City of Chico Sanitary Sewer Overflow Response Plan

(Appendix D of the City of Chico Sewer System Management Plan)

Updated July 2019

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List of Abbreviations and Acronyms

Checklist Form	Checklist for Plugged Sewer Lines and Overflow Form
City	City of Chico
CIWQS	California Integrated Water Quality System
EHD	County of Butte Environmental Health Division
EPA	Environmental Protection Agency
GWDR	General Waste Discharge Requirement
LPA	Liability Third Party Administrator
LRO	Legally Responsible Officer
MRP	Monitoring and Reporting Program
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
OES	Office of Emergency Services (formerly the Emergency Management Agency)
O&M	Operations and Maintenance
RWQCB	Regional Water Quality Control Board
SCADA	Supervisory Control and Data Acquisition
SOP	Standard Operating Procedure
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow
SSORP	Sanitary Sewer Overflow Response Plan
SWRCB	State Water Resources Control Board
WPCP	Water Pollution Control Plant

Chapter 1 Introduction

The purpose of the Sanitary Sewer Overflow Response Plan (SSORP) is to support an orderly and effective response to Sanitary Sewer Overflows (SSOs). The SSORP provides guidelines for responding to, cleaning up, and reporting SSOs that may occur within the collection system service area.

1.1 Regulatory Requirements

The section summarizes the regulatory requirements for the SSORP.

1.1.1 GWDR Requirements

The Statewide General Waste Discharge Requirements (GWDR) for Sanitary Sewer Systems was adopted by the State Water Resources Control Board of California (SWRCB) on May 2, 2006. The goal of the GWDR is to provide a consistent statewide approach for reducing SSOs. The GWDR outlines requirements for all publicly owned sanitary sewer collection systems in California with more than one mile of sewer pipe. Per the GWDR, the collection system agency 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 the regulatory agencies are informed of all SSOs in a timely manner;

(b) A program to ensure 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 Monitoring and Reporting Program (MRP). All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board Waste Discharge Requirements or National Pollutant Discharge Elimination System (NPDES) permit requirements. The Sewer System Management Plan (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, crowd control and other necessary response activities; and

(f) A program to ensure that all reasonable steps are taken to contain untreated wastewater and prevent discharge of untreated wastewater to waters of the United States and 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.

1.1.2 NPDES Requirements

The City of Chico (City) in January 2010, was reissued an NPDES permit for the City of Chico Water Pollution Control Plant (WPCP), Butte County Order No. R5-2010-0019 (Order) by the Central Valley Regional Water Quality Control Board (RWQCB). In the permit, Section VI.C.5.e. Collection System states that the City shall be subject to the GWDR and any future revisions. The permit also verifies that the City has applied for and has been approved for coverage under the GWDR for the operation of its wastewater collection system.

1.2 Goals

The purpose of this SSORP is to provide City of Chico (City) personnel with established guidelines for responding to sewer spills which may occur within the collection system service area. The goals with respect to responding to SSOs are:

- Respond quickly to minimize the volume of the SSO;
- Eliminate the cause of the SSO;
- Contain the spilled wastewater to the extent feasible;
- Minimize public contact with the spilled wastewater;
- Mitigate the impact of the SSO; and
- Meet the regulatory reporting requirements.

1.3 Definitions

Sanitary Sewer System: Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the publicly owned treatment facility.

Sanitary Sewer Overflow (SSO): An SSO includes any overflow or discharge of any quantity of partially treated or untreated wastewater from the sanitary sewer system at any point upstream from the wastewater treatment plant, including backup into buildings. Temporary storage and conveyance facilities under City control (such as vaults, temporary piping, construction trenches, wet wells, impoundment, tanks, etc.) are considered to be part of the sanitary sewer system, and discharges to these temporary storage facilities are not considered to be SSOs.

- **Category 1 SSO:** Includes all discharges of untreated or partially treated wastewater resulting from a failure or flow condition in the sanitary sewer system that results in either a
  - Discharge to a drainage channel and/or surface water; or
  - Discharge to a Municipal Separate Storm Sewer System (MS4) and was not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly.
- **Category 2 SSO:** Includes all discharges of untreated or partially treated wastewater of 1,000 gallons of greater resulting from a failure or flow condition in the sanitary sewer system that do not reach surface water, a drainage channel, or a MS4 unless the entire volume is fully captured and disposed of properly.
- **Category 3 SSO:** All other discharges of sewage resulting from a failure in the sanitary sewer system.
- **Private Lateral Sewage Discharges:** Sewage discharges that are caused by blockages or other problems within a privately owned lateral.

Chapter 2 Response to Notification of Spill

The City of Chico has adopted service call/overflow response procedures requiring immediate response to minimize or eliminate an overflow. The Overflow Response Standard Operational Procedure (SOP), included as Appendix A, aids staff for prompt and responsible SSO response.

