MEMO

Date: August 6, 2009
To: Michelle Moustakas, EPA Region 9
From: Bill Hahn and Dianne Stewart, SAIC

Subject: Sewage Collection System Inspection of the City of Piedmont, CA (NPDES Permit No. CA0038504; RWQCB Order No. R2-2004-0013)

On April 30, 2009 EPA Region 9, RWQCB 2, and SAIC conducted an inspection of the City of Piedmont'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.

- Since 2007, 37 percent of the collection system has been televised, and the remainder will be done by 2012.
- The City has no force mains.

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.

- A March 2009 condition assessment report on the parts of the system inspected to date found that 24 percent of the system was in "very poor" condition. Most of the pipes in very poor condition were either beginning to collapse or have collapsed. Many of the problems occurred in vitrified clay pipe. The City has an emergency program to rehabilitate the worst of the pipes.

- The City rehabilitated 47 percent of the system since 1995. There is a program to rehabilitate the remaining 53 percent by 2020.
- The March 2009 condition assessment provides the basis for the pipe rehabilitation program.

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. The ordinance will be enforced if sources of inflow are found during the sewer rehabilitation program or during routine maintenance.
- The City does not have a proactive ongoing program, such as smoke testing, to detect sources of inflow.

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.

- The City has a chemical root control program. During 2008, chemicals were applied to 10 miles of pipe (at a rate of twice per year).
- Manholes are also foamed if roots are present.

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 has a CMMS. It is not currently used to track spills.
- Sewer maps are available on 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 owns no part of the laterals.
- When mains are rehabilitated or replaced, the lower lateral is included in the project. The homeowner is informed at the time that it would be a good opportunity for them to replace the upper lateral, at a lower cost to the owner than would otherwise be possible.

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 does not have a private lateral inspection program. However, they are considering such a program.

8. Routine Flow Monitoring

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

- Flow is measured by EBMUD at seven locations. The City has no flow meters in place within the collection system.
- The City is relying on its 1986 model at present. They feel that little has changed in the community with regard to sewer flows since that time.

9. SSO 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.

- The City's spill rate (number of spills per 100 miles of pipe per year) for 2008 was 16, down from 26 in 2006. Even so, based on SAIC's experience with similar systems, this appears to be a high spill rate.
- Roots and debris typically cause the greatest number of spills.
- The rate of spills due to gravity main breaks appears unusually high. This is probably a result of the very poor condition of a significant number of pipes, as identified in the March 2009 condition assessment report.
- The City investigates the causes of SSOs using CCTV, since April 2008 when they purchased a new "push-cam" type camera.

10. FOG Program

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

- There are no restaurants located within the City of Piedmont.
- 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 food service establishments (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.