UNITED STATES DISTRICT COURT
for the
DISTRICT OF MASSACHUSETTS

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UNITED STATES OF AMERICA, .
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Plaintiff, .
. CIVIL ACTION
v. . No. 85-0489-ADM
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METROPOLITAN DISTRICT COMMISSION, .
et al., .
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Defendants. .
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CONSERVATION LAW FOUNDATION OF .
NEW ENGLAND, INC., .
.
Plaintiff, .
. CIVIL ACTION
v. . No. 83-l6l4-ADM
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METROPOLITAN DISTRICT COMMISSION, .
et al., .
.
Defendants. .
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. . . .

MWRA MONTHLY COMPLIANCE REPORT FOR
NOVEMBER 1998 AND PROGRESS REPORT AS OF DECEMBER 15, 1998

The Massachusetts Water Resources Authority (the "Authority") submits the following monthly compliance report for the month of November 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 November 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 Completed.

1.Environmental Review of Combined Sewer Overflow Facility Upgrades.

As expected, on November 16, 1998, the Secretary of Environmental Affairs issued a Certificate on the Authority's Supplemental Environmental Impact Report ("SEIR") for the combined sewer overflow ("CSO") facility upgrades.1 A copy of the Certificate is attached as Exhibit "B." The facilities addressed in the SEIR include Somerville Marginal in Somerville, Prison Point in Cambridge and Commercial Point in Dorchester.

The Certificate found that the SEIR adequately and properly complies with the Massachusetts Environmental Policy Act ("MEPA") and recommends that the Authority proceed with final design and permitting without further MEPA review. The Authority is moving ahead with final design of the Prison Point facility, scheduled to be in construction by May 1999, and design of the Somerville Marginal and Commercial Point facilities, scheduled to be in construction by November 1999.

At the same time design of the upgrades is moving forward, the Authority acknowledges certain issues raised by several commenters on the SEIR that deserve further consideration. These issues include the cost/benefit of dechlorination at Commercial Point and Fox Point, especially given that these facilities will not be necessary for CSO control once sewer separation in Dorchester is completed by 2008; the effect of the proposed upgrades on the quality of the discharges, which include separate storm water entering the outfall pipes downstream of the treatment facilities; the potential benefit of additional data regarding chlorine demand; and the importance of careful design to ensure permit compliance while balancing the chlorination and dechlorination processes to minimize environmental impacts. The Authority intends to continue its discussions with regulatory parties and others on these issues to ensure that final design efforts respond to them to the extent possible and beneficial.

B. Progress Report.

1. Fiscal Matters.

(a)State Legislation.

A number of bills recently filed in the Massachusetts House of Representatives and Senate for consideration in the 1999-2000 legislative session would provide support to the Authority's financing program.2 One relates to the Commonwealth Sewer Rate Relief Fund and seeks to establish by statute the statewide debt service assistance program included in the Commonwealth's budgets in recent years to help mitigate sewer assessment increases. Under this bill, the Authority would receive approximately $48.5 million for Fiscal Year ("FY") 2000. Another bill seeks to change the Authority's Enabling Act to permit the Authority to enter into lease/leaseback transactions regarding certain assets, and a third seeks to reimburse the Authority for the costs of its infiltration and inflow ("I/I") financial assistance program, by which it provides sewer service customer communities interest-free grants and loans to rehabilitate their sewer collection systems to reduce I/I. Bills seeking to increase the Authority's current borrowing limit to $4.75 billion to support the continuing capital program including the Boston Harbor Project and to continue the Low-Income Sewer and Water Assistance Program in FY 2000 and expand it to include all homeowners eligible for energy assistance also were filed.

Three additional bills would support the Authority's drinking water program. They include a bill to extend debt service assistance to the Walnut Hill Water Treatment Plant, a bill to establish a program to provide no-interest loans for local water pipeline improvements in the Authority's member communities and a bill to authorize a $2.5 million appropriation to reduce the cost to ratepayers for the relocation of a pipeline in the Chelsea River (a project required by the dredging of the channel by the Army Corps of Engineers). The Authority will be following each of these matters during the upcoming legislative session and will report as appropriate.