When a notification of an SSO is received, it should be clearly communicated to the caller who will respond, the estimated time of arrival, and what areas will need to be accessed. The information provided by the caller should be verified before dispatching a field crew.

2.1 Public Observation of SSO

Public observation is the most common way that the City is notified of blockages and spills. Contact information for reporting sewer spills and backups are in the phone book and on the website: http://www.chico.ca.us/ . The main telephone number for the Public Works Department, Operations and Maintenance (O&M) Division is 530-894-4200.

2.1.1 Normal Working Hours

The regular working hours for the O&M Division are Monday through Friday from 6:30 a.m. to 3:00 p.m., except holidays. When a report of a sewer spill or backup is made, City staff route the call directly to the Underground Field Supervisor, who takes the information from the caller, and fills out the first section of the Checklist for Plugged Sewer Lines and Overflow Form (Checklist Form) found in Appendix D.

The Underground Field Supervisor verbally communicates the information to the field crew (do not leave a voicemail) along with any information collected on the Checklist Form.

2.1.2 After Normal Working Hours

After working hours, calls are automatically routed to the Chico Police dispatcher who takes essential information and then notifies the appropriate responder, who responds to the incident. The Chico Police dispatcher can be reached at 530-895-4911 or 911 in emergency situations.

2.2 Receipt of SCADA or Autodialer Alarms

The City's pump stations are monitored using SCADA or autodialers. Alarm conditions are monitored by City Water Pollution Control Plant (WPCP) staff. When a SCADA or autodialer alarm is received, a call out to a Wastewater Treatment Standby Operator is made to initiate a response. Autodialers will escalate calls until answered up to the Chico Police dispatcher. The Chico Police dispatcher will notify the Standby Operator and/or the Wastewater Treatment Manager of the alarm condition.

