United States Environmental Protection Agency
Pacific Southwest Region (Region 9)

Clean Water Act Compliance Evaluation Inspection
Homestead Sanitary District Wastewater Collection System
(Satellite Collection System to Sewerage Agency of Southern Marin WWTP NPDES No. CA 0037711)

Date of Inspection: August 9, 2007

Inspection team:	Ann Murphy, EPA Mark Briggs, Eastern Research Group, Inc.
Facility representatives:	Tom Roberts
Report prepared by:	Mark Briggs, Eastern Research Group, Inc.
Date prepared:	February 11, 2008

USEPA Region 9 SSO Inspection Report
Homestead Valley Sanitary District

Background

On 8/9/2007, USEPA Region 9 and its contractor inspected the Homestead Valley Sanitary District's (the "District") sanitary sewer system located in Mill Valley, California. Spills and sanitary sewer overflows (SSOs) from the sewer system are prohibited by the Clean Water Act. Additionally, spills and SSOs from the District's system are prohibited by Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, WQO No. 2006-0003. The District is an enrollee under the Statewide General Waste Discharge Requirements. Additionally, the Agency is also required to comply with the San Francisco Bay Regional Water Quality Control Board's July 2005 Section 13267 of the California Water Code letter that establishes earlier deadlines for submittal of Sewer System Management Plan (SSMP) components than the SSMP deadlines present in WQO No. 2006-003. As such, the Agency must comply with both the Section 13267 letter and WQO No. 2006-003 requirements. The primary purpose of the inspection was to document the history of sewage spills, determine the adequacy of the District's spill response and prevention programs, evaluate sewer maintenance activities, and assess the accuracy and reliability of the District's spill reporting procedures. The District's representative during the inspection was Mr. Tom Roberts. Ann Murphy with EPA Region 9 and Mark Briggs with Eastern Research Group conducted the inspection. The weather at the time of inspection was overcast.

The District owns and operates approximately 11 miles of gravity sewer pipe. The District has no pump stations or force mains. Sanitary sewage generated within the Homestead Valley Sanitary District gravity flows to the Sewage Agency of Southern Marin (SASM) wastewater treatment plant. According to Mr. Roberts, the District has approximately 1,000 sewer connections. The District also has one restaurant discharging to the collection system: Kentucky Fried Chicken. Mr. Roberts was unaware of the wastewater flow from Homestead Valley to the SASM wastewater treatment plant since SASM bills for treatment based on the number of residential connections rather than flow. Mr. Roberts did state however that dry-weather flows to the SASM wastewater treatment plant were approximately 2.5 MGD, but could climb as high as 25 MGD during wet weather indicating significant inflow and infiltration (I&I) was entering some or all of the collection systems discharging to the SASM wastewater treatment plant. No I&I modeling studies have been conducted by Homestead Valley to limit flow to SASM; however, smoke testing was conducted in the early 1980s to determine if roof drains had been connected to the sanitary sewers. A review of the district's budget for 2007/2008 (Attachment 2) shows no money directly allocated for I&I study and control, though it is unclear as to the use of the "rehabilitation" funds (some of which may be to address I&I). Since Homestead Valley is billed for treatment by SASM based on residential connections rather than flow, it has no or limited incentive to address I&I within their collection system.

The District currently and historically has had an un-written agreement with Roto-Rooter for system maintenance. This agreement is for 'on-call' sewer maintenance, blockage, and spill response. According to Mr. Roberts, if an individual calls his office to report an overflow or blockage, the individual is directed to call Roto-Rooter, which investigates and corrects the problem. Roto-Rooter then provides documentation to Mr. Roberts regarding the volume of the

spill, the cause of the spill, and the corrective actions taken to mitigate the spill, along with an invoice for its services.

During the inspection, EPA tried to contact Roto-Rooter by telephone to discuss their procedures for responding to spill response. The individual at Roto-Rooter responsible for service to the Homestead Valley Sanitary District was not available to comment, and has not returned the EPA's phone call (see Finding No. 4 below). One of the primary concerns with the Roto-Rooter and Homestead Valley un-written agreement is the potential lack of responsiveness by Roto-Rooter. Without a written agreement between Homestead Valley and Roto-Rooter, no method exists to ensure if, and when, Roto-Rooter may respond to a reported spill. The average distance between Mill Valley and Roto-Rooter in Navato is approximately 18 miles; therefore, it is unlikely that a response time would be less than 25 minutes. Several factors could lengthen the time considerably, such as traffic on U.S. 101, large-scale wet weather events requiring additional demands on Roto-Rooter staff, etc.

