittee is obligated to monitor and report sampling results to EPA and the MADEP within the time specified within the permit. Timely reporting is essential for the regulatory agencies to expeditiously assess compliance with permit conditions.

G. STATE PERMIT CONDITIONS

The NPDES Permit is issued jointly by the U. S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection under federal and state law, respectively. As such, all the terms and conditions of the permit are, therefore, incorporated into and constitute a discharge permit issued by the Director of the Division of Watershed Management pursuant to M.G.L. Chap. 21, §43.

H. GENERAL CONDITIONS

The general conditions of the permit are based on 40 C.F.R. Parts 122, Subparts A and D and 40 C.F.R. § 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits.

I. STATE CERTIFICATION REQUIREMENTS

The staff of the Massachusetts Department of Environmental Protection ("MADEP") has reviewed the draft permit. EPA has requested permit certification by the State pursuant to 40 C.F.R. § 124.53 and expects that the draft permit will be certified.

V. PUBLIC COMMENT PERIOD AND PROCEDURES FOR FINAL DECISION

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, Office of

Ecosystem Protection, Municipal Permits Branch, One Congress Street, Suite-1100 (CMP), Boston, Massachusetts 02114. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. Public hearings may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates a significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

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

VI. EPA CONTACT

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

Suproakash Sarker, P.E.
U.S. Environmental Protection Agency
Office of Ecosystem Protection
One Congress Street - Suite-1100 (CMP)
Boston, MA 02114
Telephone: (617) 918-1693

Date

Linda M. Murphy, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency