UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
ONE CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

FACT SHEET

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

NPDES PERMIT NO: **MA0036781**

PUBLIC NOTICE DATE:

NAME AND ADDRESS OF APPLICANT(S):

Massachusetts Bay Transportation Authority
10 Park Plaza, 6th Floor
Boston, MA 02116-3974

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Four (4) separate construction-related discharge points
associated with the construction of the
MBTA Silver Line, South Station to World Trade Center Station
Boston, MA 02116

RECEIVING WATERS: **Fort Point Channel/Boston Inner Harbor** (MA70-02)

CLASSIFICATION: **Class SB**

I. PROPOSED ACTION

The above named applicant has applied to the U.S. Environmental Protection Agency for the re-issuance of its National Pollutant Discharge Elimination System (NPDES) permit to discharge into the designated receiving waters. The current permit was issued to the Massachusetts Bay Transportation Authority (MBTA) on July 13, 1997 and became effective 30 days later. It expired on August 13, 2002. A complete re-application was received from the MBTA on August 6, 2003. This draft permit, after it becomes effective, will expire five years from the effective date of issuance or at the end of the construction.

II. TYPE OF FACILITY AND DISCHARGE LOCATION

This permit covers construction dewatering and storm water discharges during the construction of a 1.5-mile underground mass transit tunnel (currently under construction) (Figure 1) .

The initial NPDES permit application submitted in 1996 requested authorization to discharge proposed construction-related dewatering and storm water. The 1996 application also included a request for a future operational discharge associated with a proposed MBTA Maintenance Facility; however, that facility will not be constructed, and therefore, was not included in the most recent application. The locations of the discharges are shown in Figure 2.

The facility's current discharge outfalls are listed below:

Outfall	Description of Discharge	Outfall Location
T1	Temporary Construction Dewatering	Fort Point Channel
T2	Temporary Construction Dewatering	Fort Point Channel
DO-164 (BWSC - 23L164)	Temporary Construction Dewatering	Fort Point Channel
DO-196 (BWSC - 23L196)	Temporary Construction Dewatering	Fort Point Channel

III. DESCRIPTION OF DISCHARGE

A quantitative description of the discharge in terms of significant effluent parameters, based on discharge monitoring reports (DMRs), January 2002 through December 2003, and the most recent application is shown on Tables 1 A-C and 2 of this fact sheet, respectively.

The characteristics of these discharges are typical of construction dewatering and storm water discharges. Specifically, they are petroleum hydrocarbons, suspended solids, and metals.

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 LIMITATION DERIVATION

A. Project Characteristics

The project is the construction of a 1.5 mile underground mass-transit tunnel for electric bus service. The project is currently in Phase II (South Station to the World Trade Center) and that phase is anticipated to be completed in 2005. During the remaining construction for this phase, discharges to Fort Point Channel/Boston Harbor will continue as the result of construction site dewatering and storm water runoff.

During the monitoring period (2002-2003), five (5) outfalls received MBTA Silver Line Phase II construction-related discharges: temporary outfalls T-1 (west side of the Fort Point Channel) and T-2 (east side of the Fort Point Channel), and permanent Boston Water and Sewer Commission (BWSC) outfalls 23L196 (DO-196), 23L164 (DO-164) and 23L195 (DO-195) (Figure 2). The flow rates to outfall T-1 varied from approximately 5-20 gallons per minute. The discharges to outfalls T-2, and 23L196 were intermittent, with flow rates from 5-10 gpm to each outfall. There were minimal discharges to 23L164 during the period. Flow from outfall DO-195 occurred from May through June 2003.

B. Treatment

Storm water and construction dewatering is pumped through four (4) sedimentation tanks, one for each outfall, with oil sorbent booms to the Fort Point Channel.

The permittee used a 3 month storm event as a basis for sizing the sedimentation tanks. Peak flow rates resulting from this storm would be expected to be exceeded during less than 4% of all storm events. Designing for storm events of larger than a three (3) month frequency would require significant additional storage and accommodation of peak flows for only a fraction of the remaining 4% of total storms. Sedimentation tanks are sized to provide for a minimum of 10 minutes of detention time for peak flows from a 3 month storm event. This design ensures that a minimum of 10 minutes of detention time will occur for 96% of all storms.

An estimation of particle settling efficiency of such tanks indicates that a tank designed to meet these specifications will provide removal of all suspended particles greater than 40 microns in size during peak flows from the 3 month storm event. The estimate of particle size distribution is difficult to predict and thus, overall TSS removal efficiencies are difficult to assess.

The previous permit and this draft permit required the permittee to assure that each construction contract package will provide for the appropriate method of solids sedimentation.

