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

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT NO.: **MA0102598**

PUBLIC NOTICE DATES: July 3, 2008 through August 1, 2008

NAME AND ADDRESS OF APPLICANT:

Charles River Pollution Control District
66 Village Street
Medway, Massachusetts 02053

The Towns of Franklin, Medway, Millis, and Bellingham are co-permittees for specific activities required in Sections I.B - Unauthorized Discharges and I.C - Operation and Maintenance of the Sewer System of the draft permit. Sections B - Unauthorized Discharges and C - Operation and Maintenance of the Sewer System include conditions regarding the operation and maintenance of the collection systems. The responsible municipal departments are:

Town of Franklin
Department of Public Works
150 Emmons Street
Municipal Building, Lower Level
Franklin, MA 02038

Town of Medway
Department of Public Services
155 Village Street
Medway, MA 02053

Town of Millis
Department of Public Works
Veterans Memorial Building
900 Main Street
Millis, MA 02054

Town of Bellingham
Department of Public Works
26 Blackstone Street
Bellingham, MA 02019

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Charles River Pollution Control District
Water Pollution Abatement Facility
66 Village Street
Medway, Massachusetts 02053

RECEIVING WATER: **Charles River (MA 72 - 05)**

CLASSIFICATION: **B (warm water fishery)**

I. PROPOSED ACTION

The above named applicant has requested that the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) reissue its NPDES permit to discharge into the designated receiving water, the Charles River. The current permit was issued on September 29, 2000, modified October 25, 2000, November 13, 2000, and April 22, 2002. The permit expired September 29, 2004, and was administratively continued. This permit will expire five (5) years from the effective date of the reissued permit.

The applicant filed a complete application for permit reissuance as required by 40 Code of Federal Regulations (CFR) § 122.6.

II. TYPE OF FACILITY AND DISCHARGE LOCATION

The facility is engaged in the collection and treatment of wastewater from the towns of Franklin, Medway, Millis, and central and north Bellingham and serves approximately 28,000 people and four significant industrial users.

The existing permit authorizes a discharge from Outfall 001 to the Charles River as shown on **Figure 1**. The draft permit has been written to reflect the current operation and conditions at the facility.

III. DESCRIPTION OF THE DISCHARGE

The Charles River Pollution Control District Water Pollution Abatement Facility (CRPCD WPAF) **(Figures 2 and 3)** is an advanced plant providing treatment to domestic, commercial, and industrial wastewater. The plant was expanded and upgraded in 2000 to increase the capacity of the flow from 4.5 to 5.7 MGD. The upgrades included an anoxic biological selector for filamentous bacteria control, two fine bubble diffused aeration basins to increase the aeration capacity, four 12-cloth disk filters to supplement the existing sand filters, and an upgrade to the plants electrical system. In 2003, new piping and pumps for the ferric chloride, ferrous sulfate, and lime systems were installed, and a hydrated lime mixing system was installed to replace the quick lime slaking system.

The unit processes and equipment at the plant now consist of a Parshall flume, two automatic bar racks, three influent pumps (lead/lag/standby), two aerated grit tanks where lime is added for pH control and ferric chloride for phosphorus control, two primary clarifiers, an anoxic selector, two fine bubble aeration chambers, eight mechanical aeration tanks, four secondary clarifiers, and four cloth filter basins. Solids are captured on the filter cloth and backwashed to the headworks, and the filtered water continues to the chlorine contact chamber. There are additional gravity sand filters for high flow periods. The effluent is disinfected in two chlorine contact chambers (Cl_2 gas), dechlorinated with sodium bisulfate, passes down effluent cascade steps, and flows 3,375 feet through the outfall pipe to the Charles River.

The facility receives approximately 25,000 gallons of septage per day from Franklin, Medway, Millis, Bellingham, Norfolk, Sherborn, Dover, and Wrentham. There are two septage tanks, which are filled and batch discharged by gravity into the headworks. One septage tank is typically all that is needed however, the other tank is available for haulers to discharge into if it is needed. The facility checks the pH of each septage delivery and conducts micro-toxicity testing of the septage tank once per week. Ferrous chloride is added to the wet wells for odor control.

Primary sludge is pumped to a gravity belt thickener. Secondary sludge flows to the wet well and is pumped to the gravity thickener with polymer added to aid thickening. The 7% solids sludge is held in

wet wells and then trucked to the incinerator at Synagro in Woonsocket, RI.

A quantitative description of the discharge in terms of significant effluent parameters based on recent monitoring data is shown in **Fact Sheet Tables 1 and 2.**

IV. LIMITATIONS AND CONDITIONS

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

V. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITS DERIVATION

The Clean Water Act (CWA or the Act) prohibits the discharge of pollutants to waters of the United States without an NPDES permit unless such a discharge is otherwise authorized by the Act. An NPDES permit is used to implement technology based and water quality based effluent limitations as well as other requirements including monitoring and reporting. This draft NPDES permit was developed in accordance with statutory and regulatory authorities established pursuant to the Act. The regulations governing the NPDES program are found in 40 CFR Parts 122, 124, and 125.

Regulatory Basis.

EPA is required to consider technology and water quality requirements when developing permit effluent limits. Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 402 and 301(b) of the Clean Water Act (CWA) (see 40 CFR 125 Subpart A). For publicly owned treatment works (POTWs), technology based requirements are the effluent limits based on secondary treatment defined in 40 CFR Part 133. EPA regulations require NPDES permits to contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve federal or state water quality standards.

Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limits based on water quality standards. The Massachusetts Surface Water Quality Standards (314 CMR 4.00) include requirements for the regulation and control of toxic constituents and also require that EPA criteria, established pursuant to Section 304(a) of the CWA, shall be used unless a site-specific criteria is established. The state will limit or prohibit discharge of pollutants to surface waters to assure that water quality of the receiving waters are protected and maintained, or attained.

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 caused, or has reasonable potential to cause, or contributes to an excursion above any water quality criterion [40 CFR 122.44(d)(1)]. An excursion occurs if the projected or actual instream concentrations exceed the applicable criterion. In determining reasonable potential, EPA considers existing controls on point and non-point sources of pollution, variability of the pollutant in the effluent, sensitivity of the species to toxicity and where appropriate, the dilution of the effluent in the receiving water.

Waterbody Classification and Usage

The Charles River is classified as a Class B warm water fishery by the Massachusetts Surface Water Quality Standards [314 CMR 4.05(3)(b)]. Class B waters are designated as habitat for fish, other aquatic life, and wildlife, and for primary and secondary contact recreation. Where designated, they shall be suitable as a source of public water supply with appropriate treatment. They shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.

Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those waterbodies that are not expected to meet surface water quality standards after implementation of technology-based controls and as such require the development of total maximum daily loads (TMDL). The CRPCD WPAF discharges into Charles River segment MA 72-05, which extends from below Populatic Pond on the Norfolk/Medway line to the South Natick Dam. The Massachusetts Year 2006 Integrated List of Waters [Section 303(d) list] identifies segment MA-72-05 and segments downstream from the facility as not attaining water quality standards. Segment 72-05 is listed as impaired by unknown toxicity, metals, nutrients, organic enrichment/low dissolved oxygen, pathogens, noxious aquatic plants, and turbidity.

EPA and MassDEP have awarded grants to the Charles River Watershed Association (CRWA) for the Upper Charles River Watershed Total Maximum Daily Load Project (# 2001-03/104). Under these grants, CRWA has collected wet and dry weather water quality and flow data, is estimating pollutant loads from sources such as land use, septic systems, atmospheric deposition, sediment resuspension, and point sources, and is determining receiving water concentrations, estimating loading capacity; and establishing load allocations by source category. This information will be used to establish load allocations by source category and will be used by MassDEP to develop a TMDL and to evaluate Water Management Act and groundwater discharge permits for the Charles River watershed.

Plant Design Flow

The design flow of the plant is now 5.7 MGD. Plant flow is measured at the influent Parshall flume. The annual average flow rate was 5.16 MGD in 2005, 5.03 MGD in 2006 and 4.36 MGD in 2007. The range of the maximum daily flow rate between January 2005 and December 2007 was 3.55 MGD and 14.38 MGD.

During the 2000 public notice period, the District commented that they would not need the design capacity during the term of the permit in the summer months. The permit issued in 2000 included a monthly average flow limit of 4.5 MGD from July through September and the effluent limits for those months were calculated based on a flow of 4.5 MGD. The table below compares the monthly minimum river flow at the USGS station in Dover and the plant discharge.