(b) Bond Sales.

On December 9, the Authority accepted bids for a $200 million "floating-to-fixed" interest rate swap that will be used in connection with a $200 million variable rate bond sale anticipated later in December to refund outstanding debt. The results of the swap bid establish the benefit of the refunding at approximately $1.2 million in annual debt service savings over the next ten years. Total savings from the refunding equal 6.7 percent of the value of the refunded bonds, the highest savings-to-refunded-bond ratio ever achieved for the Authority.

2. Harbor Management.

(a) Construction of Effluent Outfall Tunnel.

During the past month, the contractor for the Effluent Outfall Tunnel completed dismantling equipment used for the first pass clean-up and repair of the tunnel arch and removed the equipment from the tunnel. In addition, the contractor completed final pass clean-up and liner repairs to within 2,115 feet of the tunnel shaft. Progress in this area was slowed by equipment problems and the large number of liner repairs required.3 In the meantime, grouting operations were halted 50 feet from the tunnel shaft because of difficulty containing the grout behind the precast liner segments closest to the unlined starter tunnel. The grouting in this area will be performed after the cast-in-place liner for the starter tunnel is poured.

The contractor's progress was interrupted early on Friday, December 11, when smoke was observed in the tunnel. No workers were in the tunnel at the time. When a Boston Fire Department tunnel rescue team entered the tunnel, it found the smoke emanating from the east dam car, the piece of equipment farthest from the shaft.4 Firefighters directed the contractor to turn off the ventilation system to deprive the fire of oxygen. By 3:00 p.m., the fire was extinguished and the ventilation system was turned on to purge the tunnel of smoke and toxic gases and to restore the oxygen supply to safe levels.

On December 14, Boston firefighters were able to re-enter the tunnel and begin investigating the cause of the fire. Based on preliminary information, it appears that a portion of the ventilation line that had been removed from the tunnel wall and stacked on the east dam car for subsequent removal came in contact with a heat source, causing it to smolder and generate smoke. Preliminary evaluation of the dam car indicates that, except for a portion of its electrical wiring, it sustained minimal damage.

A small area of the surface of several tunnel liner segments appears to have received damage. The initial inspection indicates that approximately 10 square feet of surface area shows spalling and an additional 50 square feet show surface cracks and checkering. At present, the extent of any needed repairs is not known. Concrete testing equipment is in route to Deer Island, and inspectors will perform more detailed evaluations once the contractor has cleaned the affected area.

In the meantime, the Boston Fire Department allowed the contractor to re-enter the tunnel on Monday afternoon, December 14. The contractor has resumed work using a second dam car in the tunnel that supports the removal of rail lines, invert clean-up and invert repairs, which is the critical path to completion of the project. The contractor is continuing with the invert clean-up and repair using this second dam car.

The remaining 2,115 linear feet of the tunnel is comparatively dry, and the contractor may elect to proceed with clean-up and repair using only the second dam car. The contractor then would tow the east dam car through the last reach of the tunnel to remove the remaining ventilation and water discharge lines and complete punchlist work, performing this work concurrently with staging the placement of the cast-in-place lining in the starter tunnel.

In the Special Report submitted to the Court on October 15, 1998, the Authority noted that the invert clean-up, repair and utility removal were scheduled to be completed by the end of November 1998. Because of greater than anticipated delays in completing repairs in the last mile of the precast liner segments, the contractor did not meet that completion date. In addition, the recent fire may result in additional delay. At this point, the Authority is uncertain what impact these factors will have on the contractor's overall schedule. The Authority will present an updated schedule to the Court reflecting this new information with the Annual Report on the Boston Harbor Project to be filed in January 1999.

(b) Electrical System Modifications for Deer Island Pump Stations.