Sedimentation tanks will be designed to cause suspended particles 40 microns and larger to settle a vertical distance ½ the effective depth of the tank. Additional features include:

- A baffle one-half the effective depth of the tank located 1/3 the length of the tank from the influent side of the tank,
- an effluent "tee" inhibiting the discharge of surface water to retain oil and floatables, and
- replaceable sorbent booms directly upstream of the discharge pipe.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Overview of Federal and State Regulations

The Clean Water Act (CWA) requires that discharges satisfy both minimum technology and water quality requirements. The minimum technology requirements which are presently applicable are the Best Practical Control Technology currently available (BPT) Section 301 (b)(2)A of the Clean Water Act, Best Conventional Pollutant Control Technology (BCT) Section 301 (b)(2)E and Best Available Technology Economically Achievable (BAT) Section 301 (b)(2)A. In the absence of technology based guidelines EPA is authorized to use Best Professional Judgement (BPJ) in accordance with Section 402(a)(1)of Clean Water Act. In addition, Section 301 (b)(1)(c) of the CWA requires that effluent limitations based on water quality consideration be established for point source discharges when such limitations are necessary to meet State and Federal Water Quality Standards that are applicable to the designated receiving water.

Storm water runoff from construction sites is identified and defined as a category of stormwater discharge associated with industrial activity which includes "construction activity including clearing, grading and excavation activities except: operations that result in the

disturbance of less than one (1) acre total land area".... Since the South Boston Piers/Fort Point Channel Transit Project is disturbing more than five (5) acres, an application for an NPDES permit was filed. There have been no effluent guidelines established for groundwater/site dewatering discharges or storm water runoff. Therefore, the effluent limitations and other conditions in the draft permit have been established using BPJ.

The major source of water entering the excavated areas of South Boston Piers/Fort Point Channel Transit Project are precipitation, seepage through excavation support structures and seepage through the bottom of the excavation. Water is pumped from excavations to temporary construction discharges and existing storm drains of BWSC.

Pumping schemes for dewatering of project excavation were designed to deal with both groundwater and storm water discharges. Pumping capacities were based upon requirements for storm water dewatering since these flows are significantly larger than dry weather site dewatering flows. In estimating rainfall volume to determine expected pumping capacities, a two-year design storm event was used with a 40-minute time of concentration and a peak intensity of 1.5 inches per hour.

2. Water Quality Standards; Designated Use; Outfall 001

The Boston Inner Harbor (MA70-02) has been classified as Class SB (CSO) in the Massachusetts Surface Water Quality Standards. The CSO designation identifies the waters as impacted by the discharge of combined sewer overflows (CSO), for all other discharges, SB standards apply.

Title 314 Code of Massachusetts Regulations ("CMR") 4.05(4)(b) states that Class SB waters have the following designated uses*:* These waters are designated as habitat for fish, other aquatic wildlife and wildlife and for primary and secondary contact recreation. In approved areas they shall be suitable for shellfish harvesting with depuration (Restricted Shellfish Areas). 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 the implementation of technology-based controls and, as such require the development of total maximum daily loads (TMDL). The 1998 303(d) report states that the Boston Inner Harbor (Basin MA70-02) is not attaining water quality standards because of pathogens.

BEST MANAGEMENT PRACTICES (BMP)

The previous permit required the submittal of a Best Management Practices (BMP) plan. The MBTA shall update the existing BMP plan to reflect the current status of the project , and this plan will remain an enforceable element of the permit.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Pursuant to Section 304 (e) of the CWA and 40 CFR §125.103(b), Best Management Practices (BMPs) may be expressly incorporated into a permit on a case by case basis where necessary to carry out Section 402(a)(1) of the CWA. When the MBTA engages in activities which could result in the storm water discharge of pollutants to waters of the United States, it must propose and have approved site-specific BMPs for those operations. These operations include at least one of the following from which there is or could be site runoff: materials processing, material handling or loading and unloading.

The permittee is required to update the SWPPP **within 60 days after the effective date of the permit**. The goal of the SWPPP is to eliminate or reduce the potential for discharge of pollutants through the stormwater system. In the event, the potential cannot be eliminated, the permittee should select BMPs to reduce or eliminate the pollutant loading to the receiving water. The SWPPP requirements direct the Permittee to review the physical equipment, the operation procedures, and the operator training at the facility. The objective of this review is to protect waters of the United States by eliminating or minimizing the potential discharge of any pollutants.

The SWPPP becomes an enforceable element of the permit upon the effective date of the permit. Consequently, the SWPPP is as enforceable as any effluent limits on the discharges.