Charles River <u>Minimum</u> Mean Daily Discharge at USGS Gage in Dover and Average Monthly Plant Effluent Flow

Year	July		August		September	
	River Flow, MGD	Plant Flow, MGD	River Flow, MGD	Plant Flow, MGD	River Flow, MGD	Plant Flow, MGD
2000	15.48	3.76	14.19	3.67	9.03	3.62
2001	46.44	4.17	29.67	3.51	19.35	3.35
2002	21.93	3.43	5.87	3.31	10.32	3.51
2003	72.89	4.17	38.70	3.85	36.12	3.74
2004	34.83	3.72	27.74	3.86	34.83	3.98
2005	25.80	3.79	14.19	3.48	11.61	3.55
2006	92.90	4.56	36.77	3.78	30.96	3.77

Because the monthly average flows typically remain below 4.5 MGD during the critical July through September period, EPA and MassDEP have retained the seasonal flow limits in this draft permit. The flow

limits in the draft permit are therefore 5.7 MGD as an annual average flow, and 4.5 MGD as a monthly average flow from July 1 to September 30. The monthly average and daily maximum flows shall be reported for all months.

River Flow and Dilution Calculation
The receiving water 7Q10, or the 7-day mean stream low flow with 10-year recurrence interval and the treatment plant design flow are used to calculate a dilution factor. A dilution factor is used to establish water quality based effluent limits in the draft permit.

EPA and MassDEP calculated the dilution factor in 2000 using the 7Q10 flow measured at the USGS gage in Dover[1] (01103500), average flows from the wastewater treatment plants discharging into the Charles and Stop Rivers upstream of the Dover gage during the week of August 7 through August 13, 1999, and the drainage areas upstream of the Dover gage and upstream of the CRPCD discharge. The treatment plant flows from this week were used because flows in the Charles River were approximately equal to the 7Q10 flows during this period so the plant discharge flows are representative of flows during a 7Q10 low flow period. EPA and MassDEP believe that this approach is still valid for use in this draft permit.
The dilution factor was calculated using 4.5 MGD as the design flow. The dilution factor is 1.59.
The calculations are as follows:

Dilution Factor Calculation:

7Q10 at USGS station 0110350 Charles River at Dover = 12.2 cfs
Contributing flows from WWTPs upstream of the USGS gage (August 7 - 13, 1999):

Milford WWTP	3.64 cfs
CRPCD	5.38 cfs
Medfield WWTP	1.11 cfs
Wrentham Developmental Ctr	0.114 cfs
Caritas Southwood Community Hospital [2]	0.015 cfs
MCI-Norfolk WPCF	0.569 cfs
Total	10.83 cfs

Base flow at USGS Dover = (7Q10) - (contributing flows) = 12.2 cfs - 10.83 cfs = 1.37 cfs

Base flow per square mile of drainage area:
The total drainage area upstream of the Dover gage is 183 sq mi, therefore the flow factor for the watershed is:

(1.37 cfs) / (183 sq mi) = 0.0075 cfs/sq mi

Base Flow at CRPCD:

Using the calculated flow factor for the watershed and the drainage area upstream of CRPCD discharge

[1] Current 7Q10 at the Dover gage is estimated at 12.9 cfs, only a small change from the estimate in 1999.
[2] Caritas Southwood Community Hospital is included in this calculation of upstream WWTP flow, but the discharge has since been terminated. The calculation has not changed given the minimal flow from this facility.

(66.7 sq mi), the base flow in the Charles River at the discharge point is:

(0.0075 cfs/sq mi) (66.7 sq mi) = 0.5 cfs

7Q10 Flow at CRPCD (Base flow at CRPCD plus Milford WWTP flow):
Adding the base flow and the flow discharged from the Milford WWTP, the only discharge upstream of CRPCD:

7Q10 = (0.5 cfs) + (3.64 cfs) = 4.14 cfs

Dilution factor:
CRPCD flow = 4.5 MGD = 6.96 cfs

$$DF = \frac{7Q10 + \text{design flow}}{\text{design flow}} = \frac{4.14 \text{ cfs} + 6.96 \text{ cfs}}{6.96 \text{ cfs}} = 1.59$$

Conventional Pollutants
$CBOD_5$ and TSS
The seasonal concentration and mass-based effluent limitations for $CBOD_5$ and TSS are the same limits as the current permit and are based on previous waste load allocations[3], water quality considerations, and state certification requirements. The summer average monthly and average weekly limits are 7 mg/l and 10 mg/l, respectively. The winter average monthly and average weekly limits are 15 mg/l and 25 mg/l, respectively. The monitoring frequency remains the same. These limits were established to achieve the Class B water quality standards in the Charles River.

$CBOD_5$ and TSS Mass Loading Calculations:
Average monthly limits = (concentration) (design flow) (8.34) = lbs/day
$CBOD_5$ and TSS (summer) = (7 mg/l) (4.5 MGD) (8.34) = 265 lbs/day
$CBOD_5$ and TSS (winter) = (15 mg/l) (4.5 MGD) (8.34) = 570 lbs/day
Average weekly limits = (concentration) (design flow) (8.34) = lbs/day
$CBOD_5$ and TSS (summer) = (10 mg/l) (4.5 MGD) (8.34) = 380 lbs/day
$CBOD_5$ and TSS (winter) = (25 mg/l) (4.5 MGD) (8.34) = 950 lbs/day

Between January 2005 and December 2007, the average monthly $CBOD_5$ ranged from 1.1 to 5.9 mg/l, and the maximum daily ranged from 1.5 to 28 mg/l (Table 1). There were no exceedances of the $CBOD_5$ average monthly concentration limit.

During the same period, the average monthly TSS concentration ranged from 0.8 to 76 mg/l, and the maximum daily ranged from 1.5 to 509 mg/l. There were four exceedances of the TSS average monthly limit during this period.

The monthly average 85 percent removal requirements for $CBOD_5$ and TSS are based on the provisions of 40 CFR §133.102(a)(3) and (b)(3). The limit is carried forward from the current permit. There were no exceedances for the $CBOD_5$ 85% removal requirement between January 2005 and December 2007. There was one exceedance for the TSS 85% removal requirement in June 2006.

[3] Massachusetts Department of Environmental Protection, Charles River Basin 1976 Water Quality Management Plan, Report 72 – D-1.

Fecal Coliform, Escherichia coli (E. coli), Dissolved Oxygen (DO) and pH
The numerical limitations for fecal coliform, E.coli, dissolved oxygen (DO) and pH are based on state certification requirements under Section 401(a) of the CWA, as described in 40 CFR 124.53 and 124.55, and the Massachusetts Surface Water Quality Standards at 314 CMR 4.05(3)(b). The limits for pH, dissolved oxygen, and fecal coliform will remain unchanged from the limits in the existing permit.

Massachusetts adopted revisions to the State Water Quality Standards on March 26, 2007, which were approved by EPA on September 19, 2007. For Class B waters, the bacteria indicator changed from fecal coliform to E.coli for non-bathing beaches and other waters.

Accordingly, the draft permit contains effluent limits for E.coli. The proposed limits include a monthly geometric mean of 126 colony forming units (cfu)/100 ml and a daily maximum of 409 cfu/100 ml (the daily maximum value is the 90% distribution of the geometric mean of 129 cfu/100 ml).

Because the E.coli limits are new water quality based limits, the Massachusetts Water Quality Standards allow a compliance schedule for achieving them. (see 314 CMR 4.03(1)(b) and Section H in the draft permit). The draft permit includes a compliance schedule requiring that the E.coli limit be achieved by March 2010. The current permit limits for fecal coliform are continued as interim limitations until the E.coli limits become effective. The bacteria limits are seasonal, and the seasons remain the same as in the current permit (March-November).

The fecal coliform and E.coli samples are to be collected at the same time as the total residual chlorine samples.

During the period of January 2005 through December 2007 there were two exceedances of the maximum fecal coliform limits, no exceedances of the maximum pH limit, and one exceedance of the DO requirement.

Non-Conventional Pollutants
Phosphorus
The existing permit includes a seasonal monthly average effluent limit for total phosphorus of 0.2 mg/l (April 1 through October 31) and a reporting requirement for the remainder of the year (November 1 through March 31). From January 2005 through December 2007, the monthly average phosphorus concentration ranged from 0.07 to 2.9 mg/l in the summer with seven exceedances and 0.09 to 1.4 mg/l in the winter (Table 2).

As discussed earlier, the segment of the Charles River receiving the facility's discharge is not attaining water quality standards and is listed as impaired by unknown toxicity, metals, nutrients, organic enrichment/low dissolved oxygen, pathogens, noxious aquatic plants, and turbidity. The Charles River has been included on the 2006 Massachusetts Section 303(d) CWA lists for nutrients because of cultural eutrophication. Phosphorus is an essential nutrient for plant growth and is the limiting nutrient in fresh water ecosystems. Phosphorus discharged by the CRPCD and other sources into the Charles River has the potential to accelerate eutrophication.

MassDEP has not adopted numeric nutrient criteria for phosphorus, but its water quality standards include narrative criteria for nutrients at 314 CMR 4.05(5)(c) specifying that " unless naturally occurring, all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses" and "any existing point source discharge containing nutrients in

concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface waters shall be provided with the most appropriate treatment as determined by the Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs….". MassDEP construes "highest and best practical treatment" for POTWs as treatment achieving a monthly average total phosphorus concentration of 0.2 mg/l.

