

UNITED STATES DISTRICT COURT  
for the  
DISTRICT OF MASSACHUSETTS

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UNITED STATES OF AMERICA, .  
.  
Plaintiff, .  
. CIVIL ACTION  
v. . No. 85-0489-MA  
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METROPOLITAN DISTRICT COMMISSION, .  
et al., .  
.  
Defendants. . .  
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CONSERVATION LAW FOUNDATION OF .  
NEW ENGLAND, INC., .  
.  
Plaintiff, .  
. CIVIL ACTION  
v. . No. 83-1614-MA  
.  
METROPOLITAN DISTRICT COMMISSION, .  
.  
Defendants. .  
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MWRA MONTHLY COMPLIANCE REPORT  
FOR SEPTEMBER 1998 AND  
PROGRESS REPORT AS OF OCTOBER 15, 1998

The Massachusetts Water Resources Authority (the "Authority") submits the following monthly compliance report for the month of September 1998 and supplementary compliance information in accordance with the Court's order of December 23, 1985, subsequent orders of the Court and undertakings of the Authority.

I. Schedule Six.

A status report for the scheduled activities for the month of September 1998 on the Court's Schedule Six, certified by Douglas B. MacDonald, Executive Director of the Authority, is attached hereto as Exhibit "A."

A. Activities Not Completed.

1. Supplemental Environmental Impact Report for  
Combined Sewer Overflow Facility Upgrades.

On September 30, 1998, the Authority submitted its Supplemental Environmental Impact Report ("SEIR") for the combined sewer overflow ("CSO") facility upgrades to the Massachusetts Environmental Policy Act ("MEPA") Unit of the Executive Office of Environmental Affairs ("EOEA").<sup>1</sup> The SEIR responds to the October 1997 MEPA Certificate on the Notice of Project Change ("NPC") which was submitted to MEPA for public review in August 1997.<sup>2</sup> For reasons explained in a separate Memorandum filed today by the Authority with an accompanying motion, the SEIR did not include a final recommendation for siting the dechlorination facility for the Fox Point CSO Facility. The Authority has moved for an extension of the date for completing that portion of the SEIR to December 1998.

The MEPA Certificate required the Authority to prepare the SEIR to address certain issues identified in the public comments on the NPC. These issues included the results of chlorine residual monitoring and the attendant need for dechlorination, siting issues at the Fox Point, Somerville Marginal and Prison Point facilities, the environmental effect of any residual amount of dechlorinating agent, sodium bisulfite, in the marine environment and the potential future uses of the Fox Point and Commercial Point facilities to treat storm water following sewer separation in the tributary drainage areas. The Certificate also required the Authority to continue design efforts for all facilities to the extent feasible, but recognized that for certain facilities, the ability to move forward with design was dependent on resolving the outstanding issues, particularly in regard to siting and the potential long-term use of the facilities.

The SEIR reviews the disinfection and dechlorination alternatives previously evaluated for the various CSO facilities and discusses related design issues, including the treatment system controls proposed to operate and monitor the proposed systems. In addition, it presents the objectives, protocols and results of the wet weather sampling program.<sup>3</sup> As previously reported, the intent of the sampling program was (1) to establish chlorine demand fluctuations and predictability, (2) to establish dosage rates to maintain a minimum effective chlorine residual and to determine if adequate bacterial kill could be achieved at a reduced contact time and (3) to determine whether a significant enough chlorine demand exists in the CSO outfall pipe to reduce the chlorine residual and potentially preclude the need for an active dechlorination process to achieve anticipated NPDES<sup>4</sup> permit limits. Results of the wet weather sampling program through the Summer of 1998 are presented in the SEIR and suggest that the discharges from the CSO facilities will not meet the anticipated permit requirements for chlorine residual consistently without adding a dechlorination agent.<sup>5</sup>

With regard to siting issues at Somerville Marginal, during preparation of the SEIR, the Authority was able to coordinate its plans for the proposed location of on site structures with Massachusetts Highway Department plans and off-site structures with the Assembly Square Mall property owners. The Authority believes that the problematic siting issues identified in the NPC for that location have been resolved. For Prison Point, the results of the wet weather sampling program verified that the Authority could construct the Prison Point improvements, including dechlorination, within the existing site boundaries and meet anticipated permit limits for both disinfection and dechlorination. This result eliminates the need for interference with the ongoing Central Artery/Tunnel project construction or with the use of these same adjacent properties for future parkland, thus avoiding a difficult siting dilemma.

