

2018 Sewer System Management Plan Audit Report

Inland Empire Brine Line



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Santa Ana Watershed Project Authority
December 2018

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Summary

Order No. 2006-0003 was adopted by the State Water Resources Control Board establishing General Waste Discharge Requirements for Sanitary Sewer Systems. As part of the SWRCB Order, all publicly owned sanitary sewer collection systems with more than one (1) mile of sewer pipe were required to develop a Sewer System Management Plan.

The Santa Ana Watershed Project Authority adopted the Sewer System Management Plan (SSMP) on April 21, 2009 and requires re-certification every 5 years and audits every 2 years. The SSMP was recertified by the SAWPA Commission on April 15, 2014.

Audits were conducted in the years 2010, 2013, 2016.

A detailed review of the 11 SSMP programs found that they are considered to be in compliance. However, there were certain areas of improvement identified. These specific recommendations apply to Section 4 (Operation and Maintenance Program).

Introduction

The SAWPA Commission adopted the Sewer System Management Plan on 2008, in compliance with the State Water Resources Control Board Order No. 2006-0003. The SWRCB Order requires that the owner of a wastewater collection system with more than one (1) mile of pipeline establishes a Sewer System Management Plan as a way to reduce the number and severity of Sanitary Sewer Overflows (SSOs). The SWRCB Order also requires recertification of the SSMP once every 5 years and a bi-annual audit.

Subsequent SWRCB Orders include No. 2008-0002-EXEC which rectified early notification deficiencies and Order No. 2013-0058-EXEC, which amended the Order by adding a Category 3 SSO.

The three spill categories are summarized below:

Category 1 – Discharges of untreated or partially treated wastewater of any volume resulting from SAWPA's Brine Line failure or flow condition that:

- a. Reach surface water and/or reach a drainage channel tributary to a surface water; or
- b. Reach a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basins (e.g. infiltration pit, percolation pond).

Category 2 – Discharges of untreated or partially treated wastewater of 1,000 gallons or greater resulting from SAWPA's Brine Line failure or flow condition that do not reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.

Category 3 – All other discharges of sewage resulting from a failure in the Brine Line sewer system.

Private Lateral Sewage Discharge (PLSD) reporting is voluntary.

The SAWPA SSMP was adopted by the SAWPA Commission on April 21, 2009. The SSMP includes eleven (11) Sections as summarized below:

Section	Title
1	Goals
2	Organization
3	Legal Authority
4	Operation and Maintenance Program
5	Design and Performance Standards
6	Overflow Emergency Response Plan
7	FOG (fats, oils, and grease) Control Plan
8	System Evaluation and Capacity Assurance Plan
9	Monitoring, Measurement and Program Modifications
10	SSMP Program Audits
11	Communication Program

The bi-annual audit is focused on the 11 sections listed, as required by the Order.

The 2010 audit was performed by an outside consultant. The 2013 audit was performed by SAWPA staff, based on the EPA CMOM questionnaire, and the 2016 audit was performed by SAWPA staff, based on the SWRCB pre-inspection questionnaire.

Sewer System Management Plan Update

1. Goals

The goal of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system. This will help reduce and prevent SSOs, as well as mitigate any SSOs that do occur.

SAWPA maintains the following strategic goals as the owner and operator of the Brine Line:

1. Facilitate water supply through groundwater desalting and protecting watershed resources
2. Manage and operate the Brine Line system in an environmentally and sustainable way
3. Provide adequate capacity for existing and projected future customers
4. Continue to improve Brine Line system planning and operations

Immediate goals for the Brine Line include:

1. Track all SSO's by size, cause, and location in GIS.
2. Reduce number and volume of SSO's in the Brine Line.

3. Update and train on the Overflow Emergency Response Plan yearly.
4. Review the Pretreatment Ordinance and successors yearly for compliance with WDR updates.
5. Legally secure all of the easements required for the operation and maintenance of the Brine Line.
6. Clean 100% of known Fats, Oils, and Grease (FOG) problem areas according to a schedule that maintains Brine Line capacity.
7. Identify new dischargers that may contribute FOG and ensure implementation of FOG control devices and/or measures.
8. Place new FOG problem areas created by new dischargers or discovered by system reconnaissance on the known problem areas list.
9. Utilize standard drawings and specifications for all improvements on the Brine Line, and create new standards where necessary.
10. Complete development Operations and Maintenance (O&M) Standard Operating Procedures (SOP's) that have been identified.
11. Clean Problem Areas list as specified in SAWPA's line cleaning program.
12. Clean laterals as specified in SAWPA's line cleaning program.
13. Clean siphons as specified in SAWPA's line cleaning program.
14. Perform Brine Line Reconnaissance at specified locations in order to determine system cleaning requirements.
15. Perform cleaning as required.
16. Update Capital Replacement Program yearly as projects are completed.
17. Complete Brine Line-Specific Training Protocols that have been identified.
18. Have all Brine Line O&M staff complete Brine Line-Specific Training Protocols yearly.
19. Update hydraulic model with existing and potential future users yearly.
20. Measure compliance with stated goals and make necessary modifications and adjustments on a yearly basis.
21. Focus on preventive maintenance, including but not limited to, regular inspection of blow-off valves, air release valves, and maintenance access structures.
22. Establish a GIS-based system to keep track of all inspections (GIS asset management).
23. Establish priority indices for structures inspected (based on NASSCO guidelines for sewer lines)
24. Create a Brine Line file and photograph database.
25. Establish procedures to follow-up with DigAlert requests.

