Pollution Prevention Plan: households and permitted industries in the Massachusetts Water Resources Authority service area

NPDES Permit No. MA0103284

Massachusetts Water Resources Authority

Environmental Quality Department
Report ms-063

Pollution Prevention Plan

for

Households and Permitted Industries

in the

Massachusetts Water Resources Authority Service Area

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Pollution Prevention Plan for Households and Permitted Industries in the Massachusetts Water Resources Authority Service Area

1. INTRODUCTION

The development of a pollution prevention plan is a requirement in MWRA's NPDES Permit (No. MA0103284). Part I.11.a., states that "The permittee shall develop, submit for EPA and MADEP approval, and implement a comprehensive pollution prevention plan that will address households and permitted industries in MWRA sewer service area." With respect to PCBs, Section 11, Part b. of the NPDES permit requires that MWRA:

i. Identify and monitor key industrial sectors where PCBs are expected;
ii. Include PCBs as a sampling requirement for facilities with known or suspected sources of PCBs and conduct periodic reviews of TRAC's industrial database to determine whether PCBs are being detected, and when appropriate, take enforcement action;
iii. Continue to promote the proper maintenance of gas/oil separators by prioritizing inspections of these facilities;
iv. Encourage proper maintenance practices for floor washing operations at industrial facilities suspected of on-site PCB contamination;
v. Evaluate the feasibility of using the MADEP and EPA hazardous waste and MADEP 21E/MCP databases to identify potential areas for PCB releases into MWRA sewer system;
vi. Require that industries certify that they are in compliance with all applicable laws with respect to chemical storage;
vii. Require that industries certify that they have adequate spill containment on site;
viii. Continue to implement a pollution prevention outreach program that enables homeowners to take steps to prevent pollution from entering into MWRA's wastewater collection system and develop a pollution prevention fact sheet that enables individual homeowners to take steps to prevent pollution from entering MWRA's system. The pollution prevention outreach program includes:
    (1) Making pollution prevention fact sheets available to all communities and interested homeowners in MWRA service area;
    (2) Including a list of ideas that should be implemented with a list of pollution prevention hotline numbers in the fact sheet;
    (3) Distributing a brochure describing the effects of HHW on the environment and listing proper disposal practices as well as nontoxic alternatives to anyone in MWRA service area that is interested;
    (4) Developing an HHW WebPage on the Internet that gives similar information;
    (5) Continuing to administer the school curriculum that covers the wastewater treatment process and the importance of individuals keeping the harbor clean by not polluting;

(6) Continuing to provide outreach to schools and community groups concerning the Boston Harbor Cleanup and how they can practice pollution prevention at home;

ix. Continue to encourage pollution prevention through its enforcement response plan;

x. Continue working with other organizations such as the New England Waste Management Officials Organization, the Mass. Office of Technical Assistance, the Executive Office of Environmental Affairs, etc.

This plan is meant to be a scope of work that responds to both the spirit and intent of the permit requirements for pollution prevention. It presents strategies and an approach to continue and to improve MWRA's efforts on reducing pollutants entering its system. It is not intended to be a detailed Standard Operating Procedure. The goal of the pollution prevention plan is to develop and implement a program to continue PCB reduction. The plan also focuses on household hazardous waste and spill prevention in permitted industries.

2. PLAN COMPONENTS

MWRA has been promoting pollution prevention for more than 8 years through a variety of outlets including outreach programs for both households and industries, active support of innovative source reduction technologies, promotion of pollution prevention through our industrial compliance activities, and active participation in workshops and outreach activities for industries in conjunction with other State agencies.

2.1 PCB Reduction

To accomplish the goal of PCB reduction, MWRA will need to look beyond regulatory controls in addressing the PCB issue because a) the discharge of PCBs to the sewer system is already prohibited; and b) PCBs are not utilized to any extent by current manufacturing sources. They are typically contributed from other sources. This plan will identify these possible sources of PCBs beyond direct discharges from industries and identify unknown industrial sources, if any.

2.1.1 PBC Source Identification

MWRA currently prohibits the discharge of PCBs into the sewer from permitted users and monitors the wastewater for the presence of PCBs (of known/suspected sources). Therefore, identification of potential pathways for PCBs to enter the sewer system constitutes the primary focus of this plan. One potential area of review will include 21E sites throughout MWRA's district and their proximity to permitted industries and/or areas of high infiltration. Previous work done by MWRA and others has shown that PCBs from contaminated sites could find their way into industries near the contaminated site through drag-in[1] or into the sewers via infiltration. The approach to augment MWRA's current PCB control program is provided below:

1 Drag in is defined as the transfer of pollutants into a facility via shoes or equipment from outside contamination. These pollutants may be discharged to the sewer during floor or equipment washing.