In the absence of a numeric criterion for phosphorus, EPA looks to nationally recommended criteria, supplemented by other relevant materials, such as EPA technical guidance and information published under Section 304(a) of the CWA, peer-reviewed scientific literature and site-specific surveys and data. *See* 40 CFR §122.44(d)(1)(vi)(B). EPA has produced several guidance documents which set forth total ambient phosphorus concentrations that are sufficiently stringent to control cultural eutrophication and other adverse nutrient-related impacts. These guidance documents present protective in-stream phosphorus concentrations based on two different analytical approaches. An effects-based approach provides a threshold value above which adverse effects (*i.e.*, water quality impairments) are likely to occur. It applies empirical observations of a causal variable (*i.e.*, phosphorus) and a response variable (*i.e.*, chlorophyll *a*) associated with designated use impairments. Alternatively, reference-based values are statistically derived from a comparison within a population of rivers in the same eco-region class. They are a quantitative set of river characteristics (physical, chemical and biological) that represent conditions in waters in that ecoregion that are minimally impacted by human activities (*i.e.*, reference conditions), and thus by definition representative of water without cultural eutrophication. Thus, while reference conditions, which reflect minimally disturbed conditions, will meet the requirements necessary to support designated uses, they may also exceed the water quality necessary to support such requirements.

The 1986 Quality Criteria of Water (commonly known as the "Gold Book") follows an effects-based approach. It recommends maximum threshold concentrations designed to prevent or control adverse nutrient-related impacts from occurring. Specifically, the Gold Book recommends in-stream phosphorus concentrations of no greater than 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. A more recent technical guidance manual, the Nutrient Criteria Technical Guidance Manual: Rivers and Streams (EPA 2000) ("Nutrient Criteria Technical Guidance Manual"), cites a range of values drawn from the peer-reviewed scientific literature to control periphyton and plankton, two types of aquatic plant growth commonly associated with eutrophication. This guidance recommends an in-stream phosphorus concentration from 0.01 mg/l to 0.09 mg/l to control periphyton growth and concentrations from 0.035 mg/l to 0.070 mg/l to control plankton (see Table 4 on page 101).

EPA has also released recommended ecoregional nutrient criteria, established as part of an effort to reduce problems associated with excess nutrients in water bodies in specific areas of the country. The published criteria represent conditions in waters in that ecoregion that are minimally impacted by human activities, and thus free from cultural eutrophication. The CRPCD discharge is within sub-ecoregion 59 of Ecoregion XIV, Eastern Coastal Plains. The total phosphorus criterion for this sub-ecoregion, found in Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion XIV (2000), is 24 ug/l (0.024 mg/l). The recommended chlorophyll a criterion for aggregate Ecoregion XIV streams is 3.75 ug/l.

Phosphorus concentrations in the Charles River Basin

The impacts associated with the excessive loading of phosphorus are well documented in three recent reports on the Charles River Watershed Basin. The Charles River Basin 2002-2006 Water Quality

Assessment Report published by MassDEP in April 2008 and its Appendix B, Technical Memorandum TM 72-9; the Upper Charles River Watershed Total Maximum Daily Load Project, project # 2001-03/104, Volume I: Phase I Final Report, dated May 2004, and the Upper Charles River Watershed Total Maximum Daily Load, Project # 2001-03/104, Volume I: Phase II Final Report and Phase III Data Report, dated July 2006.

The Charles River Watershed Basin 2002-2006 Water Quality Assessment Report provides data from nine samples collected by the Charles River Watershed Association for total phosphorus both upstream and downstream of the treatment plant's outfall (segment MA72-05) for the months of April through September. The range of phosphorus concentration upstream of the outfall is between 0.0386 to 0.0836 mg/l and the range downstream of the outfall is between 0.043 to 0.0717 mg/l.

The MassDEP Technical Memorandum T72-9, Charles River Watershed DWM Year 2002 Water Quality Monitoring Data – Rivers includes data from sampling locations on the Charles River, upstream of CRPCD's discharge and downstream of the discharge. A range of total phosphorus concentration from April through September measured below the detection limit to 0.055 mg/l upstream of the discharge and below the detection limit to 0.061 mg/l downstream of the discharge.

The Upper Charles River Watershed Total Maximum Daily Load, Project # 2001-03/104, Volume I: Phase I Final Report, and Volume I: Phase II Final Report and Phase III Data Report states that every tributary, wastewater treatment plant and, all but two main stem sites on the Charles River, (one in Milford and one in Millis) exceed the USEPA recommended action limit for total phosphorus of 0.024 mg/l. Data from dry weather sampling events conducted in August 2002 show that instream concentration of phosphorus downstream from the treatment plant is higher than upstream of the treatment plant and also shows elevated concentrations of chlorophyll a, dissolved oxygen, and pH, which are indicative of excessive plant growth. See the Table below.

Charles River TMDL Water Quality Monitoring Data (mg/l)

Dry Sampling Date	Total Phosphorus	Orthophosphate	Chlorophyll *a*	DO	Percent Saturation
Station 184S: USGS Gage Station, upstream of Populatic Pond, Medway					
8/13/2002	0.0472	0.0141	4.92 [1]	9.54 - 9.63 [2]	----
8/24/2005	0.0259	0.016	ND	8.84	99.7
Station 201S [3] : Outlet of Populatic Pond, Medway					
8/13/2002	0.0632	0.0201	0.0416	9.2	110
8/24/2005	0.0562	0.0134	0.022	10.10	119
Station 202W : CRPCD Discharge					
8/13/2002	0.106	0.116	0.0416	----	----
8/24/2005	0.0992	0.0897	0.022	7.7	----
Station 207S: One-half mile downstream of CRPCD outfall, Norfolk					

8/13/2002	0.0717	0.0312	38 [1]	9.85	115
8/24/2005	0.0536	0.0233	12	8.8	106.5
Station 229S: Two miles downstream of CRPCD, Millis					
8/13/2002	0.0230	0.0219	0.00804 [1]	7.9	----
8/24/2005	0.0375	0.0188	0.007	7.1	82.5
Station 290S: Nine miles downstream of CRPCD, Medfield (above Medfield WWTP)					
8/13/2002	0.0395/0.0378[4]	0.00928/0.00943[4]	0.00946/0.00928[4]	7.9	----
8/24/2005	0.0415	0.011	0.015	7.2	90
Station 294S: Immediately below Medfield WWTP					
8/13/2002	0.100	0.0622	12.4	8.2	----
8/24/2005	0.041	0.0122	15	7.5	90
Station 318S: Route 27 Bridge, Medfield/Sherborn town line					
8/13/2002	0.0616	0.0187	1.93[1]	8.83	----
8/24/2005	0.0377	0.0115	9	5.7	68.3
Station 387S: Cheney Bridge, Wellesley, downstream of South Natick					
8/13/2002	0.0307	0.182	7.48[1]	5.37	----
8/24/2005	0.0462/0.0504[4]	0.0137/0.0141[4]	9/9[4]	5.3	64.2
Station 407S: Claybrook Road, Dover					
8/13/2002	0.0384/0.0346[4]	0.00614/0.00384[4,5]	30.8/27.4[1,4]	8.26	----
8/24/2005	0.043	0.0118	13	5.9	75
Station 447S: USGS Gage, Dover					
8/13/2002	0.0372	0.00476	10.7	6.42	----
8/24/2005	0.0572	0.00996	21	6.8	----

[1]Chlorophyll *a* equipment blanks for 8/13/02 are 0.00215 and 0.00301 mg/l.
[2] Unstable.
[3] Station 201S is located at the outlet of Populatic Pond upstream of the discharge
[4] Field Duplicate.
[5] Field Duplicate Relative Percent Difference is greater than acceptable range.

In addition to the data in the tables above, continuous dissolved oxygen data collected in Populatic Pond, just upstream of the discharge, and from the first sampling site downstream of the CRPCD discharge (207S) show large diurnal variations in dissolved oxygen and very high levels of supersaturation (see

Figures 2-27 and 2-28, from *Upper Charles River Watershed Total Maximum Daily Load Project, Volume I: Phased I Final Report.* This data is indicative of significant photosynthesis-driven fluctuations in dissolved oxygen, an indication large quantities of plant biomass are in the receiving water.

The Charles River Watershed 2002-2006 Water Quality Assessment Report notes a bloom of cyanobacteria algae in this segment of the Charles River in September 2004 and also notes large mats of filamentous algae downstream of Populatic Pond in July 2002.

In summary, the available data shows extremely high productivity in the receiving water upstream and downstream of the discharge as evidenced by high chlorophyll a, large diurnal variation in dissolved oxygen concentration and visible algae mats as noted in field observations.