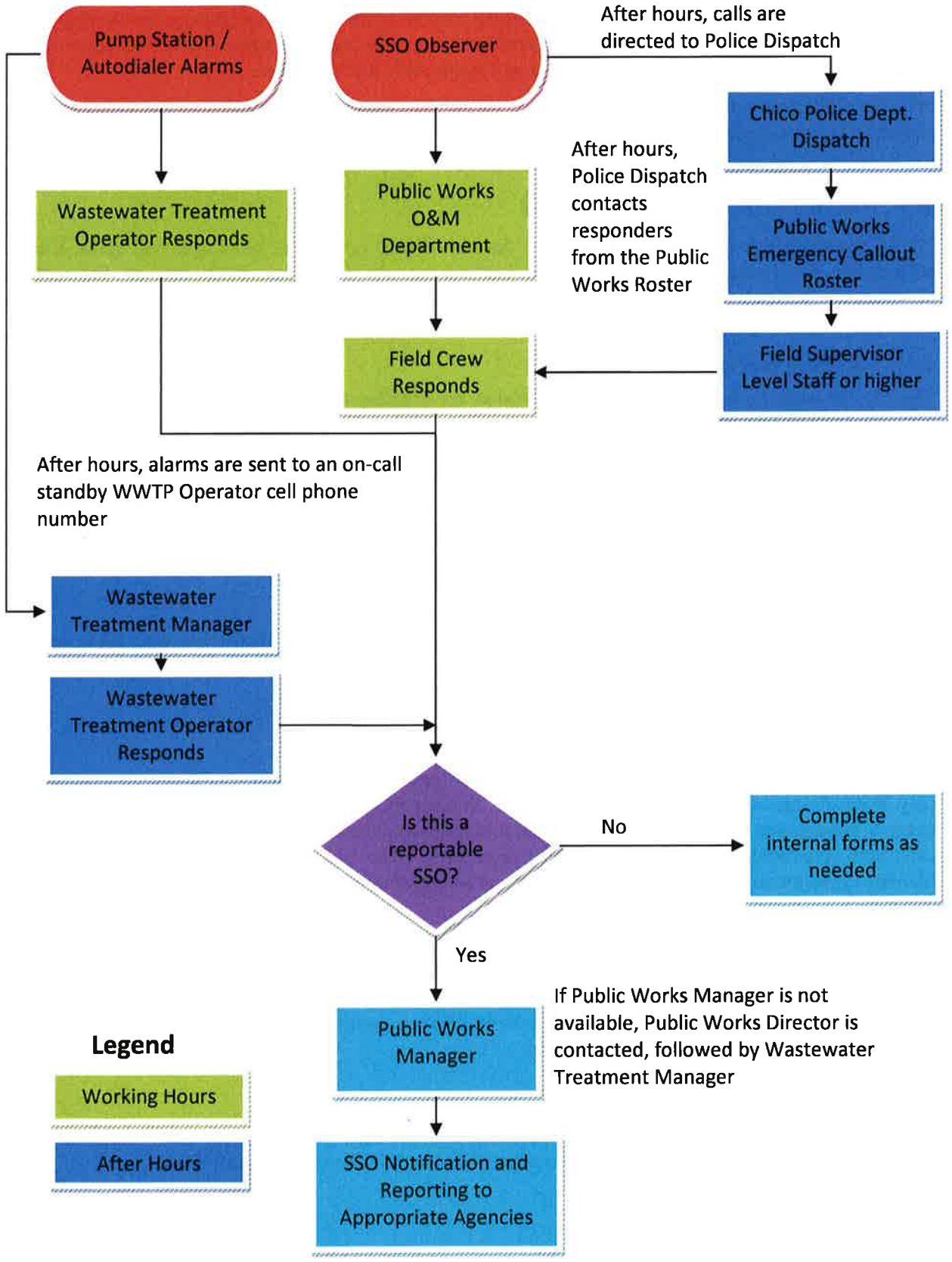
2.3 Staff Observation

City field crews and contractors perform periodic work on its sewer system facilities. Any problems noted with the sewer system facilities are reported to the Underground Field Supervisor, who, in turn, responds to emergency situations. Corrections for non-emergency conditions are noted in the City's Repair Package as a priority or non-priority condition.

2.4 Response Flow Chart

Sewer service calls and pump station alarms are considered high priority events that demand a prompt response. The notification and response procedure flow chart is shown on **Figure 2-1**.

Figure 2-1: Notification and Response Flow Chart



2.5 Roles for Responding to SSOs

Currently, the following positions are responsible for responding to SSOs:

- Responder to SSO from a Gravity Sewer: Public Safety or SSO Underground Response Crew or Public Works Manager
- Responder to Pump Station or Forcemain Failure: Wastewater Treatment Operator or Wastewater Treatment Manager
- Risk Management: Liability Third Party Administrator (LPA)

The contact information for those currently holding the positions named above are shown in Appendix C - City Responders Contact List.

Chapter 3 SSO Response Procedures

This section describes the procedures for responding to an SSO from the time that the responders are dispatched through containment of the spill.

3.1 Customer Relations Practices

As a representative of the City, you will occasionally have to deal with an irate homeowner. A sewer backup is a stressful event and even a reasonable homeowner can become irate if it is perceived that staff members as being indifferent, uncaring, unresponsive, and/or incompetent.

Although sometimes difficult, effective management of a sewage backup situation is critical. If it is not managed well, the situation can end up in a costly, prolonged process with the homeowner. The homeowner should feel assured that the City is responsive and the homeowner's best interest is a top priority.

It is important for employees to communicate effectively with customers, especially in sewage backup situations. How we communicate – on the phone, in writing, or in person – is how we are perceived. Good communication with the homeowner results in greater confidence in our ability to address the problem satisfactorily, less chance of having the homeowner prolong the claims process, and less chance of the customer exaggerating the damage done on the property.

Here are a few communication tips:

- Give the homeowner ample time to explain the situation or to vent. Show interest in what the homeowner has to say, no matter how many times you have heard it before, or how well you understand the problem.
- As soon as possible, let the customer know that you will determine if the source of the sewer backup is in the sewer main and, if it is, will have it corrected as quickly as you can.
- Acknowledge the homeowner's concerns. For example, if the homeowner seems angry or worried about property damage, say something like, "I understand that you're concerned about the possible damage to your property, but a professional cleanup crew can restore the area."
- Express understanding and empathy for any inconveniences caused by the incident, but do not admit fault. If it is determined that the City is at fault, the property owner has the right to file a claim for any reasonable repairs or losses resulting from the incident.
- As much as possible, keep the homeowner informed on what is being done and will be done to correct the problem.
- Keep focused on getting the job done in a very professional manner. Don't wander from the problem with too much unnecessary small talk with the homeowner.
- Don't find fault or lay blame on anyone.

3.2 Responder Priorities

The responder's priorities are:

- To follow safe work practices.
- To respond promptly with the appropriate equipment.
- To evaluate the cause of spill and determine responsibility.

- To restore the flow as soon as possible.
- To contain the spill whenever feasible.
- To minimize public access to and/or contact with the spilled sewage.
- To promptly notify the Public Works Manager in the event of a major SSO.
    - **If the Public Works Manager cannot be reached, contact the Public Works Director, and if also unreachable, the Wastewater Treatment Manager.**
- To return the spilled sewage to the sewer system.
- To restore the area to its original condition (or as close as possible).

3.3 Safety

The responder is responsible for following safety procedures at all times. Special safety precautions must be observed when performing sewer work. Special consideration should be given to following all local traffic, confined space, and safety procedures.