As anticipated last month, the Authority issued a purchase order for the design and fabrication of additional harmonic filters for the North Main Pump Station during November, with delivery expected in February 1999.5 Two construction support contractors continue the critical path work required to prepare for installation of the new filters once they arrive. In the meantime, design and fabrication of new and modified filters for the Lydia Goodhue Pump Station are continuing, and delivery of the filters and associated equipment remains scheduled for January 1999. Installation of the new filters for both pump stations will be included in the work to be performed under a new contract to be presented to the Board of Directors for award on December 16, 1998.

(c) Demolition and Construction on Nut Island.

At the Nut Island Headworks, progress continues to be made towards the demolition of the old treatment plant. The contractor has completed the removal of the sedimentation basins and all asbestos in the administration building and has performed 80 percent of the work required for demolition of the administration building. The contractor is proceeding with the transport of fill material from Deer Island to Nut Island for forming the final contours and grading of the site, which will include a public park. To date, the contractor has moved approximately 62,000 cubic yards of material. The work is expected to require between 100,000 and 130,000 cubic yards overall.

With respect to the work on the surge chamber in the headworks facility, the contractor has commenced work on the west side of the surge chamber. The contractor has completed placing stop logs and wooden bulkheads within the surge chamber to isolate the area from overflows from the High Level Sewer, tunnel or shaft surges or seawater from the existing outfalls. The contractor has begun work in the "sand catcher" area (an area for screening flows entering the Nut Island outfalls) and expects to begin the demolition and reconstruction of a wall in that area, once the main building of the old treatment plant that lies above has been demolished.

(d) Thermal Plant.

In the thermal plant, ongoing testing of the digester gas system is limited currently by the ability of the digester gas compressor in the residuals facility to delivery gas to the thermal facility. Over the past month, the Deer Island Treatment Plant has been able to consistently provide between 110,000 to 120,000 cubic feet per hour of gas to the new thermal plant. While this amount is capable of generating sufficient steam to meet almost all of the treatment plant's heat and hot water demands under current weather conditions, it is less than the 180,000 cubic feet per hour being generated by the residuals complex. Although this higher volume has been transported to the thermal plant and burned for short period of time, it has not been available for sustained periods. The construction manager is currently working with treatment plant staff to evaluate this issue and review operating procedures to achieve this higher rate of gas transfer. Once this problem is addressed, the contractor will proceed with dual fuel testing -- firing the boilers with a mixture of gas and fuel oil.

(e) Deer Island Performance Certification.

During the next few weeks, Deer Island Treatment Plant staff expect to finalize contractual arrangements for Phase II of the performance certification described in last month's report. Once underway, the review of various construction projects and operating systems will focus on process evaluation, an operations and maintenance practices review and a determination as to whether the physical facilities and equipment meet specifications. Individual reports on specific projects and systems will be forthcoming during the 20-month term of the contract. At the conclusion of Phase II, an overview will summarize the entire evaluation and report on how well the individual projects and systems perform together to provide the level of treatment intended.

3. CSO Program.

(a)Fox Point CSO Facility.

In November, the Authority concluded the intensive public participation effort intended to develop better community understanding of the upgrade planned at the Fox Point CSO facility. Based to a great extent on the information gained from these meetings, the Authority completed an evaluation of the options for the

dechlorination facilities that considered regulatory requirements, property requirements, engineering and construction risks, environmental and community impacts, public support and cost. Staff are now preparing the SEIR for the Fox Point upgrade, including the siting evaluation and recommended plan, for submission to MEPA by the end of this month. There will be additional opportunity for public meetings during the comment period following public notice of the SEIR in the *Environmental Monitor* in January.

(b) Cottage Farm Facility Upgrade.

As reported last month, unforeseen deterioration of the floor in the existing sodium hypochlorite storage room at the Cottage Farm CSO facility has affected construction of the upgrade at this facility.6 Based on further investigation during the past month, the Authority has confirmed that the new control room planned for this space, according to the recommended design, cannot be in place by the March 1999 milestone for completing the Cottage Farm upgrade. However, the Authority is making every effort to have a functioning upgraded chlorination and dechlorination system with interim controls in place by March and to complete the new permanent control room as soon as possible thereafter.