As discussed previously, the existing permit includes a monthly average total phosphorus limit of 0.2 mg/l, which was based on MADEP's interpretation of highest and best practical treatment for POTWs. However, the receiving water data collected for the TMDL shows that this limit is not sufficiently stringent to achieve water quality standards. Pursuant to 40 CFR 122.44(d)(1) (v), where a State has not established a water quality criterion for a specific chemical pollutant that is present in the effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of the following options:

(A) – Establish effluent limits using a calculated numeric water quality criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use. Such a criterion may be derived using a proposed state criterion, or an explicit State policy or regulation interpreting its narrative criterion, supplemented with other relevant information which may include: EPA's Water Quality Standards Handbook, October 1983, risk assessment data , exposure data, information about the pollutant from the Food and Drug Adminstration, and current EPA criteria documents; or

(B) – Establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under section 304(a) of the CWA, supplemented where necessary by other relevant information; or

(C) – Establish effluent limitations on an indicator parameter for the pollutant of concern.

EPA has produced several guidance documents which contain recommended total phosphorus criteria for receiving waters to which this data may be compared. The 1986 Quality Criteria for Water (EPA 440/5/86-001), commonly known as the "Gold Book", recommends a desired goal of 0.1 mg/l total phosphorus for the prevention of plant nuisances in streams or other flowing waters not discharging directly into lakes or impoundments.

More recently, EPA has released "Ecoregional Nutrient Criteria," established as part of an effort to reduce problems associated with excess nutrients in water in specific areas of the country. The published criteria represent conditions in waters in an ecoregion minimally impacted by human activities, and thus representative of water without cultural eutrophication. CRPCD WPAF is within Ecoregion XIV, Eastern Coastal Plains, Level III Northeastern Coastal Zone. The total phosphorus criteria for this ecoregion, found in Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion XIV (EPA-822-B-00-022, December 2000), is 24 ug/l (0.024 mg/l). The chlorophyll *a* criteria for the aggregate ecoregion is 3.75 ug/l (0.004 mg/l).

The report emphasizes that these values represent a starting point for states to develop more refined nutrient criteria for local conditions.

The current limit is not sufficiently stringent to achieve the Gold book criteria under 7Q10 conditions, or the Ecoregion Criteria under average summer conditions. A more stringent limit, based on the Gold Book criteria is proposed in the draft permit and was calculated as follows:

Calculation of Summer Phosphorus Effluent Limits based on 1986 Quality Criteria for Water (EPA 440/5/86-001):

Average monthly summer total phosphorus limit:

The effluent limit was calculated to assure that the instream total phosphorus concentration does not exceed 0.1 mg/l under 7Q10 low flow conditions with the treatment plant discharging at a flow of 4.5 MGD (6.96 cfs). A background concentration of 0.06 mg/l was assumed based on the instream data collected at sampling site 201S, just upstream of the discharge. The calculation of the limit is shown below

$$Q_rC_r = Q_dC_d + Q_sC_s$$

Where

Q_r = receiving water flow downstream of the discharge (Qd + Qs), 11.1 cfs
C_r = total phosphorus concentration in the receiving water downstream of the discharge, 0.1 mg/l
Q_d = discharge flow from the facility, 6.96 cfs
C_d = total phosphorus concentration in the discharge
Q_s = receiving water flow upstream of the discharge, 4.14 cfs
C_s = total phosphorus concentration upstream of the discharge, 0.06 mg/l

Solving for C_d yields:

$$Cd = \frac{QrCr - QsCs}{Qd}$$

$$Cd = \frac{(11.1)(0.1) - (4.14)(0.06)}{6.96}$$

Cd = 0.12 mg/l

The draft permit therefore includes a monthly average summer phosphorus limit of 0.12 mg/l. In the future, should MassDEP adopt numeric phosphorus criteria, or a TMDL be approved by EPA, or should additional water quality information shows that a different (more or less stringent) phosphorus limit will result in attainment of water quality standards, the permit may be modified to include the appropriate limit.

The draft permit also includes a total phosphorus limitation of 1.0 mg/l for the period from November 1 through March 31. The basis for the limit is to protect the Charles River from cultural eutrophication. The discharge of particulate phosphorus from the facility during the winter months to the Charles River has the potential to settle and become incorporated into the bottom sediments within the Charles River system. The potential for particulate phosphorus being stored in the Charles River system is high because of the physical characteristics of the downstream river system, which include low gradient segments, adjacent

wetland/marshy areas, and impounded sections along the river (areas upstream of dams). These characteristics result in low flow velocities and long travel times which, allows particulate matter to settle from the water column and become part of the bottom sediments.

The primary concern with phosphorus being stored in the bottom sediments is that it may become available for algal and macrophyte growth during the summer growing season. Depending on water column conditions, sediment-bound phosphorus may be released to the water column. This is particularly true for impounded portions of the river that become stratified during the summer months and have low DO in the lower water column. Low DO at the sediment water interface promotes mobilization of phosphorus from the sediments to the water column. A limit of 1.0 mg/l from November 1 through March 31 will require removal of most of the particulate-bound phosphorus in the discharge. This will presumably allow the dissolved portion to pass out of the system during the winter and spring when flows are higher and plant uptake is low. Orthophosphorus will be monitored during the winter months to determine the bioavailable concentration of phosphorous in the water column.

In summary, the draft permit total phosphorus limit for the summer months is 0.12 mg/l and the winter limit is 1.0 mg/l. The monitoring frequency for the summer is 3/week, and the winter monitoring frequency is 1/month.

Ammonia
Ammonia can impact the receiving stream's dissolved oxygen concentration and can be toxic at elevated levels. The ammonia limits are based on previous waste load allocations and water quality considerations. These limits have been established to achieve dissolved oxygen water quality standards for a Class B receiving water. The effluent limitations in the draft are the same as the limits in the existing permit. The average monthly, average weekly, and maximum daily concentration limits for the month of April are 10 mg/l, 15 mg/l, and 20 mg/l and for May the limits are 5 mg/l, 7.5 mg/l and 10 mg/l. The average monthly, average weekly, and maximum daily concentration limits for the months of June through October are 1 mg/l, 1.5 mg/l, and 2 mg/l.

During the winter months, ammonia limits may not be necessary to ensure compliance with water quality standards given the higher receiving water flows, reduced rates of biological degradation of ammonia and, higher instream concentrations of dissolved oxygen. However, winter limits may be necessary to ensure that ammonia toxicity does not cause or contribute to violations of water quality standards. The facility reports average monthly and maximum daily ammonia limits from November 1 through March 31 once per month. See Table 2 for total ammonia data reported on the facility's discharge monitoring report from January 2005 through December 2007.

In order to determine if there is a reasonable potential for the CRPCD discharge to cause a violation of the water quality standards, the potential winter limits were calculated as follows:

Winter Ammonia Limits Calculations:
The winter ammonia instream criteria is dependent on pH and temperature, as explained in 1999 Update of Ambient Water Quality Criteria for Ammonia (EPA-822-R-99-014), and Federal Register Vol. 64, No. 245, pgs. 71973 - 71980, December 22, 1999. The recommended chronic ammonia criteria is established as a 30-day concentration, therefore the monthly average limit has been calculated using a dilution factor based on 30-day mean low flow with a recurrent interval of 10 years (30Q10) and the discharge design flow.

Estimation of 30Q10 for period of November 1 to March 31:

Charles River 30Q10 at USGS station 0110350 Charles River at Dover = 72.1 cfs
The contributing flows for the 30Q10 estimate are based on the design flows, in contrast to the 7Q10 estimate, where the flows were based on the actual discharge volumes during a period when 7Q10 conditions existed in the river.

Contributing flows from upstream WWTPs:

Milford WWTP	4.3 MGD	6.6 cfs
CRPCD	4.5 MGD	6.96 cfs
Medfield WWP	1.52 MGD	2.35 cfs
Wrentham Developmental Ctr	0.454 MGD	0.70 cfs
Caritas Southwood Hospital	0.055 MGD	0.085 cfs
MCI-Norfolk	0.484 MGD	0.749 cfs
Total contributing flows		17.4 cfs

* Base flow at USGS Dover = (30Q10) - (contributing flows) = 72.1 cfs - 17.4 cfs = 54.7 cfs
Base flow per square mile of drainage area (base flow factor):
(54.7 cfs) / (183 sq mi) = 0.298 cfs/sq mi
* 30Q10 estimate at CRPCD:
(base flow factor) (drainage area) + (Milford flow) = (0.29) (66.7 sq mi) + (6.6 cfs) = 26.47 = 26.5 cfs

Instream dilution based on 30Q10:
$DF = \frac{30Q10 + \text{design flow}}{\text{design flow}} = \frac{26.5 + 6.96}{6.96} = 4.8$

Calculation of Ammonia Criteria:
Temperature and pH data collected by the Charles River Watershed Association from 2000 through 2002 at station 165S, Shaw Street Bridge, Medway/Franklin (www.crwa.org), were reviewed to determine the pH and temperature values needed to calculate the ammonia criteria. On occasion, the pH in the winter months was below the minimum water quality standard of 6.5.

The CRWA data on the ammonia criteria for each sampling data are tabulated below. Based on this information, a criteria value of 4.36 mg/l based on a pH of 7.5 and temperature of 1^0 C was selected to be protective of the river during cold weather conditions.