2.1.2.1 Conduct a literature review to identify additional sources of PCBs from permitted industries as well as from other sources.

2.1.2.2 Circulate this information to MWRA Industrial Coordinators for use in drafting permits, if appropriate.

2.1.2.3 Continue to identify, sample and encourage proper maintenance practices for industries where PCBs are expected.

2.1.2.4 Obtain data from TRAC IS (TRAC's industrial database) on which permitted industries are currently required to sample for PCBs in order to target additional permitted industries where special sampling may reveal other sources of PCBs. (See 2.1.2.5 below)

2.1.2.5 Conduct sampling specifically for PCBs at permitted industries that are not currently required to sample for PCBs, that are associated with the following industrial activities: laboratories, incinerators, gas/oil separators, waste oil handlers, metal pressing/forming operations, and construction dewatering sites.

2.1.2.6 Conduct sampling for PCBs of discharge from sewer clean out by electric utilities when equipment is located in or adjacent to a sewer system. The sampling would be triggered when a request from a utility company is received by TRAC. Notification from utility companies concerning sewer clean out needs to be improved. TRAC will develop a pre-notification system for the utility companies to ensure that TRAC is notified prior to a sewer clean-out (includes municipal as well as MWRA sewers).

2.1.2.7 Obtain a list of sites with electrical transformers from electric utilities and industries with power generation equipment and conduct special sampling of runoff around these areas for PCBs.

2.1.2.8 Conduct sampling at targeted facilities that conduct floor-washing operations to provide analytical result of the washing effluent for analysis of PCBs. Potential problem areas will be identified through the following:

- Identification by MWRA Industrial Coordinators of permitted facilities that conduct floor washing;

- Using the DEP 21E/MCP and EPA Hazardous Waste databases and a map of permitted industries, determine which industries that conduct floor washing are located adjacent to a 21E/MCP site that is contaminated with PCBs and conduct special sampling for PCBs at these facilities. Add PCBs to the facility's permit if PCBs are detected during the special sampling.

2.1.2.9 Using the DEP and EPA database information, overlay the PCB-contaminated site information upon areas of high infiltration within MWRA sewer system.

2.1.2.10 Develop reporting form to transmit information to DEP and MWRA's I/I group for possible action concerning potential flow of PCBs into the sewer system through infiltration from contaminated sites.

2.1.2 PCB Control Measures

2.1.3.1 Require PCB control plan for floor washing operations for industries that have PCBs through drag-in via adjacent contaminated sites and assist these industries to reduce or eliminate PCB discharge to the sewer.

2.1.3.2 Continue to prioritize trap inspections by facility activity, discharge, and past maintenance history according to Trap Inspection Plan in order to minimize the discharge of used oil into the sewer system. To the extent that certain activities are found to be more likely to generate PCBs in a trap, MWRA will increase the frequency of inspections.

2.1.3.3 Continue practice of reviewing and updating enforcement activities related to industries where PCBs are being discharged in detectable concentrations.

2.1.3.4 Based on the results of the literature search, develop outreach to industries and commercial facilities concerning PCB reduction, if appropriate.

2.1.3.5 Continue to work closely with OTA, EOEA, and other agencies to promote pollution prevention when possible.

2.2 Spill Control

Part I.11.b vi and vii of the Permit require MWRA to minimize pollutants entering the sewer system through industrial spills. The MWRA already requires spill control plans from certain permitted industries and the Industrial Coordinators examine spill potential and control as part of their annual Significant Industrial User (SIU) inspection of each facility. MWRA staff does not have the regulatory authority to enforce other regulations that cover spills to the air or to the ground. However, inspection staff will, as appropriate, observe and note these non-sewer spill potentials and notify DEP.

The pollution prevention plan will add to MWRA's existing spill control activities by requiring the following:

2.2.1 All permitted companies must certify through the permit application that they are in compliance with respect to chemical storage and spill containment, prior to permit issuance.