3.4 Initial Response

All sewer system calls require a response to the reported location of the event in an attempt to minimize or eliminate an overflow. The responder must respond as soon as feasible after initial notification of the spill.

The responder should determine appropriate response measures based on the circumstances and information provided by the caller (e.g. weather and traffic conditions, small backup vs. sewage flowing on the ground, etc.). If additional help is needed, contact other employees, contractors, and/or equipment suppliers. Contact information for City personnel is available in the Appendix C - City Responders Contact List. A comprehensive external Emergency Contact List can be found in Appendix B. Based on available information, the responder should determine if a combination sewer cleaning truck (e.g. Vactor or VacCon) and/or a spill response vehicle is needed.

Upon arrival at the site, the responder should:

- Note arrival time at spill site (include in Checklist Form in Appendix D).
- Verify the existence of a sewer system spill or backup.
- Field verify the address and nearest cross street, making sure it's part of the City's sanitary sewer system.
- Identify and clearly assess the affected area and extent of spill.
- Comply with all safety precautions (traffic, confined space, etc.)
- Contact caller, if time permits.
- Notify the Public Works Manager if:
    - The spill appears to be large, in a sensitive area, or there is doubt regarding the extent, impact, or how to proceed; or
    - Additional help is needed for line cleaning or repair, containment, recovery, sampling, and/or site cleanup.
    - **If the Public Works Manager cannot be reached, contact the Public Works Director, and if also unreachable, the Wastewater Treatment Manager.**
- If the spill is a Category 1, a Category 2, or in a sensitive area, it is recommended to document conditions upon arrival with photographs (given that the activity does not interfere with SSO recovery and clean up).

3.5 Restore Flow

Upon arrival at the location of a spill into a house or a building, the responder should evaluate and determine if the spill was caused by a blockage in the lateral or in the City-owned sewer main, caused either by a backup in the sewer main line or nearby O&M or construction activities.

- If a blockage is found in a property owner's lateral, it should be clearly communicated that it is not the City's responsibility to work on a private lateral. Recommend that property owner or tenant contact a qualified plumbing contractor to remove the blockage.
- If a backup in the main line is found to have caused the SSO in a house or building, relieve the blockage in the main line and see Section 4.6 for Claims and Restoration Firm information.

The responder should attempt to remove the blockage from the system and restore flow to the area. Using the appropriate cleaning tools, the field crew should set up downstream of the blockage and hydro-clean upstream from a clear maintenance hole. The flows should be observed to ensure that the blockage does not recur downstream.

If the blockage cannot be cleared within a reasonable time, or sewer requires construction repairs to restore flow, then initiate containment and/or bypass pumping. If assistance is required, immediately contact other employees, contractors, and equipment suppliers. A Staff Contact List can be found in Appendix C -City Responders Contact List, and an external Emergency Contact List is in Appendix B.

3.5.1 Pump Station or Forcemain Facilities

The responder to a potential pump station or forcemain failure should:

- Determine whether flow can be restored within a reasonable time.
- If it appears that flow cannot be restored within a reasonable time or if the conveyance system facility requires construction and/or repairs, then employ contingency plans covering containment, bypass pumping, portable electric generators, contractual assistance, etc.

If assistance is required, immediately contact other employees, contractors, and equipment suppliers as required. The contact information can be found in Appendix B - External Emergency Contact List and Appendix C - City Responders Contact List.

3.6 Contain the Spill

The responder should attempt to contain as much of the spilled sewage as possible using the following steps:

- Determine the immediate destination of the overflowing sewage.
- Plug storm drains using available equipment and materials to contain the spill, whenever appropriate. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Contain/direct the spilled sewage using dike/dam, sandbags, or other containment materials on hand.
- Pump around the blockage/pipe failure/pump station or vacuum flow from upstream of the blockage and dispose of downstream of the blockage to prevent further overflow.
- When an SSO occurs inside of a house or building, the property owner should be instructed to follow these guidelines:
    - Keep people and pets away from the affected area.
    - Place towels, rags, blankets, etc between areas that have been affected and areas that have not been affected.
    - Do not remove any contaminated items

  - Turn off the HVAC system
  - Move any uncontaminated property away from the overflow area.
- NOTE: If an SSO reaches a water body, see Section 4.3 for Water Quality Sampling requirements.

3.7 SSO Notification Signage and Restrict Public Access

Barriers shall be installed to prevent the public from having contact with the sewage if possible. Signs should be posted to keep vehicles and pedestrians away from contact with spilled sewage. Do not remove the signs until directed by the County Environmental Health Division. A sample warning sign is included as Appendix E. Additional information about posting signs during major SSOs is included in Chapter 5 of this document.

