UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
1 CONGRESS STREET
BOSTON, MASSACHUSETTS 02203

FACT SHEET

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

STORMWATER PERMIT NO.: **MA0033928**

STATE PERMIT NO.:

NAME AND ADDRESS OF APPLICANT:

Massachusetts Turnpike Authority
One South Station
185 Kneeland Street
Boston, Massachusetts 02111

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

18 separate construction/design areas comprised of 33 discharge points within the project area (Central Artery/ Third Harbor Tunnel) which are located in Boston and Cambridge

RECEIVING WATER: **Charles River, Boston Harbor, Fort Point Channel & Millers River; Boston Harbor Watershed.**

CLASSIFICATION: **Class B, SB, SB & SB, respectively**

I. Proposed Action, Type of Facility, and Discharge Location

The above named applicant has applied to the U.S. Environmental Protection Agency for reissuance of an NPDES permit to discharge into the designated receiving waters. The permittee is engaged in construction activities, including extensive excavation, requiring the discharge of groundwater construction operation water and storm water on a periodic basis. Discharges will be to the four receiving waters listed above into Outfall 001 through 099 (not all inclusive - see Attachment A of the draft permit for a list of designated outfalls).

II. Description of Discharge

The characteristics of these discharges are typical of construction dewatering and storm water discharges. Specifically, they are petroleum hydrocarbons, suspended solids, metals, and volatile organic compounds. Discharge monitoring results show that these constituents are generally in low concentrations with the exception of total suspended solids.

III. Limitations and Conditions

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

IV. Permit Basis and Explanation of Effluent Limitation Derivation

This permit is for dry weather (groundwater and construction related water) and storm water discharges associated with various construction and construction related activities that the Massachusetts Turnpike Authority (MTA) will conduct in the Cities of Boston and Cambridge as part of the Central Artery/Tunnel (CA/T) Project. The main elements of this project include above ground, below ground, and at-grade road/highway expansion and formation including all appropriate appurtenances such as vent buildings, new parklands, etc.

Project Characteristics

The total volume of soil expected to be excavated for the entire CA/T project is estimated at 28 million tons. To date, 26 million tons have been excavated with approximately 2 million tons remaining to be excavated. The total area comprises 18 separate design areas, each of which is affiliated with several construction packages. Construction packages have distinct outfalls from which they will discharge up through the year 2005, when the project is scheduled to be completed.

After the project is completed, the project area will be restored to approximately its present usage (i.e. roadways, parking lots, buildings) and will include the creation of some 20 acres of open space. Runoff from these surface areas will be discharged to adjacent water bodies through either the Boston Water and Sewer Commission (BWSC) storm drainage system, BWSC combined sewer outfalls, or from drains constructed specifically for this purpose. Runoff from the newly constructed CA/T will be discharged through the separate highway drainage system for Interstate-93 and Interstate-90. Permit coverage for these outfalls will be obtained by the appropriate entity.

The following four categories of CA/T site operations covered by this permit will result in discharges:

(1) site clearance (removal and/or treatment of contaminated soils and groundwater),
(2) conventional excavation and construction activities,
(3) material processing facility (MPF) and storage area; and
(4) barge loading area.

The permittee is currently discharging, through 33 different outfalls, which are primarily owned by BWSC, Massport, and Massachusetts Highway Department (MHD). Several previously approved outfalls are no longer in use. See Attachment A of the permit for a brief description and status (active or inactive) of each of the outfalls covered under this permit.

The draft permit authorizes the discharge of outfall 001 through 099, however not all are expected to be active at any one time.

Since most of the proposed outfalls are owned by BWSC, considerable interest has been shown by BWSC in terms of how their NPDES Combined Sewer Overflow (CSO) permit and Phase I Stormwater Permit may be affected. BWSC's NPDES permit states that "dry weather discharges are unauthorized" through its outfalls. A dry weather discharge (DWD) is defined in the BWSC CSO permit as a discharge of undiluted and untreated sewage from the combined sewer system. Dry weather discharges from the CA/T project are never discharges of undiluted and untreated sewage from the combined sewer system, since all discharges from the CA/T are directed to outfall conduits downstream of the combined sewer regulator structures. Therefore, the DWD prohibition in the BWSC permit will not be applicable to these discharges to the extent that both permittees meet and maintain compliance with the terms of their individual permits.

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 Best Practicable Control Technology Currently Available (BPT), Section 301(b)(1)A of the CWA; Best Available Technology Economically Achievable (BAT) for toxic pollutants, Section 301(b)(2)A; and Best Conventional Pollution Control Technology (BCT), Section 301(b)(2)E which applies to conventional pollutants. In the absence of technology based guidelines EPA is authorized to use Best Professional Judgment (BPJ) in accordance with Section 402(a)(1) of the Clean Water Act. In addition, Section 301(b)(1)(c) of the CWA requires that effluent limitations based on Water Quality considerations be established for point source discharges when such limitations are necessary to meet State or Federal Water Quality standards that are applicable to the designated receiving water.

Section 402(p) of the Clean Water Act requires that EPA issue permits for storm water discharges associated with industrial activity.