In support of having the upgraded system in operation by March, testing and evaluations conducted over the past few weeks have confirmed the plan to install a flow-based semi-automatic control system on an interim basis. Options to relocate the new fully-automated controls elsewhere, either permanently or temporarily, were found not to be beneficial, especially with respect to schedule. Design of the interim system is underway and should be completed this month.

With regard to the permanent control room, the coring program to assess the extent of the damage to the existing floor and the repairs required was completed in November. The resulting report characterizes the deterioration as corrosion of the reinforcing steel and delamination and spalling of the concrete, with the majority of the damage found in the top portion of the concrete slab. The report anticipates extensive repairs will be required in areas closest to the source of sodium hypochlorite penetration, with more modest repairs elsewhere. In addition, some areas of the floor will require shoring prior to beginning concrete repair efforts, to support operational loads and ensure stability. Some areas are now undergoing more detailed testing, while design of the repair work is underway.

Although the Authority cannot estimate very precisely at this stage the time required to complete the preliminary arrangements and to perform the repairs, it anticipates that the repairs and installation of the new control equipment should be complete by July 1999. The Authority has met with staff from the Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("DEP") to review the information available to date. The Authority will report further to the Court and the regulatory agencies as activities proceed.

(c) Funding of the Charles River Watershed Association Study.

On November 18, 1998, the Authority's Board of Directors authorized a payment of $80,000 to the Charles River Watershed Association ("CRWA") for the fifth year of its Integrated Monitoring, Modeling and Management Study ("IM3") of water quality and pollution control in the Charles River.7 The payment completes the overall financial support of $485,000 approved by the Board of Directors in 1994 and 1996.

Several key IM3 work efforts relevant to the Authority's CSO control program will continue during this fifth year. They include baseline and wet weather water quality sampling, monitoring of tributaries and "hot spots," and calibration and application of the watershed-wide computer model. These efforts will enable CRWA to observe trends in water quality associated with both variations in precipitation and ongoing or planned infrastructure improvements, as well as support the continued identification of specific problem areas.

The Authority expects the CRWA study to be coordinated with the information obtained from the United States Geological Survey ("USGS") study of the Lower Charles Basin, which the Authority is also supporting in compliance with conditions of the Variance for Charles River CSO discharges recently issued by DEP.8 CRWA

has revised the schedule for its study to allow the final phase, the Management Plan, to incorporate USGS study results.

4. Residuals Program.

(a) Pelletizing Plant Expansion.

During the past month, performance testing of the two new dryer trains at the pelletizing plant revealed several problems requiring attention.. The pugmills that feed the trains were found to vibrate excessively during normal operation. In addition, the computerized control system has experienced frequent system shutdowns, so that the contractor has been unable to operate the system continuously. The contractor is working to correct these problems, which are expected to delay turnover and startup of the new trains until at least January.

(b) Report on Residuals Management Program.

The Authority recently undertook a review of its residuals management program in response to a commitment made to the Towns of Walpole and Norfolk in Memoranda of Understanding (the "MOUs") entered into in September 1993. The MOUs were included in the materials presented to the Court in support of the Authority's motion to substitute an alternative plan for backup sludge disposal for the requirement to construct a landfill in the Town of Walpole.9 In compliance with the Court's order of October 8, 1993, as amended on December 3, 1993, the Authority has retained ownership of the Walpole landfill site and maintained the design, specifications and permits for constructing the landfill. However, the Authority has relied on commercial landfill disposal as the backup to its primary disposal method of pelletization. In the MOUs with the communities, the Authority agreed to return to the Court in five years to review its sludge management program, and, if judged appropriate by the Authority, to request the elimination of the requirement to retain the Walpole site.10 During the Fall, the Authority received a letter from the Walpole Town Administrator, reminding it of its obligation under the MOU and reporting a recent vote by the Walpole Board of Selectmen, requesting that the Authority seek to eliminate the requirement for an in-state backup site.