2.2.1.1 Develop certification statement to include with permit applications and Notice of Intents to Discharge (NOI).

2.2.1.2 Revise permit applications and NOIs to include certification statement.

2.2.1.3 Industrial Coordinators (IC) continue to confirm that the facility has adequate spill control in place when they do their inspections.

2.2.2 Encourage inspection staff to observe and note non-sewer spill potentials and notify DEP. Develop and employ a transmittal sheet for potential non-sewer related discharges to be sent to DEP and the municipality in which the industry is located, if appropriate.

2.3 Continue to employ pollution prevention outreach through MWRA's Enforcement Response Plan.

The Enforcement Response Plan outlines the procedures to be followed by MWRA staff to identify, document, and respond to violations of MWRA's Sewer Use Regulations. The Plan provides guidance and describes how MWRA will investigate instances of noncompliance, the types of escalating enforcement responses MWRA will take in response to all anticipated types of industrial user violations, the time periods within which responses will take place, and staff that are responsible for these actions.

Current enforcement orders require facilities to submit a detailed report and schedule setting forth actions to be taken to correct or prevent violations. The report shall describe the engineering, toxic use reduction, waste minimization, and/or operational changes that a facility will undertake or has undertaken to ensure that no further violations will occur. TRAC often works with the permitted industrial user to implement pollution prevention applications through referrals to the State Office of Technical Assistance or other appropriate resources. MWRA is committed to ensuring that pollution prevention is an integral part of its compliance activities.

TRAC will review existing enforcement procedures and modify them to require an evaluation of pollution prevention options as one method of achieving compliance.

2.4 Establish Pollution Prevention Outreach for Homeowners

The MWRA's household outreach program is aimed at changing the product use behavior of the more than 800,000 households in MWRA service area and helping them to be more informed consumers. MWRA developed and distributes a brochure that describes the problems with many household hazardous products and what types of less toxic products can be used instead. The booklet entitled "A Healthy Environment Starts at Home" (Attachment A) has been well received, both locally and nationally. Over 100,000 booklets have been distributed to ratepayers in MWRA service area since 1992.

The MWRA has had success with its existing household hazardous waste (HHW) brochure, "A Healthy Environment Starts at Home", however, to increase the effectiveness and extent of MWRA's HHW outreach, the next step is to target specific groups who may not have received this type of information in the past and to focus on specific types of pollutants that have the greatest impact on the treatment system and receiving water. The brochure is being updated, and should be released by spring 2001.

Additionally, MWRA helped establish nine used oil collection centers in partnership with 12 municipalities within MWRA service area to collect used motor oil on a permanent basis from these communities. The MWRA initially established the collection centers providing all of the equipment and planning services as well as the costs for the first year of disposal services. The municipality provided the site and the staffing for the collection facility and took over operations completely after the first year.

MWRA's School Education Program has been extremely successful in its efforts to highlight the effects of household hazardous waste on Boston Harbor and its tributaries. (Attachment B is an outline of the curriculum). Through an established network of approximately 125 schools, the program has educated many students and by extension countless number of adults to the environmental perils of improper disposal of household hazardous waste. The program's Storm Drain Stenciling Initiative, conducted by students, boldly requests of all "Do Not Dump, Drains To Boston Harbor". The School Education Program not only covers students from grades K-12 but conducts outreach to civic and community organizations as well.

In addition, other POTWs, state environmental agencies and organizations have learned a lot over the past ten years about what makes effective HHW outreach and education. MWRA will use the experience of these other agencies and groups to ensure that the materials we produce will be effective. Outlined below are some of the steps MWRA will take to increase public awareness of household hazardous products.

2.4.1 Revise HHW brochure and translate into Spanish in response to community requests. We expect to release this version of the brochure in late spring 2001.

2.4.2 Evaluate other forms of outreach to determine their possible effectiveness, such as targeted fact sheets for households (i.e. automotive products, gardening products), and small quantity generator fact sheets (i.e. small paint contractors, autobody and auto repair shops).

2.4.3 Prepare a report describing the benefits/disadvantages of different approaches based upon experiences within MWRA system and elsewhere and the costs and implementation issues associated with each of these.

2.4.4 Conduct a peer review of draft material.

2.4.5 Draft samples for review by regulatory agencies.

2.4.6 Develop a Web site focussed on community education of HHW issues.

2.4.7 Continue to work closely with OTA, EOEA, and other agencies to promote household hazardous waste reduction when possible.