Another concern with the un-written agreement between Homestead Valley and Roto-Rooter is the SSO documentation developed by Roto-Router (see Finding No. 1 below). The District's representative was not aware of the method used by Roto-Router to estimate spill volumes and with limited documentation, could be under estimated. Homestead Valley should consider developing a written contractual agreement between the District and Rooter which specifically states maximum allowable SSO response times, clean up procedures, and methods for estimating and reporting spill volumes.

Under section 301(a) of the Clean Water Act (CWA), it is unlawful for any person to discharge any pollutant from a point source into "waters of the United States" except in compliance with an NPDES permit. The District does not have an NPDES permit that authorizes the discharge of sewage spills. Therefore, any sewage spill from the District's collection system that flows to "waters of the United States" constitutes a violation of the Clean Water Act.

Attached to this inspection report are the following documents obtained during the inspection:

- Homestead Valley Sanitary District Annual Report of Sanitary Sewer Overflows for Calendar Year 2006 (Attachment 1)

- Homestead Valley Sanitary District Budget for Fiscal Year 2007-08 (Attachment 2)

Findings

1. **Occurrence of spills.** Discharges to waters of the United States without a permit are prohibited under Section 301(a) of the Clean Water Act. Additionally, as per Part C.1 Prohibitions of the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, WQO No. 2006-0003, any spill that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited. The Homestead Valley Sanitary District reported six sewage spills in calendar year 2006 to the California Regional Water Quality Control Board on its annual report. Table 1 provides information regarding each spill obtained from the annual report. According to the report, three spills were a result of root intrusion, while the cause of the other three spills was unknown. A review of the San Francisco Bay Water Board - Sanitary Sewer Overflow (SSO) eReporting Program Database Records (from Dec.1, 2004 to May 2, 2007) did not include any information from the Homestead Valley Sanitary District; therefore, Table 1 was prepared from the annual report provided during the inspection.

Table 1. Homestead Valley Sanitary District Reported SSOs for 2006

Incident date	Report Date	Volume of Spill Reported	Volume Reaching Waters of the State
Unknown	March 22, 2007	475 gallons	475 gallons
Dec. 12, 2006	March 22, 2007	275 gallons	0 gallons[1]
Nov. 28, 2006	March 22, 2007	0[2] gallons	0 gallons
Nov. 21, 2006	March 22, 2007	0[2] gallons	0 gallons
Sept. 16, 2006	March 22, 2007	45 gallons	0 gallons[3]
Aug. 21, 2006	March 22, 2007	450 gallons	0 gallons[4]

1. Roto-Rooter reported 275 gallons drained to the street
2. Roto-Rooter reported no overflow but was reported to Regional Water Quality Control Board as <10
3. Roto-Rooter report indicated flow to "gutter"
4. Roto-Rooter reported flow to "hill side"

Based on 11 miles of gravity sewers in the District, the spill rate in 2006 was 55 spills/100 miles/yr.

A review of the spill information provided to the California Regional Water Quality Control Board shows the spill volume estimated for two events was incorrectly calculated. For the event that occurred on the unknown date in Table 1, the spill was reported at 08:00am and flow was not stopped until 11:30am, an elapsed time of 210 minutes. According to the Roto-Rooter Spill Reporting Form in Attachment 1, the flow rate was estimated at 5 gallons per minute (gpm) and entered a storm drain. Based on an elapsed time of 210 minutes and a flow of 5 gpm, the estimated spill volume should have been reported as 1,050 gallons, not 475 gallons. The spill volume reported for the December 12, 2006 event also appears to have been calculated incorrectly. The spill was reported at 9:00am and was not stopped until 10:15am, and was flowing at a rate of approximately 5 gpm according to the Roto-Rooter Spill Reporting Form. This spill volume should have been reported as 375 gallons, not 275 gallons. In addition, the spill which occurred on September 16, 2006 flowed into a gutter according to Roto Rooter's Spill Response Reporting Form;

however, the District did not indicate the spill reached waters of the United States in their annual report to the California Regional Water Quality Control Board.