All of these goals identified when the SSMP was developed have been met. The goals identified are adequate. No recommendations are made regarding Section 1. Goals.

2. Organization

The SSMP must identify: (a) The name of the responsible or authorized representative as described in Section J of this State Water Resources Control Board Waste Discharge Requirements. (b) The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation; and (c) The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Board, and/or State Office of Emergency Services (OES)).

SAWPA updates the organizational chart once per year. The Overflow Emergency Response Plan (OERP) [See Section 6] describes the chain of command during a response to a Sewer System Overflow (SSO), as well as contact information for SAWPA staff and information for all the Brine Line dischargers.

Review of Section 2 of the SSMP determines that the information provided is adequate.

3. Legal Authority

SAWPA must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to: (a) Prevent illicit discharges into its sanitary sewer system (examples may include I/I, stormwater, chemical dumping, unauthorized debris and cut roots, etc.); (b) Require that sewers and connections be properly designed and constructed; (c) Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency; (d) Limit the discharge of fats, oils, and grease and other debris that may cause blockages, and (e) Enforce any violation of its sewer ordinances.

SAWPA, through Ordinance No. 8, has the authority to control discharges to the Inland Empire Brine Line. Additionally, SAWPA and the Member Agencies, including discharging agencies such as the Jurupa Community Services District, and Yucaipa Valley Water District, have signed multi-jurisdictional pretreatment agreements.

No recommendations are made at this time to make changes to the Legal Authority section of the SSMP.

4. Operation and Maintenance Program

The SSMP must include those elements listed below that are appropriate and applicable to SAWPA's system: (a) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities; (b) Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders; (c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency.

The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan; (d) Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and (e) Provide equipment and replacement part inventories, including identification of critical replacement parts.

SAWPA uses a variety of spreadsheets and a GIS based system as the primary tools to keep track of scheduling, completion, and planning on maintenance activities.

Some activities are recurring on an annual basis, such as air release and vacuum valve maintenance, valve exercising, and maintenance access structure inspection.

The GIS based system was developed by SAWPA staff and has several modules:

Record Drawings – Gives access to as-built plans to field staff to assist identifying Brine Line assets and pipeline location in response to USA DigAlert notifications.

DigAlerts – Provides a mechanism to keep track of all USA DigAlert notifications received, allows input from field staff and the ability to attach photographs. This module also has a search feature which allows the retrieval of completed reports.

Inspections – Creates records for inspections of Brine Line maintenance access structures (MAS), air release and vacuum valves (AVs), blow-off (BO) valves, and reaches (4, 4A, 4B, 4D, 4E, and 5).

Open/Close – Keeps track of the status (open/close) of sealed maintenance access structures.

Service Requests – Helps create service request for activities required.

Equipment – Keeps track of inventory kept at various locations (SAWPA vehicles, Brine Line Operations Center, WMWD yard).

Easements – Keeps track of existing easements, right-of-way agreements, license agreements for the Brine Line.

SSOs – Provides a summary of Brine Line SSOs, by category.

Facility Status – Provides an at-a-glance summary of all Brine Line activity.

The main recommendation is to improve the search capability of service requests and update the SSOs summary based on the data submitted to the State CIWQS database.

5. Design and Performance Standards

(a) Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and (b) Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

There has been no change to SAWPA Design and Performance Standards since they were originally developed. All new design standards are incorporated to the appropriate section of the SSMP.

No recommendation is made at this point to modify SAWPA Design and Performance Standards.

6. Overflow Emergency Response Plan

SAWPA shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following: (a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner; (b) A program to ensure an appropriate response to all overflows; (c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP. All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification; (d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained; (e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and (f) A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

The Overflow Emergency Response Plan (OERP) is updated annually to reflect any changes in procedures, contact information for various agencies, incorporate lessons learned if there is a spill, and vendor contact information.

Annual training is provided to SAWPA staff responsible for responding to a spill and SAWPA member agencies.

No recommendations are made regarding the Overflow Emergency Response Plan at this time.

7. Fats, Oils, and Grease Control Plan

SAWPA shall evaluate its service area to determine whether a FOG control program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source

control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate: (a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG; (b) A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area; (c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG; (d) Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements; (e) Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance; (f) An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section; and (g) Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (f) above.

SAWPA does not have a FOG issue on the Brine Line.

SAWPA relies on the Member Agencies to implement any FOG programs required to regulate dischargers from individual dischargers.