Storm water runoff from CA/T construction sites is identified and defined as a category of storm water discharge associated with industrial activity as defined under 40 CFR §122. 26 (b)(4)(x) which includes "construction activity including clearing, grading and excavation activities except: operations that result in the disturbance of less than five acres total land area ...". Since the CA/T will disturb more than five acres, an application for an NPDES permit must be filed. CA/T's storm water is mixed with other non-storm water such as site dewatering which is why the facility cannot be covered under the storm water general permit. There have been no effluent guidelines established for 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 sources of water entering the excavated areas of CA/T are precipitation, groundwater seepage through excavation support structures and seepage through the bottom of the excavation. Water will be pumped from excavations areas to sedimentation tanks for treatment prior to entering storm drains or the receiving water.

Although pumping schemes for dewatering of excavation areas were designed to deal with both wet and dry weather discharges, this draft permit is for dry weather discharges only. Storm water comingles with construction dewatering and groundwater seepage flows during a wet weather event and is pumped to a sedimentation tank for treatment prior to discharge. 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.

Treatment

Sedimentation tanks with sorbent booms and outlet tees, hay bales, siltation fences, sorbent booms, turbidity curtains, and outlet tees polymer addition, pH adjustment, and filtration will continue to be used as a means of treatment for discharges.

The permittee used a 3 month storm event as a basis for sizing sedimentation tanks. Peak flows from this storm will be exceeded during less than 4% of all storm events. Designing for storm events of larger than 3 months frequency would have required significant additional storage and accommodation of peak flows from only a fraction of the remaining 4% of total storms.

Sedimentation tanks are sized to provide 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 mitigation for all suspended particles greater than 40 microns in size during peak flows from the 3 month storm event.

The permittee will be required 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 of 1/2 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.

Best Management Practices (BMP) Plan

MTA will update the existing BMP to reflect the status of the CA/T current conditions, and this plan will remain an enforceable element of the permit.

Storm water Pollution Prevention Plan

Pursuant to Section 304(e) of the CWA and 40 C.F.R. §125.103(b), Best Management Practices (BMPs) may be expressly incorporated into a permit on a case-by-case bases where necessary to carry out Section 402(a)(1) of the CWA. When the CA/T engages in operations 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 operation include at least one of the following from which there is or could be site runoff: material processing, material handling, or loading and unloading.

The permit requires a storm water pollution prevention plan (SWPPP) which will include BMPs appropriate for this specific operation to control storm water discharges from these and other activities which could contribute pollutants to waters of the United States through storm water. The SWPPP requirements direct the Permittee to review the physical equipment, the operational 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.

Monitoring and Sampling Requirements

Sampling will be conducted on dry weather discharges because the outfalls for wet weather discharges identified in the existing permit are no longer in use. Storm water that comingles with all other wastewater during a wet weather event enters a sedimentation tank for treatment prior to discharge to the receiving water. The monitoring requirements in the draft permit include flow, petroleum hydrocarbons, TSS, pH, priority pollutant metals, and volatile organic compounds (VOCs) for site dewatering.

A review of recent project Discharge Monitoring Reports (DMRs) from 2002 indicates that the TSS limit has exceeded the maximum limit of 250 mg/l in the first three quarters in 2002. Other less frequent exceedances include total petroleum hydrocarbon and the upper limit of pH in both the first and second quarters of 2002. When the permit limits are exceeded corrective measures taken by the permittee, include but are not limited to, cleaning the sedimentation tanks more frequently, CO_2 air injection to adjust the pH, adding polymer to reduce TSS, reducing the number of pumps during excavation, and improving management practices.

Anti-backsliding

EPA's anti-backsliding provision at 40 CFR §122.44(l) prohibit the relaxation of permit limits, standards, and conditions unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued. Therefore, technology based effluent limitations in the draft permit must be as stringent as those in the current permit. Relaxation of these limits is only allowed when cause for permit modification is met, see 40 CFR §122.62. Effluent limits based on BPJ, water quality, and State Certification requirements must also meet the anti-backsliding provisions found in Section 402(o) and 303(d)(4) of the CWA.

The permit limit for TSS will remain the same as in the existing permit. The permittee requires installation and use of sedimentation tanks to meet the permit limits. These facilities have operated satisfactorily, or the permittee has initiated corrective actions as necessary. It is expected that by the use of the complementary technologies and continued corrective measures as stated above, the limits are achievable.

Antidegradation

This draft permit is being reissued with an allowable wasteload analogous to the current permit with the same parameter coverage, no change in the overall scope of the project, and with an annual average limit imposed to offset higher daily limits for operational discharges. The Commonwealth of Massachusetts has indicated that there will be no lowering of water quality and no loss of existing water uses and that no additional antidegradation review is warranted.

The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308(a) of the CWA as required by 40 CFR 122.41, 122.44 and 122.48.

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

V. 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 ensure that the discharge will not cause the receiving water to violate State Water Quality Standards. The staff of the Massachusetts Department of Environmental Protection has reviewed the draft 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 draft permit will be certified.

VI. 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 the U.S. EPA, Compliance Branch, 1 Congress Street, Boston, Massachusetts 02203. 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 hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates 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 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. Within 30 days following the notice of the final permit decision any

interested person may submit a request for a formal hearing to reconsider or contest the final decision.

Requests for formal hearings must satisfy the requirements of 40 C.F.R. §124.74, 48 Fed. Reg. 14279-14280 (April 1, 1983).

VII. EPA Contact

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
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1 Congress Street
Suite 1100 (CPE)
Boston, Massachusetts 02114-2023
Telephone: (617) 918-1576

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DATE

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