SAMPLING AND MONITORING REQUIREMENTS

Sampling shall be conducted on both site dewatering discharges (primarily groundwater) and wet weather discharges (combination of stormwater and groundwater). Monitoring requirements have been established for both types of discharges and include flow, TSS, Total Petroleum Hydrocarbons (TPH), Priority Pollutant metals, Volatile Organic Compounds (VOCs) and pH.

A review of recent Discharge Monitoring Reports (DMRs) from 2002 and 2003 indicates that Total Aluminum concentrations have been very high from outfalls T1 and DO196 during both dry and wet weather conditions. The MBTA has notified EPA that the probable source of the high total aluminum concnetrations may be related to grouting operations. Previous flow to DO196 has recently been relocated to T-2.

EPA has not established a national recommended water quality criteria for aluminum in saltwater due to limited data (EPA 440/5-86-008). However, aluminum has the potential to impair, or contribute to impairing water quality or affect human health from ingestion of water or fish. As such EPA will continue to require the permittee to report Total Aluminum from all active outfalls quarterly for both dry and wet weather conditions, without a limit. EPA will, furthermore, require the permittee to conduct annual acute whole effluent toxicity testing (once in dry weather and once in wet weather) for outfalls T1 and T2. Twice (2) per year the permittee shall perform acute whole effluent toxicity testing using two species, Mysid Shrimp and inland silverside in accordance with the test protocols specified in **Permit Attachment A.** An LC50 limit of $\geq$ 50% is established for facilities having a dilution factor greater than 100:1.

As a condition of this permit, the testing requirements may be reduced if certain conditions are met. The permit provision anticipates that the permittee may wish to request a reduction in the WET testing. After two consecutive WET tests, demonstrating compliance with the permit limits for whole effluent toxicity, the permittee may submit a written request to the EPA seeking a

review of toxicity test results. The EPA will review the test results and pertinent information to make a determination. The permittee is required to continue testing at the frequency and species specified in the permit until the permit is either formally modified or until the permittee receives a certified letter from the EPA indicating a change in the permit conditions.

Site dewatering discharge samples shall be taken after at least 48 hours during which no precipitation in excess of 0.01 inches has occurred. Wet weather discharge samples shall be taken in accordance with the protocol established in the permit.

VI. ANTI-BACKSLIDING

Anti-backsliding as defined in Section 402(o) of the Clean Water Act and at 40 CFR §122.44(l)(1) requires reissued permits to contain limitations as stringent or more stringent than those of the previous permit unless the circumstances allow application of one of the defined exceptions to this regulation. For example, anti-backsliding does not apply when changes to limits are based on new information not available at the time of the previous permit reissuance (40 CFR §122.44 (l)(2)(i)(B)(1)) or when limits are changed as a result of material and substantial additions or alterations to the permitted facility which occurred after permit issuance which justify the application of less stringent limitations, as defined 40 CFR § 122.44 (l)(2)(i)(A).

The permit limits will remain the same as in the existing permit with an additional requirement for WET testing.

VII. ANTI-DEGRADATION

The Massachusetts Anti-degradation Policy is found at Title 314 CMR 4.04. All existing uses of the Fort Point Channel/Boston Inner Harbor must be protected. This draft permit is being reissued with allowable discharge limits as or more stringent than the current permit with the same parameter coverage. There is no change in outfall location but a reduction in the number of outfalls permitted.

VIII. MONITORING AND REPORTING

The permittee is obliged to monitor and report sampling results to EPA and the MADEP within the time specified in the permit. The effluent monitoring requirements have been established to yield data representative of the discharge by the authority under Section 308(a) of the CWA in accordance with 40 CFR 122.441(j), 122.44, and 122.48.

The remaining general conditions of the permit are based primarily on the NPDES regulations 40 CFR 122 through 125 and consist primarily of management requirements common to all permits.

IX. STATE CERTIFICATION REQUIREMENTS

EPA may not issue a permit unless the State Water Pollution Control 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 Surface Water Quality Standards. The staff of the Massachusetts Department of Environmental Protection is reviewing the draft permit and will determine if the limitations are adequate to protect water quality. EPA has requested permit certification by the state pursuant to 40 CFR 124.53 and expects that the draft permit will be certified.

X. PUBLIC COMMENT PERIOD AND PROCEDURES FOR FINAL DECISION

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, Office of Ecosystem Protection, MA Unit, One Congress Street, Suite-1100, Boston, Massachusetts 02114. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. Public hearings may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates a significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

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

XI. EPA CONTACT

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

Michele Cobban Barden
Office of Ecosystem Protection
U.S. Environmental Protection Agency
One Congress Street, Suite-1100 (CPE)
Boston, MA 02114-2023
Telephone: (617) 918-1539
Fax: (617) 918-0539
barden.michele@epa.gov

March 24, 2004
Date

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