Calculation of Ammonia Criteria

Month	pH	Temperature, ^{0}C	Instream Criteria, mg/l
March 2002	6.9	3.0	6.12
February 2002	7.4	2.0	4.73
November 2001	7.5	1.0	4.36
March 2001	6.7	0.5	6.44
November 2000	6.8	3.5	6.29

March 2000	7.3	0.0	5.08
February 2000	6.3	1.0	6.67
December 2000	6.9	---	6.12
November 2000	6.0	3.5	6.67

Average monthly winter ammonia limit = (ammonia criteria) (30Q10 DF) = (4.36 mg/l) (4.8) = 21 mg/l

The weekly average ammonia criteria should be no more than twice the monthly average limit:
Weekly average winter ammonia limit = (average monthly limit) (2) = (21 mg/l) (2) = 42 mg/l
The average monthly and maximum daily ammonia concentrations reported on the monthly discharge monitoring reports are listed in Table 2. Based on these calculations, reasonable potential of ammonia concentration in the effluent exceeding water quality criteria does not exist. Therefore winter ammonia limits are not required at this time. The reporting requirement and 1/month winter sampling frequency are carried over from the current permit.

Total Residual Chlorine (TRC)
The effluent is seasonally disinfected with chlorine gas and dechlorinated with sodium bisulfate. The chlorine is delivered by a vacuum-solution feed chlorinator. The chlorine feed rate and pounds remaining in the cylinder are checked every morning. In the event of loss of injector water, the chlorinator will respond to the loss of vacuum and automatically discontinue flow of chlorine gas supplied by the cylinder. The daily maximum concentration reported for effluent monitoring over the past two years ranged from below the detection limit of 0.05 mg/l to 0.9 mg/l, with four exceedances. Table 1 shows the TRC values recorded on the monthly discharge monitoring report.

Chlorine and chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. The draft permit includes total residual chlorine limits based on Massachusetts Water Quality Standards [314 CMR 4.05(5)(e)] and the Massachusetts Implementation Policy for the Control of Toxic Pollutants in Surface Waters, February 23, 1990. The instream criteria for chlorine are found in the updated compilation of the National Recommended Water Quality Criteria: 2002 (EPA 822-R-02-047). The calculations for water quality based limits are as follows:

National Recommended Water Quality Criteria 2002 (EPA 822-R-02-047):
Chronic criteria (CCC) = 11 ug/l

*Average monthly limit = (CCC) x (DF) = (11 ug/l) (1.59) = 17 ug/l
Acute criteria (CMC) = 19 ug/l

*Maximum daily limit = (CMC) x (DF) = (19 ug/l) (1.59) = 30 ug/l

A monitoring frequency of 2/day for chlorine is the minimum frequency authorized in the permit.
The minimum detection level (ML) for TRC has been lowered to 20 ug/l in the draft permit. This level may be obtained using the EPA methods specified in the permit. The average monthly TRC limit in the permit is below the analytical detection limit for this pollutant. In these situations, EPA Region I is following guidance set forth in Technical Support Document for Water Quality Based Toxics Control (EPA 505/2-90-001, March 1991, page 111), which recommends that "the compliance level be defined in the permit as the minimum level (ML)." Therefore, the limit at which compliance determinations will be based is the ML. For this permit, the ML for total residual chlorine is defined at 20 ug/l and any value below 20 ug/l shall be reported as zero on the Discharge Monitoring Report. The ML value may be

reduced by permit modification as EPA and the State approves more sensitive tests.

The E.coli bacteria samples shall be collected at the same time and location as the TRC sample.

Whole Effluent Toxicity Testing
Under Section 301(b)(1) of the CWA, discharges are subject to effluent limitations based on water quality standards. The Massachusetts Surface Water Quality Standards [314 CMR 4.05(5)(e)], include the following narrative statements and require that EPA criteria established pursuant to Section 304(a)(l) 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. Where the State determines that a specific pollutant not otherwise listed in 314 CMR 4.00 could reasonably be expected to adversely affect existing or designated uses, the State shall use the recommended limit published by EPA pursuant to 33 U.S.C. 1251 §304(a) as the allowable receiving water concentrations for the affected waters unless a site-specific limit is established. Site specific limits, human health risk levels and permit limits will be established in accordance with 314 CMR 4.05(5)(e)(1)(2)(3)(4)".*

National studies conducted by the EPA have demonstrated that domestic sources contribute toxic constituents to POTWs above those which may be contributed from industrial users. These pollutants include metals, chlorinated solvents, aromatic hydrocarbons and other constituents. As a result, EPA Region I and MassDEP have developed toxicity control policies. These policies require wastewater treatment facilities to perform toxicity bioassays on their effluent. Discharges that have a dilution of less *than 10:1 require acute and chronic toxicity limits.*

Based on the potential for toxicity resulting from domestic sewage, and in accordance with EPA regulations and policy, the draft permit includes chronic and acute toxicity limitations and monitoring requirements. (See, e.g. Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants", 50FR30784 (July 25, 1985); see also EPA Technical Support Document for Water Quality-Based Toxics Control," (EPA/505/2-90-001, September 1991).

The principal advantages of biological techniques are: (1) the effects of complex discharges of many known and unknown constituents can be measured only by biological analysis; (2) bioavailability of pollutants after discharge is measured by toxicity testing including any synergistic effect of pollutants; and (3) pollutants for which there are inadequate analytical methods or criteria can be addressed. Therefore, toxicity testing is being used in connection with pollutant-specific control procedures to control the discharge of toxic pollutants.

The chronic no observed effect concentration (C-NOEC) whole effluent toxicity limit is calculated using the instream waste concentration (IWC) of the WPAF effluent. The IWC is the inverse of the dilution (1.59 cfs).

C-NOEC = 1/ dilution factor = 1/1.59 = 0.63 = 63 %

Toxicity test requirements in the draft permit are the same as in the existing permit. The permittee shall test two species, the daphnid, Ceriodaphnia dubia and the fathead minnows, Pimephales promelas. The toxicity tests shall be conducted in the months of January, April, July and October to be consistent with other facilities in the Charles River watershed. The draft permit requires that if any future toxicity test

should fail to comply with the permit limits, the permittee must retest the effluent within fourteen days of the original test.

See Permit **Attachment A,** Freshwater Chronic Toxicity Test Procedure and Protocol, for a description of the testing requirements.

Toxic Pollutants
Relatively low concentrations of trace metals in receiving waters can be toxic to resident aquatic life species. EPA is required to limit any pollutant that is, or may be discharged at a level that caused, or has reasonable potential to cause, or contributes to an excursion above any water quality criterion. See 40 CFR 122.44(d)(1)(vi). Effluent metals data submitted with toxicity tests results and discharge monitoring reports were reviewed to determine if any of the metals in the discharge have the potential to exceed aquatic life criteria in the Charles River.

The EPA recommended approach to set and measure compliance with water quality standards is to use dissolved metals, because dissolved metals more closely approximates the bioavailable fraction of metal in the water column than does total recoverable metal. Most toxicity to aquatic organisms is by adsorption or uptake across the gills which would require the metal to be in dissolved form. When toxicity tests were originally conducted to develop EPA's Section 304(a) metals criteria, the concentrations were expressed as total metals. Subsequent testing determined the percent of the total metals that is dissolved in the water column. The calculations that follow use the freshwater conversion factors to calculate the dissolved acute and chronic water quality criteria for metals (EPA National Recommended Water Quality Criteria: 2002, Appendix A).

However, the regulations in 40 CFR 122.45(c) require that the permit limits be based on total recoverable metals. The chemical differences between the effluent and the receiving water may cause changes in the partitioning between dissolved and particulate forms of metals. As the effluent mixes with the receiving water, adsorbed metals from the discharge may dissolve in the water column.

In this case, measuring dissolved metals would underestimate the impact on the receiving water, and an additional calculation, using a site-specific translator would determine total metal criteria. Based on EPA's Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion (EPA-823-B-96-007), the conversion factor is equivalent to the translator if site-specific studies for partitioning have not been conducted. In subsequent calculations, conversion from dissolved metals to total recoverable metals have been done using the conversion factor for the particular metal found in Appendix A of National Recommended Water Quality Criteria: 2002, in lieu of a translator.

Copper - The current permit includes an average monthly total recoverable copper limitation of 10 ug/l and a maximum daily total recoverable copper limitation of 14 ug/l. These limits were calculated using the EPA 1998 National Recommended Water Quality Criteria for Copper, using a hardness of 60 mg/l as $CaCO_3$, which resulted in a total recoverable chronic criteria of 6 ug/l and a total recoverable acute criteria of 8.6 ug/l. These criteria were then multiplied by the dilution factor of 1.59 to calculate the limits.

The Massachusetts Surface Water Quality Standards were revised in December 2006 to include site-specific criteria for copper that were developed for specific receiving waters where national criteria are invalid due to site-specific physical, chemical, or biological considerations, and do not exceed the safe exposure levels determined by toxicity testing [314 CMR 4.05(5)(e) Table 28]. EPA approved an acute criterion of 25.7 ug/l and chronic criterion of 18.1 ug/l for the Charles River on March 26, 2007.