2. **Failure to maintain adequate records for reported and unreported spills.** As per Part B.5 of the Monitoring and Reporting Program No. 2006-0003-DWQ, the District is required to maintain records of all SSOs. At the time of the inspection, Mr. Roberts was not able to provide any documentation for spills prior to 2006. Mr. Roberts stated the files were available at the SASM wastewater treatment plant. A review of the District files by USEPA Region 9 and their contractor at the SASM wastewater treatment plant could not locate any information on spills prior to 2006.

3. **Failure to report spills.** State law requires sewage collection agencies to report large sewage spills (greater than 1,000 gallons) or spills that reach waters to the State of California, Office of Emergency Services (OES). Additional reporting requirements have been established by the Regional and State Water Boards. In 2004, the San Francisco Bay Regional Water Quality Control Board issued a 13267 letter that required collection agencies to electronically report spills to the Board and to submit annual spill reports. Beginning in May 2007, the Regional Board reporting requirements were superseded by the Statewide General Waste Discharge Requirement for Sanitary Sewer Systems (WQO No. 2006-0003) that requires electronic spill reporting to the State Board. This inspection included an examination of spill data reported to the Regional and State Boards. As per Part A of the Monitoring and Reporting Program No. 2006-0003-DWQ, all Category 1 spills (greater than 1,000 gallons) must be reported immediately and all Category 2 overflows must be reported to the On-Line SSO Database within 30-days after the end of the calendar month in which the SSO occurs. As shown in Table 1 above, the District had three spills in 2006 exceeding 100 gallons, but failed to report these to the On-Line Database as required by the Board's 13267 letter. Instead, according to Mr. Roberts, all spills associated with the District were not reported until the annual sanitary sewer overflow report dated March 22, 2007.

4. **Failure to contain and mitigate the impacts of an SSO**. As per Part D.3 of the State Water Resources Control Board Order No. 2006-0003-DWQ, in the event of a spill, the enrollee shall take all feasible steps to contain and mitigate the impacts of an SSO. The District does not have the equipment or training to respond to and contain spills and mitigate the impacts. Instead, the District relies on a verbal agreement with Roto-Rooter to respond to spills and correct problems which may have caused the spill. The average distance between Mill Valley and Roto-Rooter in Navato is approximately 18 miles; therefore, it is unlikely that a response time would be less than 25 minutes. Several factors could lengthen the time considerably, such as traffic on U.S. 101, large-scale wet weather events requiring additional demands on Roto-Rooter staff, etc. The response time for Roto-Rooter varies but typically ranges between half and one hour. There is no written or verbal agreement between the Homestead Valley Sanitary District and Roto-Rooter regarding the maximum response time for SSOs. In addition, Mr. Roberts was not aware of any written operating procedure implemented by Roto-Rooter to mitigate the impacts of an SSO. Subsequently, USEPA Region 9's contractor attempted to contact Mr. Clyde Klyse at Roto-Rooter's office by telephone (415-388-2740) during the Alto Sanitary District inspection to discuss Roto-Rooter's operating procedure to mitigate spills. The

individual answering the telephone at Roto-Rooter referred the contractor to speak with Mindy, who was unavailable. The USEPA Region 9 contractor provided his cell phone number and requested that Mindy return his call to discuss Roto-Rooter's operating procedure for mitigating spills. As of October, 2007, Mindy had not returned the call to the USEPA Region 9 contractor.

5. **Inadequate procedures for estimating spill volumes**. As per Part A of the State Water Resources Control Board Order No. 2006-0003-DWQ, the volume of a spill or overflow must be estimated and reported. As described in item 1 above, there appear to be a several problems associated with the District's and Roto-Rooter's methodology for estimating and reporting spill volumes. For example, the District and Roto-Rooter estimate spill volume based on the time Roto-Rooter arrived on site, not when the overflow was first identified and reported. In addition, Mr. Roberts was not aware of Roto-Rooter's method to estimate flow rate. Since Roto-Rooter has not returned a call to the USEPA Region 9 contractor, there is currently no method of evaluating Roto-Rooter's method of estimating flows.