Chapter 4 Recovery and Clean Up

The recovery and clean up phase begins when the flow has been restored and the spilled sewage has been contained to the extent possible.

4.1 Recovery of Spilled Sewage

Vacuum up or pump the spilled sewage and discharge it back into the sanitary sewer system.

4.2 Clean Up and Disinfection

Clean up and disinfection procedures should be implemented to reduce the potential for human health issues and adverse environmental impacts that are associated with an SSO event. The procedures described are for dry weather conditions and should be modified as required for wet weather conditions. Where clean up is required inside a private property (e.g. back up into house), the Risk Management Office will arrange for an outside contractor to perform clean up.

4.2.1 Private Properties

Spills inside houses or buildings should be cleaned up by a professional cleaning company. Contact information for professional cleaning companies can be found in Appendix B. Claims should be submitted based on information in Section 4.6 of this document.

4.2.2 Hard Surface Areas

- Collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes and brooms.
- Take reasonable steps to contain and vacuum up the wastewater.
- Disinfect all areas that were contaminated from the overflow using the disinfectant solution of household bleach diluted 10:1 with water. Apply minimal amounts of the disinfectant solution using a hand sprayer. Document the volume and application method of disinfectant that was employed.
- Allow area to dry. Repeat the process if additional cleaning is required.

4.2.3 Landscaped and Unimproved Natural Vegetation

- Collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes and brooms.
- Allow the area to dry. Repeat the process if additional cleaning is required.

4.2.4 Natural Waterways

Clean up should proceed quickly in order to minimize SSO impacts to any creeks, gullies, or natural waterways. Any water that is used in the cleanup process should be de-chlorinated prior to use.

4.2.5 Wet Weather Modifications

Omit flushing and sampling during heavy storm events with heavy runoff where flushing is not required and sampling would not provide meaningful results.

4.3 Water Quality Sampling

Water quality sampling and testing is required whenever spilled sewage enters a water body to determine the extent and impact of the SSO. The following guidelines must be followed:

- The responder should notify the City's Industrial Waste Inspectors or WPCP Laboratory Technicians to collect samples. Samples should be collected as soon as possible after the discovery of the SSO event.
- For spills less than 1,000 gallons, at a minimum water quality samples should be collected at the discharge point, 100 feet upstream, and 100 feet downstream.
- If a spill is more than 1,000 gallons, additional sites should be sampled; recommendations should be given according to County Environmental Health Division (EHD) requirements.
- If a spill reaches a large water body, the water quality samples should be collected near the point of entry of the spilled sewage and every 100 feet along the shore of stationary water bodies or as directed by County EHD.

The procedure for water quality sampling is included in Appendix F - Water Quality Monitoring Program Plan.

4.4 Estimate the Volume of Spilled Sewage

Use the methods outlined in Appendix G to estimate the volume of the spilled sewage. Wherever possible, document the estimate using photos of the SSO site before and during the recovery operation.

4.5 Follow Up Activities

If sewage has reached the storm drain system, the combination sewer jet vacuum cleaning truck should be used to vacuum/pump out the catch basin and any other portion of the storm drain that may contain sewage.

In the event that an overflow occurs at night, the location should be reinspected first thing the following day. The operator should look for any signs of sewage solids and sewage-related material that may warrant additional cleanup activities.

Furthermore, City staff meet for a SSO event debriefing activity after Category 1 or Category 2 spills. These SSO events provide opportunities to evaluate response and reporting procedures. After these SSO events, all of the participants, from the person who received the call to the last person to leave the site, may meet to review the procedures used and to discuss what worked and where improvements could be made in responding to and mitigating future SSO events. The results of SSO event debriefings will be recorded and tracked to ensure the action items are completed.

4.6 Claims for Backups into a Building

If sewage has backed up into a house or building the responder should:

- Contact the City's Liability Third Party Administrator (LPA)
- Wait for LPA to arrive at site

Once on site, LPA should continue response including:

- Gather information, and fill out the Sewer Backup Summary Report (Appendix H).
- Contact Restoration Firm
    - If the Restoration Firm cannot be reached, contact the City's Risk Management Office who will provide direction on how to proceed.
- Notify the Public Works Manager of the incident.

    - If the Public Works Manager cannot be reached, contact the Public Works Director, and if also unreachable, the Wastewater Treatment Manager.
- Wait for Restoration Firm to arrive.
- Forward incident reports and related documents to the Risk Management Office.

For claims and for potential claims, follow City policies.

Chapter 5 Public Notification

5.1 County Environmental Health Division Requirements

In the event of an SSO, the City will contact the County Environmental Health Division (EHD) for direction on public notification requirements. The County EHD Officer shall determine if:

1) a field investigation of the discharge site and potentially affected areas is required and;
2) public warning signs should be posted to notify the public of the risk of contamination.