Antibacksliding requirements found at CWA 402(o) and 40 CFR 122.44(l) generally prohibit relaxation of effluent limits. Water quality-based effluent limits can only be relaxed if one of the exceptions found at CWA 402(o)(2) is met or if the requirements of CWA 303(d)(4) are met. In this case, the requirements in CWA 303(d)(4) apply.

CWA 303(d)(4) requires that a determination be made whether the receiving water is attaining the applicable water quality standard. If the receiving water is in attainment of the standard, a relaxation of the limit would be allowed subject to the state antidegradation policy. If the receiving water is not in attainment of the applicable standard, the existing limit must be based on a wasteload allocation or a total maximum daily load, and the relaxed limit is only allowed if attainment of water quality standards is ensured.

The segment of the Charles River receiving the discharge from CRPCD is listed on the Massachusetts Integrated List of Waters as not attaining water quality standards, and metals is listed as one of the pollutants causing nonattainment. However, to the extent that copper is one of the metals in nonattainment, this listing is based on the earlier copper criteria, which, as has been discussed, is about three times more stringent than the site-specific criteria.

The existing instream concentration of copper downstream of the discharge under critical low flow conditions was estimated using upstream copper concentrations obtained from the dilution water samples from CRPCD's WET tests, the effluent concentration of copper from DMR data, the facility design flow and receiving water 7Q10. The estimates were made using the equation below.

$Q_rC_r = Q_dC_d + Q_sC_s$

Q_r = receiving water flow downstream of the discharge (7Q10 + plant flow)
C_r = copper concentration in the receiving water downstream of the discharge
Q_d = design flow of the discharge
C_d = copper concentration in the discharge
Q_s= receiving water flow upstream of the discharge
C_s = copper concentration in the receiving water upstream of the discharge

The upstream total copper concentration, as measured in the dilution water for the whole effluent toxicity tests, averaged 4.5 ug/l, with a maximum concentration of 7.5 ug/l. The discharge monitoring reports show that the total copper concentration in the treatment plant discharge averaged 6.9 ug/l over the past two years, with a maximum monthly average of 12.9 ug/l and a maximum daily discharge of 22.4 ug/l.

Using the treatment plant design flow, the 7Q10 flow and the maximum concentrations (Q_r = 7.18 MGD, Q_d = 4.5 MGD, C_d = 12.9 ug/l – chronic and 22.4 ug/l acute, Q_s= 2.68 MGD, and C_s = 7.5 ug/l) the resulting instream chronic concentration downstream of the discharge is estimated to be 11 ug/l and maximum (acute) concentration is 17 ug/l.

$$C_r = \frac{Q_dC_d + Q_sC_s}{Q_r}$$

Where:
Q_s = 2.68 MGD

C_s = 7.5 ug/l
Q_d = 4.5 MGD
C_d = 12.9 ug/l chronic, 22.4 ug/l acute
Q_r = 7.18 MGD

$$C_r(\text{chronic}) = \frac{(4.5)(12.9) + (2.68)(7.5)}{7.18} = 10.8 \text{ ug/l}$$

$$C_r(\text{acute}) = \frac{(4.5)(22.4) + (2.68)(7.5)}{7.18} = 16.8 \text{ ug/l}$$

Comparing these calculated values (11 ug/l chronic, 17 ug/l acute) to the site-specific criteria (18 ug/l chronic, 25.7 ug/l acute), it can be seen that under critical conditions the instream concentration of copper would be less than the site-specific water quality criteria, meaning that the Charles River is a high quality water for copper, and a relaxation of the limits can be considered pursuant to the state's antidegradation policy.

Using the above equation, effluent limitations can be calculated which would result in an instream concentration equal to the new criteria. Using an upstream concentration of 7.5 ug/l (C_s,), the treatment plant design flow 4.5 MGD (Q_d), the upstream 7Q10 flow of 2.68 MGD ,(Q_s), the downstream flow of 7.18 (Q_r), and downstream concentration equal to the criteria (C_r = 18.1 ug/l- chronic, and 25.7 ug/l - acute) the monthly average and daily maximum total copper effluent limitations would be 24.4 ug/l – chronic and 36.5 ug/l- acute.

$$C_d = \frac{Q_r C_r - Q_s C_s}{Q_r d}$$

Where:
Q_s = 2.68 MGD
C_s = 7.5 ug/l
Q_d = 4.5 MGD
C_r = 18.1 ug/l chronic, 25.7 ug/l acute
Q_r = 7.18 MGD

$$C_d(\text{chronic}) = \frac{(7.18)(18.1) - (2.68)(7.5)}{4.5} = 24.4 \text{ ug/l}$$

$$C_d(\text{acute}) = \frac{(7.18)(22.4) - (2.68)(7.5)}{4.5} = 31.2 \text{ ug/l}$$

<u>However, because the Charles River would be considered a high quality water for copper based on the new site-specific criteria, Tier 3 of the antidegradation review procedure must be followed, which requires that high quality waters be maintained at existing quality</u>.

The effluent data submitted by the permittee for the period from January 2004 through December 2006 shows that the maximum daily discharge concentration of total recoverable copper ranged from 3 ug/l to 22.4 ug/l and the monthly average discharge concentration ranged from 2 ug/l to 12.9 ug/l. Therefore, based on this data we have included a monthly average limit of 13 ug/l and a maximum daily limit of 23

ug/l in the draft permit.

Hardness Dependent Metals
EPA's Office of Water - Office of Science and Water Technology stated in a letter dated July 7, 2000 that: "The hardness of water containing the discharged toxic metal should be used for determining the applicable criterion. Thus the downstream hardness should be used. The hardness of the Charles River downstream of the treatment plant was calculated based on ambient and effluent hardness data collected for the whole effluent toxicity test from 2001 through 2005.

Calculation of hardness of the receiving water*:*

Calculation of hardness in the receiving water:
In order to determine the hardness downstream of the treatment plant during the critical low flow periods, the effluent and ambient hardness values from whole effluent toxicity tests conducted in July and October were calculated using mass balance equations:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

Where:
Q_s = 7Q10 river flow upstream of plant = 4.14 cfs = 2.68 MGD
Q_d = Discharge flow from plant = 4.5 MGD
Q_r = Combined river flow (7Q10 + plant flow)
C_s = Upstream hardness concentration
C_d = Plant discharge hardness concentration
C_r = Receiving water hardness concentration

Calculation of Downstream Hardness at CRPCD

WET Test Date	Effluent Hardness, mg/l	Ambient Hardness, mg/l	Calculated Downstream Hardness, mg/l
10/05	180	36	126
07/05	190	44	135
10/04	170	72	133
07/04	150	62	117
10/03	136	72	112
07/03	124	60	100
10/02	208	100	168
07/02	104	72	92
10/01	161	84	132

WET Test Date	Effluent Hardness, mg/l	Ambient Hardness, mg/l	Calculated Downstream Hardness, mg/l
08/01	177	70	137

Example calculation:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_T} = \frac{(4.5 \text{ MGD})(104 \text{ mg/l}) + (2.68 \text{ MGD})(72 \text{ mg/l})}{(4.5 \text{ MGD} + 2.68 \text{ MGD})} = 92 \text{ mg/l}$$

The lowest downstream hardness of 92 mg/l from the above table was selected, as this would be the most protective of aquatic life.

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

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

Where : m_C = pollutant-specific coefficient
$_C$ = pollutant-specific coefficient
h = hardness of the receiving water = 92 mg/l as $CaCO_3$
ln = natural logarithm
CF = pollutant specific conversion factor used to convert total recoverable to dissolved metal

Acute criteria (dissolved) = $\exp\{m_a [\ln (\text{hardness})] + b_a\}$ (CF)
Where: m_A = pollutant-specific coefficient
b_A = pollutant-specific coefficient
h = hardness of the receiving water = 92 mg/l as $CaCO_3$
ln = natural logarithm
CF = pollutant specific conversion factor used to convert total recoverable to dissolved

Metal Parameters for Calculating Freshwater Dissolved Metals Criteria That Are Hardness Dependent

					Freshwater Conversion Factors (CF)	
Chemical	m_A	b_A	m_C	b_C	CMC	CCC
Lead	1.273	-1.460	1.273	-4.705	0.803	0.803
Nickel	0.8460	2.255	0.8460	0.0584	0.998	0.997
Cadmium	1.0166	-3.924	0.7409	-4.715	0.947	0.912
Zinc	0.8473	0.884	0.8473	0.884	0.978	0.986

Lead

CCC = Chronic lead criteria (dissolved) = exp{1.273 [ln(92)] - 4.705} {0.803}= 2.3 ug/l
Average Monthly Effluent limitation: (CCC) (dilution factor) = (2.3 ug/l) (1.59) = 3.7 ug/l (dissolved)
Total recoverable limit = 3.7 ug/l ÷ (0.803) = 4.6 ug/l = 5 ug/l

CMC = Acute lead criteria (dissolved) = exp{1.273[ln (92)] - 1.460} (0.803) = 59 ug/l
Maximum Daily Effluent limitation: (CMC) (dilution factor) = (59 ug/l) (1.59) = 94 ug/l (dissolved)
Total recoverable limit = 94 ug/l ÷ (0.803) = 117 ug/l

Lead is monitored as part of the chemical analysis in quarterly toxicity testing. The concentration of lead in the effluent has been consistently below the minimum detection level (ML) of 0.0050 mg/l. Therefore, there is no reasonable potential for a violation of the water quality standards and no limit is required.