Summary

Based on the information gathered during the inspection, it appears the management and maintenance of the District's sanitary sewer collection system is primarily reactionary. The District has no equipment or staff available to contain or mitigate SSOs, and relies on Roto-Rooter to correct problems as they arise. According to Mr. Roberts, Roto-Rooter should be cleaning and repairing "hot-spot" areas within the system as part of routine maintenance as time allows; however, USEPA Region 9's inspection team could find no evidence that on-going routine maintenance was being performed. According to Mr. Roberts, routine maintenance would include both cleaning and, if necessary, TV inspection of the "hot-spot" areas. Mr. Roberts did not maintain a list of hot-spot areas for the Homestead Valley system so the Region 9 inspection team was not able to determine if any routine maintenance was being performed. In addition, since no written contractual agreement has been prepared between the District and Roto-Rooter defining on-going maintenance requirements for the collection system, it is likely that routine maintenance is being overlooked.

The District currently does not have a method to estimate either base-flow or the wet-weather flows being discharged to the SASM wastewater treatment plant. The District is billed by the SASM wastewater treatment plant based on the number of connections (EDUs) rather than flow. When asked about dry weather and wet-weather flows, Mr. Roberts stated that flow to the SASM wastewater treatment plant could increase by a factor of 10, from approximately 2.5 million gallons per day (MGD) to 25 MGD. It is possible that flows from the District may also be increasing by relatively the same proportion. Mr. Roberts said that smoke testing was conducted "many years ago" and that significant infiltration and intrusion (I&I) was suspected; the District historically has not focused on preventing I&I in the collection system, and because of the way the District is billed, it has no incentive to do so. According to Mr. Roberts, the District has embarked on a program for replacing and rehabilitating old sewers which are likely a source of some I&I into the system, however this sewer replacement program is not a direct result of high I&I.

Attachment 1

HOMESTEAD VALLEY SANITARY DISTRICT ANNUAL REPORT OF SANITARY SEWER OVERFLOWS FOR CALENDAR YEAR 2006

HOMESTEAD VALLEY SANITARY DISTRICT
P.O. BOX 149, MILL VALLEY, CA 94942 (415) 388-4796

03/22/07

Bruce H. Wolfe, Executive Officer
California Regional Water Quality Control Board, San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612
ATTN: Michael Chee

Dear Mr. Wolfe,

Subject: Annual Report of Sanitary Sewer System Overflows for Calendar Year 2006

The purpose of this letter is to report the Sanitary Sewer System Overflows (SSOs) that occurred in the **Homestead Valley Sanitary District's** sanitary sewer system during the period January 1 through December 31, 2006. This report is submitted pursuant to the requirements included in the San Francisco Bay Regional Water Quality Control Board Letter, New Requirements for Reporting Sanitary Sewer Overflows, dated November 15, 2004.

Number and Size of SSOs

The total number of SSOs for the reporting period was 6. All of the SSOs were associated with gravity sewers. There were 2 SSOs associated with dry weather conditions and 4 SSOs associated with wet weather conditions. The sizes of SSOs are summarized as shown on Table 1.

Table 1. Number of SSOs

Size of SSO (gallons)	Number	Percent of Total by Number
Greater than or equal to 1,000	0	0
From 100 to 999	3	50
From 10 to 99	1	17
Less than 10 [can include in line above]	2	33
[Public portion of lateral (if applicable)]		
Total	**6**	**100**

The volume of spills contained and returned to the sewer system, as well as the volume reaching waters of the State is shown in Table 2.

Table 2. Volume of SSOs

	Volume (gallons)	Percent of Total by Volume
Total volume contained and returned to sewer system for treatment	0	0
Total volume reaching waters of the State	475	38
Total volume not contained but not reaching waters of the State (everything else)	770	62
Total	**1,245**	100

Three of the SSOs exceeded 100 gallons in volume. This report does not include SSOs that occurred from private sewer service laterals within the **Homestead Valley Sanitary District**'s jurisdiction that were caused by conditions in privately-owned laterals or on private property. The property owners are responsible for the condition and the operation of those sewer service laterals.