City staff shall post, monitor, and remove public warning signs as directed by the County EHD Officer. An example warning sign is included in Appendix E.

5.2 Point of Contact

The City Manager shall be responsible for public notification via the media, if necessary.

Chapter 6 SSO Documentation and Reporting

All SSOs should be thoroughly investigated and documented for use in managing the sewer system and meeting established reporting requirements.

6.1 Internal SSO Documentation

The responder will complete a work order and the Checklist Form (Appendix D). The responder will follow the procedures and complete the Sewer Backup Summary Report (Appendix H) if an SSO has occurred in a residence or building.

The Public Works Manager, or their designee, will prepare a file for each individual SSO. The file should include the following information:

- Initial service call information
- Checklist for Plugged Sewer Line and Checklist Form (Appendix D)
- Copies of the California Integrated Water Quality System (CIWQS) report forms
- Volume estimation, including method and calculations
- Photographs, if applicable
- Water quality sampling and test results, if applicable

6.2 External SSO Documentation Requirements

The GWDR requires that individual SSO records be maintained by the City for a minimum of **five years** and shall be made available for review by the SWRCB or RWQCB during an onsite inspection. Records shall be retained for all SSOs, including but not limited to the following when applicable:

- General records to document compliance with the GWDR, including any required records generated by sanitary sewer system contractors and work orders, work completed, and any other maintenance records from the previous five years which are associated with responses and investigations of system problems related to SSOs;
- Records for each SSO event, including but not limited to:
    - Complaint records documenting how the City responded to all notifications of possible or actual SSOs, both during and after business hours, including complaints that do not result in SSOs. Each complaint record shall, at a minimum, include the following information:
        - Date, time, and method of notification.
        - Date and time the complainant or informant first noticed the SSO.
        - Narrative description of the complaint, including any information the caller can provide regarding whether or not the complainant or informant reporting the potential SSO knows if the SSO has reached surface waters, drainage channels or storm drains.
        - Follow-up return contact information for complainant or informant for each complaint received, if not reported anonymously.
        - Final resolution of the complaint.
- Records documenting steps and/or remedial actions undertaken by the City, using all available information, to comply with Section D.7. of the GWDR;
- Records documenting how all estimate(s) of volume(s) discharged and, if applicable, volume(s) recovered were calculated; and

- Electronic monitoring records relied upon for documenting SSO events and/or estimating the SSO volume discharged, including, but not limited to records from Supervisory Control and Data Acquisition (SCADA) systems, alarm system(s), and flow monitoring device(s) or other instrument(s) used to estimate wastewater levels, flow rates and/or volumes.

SSO records are kept at the Public Works Department Administrative Office (411 Main Street, Chico).

6.3 Internal SSO Reporting Procedure

6.3.1 Category 1 and 2 SSOs

The responder will immediately notify the Public Works Manager (if the Public Works Manager cannot be reached, contact the Public Works Director, and if also unreachable, the Wastewater Treatment Manager). The responder will fill out the Checklist Form (Appendix D) and turn it in to the Public Works Director, who is the Legally Responsible Official (LRO). The Public Works Manager or their designee will meet with field crew at the site of the SSO event to assess the situation and to document the conditions with photos. In the event of a very large overflow or an overflow in a sensitive area, the Public Works Director may notify the City Manager.

6.3.2 Category 3 SSO

The responder will fill out the Checklist Form (Appendix D) and turn it in to the LRO.

6.4 External SSO Reporting Procedure

6.4.1 SWRCB Requirements (CIWQS)

The CIWQS electronic reporting system should be used for reporting SSO information to the SWRCB. A flow chart showing the external reporting response requirements based on the type of SSO is included as **Figure 6-1** and a check list with contact information is included as **Figure 6-2**

Category 1 and Category 2 SSOs

For Category 1 SSOs greater than or equal to 1,000 gallons:

Within two hours of being aware of the SSO, the Public Works Manager, or their designee, will:

- Notify Office of Emergency Services (OES, formerly the Emergency Management Agency) and obtain spill number for use in other reports; and
- Notify the County of Butte Environmental Health Division.

For Category 1 and Category 2 SSOs:

Within 3 business days of being aware of the SSO, the Public Works Director, or their designee, will submit the draft SSO report using CIWQS.

Within 15 calendar days of the conclusion of SSO response and remediation, the Public Works Director, or their designee, will certify the final report using CIWQS.

The Public Works Director (who is the City's LRO), or their designee, will update the certified report as new or changed information becomes available.

Category 3 SSOs

Within 30 calendar days after the end of the calendar month in which the SSO occurs, the Public Works Manager, or their designee, will submit an electronic report using CIWQS. The Public Works Director, or their designee, will certify the report. The report will include the information to meet the GWDR requirements.