Nickel
CCC = Chronic nickel criteria (dissolved) = exp{0.8460 [ln(92)] + 0.0584} (0.997) = 48 ug/l
Average Monthly Effluent limitation: (CCC) (dilution factor) = (48 ug/l) (1.59) = 76 ug/l (dissolved)
Total recoverable limit = 76 ug/l ÷ (0.997) = 76 ug/l

CMC = Acute nickel criteria (dissolved) = exp{0.8460 [ln (92)] + 2.255} (0.998) = 436 ug/l
Maximum Daily Effluent limitation: (CMC) (dilution factor) = (436 ug/l) (1.59) = 693 ug/l (dissolved)
Total recoverable limit = 693 ug/l ÷ (0.998) = 694 ug/l

Nickel is monitored as part of the chemical analysis in quarterly toxicity testing. The concentration of nickel in the effluent has been below the minimum detection level (ML) of 0.004 to 0.007 mg/l. Therefore, there is no reasonable potential for a violation of the water quality standards and no limit is required.

Cadmium
CCC = Chronic cadmium criteria (dissolved) = exp{0.7409 [ln(92)] - 4.72} (0.912) = 0.23 ug/l
Average Monthly Effluent limitation: (CCC) (dilution factor) = (0.23 ug/l) (1.59) = 0.36 ug/l (dissolved)
Total recoverable limit = 0.36 ug/l ÷ (0.912) = 0.4 ug/l

CMC = Acute cadmium criteria (dissolved) = exp{1.0166 [ln (92) - 3.924} (0.947) = 2 ug/l
Maximum Daily Effluent limitation: (CMC) (dilution factor) = (2 ug/l) (1.59) = 3.2 ug/l (dissolved)
Total recoverable limit = 3.2 ug/l ÷ (0.947) = 3.4 ug/l

Cadmium is monitored as part of the chemical analysis in quarterly toxicity testing. The concentration of cadmium has been below the minimum detection (ML) of 10 ug/l Therefore, there is no reasonable potential for a violation of the water quality standards and no limit is required.

Zinc
CCC = Chronic zinc criteria (dissolved) = exp{0.8473 [ln(92)] + 0.884} (0.986) = 110 ug/l
Average Monthly Effluent limitation: (CCC) (dilution factor) = (110 ug/l) (1.59) = 175 ug/l (dissolved)
Total recoverable limit = 175 ug/l ÷ (0.986) = 177 ug/l

CMC = Acute zinc criteria (dissolved) = exp{0.8473 [ln (92)] + 0.884} (0.978) = 109 ug/l
Maximum Daily Effluent limitation: (CMC) (dilution factor) = (109 ug/l) (1.59) = 173 ug/l (dissolved)
Total recoverable limit = 173 ug/l ÷ (0.978) = 177 ug/l

Zinc is monitored as part of the chemical analysis in quarterly toxicity testing. The concentration of zinc in the effluent ranged from 0.017 to 0.031 mg/l. Therefore, there is no reasonable potential for a violation of the water quality standards and no limit is required.

Aluminum
The aluminum criterion is expressed in terms of total recoverable metal in the water column and is not hardness-dependent.

CCC = Chronic aluminum criteria = 87 ug/l
Average monthly effluent limitation: (CCC) (dilution factor) = (87 ug/l) (1.59) = 0.14 mg/l

CMC = Acute aluminum criteria = 750 ug/l
Maximum daily effluent limitation: (CMC)(dilution factor) = (750 ug/l) (1.59) = 1.2 mg/l

At the CRPCD WPAF, ferric chloride, rather than alum, is used for phosphorus control. The current permit includes a report only requirement, and the concentration of aluminum in the effluent has ranged from below detection to 0.03 mg/l (Table 2). Therefore, there is no reasonable potential for a violation of water quality standards and the effluent reporting requirement for aluminum has been eliminated. Aluminum will still be monitored as part of the chemical analysis in quarterly toxicity testing.

VI. UNAUTHORIZED DISCHARGES

The permittee and co-permitees are authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfall(s) listed in Part I.A.1 of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) are not authorized by the permit and shall be reported in accordance with Section D.1.e (1) of the General Requirements of the permit (Twenty-four hour reporting).

Notification of SSOs to MassDEP shall be made on its SSO Reporting Form which includes MassDEP Regional Office telephone numbers. The reporting form and instructions for its completion may be found online at http://www.mass.gov/dep/water/approvals/surffms.htm#sso.

VII. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

The Towns of Franklin, Medway, Millis, and Bellingham own and operate their portions of the sewer collection system that transports sewage to the treatment plant. The draft permit includes these towns as co-permittees for the operation and maintenance of each town's separate sewer system. The CRPCD and the towns are each required to comply with Part I.B, Unauthorized Discharges and I.C, Operation and Maintenance of the Sewer System.

Infiltration/Inflow Requirements
The draft permit includes requirements for the permittee and co-permittees to control infiltration and inflow (I/I). Infiltration is groundwater that enters the collection system though physical defects such as cracked pipes or deteriorated joints. Inflow is extraneous flow entering the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, and cross connections from storm water systems. Significant I/I in a collection system may displace sanitary flow, reducing the capacity and the efficiency of the treatment works, and may cause bypasses to secondary treatment. It greatly increases the potential for sanitary sewer overflows (SSO) in separate systems.

The 2007 Infiltration/Inflow report submitted by CRPCD estimated daily infiltration/inflow to the facility

at an average of 0.28 MGD. The report states that CRPCD, Bellingham, Franklin, Medway, and Millis did not have any unauthorized discharges from their sewer systems.

In March 2002, CRPCD conducted TV inspections of the District's Charles River Interceptor, Chicken Brook Connector, and a portion of the Shepard's Brook Connector. The District wanted to determine if significant infiltration was present in its collection systems at the three river crossings and the interceptor adjacent to the Charles River. Seven locations with infiltration were found and sealed in July 2002 resulting in an estimated reduction of 50,000 gpd of infiltration.

From 2002 to 2005, CRPCD assisted Franklin with TV inspections of 14,464 feet of sewer lines, and 11,166 feet were surveyed in Millis.

During 2005, Franklin lined 10,774 feet of sewer pipe; tested and sealed 18,623 feet; and rehabilitated 74 manholes. Also, 34 spot repairs were performed by a curing-in-place process. An estimated 500,000 gpd were eliminated from the sewer system. In 2007, the Town inspected approximately 500 sewer manholes, performed flow isolation in four sub areas, identified and eliminated four direct sources of inflow, evaluated flows through two sewer pump stations to assess the magnitude of wet weather/dry weather flow and installed a flow meter in the Beaver Street Interceptor to provide monitoring of wet weather/dry weather flow.

In 2007, Medway continued to inspect manholes and has compiled a list for remedial action. The Town found no unauthorized discharges in 2007. In prior years Medway has repaired sewer connections and manholes to eliminate an estimated 288,000 gpd of I/I.

In 2007 Bellingham hired a consultant to study and overhaul the Stanwood Circle meter before the end of fiscal year 2008. The Town is also planning to install remote monitoring equipment within the sewer system which is expected to further efforts to identify areas with I/I . Bellingham completed a two-year program to continuously monitor pump station operation and meter readings, inspect and repair manholes, drop structures, and pipe lines in the Stanwood Meter (Pilgrim Village), North Main Street Pump Station (Wethersfield), and Mechanic Street Pump Station sub-systems. As a result, 20,000 gpd were eliminated. Bellingham has added a line item to their sewer enterprise fund to continue their efforts to reduce I/I.

The Town of Millis appropriated a sum of $120,000 in the fall of 2007 to start an I/I identification removal program. The program was expected to begin in the spring and last for three years. In prior years, the Town has replaced several cracked and broken sewer manhole covers and rims and required a sewer contractor to repair a leaking newly installed sewer line extension.

The permit requirements for infiltration/inflow have been updated, and the permittee is required to submit a plan for controlling inflow/infiltration to the sewer system with the cooperation of the communities who are co-permittees in the District within six months of the effective date of the permit, and an annual report by March 31 of each year. The permittee and co-permittees shall develop an I/I removal program commensurate with the severity of the I/I in the collection system. Where portions of the collection system have little I/I, the control program will logically be scaled down. Significant I/I in a collection system may displace sanitary flow, reduce the capacity and the efficiency of the treatment works, and may cause bypasses at the treatment plant.