Following an internal review of the residuals program, the Authority has concluded that both the primary residuals strategy of pelletization for use as fertilizer and the occasional use of commercial landfills as a backup have worked well. The Authority believes that, for the purpose of operating a reliable sludge management program, the need to retain the Walpole site and the ability to build a landfill under its ownership and control no longer exists. Based on this review, the Authority's Board of Directors recently directed staff to seek relief from the requirement to retain the site.

The Authority will initiate conversations with both DEP and EPA regarding their current policies with respect to residuals disposal and will seek their views regarding the reliability of the Authority's current program based on pelletization and use of commercial landfills, as needed. The Authority will report further to the Court after those discussions have proceeded.

5. Management of Infiltration and Inflow.

On December 2, 1998, the Authority convened and participated in an all-day South System I/I Workshop held in Norwood. The workshop was a response to recent discussions with EPA, DEP and others about the constraints of the sewer collection system in wet weather and appropriate strategies for addressing I/I, among other problems. Although the Authority initiated the planning for the workshop, the Metropolitan Area Planning Council, the South Shore Chamber of Commerce, the Authority's Advisory Board and the Wastewater Advisory Committee joined the Authority in sponsoring it, and EPA and DEP staff participated. The purpose of the workshop was to initiate a process involving all stakeholders (the Authority, local communities, regulatory agencies and citizen groups representing a spectrum of interests from the real estate industry to local watershed associations and other environmental advocacy groups) to work together toward developing a regional I/I reduction goal and associated strategies.

The attention to wet weather issues in this region is illustrative of a growing national debate about the application of existing regulations and standards to the practical realities of the operation of sanitary and storm drainage systems under pressure from heavy storm run-off, particularly in large urban areas. Under stressed circumstances, the typical "design storm" criteria by which sanitary sewer systems have been planned and constructed simply cannot achieve the typical Clean Water Act standard of "no overflows," suggesting that further regulatory guidance must be developed to reconcile conflicting regulatory goals. Resolution of these issues is likely to require a widespread effort to reach national consensus on appropriate policy (such as that leading to EPA's National CSO Policy in 1994).

With regard to the December 2 workshop, a total of 121 stakeholders attended, including representatives of 19 of the Authority's 21 South System wastewater member communities and many other organizations. Workshop presentations and discussions addressed the following basic and practical I/I reduction and flow management issues: Where are we? Where are we going? How do we get there? The most significant outcome on which the participants reached consensus was agreement to establish a regional task force to move forward on addressing those questions. Authority staff are now beginning to organize the recommended I/I Task Force, which the Authority anticipates will require 12 to 18 months to identify, evaluate and develop regional I/I reduction goals and strategies.

The Authority expects a similar workshop to take place with stakeholders in the North System early in 1999, after which additional members will join the I/I Task Force to provide a comprehensive regional representation. The Authority is convinced that it is only with the participation of all interested parties, and most particularly the local communities with a broad base of citizen involvement, that a workable program for I/I management can be achieved.

6.Toxic Reduction and Control Enforcement Program.

The Authority recently signed a consent agreement with several corporations to resolve violations of the Authority's group permit for photoprocessors and printing operations.11 The consent agreement calls for a total penalty payment of $283,000 by December 16, 1998. Photoprocessing and printing shops have the potential to discharge excessive amounts of silver to the sewer system unless they operate simple silver recovery units. The group permit requires each holder to follow best management practices to reduce pollutant discharges, use silver recovery technology and submit an annual compliance report and wastewater sample to the Authority that shows how the permit holder met the requirements of the permit. Staff use these reports to determine which facilities should be inspected during the year and whether there have been violations that require enforcement. In previous years, the Authority has issued approximately 20 administrative penalties, each averaging between $500 and $1,000 to facilities that failed to submit the annual report or take a wastewater sample. The vast majority of shops have remained in compliance with the permit and the silver discharge limit.