The SEIR also responds to questions raised in the Certificate regarding the potential for adverse impacts associated with residual dechlorinating agent, sodium bisulfite, in the environment. The Authority conducted studies to assist in understanding both the potential toxic effects of sodium bisulfite on aquatic organisms and the changes to water chemistry resulting from addition of this chemical to the receiving waters, specifically with regard to the depletion of dissolved oxygen. The SEIR presents the results of these studies, as well as the results of a brief review of the literature addressing this topic. The results of the studies indicate that sodium bisulfite is nontoxic to the aquatic environment, except, perhaps, in very high doses in excess of those expected at the upgraded facilities. Information from the literature survey supports this conclusion. In addition, the studies suggest a negligible impact to dissolved oxygen levels.

The SEIR provides further information on the potential continued use of the Fox Point and Commercial Point facilities for the treatment of storm water flows, following implementation of the long term CSO control strategy of sewer separation in the South Dorchester neighborhoods tributary to these facilities and decommissioning of the facilities by the Authority. The Authority has discussed this issue with the Boston Water and Sewer

Commission ("BWSC") and, in summary, the Authority and BWSC agree that a decision regarding storm water treatment for South Dorchester Bay is best made by BWSC and the regulatory agencies after sewer separation is completed. As the Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("DEP") develop storm water management requirements and sewer separation construction is in progress, BWSC expects to conduct monitoring and implement best management practices throughout the project area. Thereafter, BWSC will conduct post-sewer separation monitoring. The regulatory agencies can use the comparative data to determine whether storm water treatment is needed for South Dorchester Bay and, if so, what kind of measures are appropriate. The Authority's intent is to implement the Fox Point and Commercial Point upgrades in a manner that allows the Authority to satisfy all applicable CSO regulatory requirements at this time, yet not preclude BWSC's future use of the facilities for storm water treatment if such treatment is deemed necessary.

Notice of the SEIR appeared in the *Environmental Monitor* on October 10, 1998, initiating a public comment period which will close on November 9, 1998. The Authority expects that the Secretary of Environmental Affairs will issue the Certificate shortly thereafter, in compliance with Schedule Six. The Authority anticipates continuing with design of the Somerville Marginal and Commercial Point facilities immediately upon receipt of the Certificate. Design of the Prison Point upgrades is ongoing.

## B. Progress Report.

### 1. Fiscal Matters.

#### (a) Federal Funding.

On October 1, 1998, the United States Senate and House of Representatives Joint Conference Committee on the VA, HUD and Independent Agencies included \$30 million in funding for the Boston Harbor Project in its appropriations bill for Fiscal Year 1999. The bill has been approved by both houses of Congress.

### 2. Harbor Management.

#### (a) Construction of Effluent Outfall Tunnel.

Today the Authority is filing a Special Report on the construction of the Effluent Outfall Tunnel in response to the Court's directive in *Compliance Order Number 153* (September 28, 1998) to report in detail concerning the anticipated delay in the completion of tunnel construction reported last month. As work continues in the tunnel, the contractor has completed first pass clean-up and repair of the tunnel arch to within 1,100 feet of the Deer Island shaft and final pass clean-up and repair of the tunnel invert to within 1.87 miles of the shaft. Grouting operations continue to be suspended while clean-up activities proceed.