SAWPA will continue collecting and analyzing control authority samples to ensure that fats, oils, and grease do not present a risk to the Brine Line.

No recommendations are made at this time to make any changes to SAWPA's FOG Control Plan.

8. System Evaluation and Capacity Assurance Plan

SAWPA shall prepare and implement a capital improvement plan (CIP) that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event.

A system evaluation and capacity analysis was performed recently as a result of a request from the City of Beaumont to transfer capacity from Reach 4B of the Brine Line to Reach 4E/4D/4A. SAWPA found that the additional discharge from the City of Beaumont will require sealing 5 maintenance access structures along Euclid Avenue to prevent any surcharged conditions.

No recommendations are made at this point beyond sealing 5 maintenance access structures along Euclid prior to the discharge by the City of Beaumont.

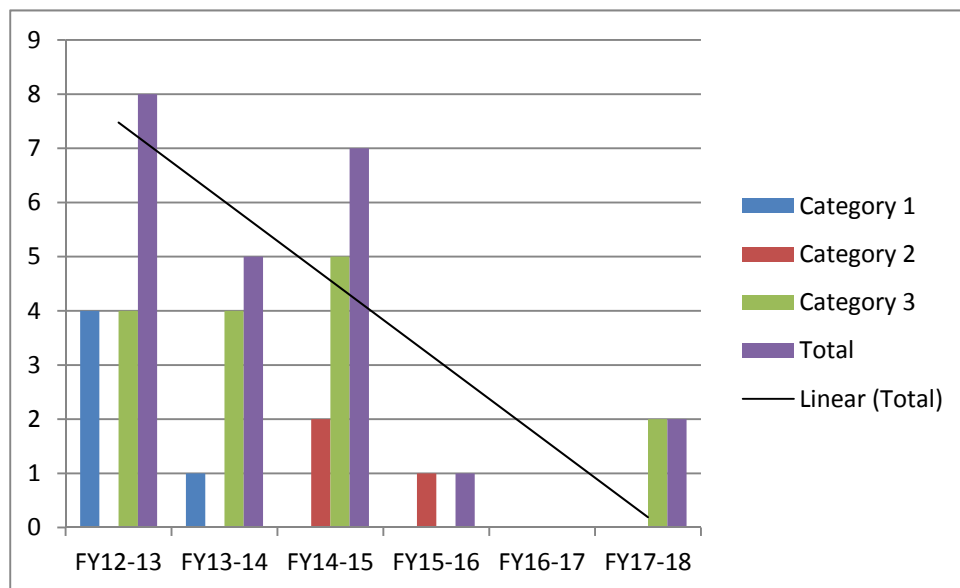
9. Monitoring, Measurement, and Program Modifications

SAWPA shall: (a) Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities; (b) Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP; (c) Assess the success of the preventative maintenance program; (d) Update program elements, as appropriate, based on monitoring or performance evaluations; and (e) Identify and illustrate SSO trends, including: frequency, location, and volume.

Review the SSMP to determine if it complies with the SWRCB Order by maintaining relevant information that can be used to establish and prioritize appropriate SSMP activities; monitoring the implementation and, where appropriate, measure the effectiveness of each element of the SSMP; assess the success of the preventative maintenance program; update program elements, as appropriate based on monitoring and performance evaluations; and, identifying and illustrating SSO trends, including frequencies, locations and volume.

SSMP activities are established and prioritized based on results from field observations and inspections. SSOs have been greatly reduced, especially at air release and vacuum valves as a result of more frequent maintenance.

Summary and trend of Brine Line SSOs:



No recommendations are made for changes to the monitoring, measurement, and program modification section.

10. SSMP Program Audits

As part of the SSMP, SAWPA shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and SAWPA's compliance with the SSMP requirements identified in this subsection D.13 of the Waste Discharge Requirements, including identification of any deficiencies in the SSMP and steps to correct them.

The SSMP requires an audit once every 2 years, a report must be prepared and kept on file. The audits need to focus on the effectiveness of the SSMP and identify any deficiencies and steps to correct them.

Since the last audit in 2016, there have been two (2) category 3 SSOs in the Brine Line. The two SSOs originated in Reach 5 air release and vacuum valves. The volumes were small and less than 50 gallons.

No changes are recommended in the audit approach and reporting.

11. Communications Program

SAWPA shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to SAWPA as the program is developed and implemented.

The SSMP is available to the public through the SAWPA Webpage. Additionally, the SSMP is shared with the SAWPA Member Agencies.

No recommendations are made to the SAWPA Communications Program at this point.

Conclusions/Summary of Recommendations

After review of the SSMP and its effectiveness in reducing SSOs, the main recommendations made as part of this audit relate to the Operation and Maintenance program:

1. Improve the search capability of service request in the Brine Line GIS Tools, and
2. Update the SSO summary based on data submitted to the State CIWQS database.

Per the SWRCB requirements, the SSMP will require update and recertification by the SAWPA Commission during 2019.