In April 1998, Toxic Reduction and Control ("TRAC") staff found that the compliance reports received from the CVS, K-Mart, and Walgreens companies for their one-hour photo shops were all photocopies of the same report and failed to provide the specific information required about chemical usage at each facility and a log of when each facility's silver recovery unit received service. In addition, the reports showed that none of the facilities took a wastewater sample in 1997. Further investigation by TRAC staff revealed that CVS, K-Mart, Walgreens, Osco and BJ's Wholesale Clubs all had one-hour photo shops discharging without a permit and that their permit applications and compliance reports had been submitted to the Authority by Qualex, a subsidiary of Kodak that runs the one-hour photo shops at BJ's and provides technical and regulatory support to the other companies.

After TRAC notified the companies of the violations, TRAC staff negotiated individual consent agreements requiring payments of administrative penalties. The companies also agreed to obtain permits, to comply with all the requirements of the permits and to pay stipulated penalties if they violate the consent agreements.

When collected, the penalties will represent the largest administrative penalty collected by the Authority to date. The Authority believes this action sends an important message to the regulated community: Streamlined permit processing is not intended to reduce the level of compliance or regulatory oversight. The group permit's success

depends upon accurate and complete facility reporting, and the Authority will continue to enforce group (as well as individual) permit requirements when necessary.

By its attorneys,

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CERTIFICATE OF SERVICE

I, John M. Stevens, attorney for the Massachusetts Water Resources Authority, do hereby certify that I have caused this document to be served by hand or mail to all counsel of record.

Dated: December 15, 1998

Notes:

1. This document does not include the siting evaluation and recommended plan for the Fox Point facility, which will be submitted in a separate SEIR later this month.

2. Included in the bills are several similar to those filed in the previous legislation session and reported in the Authority's Compliance and Progress Report for December 16, 1996, pp. 2-3.

3. As noted in the Authority's "Special Report on Construction of the Effluent Outfall Tunnel" filed October 15, 1998 ("Special Report"), the liner segments were installed in the initial reach of the tunnel before the contractor's methodology was refined. See pp. 24-25.

4. The dam cars and the associated process of clean-up, liner repair and utility removal in the tunnel are described in the October 15, 1998 Special Report. See pp. 13-15.

5. As previously reported, the purpose of the filters is to prevent excessive harmonic distortion in the electrical grid across the island when the maximum number of pumps are in operation at both stations.

6. See November 16, 1998 Compliance and Progress Report, pp. 9-12.

7. For previous reports regarding Authority support of the CRWA program see Compliance and Progress Reports for October 17, 1994 (p. 4), January 17, 1995 (pp. 3-5), October 16, 1995 (pp. 10-11), June 17, 1996 (pp. 14-15)

and November 17, 1997 (pp. 20-21).

8. See Compliance and Progress Report for September 15, 1998, pp. 11-13, for a report on the Variance and the USGS study.

9. See Motion to Modify Long-Term Residuals Management Scheduling Order, September 9, 1993, app. at Tabs 5, 6.

10. The relevant provision in the MOU with the Town of Walpole states, "The MWRA shall return to the Federal Court within five (5) years to review the MWRA's sludge management operation and request, if appropriate in the MWRA's judgment, that the in-state back-up requirement be eliminated from the court's compliance schedule. If the MWRA is successful in eliminating the requirement for an in-state back-up, the MWRA will take all steps necessary for the site in Walpole to revert to the Commonwealth. If the MWRA is not successful in eliminating this requirement after the first five year review, the MWRA will continue to review and report on its sludge management operation at five year intervals, including a request to be relieved of the in-state back-up requirement."

Memorandum of Understanding Between the Town of Walpole and the MWRA Concerning Emergency and Long Term Disposal of Wastewater Treatment Plant Residuals and Construction of the MWRA Landfill in Walpole, II, E, *Ibid*, p. 4.

Under the legislation that transferred the site to the Authority from the Commonwealth of Massachusetts, the site will automatically revert to the Commonwealth, should the Authority be relieved of the obligation to retain the site for possible construction of a landfill. 1991 Mass. Acts, Ch. 41.

11. See Compliance and Progress Reports for February 15, 1995, pp. 17-19, and June 15, 1994, pp. 13-14, for previous reports on the group permit.