Monthly No Spill Certification

If there are no SSOs during the calendar month, the Public Works Manager, or their designee, will submit a report that the City did not have any SSOs, **within 30 calendar days after the end of each calendar month**. The Public Works Director, or their designee, will certify the report.

Amended SSO Reports

The Public Works Manager, or their designee, may update the certified report as new or changed as information becomes available. Reports can only be amended **within 120 calendar days after SSO end date**. The Public Works Director, or their designee, will certify the amended report.

SSO Technical Report

The City will submit an SSO Technical Report in the CIWQS Online SSO Database **within 45 calendar days of the SSO end date for any SSO in which 50,000 gallons or greater are spilled to surface waters**. This report will include the following:

Causes and Circumstances of the SSO:

a) Complete and detailed explanation of how and when the SSO was discovered.
b) Diagram showing the SSO failure point, appearance point(s), and final destination(s).
c) Detailed description of the methodology employed and available data used to calculate the
d) Volume of the SSO and, if applicable, the SSO volume recovered.
e) Detailed description of the cause(s) of the SSO.
f) Copies of original field crew records used to document the SSO.
g) Historical maintenance records for the failure location.

City's Response to SSO:

a) Chronological narrative description of all actions taken by enrollee to terminate the spill.
b) Explanation of how the City's SSOREP was implemented to respond to and mitigate the SSO.
c) Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed.

Water Quality Monitoring:

a) Description of all water quality sampling activities conducted including analytical results and evaluation of the results.
b) Detailed location map illustrating all water quality sampling points.

Private Lateral Sewage Discharges

Reporting of private lateral sewage discharges (PLSD) is voluntary. The City does not report private lateral SSOs to CIWQS.

CIWQS Not Available

In the event that CIWQS is not available, the Public Works Manager, or their designee, will fax or email all required information to the RWQCB office in accordance with the time schedules identified above. In such event, the City will submit the appropriate reports using CIWQS as soon as practical when the database becomes available. The Central Valley RWQCB (Region 5) Redding Office fax number is (530) 224-4857.