#### (b) Final Site Completion.

On September 23, 1998, the Board of Directors approved the award of a contract for the final completion of the Deer Island site. This contract, scheduled for completion in Fall 2001, will be the last construction contract of the Boston Harbor Project. With its completion, the Authority will bring closure to all civil and site systems on Deer Island, complete mitigation measures required as part of the project and provide facilities to support public access to Deer Island.

The contract includes numerous civil and utility-related items encompassing all of the Deer Island site, such as completion of roadways, paving, lighting, signs, curbing and fencing to provide security for the plant and protect the public. In addition, it provides for the demolition of a number of construction support facilities that will no longer be needed, such as construction service areas.

The contract also includes the final grading of the northern and western landforms.<sup>6</sup> The grading will require the relocation of approximately 340,000 cubic yards of material on-island, as well as the loading of 130,000 cubic yards of material onto barges for use as backfill material on Nut Island. The work also includes the completion of

soil stabilization and erosion control of more than 55 acres, which requires the planting, irrigation and maintenance of trees, shrubs and native grass to prevent run-off.

Finally, this contract includes elements of the public access plan for Deer Island.<sup>7</sup> This work includes a walkway around the perimeter, a mooring basin, dinghy docks and the memorials to acknowledge the special roles of Irish Americans and Native Americans in Deer Island's history.

(c) Lydia Goodhue Pump Station.

In the Lydia Goodhue Pump Station, all eight pumps are now available for operation, although the contractor continues to make minor modifications to the electronic controls of the variable frequency drives. In addition, the Authority continues to work toward resolving the harmonic distortion issue in both the North Main and Lydia Goodhue Pump Stations.<sup>8</sup> The Authority reported last month that it expected that the fabrication of harmonic filters for the North Main Pump Station to be complete by early December. However, higher harmonic distortion values recently discovered in the model output used as the basis for design of the modifications led to a determination that additional filters and resistors, beyond those already designed, would be needed. The Authority now expects fabrication to continue until February 1999, with installation to follow in February and March. Meanwhile, fabrication of the filters for the Lydia Goodhue Pump Station is continuing, with installation likely to begin in January 1999. Testing of the total harmonic distortion for the entire Deer Island electrical grid will require the completion of all of the new filters and simultaneous operation of multiple pumps at both pump stations. Therefore, operation will continue to be limited to use of four pumps simultaneously until all of the new equipment is installed and tested successfully.

(d) Demolition of Nut Island Treatment Plant.

At Nut Island, preparations for demolition of the old treatment plant are proceeding. The contractor has completed the removal of asbestos from the pump station and currently is preparing to remove asbestos from the mechanical, digester and administration buildings. The cleaning of the remaining two digesters and the sedimentation basins is complete, and they are ready for demolition.

In the meantime, construction of the emergency surcharge area for the new headworks is continuing, with the contractor now working on placing the new walls.

(e) Temporary Shut Down of Secondary Battery B.

Deer Island Treatment Plant staff have found it necessary to shut down the clarifiers of Secondary Battery B in order to make repairs to the cross bracing in the effluent channel. The work began on October 12 and is expected to continue for approximately two weeks. During this time, the Authority plans to use the reactors of both batteries of the secondary treatment facilities, in conjunction with the Battery A clarifiers and the new polymer feed system. This plan is expected to allow secondary treatment of at least 180 million gallons per day. Staff will use this opportunity to conduct inspections of the Battery B clarifiers and equipment that have been in use for almost a year.

3. Residuals Program.

(a) Report on Backup Disposal Plan.

Pursuant to Schedule Six, the Authority attaches as Exhibit "B" its report on actions taken during the past six months as required by its backup residuals disposal plan. In addition, the Authority is filing jointly with the Commonwealth a progress report on implementing their Memorandum of Understanding regarding the beneficial use of biosolids.

(b) Pelletizing Plant Expansion.

On October 14, 1998, the contractor for the expansion of the pelletizing plant introduced sludge into the first of the two new dryer trains and now is conducting test operations of that dryer train with sludge. The contractor expects to complete performance testing of both new dryer trains and related systems by the end of the year.