The permit standard conditions for 'Proper Operation and Maintenance' are found at 40 CFR §122.41(e). These require proper operation and maintenance of permitted wastewater systems and related facilities to

achieve permit conditions. Similarly, the permittee and co-permittees have a 'duty to mitigate' as stated in 40 CFR §122.41 (d). This requires the permittee and co-permittees to take all reasonable steps to minimize or prevent any discharge in violation of the permit which has a reasonable likelihood of adversely affecting human health or the environment. EPA and MassDEP maintain that an I/I removal program is an integral component to insuring permit compliance under both of these provisions.
MassDEP has stated that inclusion of the I/I conditions in the draft permit shall be a standard State Certification requirement under Section 401 of the Clean Water Act and 40 CFR 124.55(b).

VIII. PRETREATMENT

CRPCD receives process discharges from 4 significant industrial users. Garelick Farms discharges 300,000 gpd; ANP Bellingham Energy Company discharges 5500 gpd; and Castronics, Inc. and SMTC Manufacturing Corporation both contribute very small process and non-process flows.

The permittee is required to administer a pretreatment program based on the authority granted under 40 CFR122.44(j), 40 CFR Part 403, and Section 307 of the Clean Water Act. The permittee's pretreatment program received EPA approval on April 24, 1995, and as a result, the appropriate pretreatment program requirements were incorporated into the previous permit with that approval and the federal pretreatment regulations in effect when the permit was issued.

The federal pretreatment regulations in 40 CFR 403 require the permittee to: (1) evaluate and enforce EPA approved specific effluent limits (technically based local limits); (2) revise the local sewer-use ordinance or regulation, as appropriate, to be consistent with federal regulations; (3) develop an enforcement response plan; (4) implement a slug control evaluation program; (5) track significant noncompliance for industrial users; and (6) establish a definition of and track significant industrial users.
The permit requires the permittee to submit to EPA, within 90 days of the effective date of the permit, all required modifications of the Streamlining Rule in order to be consistent with the provisions of the newly promulgated Rule. To the extent the Permittee's legal authority is not consistent with the required changes, they must be revised and submitted to EPA for review.

These requirements are necessary to ensure continued compliance with the POTW's permit and its sludge use or disposal practices.

On January 4, 2006, EPA approved a report entitled "Charles River Pollution Control District Reevaluation of Local Limits (November 2005)." The revised local limits went into effect April 1, 2006. However, if other changes to the permittee's pretreatment program are deemed necessary to assure conformity with current federal pretreatment regulations, the draft permit requires the permittee to provide EPA in writing within 180 days of the permit's effective date, a description of proposed changes to the permittee's pretreatment program deemed necessary to assure conformity with current federal regulations. These requirements may be new to this draft permit and are commensurate with current EPA New England pretreatment policy. In addition, the permittee must continue to submit by **September 1**, an annual pretreatment report detailing the activities of the program for the period from July 1 to June 30.

Based on the potential for toxicity as a result of industrial discharges to the POTW, and as discussed previously the draft permit includes effluent toxicity limitations and requires the performance of effluent toxicity tests. These tests will assist in assessing the effectiveness of the permittee's pretreatment program and also may be used as a basis for development or revision of specific numerical pretreatment limits.

IX. SLUDGE CONDITIONS

Sludge is thickened with a belt thickener to 7% solids, and stored in two 75,000 gallon sludge holding tanks. In 2007 Synagro, Inc. pumped and transported on average 15 loads of sludge per week, equivalent to 3,761,000 total dry metic tons per year, to their incinerator in Woonsocket, RI. The grit and screenings are now trucked away by BFI, now that the on-site landfill has reached full capacity. A feasibility study for closing the landfill has been completed, but no date for implementation has been set.

Section 405(d) of the Clean Water Act requires that sludge conditions be included in all POTW permits. The sludge conditions in the draft permit satisfy this requirement and are taken from EPA's standards for disposal of sewage sludge.

X. MONITORING & REPORTING

The effluent monitoring requirements have been specified in accordance with 40 CFR 122.41(j), 122.44(i), and 122.48 to yield data representative of the discharge.

XI. ANTI-BACKSLIDING

A permit may not be renewed, reissued, or modified with less stringent limitations or conditions than those contained in the previous permit unless in compliance with the anti-backsliding requirements of the CWA. The anti-backsliding provisions found in 40 CFR 122.44 (l) restrict the relaxation of permit limits, standards and conditions. Therefore, the technology-based effluent limits in a reissued permit must be at least as stringent as those in the previous permit. Relaxation is only allowed when cause for permit modification is met (see 40 CFR 122.62). Effluent limits based on water quality and state certification requirements must also meet the anti-backsliding provisions found under Section 402(o) and 303(d)(4) of the CWA, as described in 40 CFR 122.44(l).

The effluent limits for copper have been relaxed slightly. The relaxation of these limits are permissible under the anti-backsliding provisions found in 402(o) of the Clean Water Act and 40 CFR 122.44(l). Specifically, Section 402(o) specifies that water quality based effluent limits may be relaxed only in compliance with water quality standards and anti-degradation. For specific reasons discussed earlier in the fact sheet, EPA and MassDEP believe that these less stringent limitations are allowable.
The monitoring requirement for aluminum has been eliminated from the draft permit. Although this does not constitute anti-backsliding, it is based on new information from effluent monitoring results that do not show a reasonable potential for water quality violations. Aluminum is also one of the parameters that is analyzed as part of toxicity testing.

XII. ANTI-DEGRADATION REVIEW

The Massachusetts anti-degradation regulations (314 CMR 4.04) require that all existing uses of the Charles River must be protected. MassDEP has indicated that it believes there will be no lowering of water quality and/or no loss of existing water uses for this segment of the River and that no additional anti-degradation review is warranted.

XIII. ESSENTIAL FISH HABITAT DETERMINATION

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C § 1801 et seq.(1998)), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat," 16 U.S.C. §1855(b).

The Amendments broadly define "essential fish habitat" (EFH) as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity," 16 U.S.C. § 1802(10). "Adverse impact" means any impact which reduces the quality and/or quantity of EFH, 50 C.F.R. §600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id.

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.

There is no "habitat of particular concern," as defined under §600.815 (a)(9) of the Magnuson-Stevens Act, designated for this site.

EPA and MassDEP have determined that a formal EFH consultation with NMFS for this discharge is not required. The proposed discharge permit is developed to meet State Surface Water Quality Standards and will not adversely impact EFH.

XIV. STATE PERMIT CONDITIONS

This NPDES permit is issued jointly by the U.S. Environmental Agency and the Massachusetts Department of Environmental Protection (MassDEP) under federal and state law, respectively. As such, all the terms and conditions of the permit are incorporated into and constitute a discharge permit issued by the MassDEP Commissioner, who designates signature authority to the Director of the Division of Watershed Management pursuant to M.G.L Chap. 21, §43.

XV. STATE CERTIFICATION REQUIREMENTS

EPA may not issue a permit unless the Massachusetts Department of Environmental Protection (MassDEP), the state agency with jurisdiction over the receiving waters, certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. The staff of MassDEP has reviewed the permit and advised EPA that the limitations are adequate to protect water quality. EPA has requested permit certification by the state and expects that the permit will be certified.

XVI. COMMENT PERIOD, HEARING REQUESTS, and PROCEDURES FOR FINAL DECISIONS

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to Betsy Davis, U.S. EPA, Office of Ecosystem Protection**,** Municipal Permits Branch, 1 Congress Street, Suite 1100, Boston, Massachusetts 02114-2023. Any person, prior to such date, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of

the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 C.F.R. § 124.19.

A similar request for a hearing should also be filed with the Director of the Massachusetts Division of Watershed Management in accordance with the provisions of the Massachusetts Administrative Procedures Act, the Division's Rules for the Conduct of Adjudicatory Proceedings, and the Timely Action Schedule and Fee Provisions. The Adjudicatory hearing request should be sent to:

Docket Clerk
Office of Administrative Appeals
Department of Environmental Protection
One Winter Street, Second Floor
Boston, MA 02108

The hearing request and a valid check for $100 payable to the Commonwealth of Massachusetts must be mailed by the end of the comment period to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The hearing request to the Commonwealth will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver.

The filing fee is not required if the appellant is a city, town (or municipal agency), county, district of the Commonwealth, or a municipal housing authority. The Department may waive the hearing filing fee for a permittee who shows that paying the fee will create undue financial hardship. A permittee seeking a waiver must file, along with the hearing request, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

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

XVI. EPA AND MassDEP CONTACTS

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

Betsy Davis
US Environmental Protection Agency
1 Congress Street
Suite 1100 (CMA)
Boston, Massachusetts 02114-2023
Telephone: (617) 918-1576
Fax: (617) 918-0565
Email: davis.betsy@epamail.epa.gov

or

Kathleen Keohane
MA Department of Environmental Protection
Division of Watershed Management
627 Main Street
Worcester, MA 01608
Telephone: (508) 767-2856
Fax: (508) 791-4131
Email: kathleen.keohane@state.ma.us

_____
Date

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

Comments should be addressed to both Betsy Davis and Kathleen Keohane, not Stephen S. Perkins.