

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

**Staff Report
Fallbrook Creek Sewage Discharge
Fallbrook Public Utility District**

For

**Proposed Administrative Civil Liability
Contained in Complaint No. R9-2007-0101
Fallbrook Public Utility District**

Noncompliance with

**Order No. 96-04, *General Waste Discharge Requirements Prohibiting Sanitary
Sewer Overflows by Sewage Collection Agencies***

October 17, 2007

**by
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1.0 Introduction

This report provides a summary of factual and analytical evidence supporting an assessment of administrative of civil liability in the amount of \$29,300 against the Fallbrook Public Utility District (hereinafter FPUD) for violation of Order No. 96-04, *General Waste Discharge Requirements Prohibiting Sanitary Sewer Overflows by Sewage Collection Agencies*, as alleged in Complaint No. R9-2007-0101.

2.0 Background

The FPUD owns and operates approximately 76.6 miles of sewer lines, including a 6-inch diameter sewer pipe located near 526 Aviation Road, Fallbrook (Figure 1). From 10:00 p.m. on June 17, 2006 to 10:20 a.m. on June 20, 2006, the FPUD reported that a total of 146,625 gallons of untreated sewage were discharged from the 6-inch diameter sewer pipe, into Fallbrook Creek, which is tributary to Lake O'Neil and the Santa Margarita River.

As of June 2006, the FPUD sewage collection system has been regulated by Regional Board Order No. 96-04, *General Waste Discharge Requirements Prohibiting Sanitary Sewer Overflows by Sewage Collection Agencies*. Prohibition A.1 of Order No. 96-04 states that the discharge of sewage from any point upstream of a wastewater treatment plant is prohibited.

As a downstream user of water resources, the U.S. Marine Corps (Marines) Base at Camp Pendleton obtains over 5,000 acre-ft per year of its water supply from wells in the Santa Margarita Basin both above and below Lake O'Neill. Lake O'Neill is also used for Marine training activities involving full immersion, as well as for recreation.

The Water Quality Control Plan for the San Diego Region (9) designates the beneficial uses of Lake O'Neill and Santa Margarita River as including: municipal supply, contact and non-contact water recreation; warm and cold freshwater habitat; wildlife habitat; rare, threatened, or endangered species; and agricultural, industrial process, and industrial service supply.

Raw sewage includes high concentrations of bacteria, biochemical oxygen demand (BOD), nutrients; as well as concentrations of heavy metals and synthetic organics. At a minimum, any discharge of raw sewage to the surface waters could lead to increased bacteria and nutrient levels.

To further investigate the spill, the Regional Board issued an Investigative Order with a Notice of Violation (NOV), directing the FPUD to submit technical information, under authority of California Water Code (CWC) section 13267, about the circumstances of the June 17, 2006 sewage discharge and its impact to water quality. The FPUD sent a technical report in response to the Investigative Order, dated July 26, 2006. The report

contains supplemental information to support the original Sanitary Sewer Overflow Report.

3.0 Allegations

The FPUD violated Prohibition A.1 of Order No. 96-04 by discharging 146,625 gallons of sewage from June 17 to June 20, 2006, from a 6-inch diameter sewer pipe located near 526 Aviation Road, Fallbrook, into Fallbrook Creek, which is tributary to Lake O'Neill and the Santa Margarita River.

4.0 Determination of Administrative Civil Liability

An Administrative Civil Liability (ACL) is imposed pursuant to the procedures described in California Water Code (CWC) Section 13323. The procedures specify that the Regional Board issue a complaint to any person on whom the civil liability may be imposed. The complaint alleges the act or failure to act that constitutes a violation of law, the provision of law authorizing civil liability to be imposed and the proposed civil liability.

Persons or entities that discharge waste in violation of Waste Discharge Requirements are subject to civil liability pursuant to California Water Code Section 13350, either on a daily basis, not to exceed five thousand dollars (\$5,000) for each day the violation occurs, or on a per gallon basis, not to exceed ten dollars (\$10) for each gallon of waste discharged, but not both. The statutory maximum ACL amount for the June 2006 sewage spill therefore is \$1,466,250. The amount of the ACL is based upon consideration of the following factors:

4.1 Nature, Extent, & Gravity of the Sewage Discharge

The FPUD staff was notified via a phone call from a private citizen at 9:50 a.m. on Tuesday, June 20, 2006 of a sanitary sewer overflow on Aviation Road. The citizen reported that the sewage odors arose about two and a half days prior to June 20, 2006. Based on the report, the FPUD estimated that the discharge started at about 10:00 p.m. on Saturday, June 17, 2006. The FPUD reported that the overflow occurred from a manhole located at 526 Aviation Avenue, Fallbrook, and was caused by blockage due to grease and roots in a 6-inch diameter sewer pipe.