#### 4. Framingham Extension Relief Sewer.

The Authority recently received approval from EPA for an extension in the compliance schedule for the final phase of construction to be performed under the Administrative Order ("Order") pertaining to construction of the Framingham Extension Relief Sewer project.<sup>9</sup> The final phase includes the rehabilitation of those portions of the Framingham Extension Sewer not rehabilitated under an earlier phase of the project. Under the original Order, the Authority was scheduled to advertise for a contractor by September 1998, in preparation for beginning the rehabilitation work early in 1999. However, based on its experience with the previous rehabilitation project, similar work on a different Authority sewer and a number of technical issues that arose while design was in progress, the Authority determined that it would need additional time to complete both design and construction of the project. The Order now calls for the Authority to begin the work in May 2000.<sup>10</sup> The Authority does not anticipate that the extended time needed to complete the rehabilitation will affect its ability to transport flows through the Framingham interceptor system in the meantime.

With regard to a previous phase of the project, in its June 15, 1998 Compliance and Progress Report the Authority reported on two problems that arose during final testing of the new pumping station: significant odor problems at several locations and difficulties with the signalling system used to control operations. Since that time, the Authority engaged an expert in odor control technology to make recommendations for interim odor control measures. The Authority has received the first of eight odor control reports to be submitted by the expert by the end of November 1998. The Authority will review the consultant's recommendations and will implement corrective action, using resources available in-house or engaging outside consultants and contractors to perform this work, as necessary. With respect to the signalling system problems, the construction contractor for the pumping station will make modifications shortly to the programmable logic computer which automatically activates and controls the pump station. These modifications will permit the station to be operated automatically during low flow/non-storm periods to minimize the potential for septic wastewater and downstream odors.

As previously reported, the Authority had already engaged another consultant to perform a comprehensive, three-phase odor and corrosion study of the Framingham interceptor system. This consultant recently completed a final report for the first phase of this study, which consisted of site investigations at selected locations in the collection system and an intensive sampling program in the Framingham Extension Sewer, as well as in the local systems of Framingham, Ashland and Natick. The Authority will receive a final summary in December 1998, which will present a range of potential corrective measures to improve odor and corrosion control throughout the system.

By its attorneys,

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**Notes:**

1. The Authority has provided copies of the SEIR to representatives of each of the parties.
2. See November 17, 1997 Compliance and Progress Report (pp. 8-11) for the Authority's report on the Certificate. The Authority filed the NPC to address necessary changes in the plans for adding a dechlorination process to the CSO facilities.
3. For previous reports on the field studies the Authority has conducted to confirm the need for building dechlorination facilities, see Compliance and Progress Reports for August 15, 1997 (p. 20), September 15, 1997 (pp. 19-21) and October 15, 1997 (pp. 10-12), March 15, 1998 and July 15, 1998 (pp. 4-5).
4. National Pollutant Discharge Elimination System.
5. The Authority will continue the sampling program at least through December 1998 to augment the data and further support final conclusions.
6. The northern landform shields the Town of Winthrop from visual, noise and other impacts of treatment plant construction and operation.
7. For previous descriptions of this plan, see Compliance and Progress Reports for September 15, 1994 (pp. 14-16) and December 16, 1996 (pp. 11-12).
8. As previously reported, tests have indicated that an excessive level of harmonic distortion may occur on the island-wide electrical grid during periods of high flows when the maximum number of pumps are in simultaneous operation at the two pump stations.
9. The Administrative Order was issued on June 2, 1994. For earlier reports, see Compliance and Progress Reports for June 15, 1994 (pp. 10-12), April 14, 1995 (p. 23) and May 15, 1998 (pp. 9-11). The Authority has completed four phases of the work, including rehabilitation of the most deteriorated sections of the Framingham Extension Sewer and construction of a new force main, gravity sewer and pumping station.
10. At EPA's request, the Authority will shortly be conducting another TV inspection of the sewer, to determine whether any areas need more immediate attention.