3. MEASURES OF SUCCESS

Given the numerous ways for PCBs to reach Massachusetts Bay, it will be difficult to measure the effectiveness of this plan on overall PCB levels in Massachusetts Bay. It will also be difficult to measure the reduction of chemicals coming into the Deer Island treatment plant from homes. However, MWRA proposes some initial measures to document successful implementation of this plan. These measures include:

- Newly identified and eliminated sources of PCBs to the sewer will be quantified and compared with existing known PCB loadings to the Massachusetts Bay environment;
- Spill certification put into 100% of permit applications;
- Incorporate floor washing plans into 100% of the permitted facilities which have potential for drag-in;
- Additional 21E sites identified as a result of MWRA review;
- 100% of MWRA's Industrial Coordinators trained in PCB source identification and reduction;
- Additional audiences reached with HHW outreach;
- Survey results within MWRA's service area, assessing level of knowledge/awareness of HHW options and MWRA's programs.

Additional measures may be developed, following consultation with EPA and DEP, as implementation of the plan begins.

4. PLAN SCHEDULE

These activities will begin once DEP and EPA approve this plan. Some of the tasks will be completed relatively quickly, such as printing out existing data on PCBs and putting spill certification requirements in the permit applications. Others, such as working with DEP and EPA to use their hazardous waste databases and conducting special sampling of industries for PCBs will take considerably more time and cooperation. MWRA staff anticipate working with appropriate state and federal representatives to implement plan provisions.

A proposed schedule is attached. Although MWRA's goal is to adhere to this schedule as closely as possible, there are other agencies involved in some of the plan components and their cooperation and timeliness may affect the completion of some of these tasks.

POLLUTION PREVENTION PLAN SCHEDULE

TASK	TIMEFRAME*
2.1.1 PCB Source Identification	
Conduct literature review to identify additional sources of PCBs	30 days
Circulate information 1.A.1 to Industrial Coordinator for use in drafting permits	5 days
Continue current identification and sampling practices for industries where PCBs are expected	On-going
Obtain TRAC IS data on permitted industries required to sample for PCBs	1 day
Conduct special sampling for PCBs at permitted industries not already sampling for PCBs	120 days
Identify sewers with electrical equipment to identify sample points	On-going
Conduct sampling sewer clean-out from sewers with electrical equipment for PCBs	On-going
Identify areas with transformers	On-going
Conduct special sampling of runoff from areas with transformers	On-going
Conduct special sampling at facilities that conduct floor washing	90 days
Identify permitted facilities that conduct floor washing	60 days
Use 21E/MCP & MWRA databases to determine which industries are at risk for PCB drag-in	90 days
Use 21E/MCP & MWRA information, identify areas of PCB contamination and high sewer infiltration	180 days
Develop transmittal forms for DEP and the I/I group	10 days
2.1.2 PCB Control	
Develop PCB control plans for floor washing operations	60 days
Develop permit requirements to include floor washing plans	10 day
Revise permits to include floor washing plans, as appropriate	On-going
Continue prioritizing Trap Inspections	On-going
Continue reviewing and updating enforcement activities related to the discharge of PCBs	On-going
Develop outreach to industries and commercial facilities re: PCBs	30 days
Continue to work closely with OTA, EOEA, and other agencies to promote pollution prevention when possible	On-going
2.2 Spill Control	
Require all companies to certify that they are in compliance with respect to chemical storage and spill containment	On-going
Develop certification statement	1 days
Revise permit applications and NOIs to include certification	10 days
Confirm, during inspections, that facilities have adequate spill control	On-going
Develop a transmittal sheet for non-sewer related discharges	10 days
2.3 Continue to employ Pollution Prevention outreach through the Enforcement Response Plan	
Review existing enforcement documents and modify them to require P2 techniques	130 days
2.4 Establish Pollution Prevention Outreach for Homeowners	
Revise HHW brochure and translate into Spanish	180 days

Evaluate other forms of outreach to determine their effectiveness	180days
Conduct a Peer Review of draft material	60 days
Draft samples for review by regulatory agencies	30 days
Transfer information to WEB Page	60 days
Continue to work closely with OTA, EOEA, and other agencies to household hazardous waste reduction when possible	On-going

*Refers to schedule beginning on approval date by DEP and EPA

ATTACHMENT A

A Healthy Environment Starts at Home:
A guide to safely dealing with household hazardous waste

(Furnished upon request)

ATTACHMENT B

"Down the Drain" school curriculum

(Furnished upon request)