Upon receiving notification of the discharge, FPUD reported that the following corrective action was taken: flushing 270 feet of sewer pipe to clear the blockage, flushing the creek and storm drain with potable water, recovering 2,500 gallons of the overflow, and removing contaminated debris from Fallbrook Creek at Dussault Park (Figure 2). No other details were provided in the FPUD report.

Since there are no flow meters in the collection system, and only one influent meter at FPUD's wastewater treatment plant, the FPUD staff estimated the overflow volume by

multiplying the number of Established Dwelling Units (EDUs) utilizing the 6-inch diameter sewer pipe upstream of the overflow (230 EDUs) by the estimated duration of the overflow (2.5 days) and the District wide EDU water usage. The FPUD administrative code establishes a District wide EDU of 255 gallons per day per EDU. The calculation used was as follows:

255 gallons per day per EDU x 230 EDUs x 2.5 days = **146,625 gallons**

To compare actual flow in the 6-inch diameter sewer pipe to the estimated flow (using the method described above), the FPUD hired Teledyne Isco, Inc. to measure the flow in the 6-inch diameter sewer pipe for seven consecutive days using ultrasonic depth sensors and a velocity meter. Teledyne Isco monitored and measured the flow to the 6-inch diameter sewer pipe between Friday, July 14, 2006 and Thursday, July 20, 2006. The measured 2.5-day flow between Sunday, July 16, 2006 and Tuesday, July 18, 2006 was 158,418 gallons. This measured flow, between Sunday, July 16, 2006 and Tuesday, July 18, 2006, closely corresponds with the estimated flow, with a difference of less than 8%.

The FPUD staff collected samples from two points upstream of the overflow (Fallbrook Creek) and two points downstream of the overflow (Lake O'Neill) on June 20, 2006 and analyzed them for total coliform, fecal coliform, and Enterococcus. Samples were also collected downstream in Fallbrook Creek (on the Naval Weapons Station) and at Lake O'Neil on June 21 and 22, 2006, and analyzed for total coliform, fecal coliform, and Enterococcus. The samples collected upstream of the discharge (at the Naval Weapons Station) on June 20, 2006 exhibited higher levels of total coliform, fecal coliform, and Enterococcus (30,000; 1,400; and 6,015 MPN/ 100ml) than samples taken downstream (at Lake O'Neil) of the discharge (1075, 70, and 128 MPN/ 100ml).

4.2 Degree of Culpability

4.2.1 Prevention of Discharge

The FPUD could have implemented measures to prevent the discharge of untreated sewage. FPUD did not have the capability to monitor the flow or level in the manhole or the flow in the 6-inch diameter sewer pipe. The FPUD reported that, since May 2005, the "Smartcovers" monitoring system has been used in the FPUD sewage collection system to monitor water levels, intrusion, and acceleration in manholes. The FPUD did not install a "Smartcover unit" in the manhole at 526 Aviation Road prior to the sewage spill to monitor the water levels in this manhole. "Smartcovers" and/or flow monitors could have detected the backup in the manhole before it overflowed.

The FPUD performed a closed circuit television (CCTV) inspection on this section of sewer pipe on November 13, 2001. During the inspection, the FPUD noted that there was light grease but did not provide a rating assessment in the inspection report. The FPUD's Sewer Overflow Prevention Plan (SOPP) (reviewed on May 9, 2005) did not

include a CCTV inspection schedule for its sewage collection system. If a more frequent CCTV inspection schedule had been implemented, the build up grease and roots might have been detected before an overflow occurred.

The 6-inch diameter sewer pipe was reportedly cleaned on September 23, 2003, less than three years before the spill occurred. The SOPP states that 6-inch diameter sewer lines are cleaned on a 1 to 3 year frequency, with no guidelines specifying exactly what criteria are used to establish the frequency of cleaning sewer pipes. There was no rationale provided for why the lower frequency was chosen for the 6-inch sewer pipe on Aviation Road. If the more frequent cleaning schedule (once per year) had been implemented on the 6-inch diameter sewer pipe, the build up of grease and roots might have been detected and removed before an overflow occurred.

The FPUD established a Fats, Oils, and Grease (FOG) control program in 2004. The District also adopted a city ordinance whereby food service establishments in the area must comply with specific rules and regulations regarding the prevention of FOG reaching the sewer system, as well as complying with the oil and grease limit of 400 mg/L. There was no analysis provided to evaluate the effectiveness of the FOG control program and city ordinance have been in controlling the FOG in the sewage collection system.