Cause of SSOs

The predominant cause[s] of SSOs during the period of this report was stoppages caused by tree root intrusion. The distribution of SSOs by cause is shown on Table 3.

Table 3. Causes of SSOs

Cause of SSO	Number	Percent of Total
Blockage:		
Roots	3	50
Grease		
Debris		
Debris from Laterals		
Vandalism		
Animal Carcass		
Construction Debris		
Multiple Causes		
Subtotal for Blockage		
Infrastructure Failure		
Inflow & Infiltration		
Electrical Power Failure		
Flow Capacity Deficiency		
Natural Disaster		
Bypass		
Cause Unknown	3	50
Total	**6**	**100**

Location of SSOs

Locations of SSOs are district manholes and rodholes, in paved street areas and in unpaved easements.

Status of Development of Sewer System Management Plan (SSMP)

This district has completed its SSMP which is on file for examination as required.

Other Information

Homestead Valley S.D. is a small district with approximately 1000 residential units. The sewer system was constructed in the late '40s and early '50s using V.C.P. with mortar joints. Over the years, due to shifting ground conditions and tree root intrusion, maintenance of the old pipes has become an ever-increasing problem, and over the past several years we have embarked on a program for replacing and rehabilitating the old sewers, beginning with the worst ones. We are currently completing the fourth contract for the rehabilitation of the sewers in our system.

Certification

I certify under penalty of law that this document was prepared by me and the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Tom Roberts
Manager

Homestead

Roto Rooter
Sanitary Stoppages

Spill Reporting Form

1) **Stoppage Location:** Homestead & Loring
2) **Date & Time spill reported:** 12-12-06 9-
3) **Arrival Time:** 9:20 **Time Overflow Stopped:** 10:15
4) **Notified District:** (Yes) / No
5) **Method used to clear stoppage:** big machine 4" blades
6) **Cause of stoppage:** unknown
7) **Estimated gallons per minute:** 5 gal p.m.
8) **Where did spill drain to:** street
9) **Personnel who responded to the stoppage:** Rob Murray

DISTRICT CONTACT:

Overflow = 5 gpm x 55 min = 275 gal.

HOMESTEAD SANT

Roto Rooter
Sanitary Stoppages

Spill Reporting Form

1) **Stoppage Location:** 764 GREEN HILL RD M.V.

2) **Date & Time spill reported:** 11-28-06 3:00

3) **Arrival Time:** 3:00 **Time Overflow Stopped:** NEVER OVER FLOWED

4) **Notified District:** (Yes) / No

5) **Method used to clear stoppage:** B.G MACHINE

6) **Cause of stoppage:** ROOTS.

7) **Estimated gallons per minute:** NO OVERFLOW

8) **Where did spill drain to:** NO SPILL

9) **Personnel who responded to the stoppage:** ADAM & KEN O

DISTRICT CONTACT:
TOM ROBERTS

Overflow = 0 gal

Roto Rooter
Sanitary Stoppages

Spill Reporting Form

1) Stoppage Location: 599 Ethel / Intersection Reed Blvd.

2) Date & Time spill reported: 830 AM 11-21-06

3) Arrival Time: 900 AM Time Overflow Stopped: N/A

4) Notified District: Yes / No

5) Method used to clear stoppage: _____

6) Cause of stoppage: no stoppage found

7) Estimated gallons per minute: N/A

8) Where did spill drain to: N/A

9) Personnel who responded to the stoppage: mike Q.

DISTRICT CONTACT:

Overflow = 0 gal.

