

MEMO

Date: August 31, 2009

To: Michelle Moustakas, EPA Region 9

From: Bill Hahn and Dianne Stewart, SAIC

**Subject: Sewage Collection System Inspection of the City of Emeryville, CA
(NPDES Permit No. CA0038792; RWQCB Order No. R2-2004-0011)**

On April 27, 28 and 29, 2009 EPA Region 9, RWQCB 2, and SAIC conducted an inspection of the City of Emeryville's sewage collection system. The inspection was done as part of a series of inspections of the EBMUD satellite systems in conjunction with the EBMUD Stipulated Order. The main purpose of the inspection was to identify ways in which the system could reduce I/I so as not to contribute to overflows at the EBMUD wet weather facilities. The inspection also evaluated the SSO response and correction programs.

The first eight of the program areas below follow the programs or activities identified in the EBMUD document titled *Technical Memorandum Subtask 4.6 – Community O&M Activities Impacting Peak Flows*. The first paragraph under each program area states an accepted industry practice for the program. This is followed by bullets that indicate what the City is doing within this program area.

Findings

1. Sewer Inspection Program

Sewer agencies should have an inspection program that includes planned periodic inspection of all sewer system assets using closed circuit television (CCTV) to determine their current condition at least every 10 years.

- The City plans to begin a cyclic inspection program that will involve CCTV of all pipes every four years. Since about 65% of pipes in the collection system have been replaced within the past 25 years, the City has not had a routine CCTV program. However, pipes are inspected before and after rehabilitation. Over the past 20 years, an estimated 75% of pipes have been inspected.
- The City has one force main; it is not inspected.

2. Condition-Based Sewer Rehabilitation

Sewer agencies should use condition-based sewer rehabilitation that includes use of inspection data to select sewer line segments for repair/rehabilitation/replacement to reduce infiltration.

- An SSES was completed in the 1980s; partial studies have been done since that time. The City began a flow monitoring program in 2005. The results of this will be used to update the Master Plan.

3. Inflow Source Identification and Elimination

Sewer agencies should have ongoing programs to identify sources of inflow (such as roof leaders) and take action to eliminate those sources.

- The City ordinance prohibits storm water discharges to the sanitary sewer. Inflow sources are investigated during pipe rehabilitation projects, using smoke testing and dye testing.

4. Chemical Root Control Program

Sewer agencies should consider using herbicides to stop/reduce the damage to pipes, joints, and structures that is caused by root intrusion.

- Emeryville does not use root control chemicals. No spills due to roots have been recorded in recent years.

5. Data Management (Computerized Maintenance Management System (CMMS))

Sewer agencies should collect O&M data by individual asset and analyze that data to identify appropriate maintenance and capital improvement actions.

- The City is developing an asset management plan.
- The City is developing a computerized geographic information system (GIS).

6. Rehabilitation/replacement of lower laterals

Sewer agencies should rehabilitate or replace lower laterals during sewer system capital improvement projects.

- The City has no responsibility for lower laterals. However, they replace lower laterals during rehabilitation of mains.

7. Private lateral testing/inspection and rehabilitation program

Sewer agencies should have a program to require mandatory testing of the private portion of private laterals to determine their condition. The program should include requirements to repair or rehabilitate laterals that fail the inspection.

- The City inspects lower laterals during pipe rehabilitation projects.
- There is no program to require homeowners to inspect laterals upon sale of the house.

8. Routine Flow Monitoring

Sewer agencies should conduct periodic flow monitoring to identify areas with infiltration/inflow contributions to the total flow.

- EBMUD and Emeryville have had flow meters in eight locations during 2005, 2006, and 2009. Data is input to a hydraulic model.
- The results of the metering will be used to develop the projects in the Master Plan.

9. SSOs Rates/Response/Correcting Causes

The City's NPDES permit contains requirements for controlling and containing SSOs and SSO reporting. State Water Board Order No. 2006-0003-DWQ, as amended, contains further requirements, including electronic reporting. The most recent and comprehensive SSO reporting requirements are contained in a May 1, 2008 Letter from the Regional Board.

- Because of the small collection system, the two spills recorded thus far in 2009 resulted in a spill rate of 12.8 spills per year per hundred miles of pipe. In 2007 and 2008, the spill rate was 6.4, as the City recorded one spill during each year.
- The City often uses CCTV to investigate the causes of SSOs.
- The City's "hotspot" cleaning list does not include the adjacent spills sites 63rd & Vallejo and 6291 Vallejo, where two spills have occurred due to blockages.

10. FOG Program

EBMUD implements the FOG control program for all of its satellite agencies.

- The City has reported only one spill due to FOG.
- The City does not know how many food service establishments (FSEs) are in its service area.
- Each of the satellites has adopted a FOG source control ordinance equivalent to the East Bay Municipal Utility District Wastewater Control Ordinance, Ordinance 311A-03. Apart from an oil and grease limit, the ordinance does not contain specific FOG program requirements.

- EBMUD has issued permits to about 3,000 FSEs in the service area. The FOG program focuses on grease removal device (GRD) installation and appropriate maintenance. The required GRD pumping frequency is once every three months, and this is only changed if the GRD is found to exceed the 25% rule during an inspection or if it is found to cause or contribute to a blockage or overflow in the collection system.
- EBMUD did not know how many FSEs have GRDs. GRDs are required for food handling facilities that meet any of the following criteria:
 - New construction
 - Remodels, additions, alterations or repairs valued at or greater than \$75,000
 - Has caused or contributed to a grease related collection system blockage resulting in maintenance requirements and/or a sewage spill.
- The frequency goal for FSE inspections is once during every permit period. Permits are issued for a five year period. Based on SAIC's experience, this inspection frequency is not likely to be adequate for most FSEs. Restaurant staff and even ownership turn over frequently. Business conditions also vary, leading to the potential for the grease loading to the interceptor to increase at times. These factors point to a need for more frequent inspections.
- EBMUD has a comprehensive public education program for residential grease control.