The FPUD did not report the composition of sewage discharged into this section of sewer system, therefore it is difficult to assess whether there have been changes to the discharge since the pipe was last inspected or cleaned.

4.2.2 Quantity of Sewage Discharge

The FPUD could have implemented measures to reduce the amount of the discharge of untreated sewage. The discharge was not discovered for four calendar days since the FPUD did not have measures in place to monitor the liquid level in the manhole, or the flow in the 6-inch diameter sewer pipe. The FPUD had to rely on a member of the public to notify them of the spill from the sanitary sewer system. The FPUD reported that, since May 2005, the "Smartcover system" has been used in the FPUD sewage collection system to monitor water levels, intrusion, and acceleration in manholes. However, the FPUD did not install a "Smartcover unit" in the manhole at 526 Aviation Road prior to the sewage spill to monitor the water levels in this manhole. Smartcovers" and/or flow monitors could have resulted in earlier detection of the sewage backup in the manhole and thereby reducing the amount of untreated sewage spilled from the system.

4.2.3 Response to Discharge

The FPUD staff was notified, via a phone call from a private citizen at 9:50 a.m. on Tuesday, June 20, 2006, of a sanitary sewer overflow on Aviation Road. The FPUD

was proactive in making good-faith efforts to terminate the spill and successfully stopped the spill 30 minutes after receiving the notification.

The FPUD reports that upon receiving notification of the discharge, the following corrective action was taken: flushing 270 feet of sewer pipe to clear the blockage, flushing the creek and storm drain with potable water, recovering 2,500 gallons of the overflow, and removing contaminated debris from the creek. The FPUD did not provide any other details, regarding implementation of corrective actions, to the Regional Board.

The FPUD reports that they plan to install a "Smartcover unit" in the manhole at 526 Aviation Road and immediately downstream of this manhole. However, the FPUD did not provide the Regional Board with a schedule for the installation of the "Smartcovers."

The Report (dated July 26, 2006) did not include any changes/ improvements to the SOPP as a result of experiences gained from responding to the June 17, 2006 sewage spill.

4.3 Prior History of Violations

Between July 2003 and June 2004, the FPUD had nine sewage spills from its sewage collection system. Two of the nine spills entered surface waters and one entered a storm drain. Two of the nine spills were over 1,000 gallons. Roots were the main cause or partial cause of four of the spills, grease was the main cause or partial cause of three of the spills, and debris was the main cause or partial cause of two of the spills.

Between July 2004 and June 2005, FPUD had 12 sewage spills from its sewage collection system. Seven of the 12 spills entered surface waters. None of the spills were over 1,000 gallons. Roots were the main cause of three of the spills, grease was the main cause of two of the spills, and debris was the main cause of one of the spills.

Between July 2005 and June 2006, the FPUD had seven other sewage spills from its sewage collection system. One of the seven spills entered surface waters and two entered the storm drain system. One of the seven spills was above 1,000 gallons. The FPUD reported that roots as the main cause or partial cause of three of the spills, grease was reported as the main cause or partial cause of five of the spills, and debris was the reported as main cause of one of the spills.

From July 2006 through September 2007, the FPUD had three spills from its sewage collection system. Two of the spills reached surface waters. The FPUD reported that one of the spills was a result of grease and another was due to debris. One of these spills, estimated at 141,859 gallons, was reportedly caused by a water main leak, which undermined a sewer manhole and caused the collapse of the sewer pipe.

4.4 Economic Savings

At this time the Regional Board does not have information to determine the economic benefits or savings in connection with the spill described in this report.

4.5 Other Matters as Justice May Require

The Regional Board costs for investigating this spill incident and preparing the necessary enforcement orders and directives have been at least \$7,200 as of the date of this complaint.

5.0 Determination of Administrative Civil Liability

As indicated in Section 4.0 of this Staff Report, the statutory maximum ACL amount for the June 2006 sewage spill is \$1,466,250. The proposed civil liability in this matter is \$29,300. The liability is calculated at \$0.20 per gallon and is substantially less than the statutory maximum. The proposed civil liability is appropriate for this spill incident because:

- a. The FPUD could have implemented measures that would have more effectively and efficiently detected the spill.
- b. The FPUD could have performed more frequent CCTV inspections and cleaning of the sewer line.
- c. This discharge was a result of grease and roots and the majority of the past spills in the District were related to grease, roots, or blockage.
- d. The discharge had short term impact to water quality in the immediate area of the spill.
- e. The FPUD was proactive in making good-faith efforts in the termination and cleanup of the spill with minimal direction from the Regional Board.
- f. The FPUD performed adequate sampling to determine the nature and impact of the discharge.
- g. The proposed civil liability is sufficient to recover Regional Board costs and provides fair compensation for impacts to waters of the state.