Homestead

Roto Rooter
Sanitary Stoppages

Spill Reporting Form

1) **Stoppage Location:** 504 PIXIE TRAIL RD

2) **Date & Time spill reported:** 8:00 AM

3) **Arrival Time:** 8:15 AM **Time Overflow Stopped:** 11:30 AM

4) **Notified District: Yes / No**

5) **Method used to clear stoppage:** BIG MACHINE

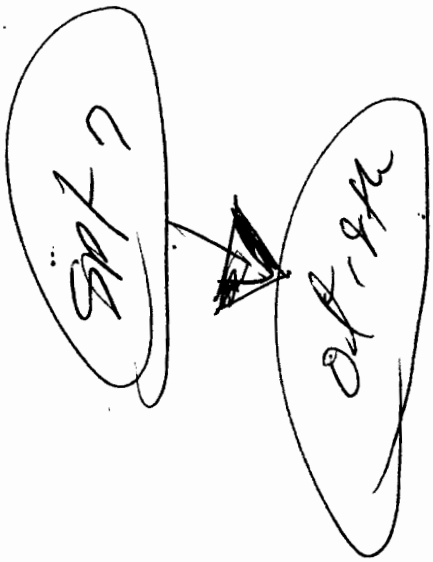
6) **Cause of stoppage:** GRIT / ROOTS

7) **Estimated gallons per minute:** 5 GALLONS

8) **Where did spill drain to:** STORM DRAIN

9) **Personnel who responded to the stoppage:** ADAM G & KENO
ROTO-ROOTER

DISTRICT CONTACT:



Overflow = 3 hr / 15 min
= 95 min x 5 = 475 gal

Roto Rooter
Sanitary Stoppages

Spill Reporting Form

1) Stoppage Location: 5504 Pixie Trail MV

2) Date & Time spill reported: 9-16-6 5:00

3) Arrival Time: 5:30 Time Overflow Stopped: 7:00

4) Notified District: Yes / No

5) Method used to clear stoppage: 4" blades

6) Cause of stoppage: Grease & roots

7) Estimated gallons per minute: 1/2

8) Where did spill drain to: gutter

9) Personnel who responded to the stoppage: David

DISTRICT CONTACT:

Overflow
1½ hrs = 90 min
x 0.5 gpm = 45 gal

Roto Rooter
Sanitary Stoppages

Spill Reporting Form

1) **Stoppage Location:** 316 TODD WAY

2) **Date & Time spill reported:** 12:00 p.m. 4-21-06

3) **Arrival Time:** 12:00 **Time Overflow Stopped:** 1:15

4) **Notified District:** ~~Yes~~ / No

5) **Method used to clear stoppage:** 4" & 6" Blades

6) **Cause of stoppage:** Roots

7) **Estimated gallons per minute:** less then 5 gpm.

8) **Where did spill drain to:** Hill side

9) **Personnel who responded to the stoppage:** ROB M. & Joey

DISTRICT CONTACT:

Overflow = 1½ hr x 5gpm

= 90 x 5 = 450 gal

Attachment 2

HOMESTEAD VALLEY SANITARY DISTRICT BUDGET FOR FISCAL YEAR 2007-08

HOMESTEAD VALLEY SANITARY DISTRICT
BUDGET FOR FISCAL 2007-08

		BUDGET AMOUNT
A.	INCOME	
1.	Sewer Service Charges: 1073 x 350.00 =	375,600
2.	Connection Fees	5,000
3.	Interest on Reserve Account	15,000
4.	MVRS Franchise Fee	15,000
5.	Tax Reimbursements, ERAF	140,000
	TOTAL INCOME	**550,600**
	Transfer from Reserve Fund to Balance	18,000
	BUDGET AMOUNT	**568,600**
B	EXPENSES	
1.	Sewage Treatment (SASM Assessment)	164,900
2.	Roto Rooter Services	
	a) Emergency Repairs	30,000
	b) Maintenance Program	30,000
3.	Rehabilitation Program	275,000
	a) Engineering Services	30,000
4.	Professional Services	
	a) Audit Fee	7,400
	b) County Fees for Servicing Accounts	3,500
5.	Board's Stipends & Expenses, Manager's Salary	
	a) Directors' Stipends: [(100 x 2) + (75 x 3)] x 12 =	5,100
	b) Outside Meetings, Travel & Conferences	1,000
	c) Manager's Salary: 1,350.00 x 12 =	16,200
6.	Insurance (CSRMA) & State Comp)	3,000
7.	Memberships (CSDA, MCSDA, USA, LAFCO)	1,500
8.	Office Expenses (Petty Cash, Telephone, P.O. Box)	1,000
	TOTAL EXPENSES	**568,600**

JUNE 26, 2007