Figure 6-1: External Reporting Requirement Flow Chart

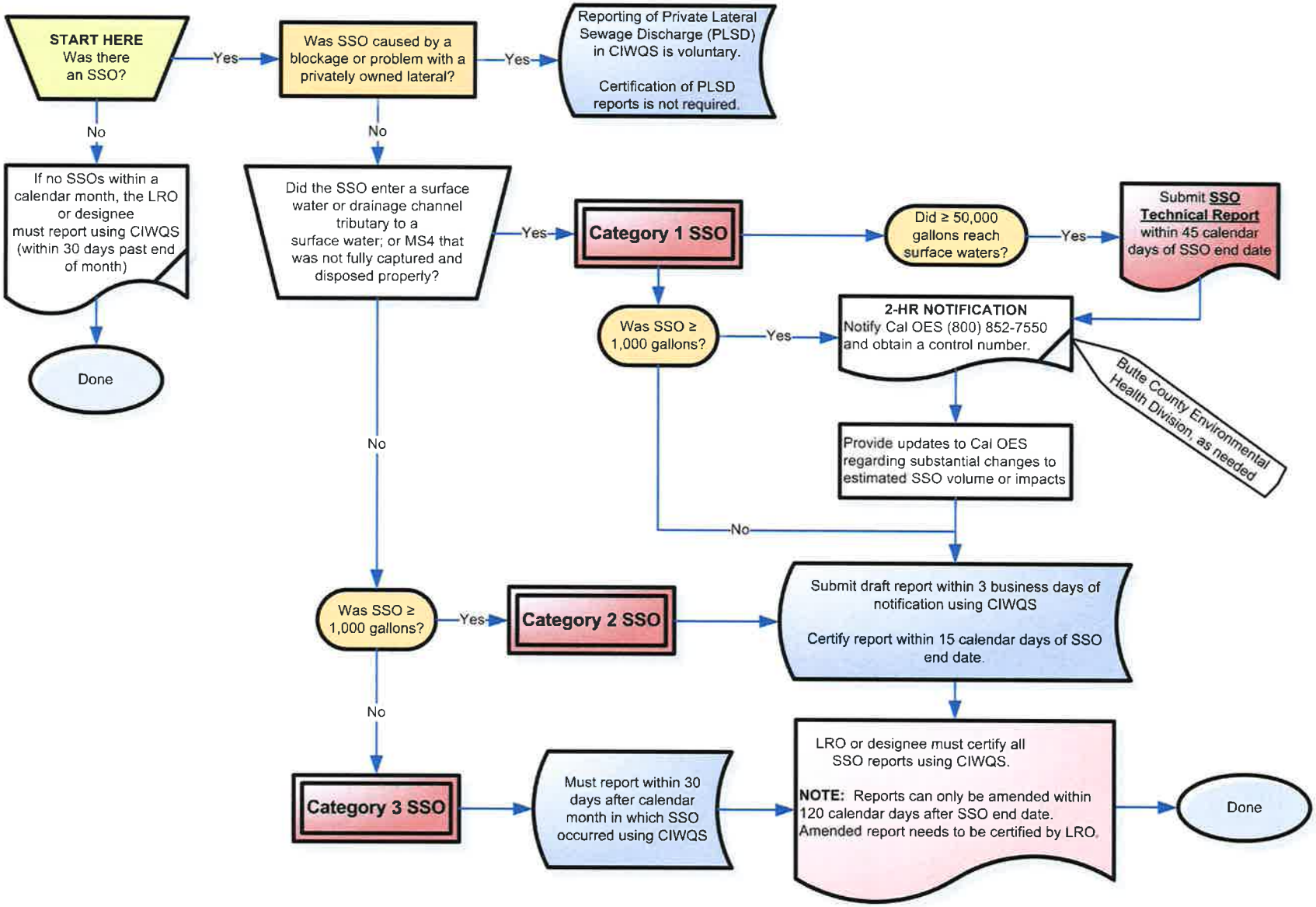


Figure 6-2: External Reporting Requirement Check List

Reporting & Certification Checklist

Category 1 SSOs (reaches surface waters or MS4, and not fully captured)

2-Hour Notification:

Regulatory Agencies (OES, County Health) must be notified within two hours of discharge ≥1,000 gallons of sewage (untreated/partially treated) to a surface water or drainage channel (that is not fully captured and returned to sewer).

Within 3 Business Days of Notification:

As a Category I SSO, it must be reported to SWRCB using CIWQS.

Within 15 Calendar Days of Conclusion of Response/Remediation:

Must be certified by LRO using CIWQS.

Category 2 SSOs (≥1,000 gallons)

Within 3 Business Days of Notification (SWRCB/CIWQS):

Submit draft report to SWRCB using CIWQS.

Within 15 calendar Days of Conclusion of Response/Remediation:

Must be certified by LRO using CIWQS.

Category 3 SSOs (<1,000 gallons)

Within 30-Days After End of Calendar Month with SSO Event:

Must be reported to SWRCB using CIWQS.
Must be certified by LRO using CIWQS.

Negative Reporting (No SSOs in Month/Quarter)

Within 30 days past the end of the month

The LRO or designee must report using CIWQS.

California Integrated Water Quality Systems (CIWQS)

SWRCB Reporting Timeframes Depend on the Size and Final Destination of the SSO.

- CIWQS must be used for reporting if the website is available (http://ciwqs.waterboards.ca.gov)
  - User Name: xxxx Password: xxxx
  - Waste Discharge Identification Number (WDID) #5SS010859
  - The SSO database will automatically generate an email notification with customized information about the SSO upon initial reporting and final certification for all Category I SSOs.
  - Emails will be sent to the EHD and the Central Valley RWQCB
- Fax RWQCB (only if website is down)
  - Fax: (530) 224-4857

Two-Hour Notification / 24-Hour Certification

1. **State Office of Emergency Services (OES, formerly Emergency Management Agency)**
   Phone: (800) 852-7550; (916) 845-8911 (Branch Manager of OES Warning Center)
2. **County of Butte Environmental Health Division (EHD)**
   Phone: (530) 891-2727 or (530) 538-7281 Fax: (530) 538-5339

Sanitary Sewer Overflow (SSO)

Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system that:

(i) Reach waters of the United States (including storm drains, unless fully captured and returned to sanitary sewer system);
(ii) Do not reach waters of the United States; and
(iii) Backs up into buildings and on private property that are caused by City owned lines.

Chapter 7 Equipment Inventory

The City maintains a stock of emergency response equipment which is available if needed for SSO response. The City's equipment inventory is included as Appendix J and includes water quality sampling equipment.

Following City emergency contracting procedures, the City can partner with outside contractors for large bypass and repair emergencies. Through these partnerships, outside contractors also maintain equipment to support this SSORP.

Chapter 8 SSO Response Training

This section provides information on the training that is required to support this Sanitary Sewer Overflow Response Plan.

8.1 Employees and Contractor Employees

8.1.1 Initial and Annual Refresher Training

All City personnel and contractor employees who may have a role in responding to, reporting, and/or mitigating a sewer system overflow should receive training on the contents of this SSORP. All new employees should receive training before they are placed in a position where they may have to respond. Current employees should receive annual refresher training on this plan and the procedures to be followed.

8.1.2 SSO Training Record Keeping

Records should be kept of all training that is provided in support of this plan. The records for all scheduled training courses and for each overflow emergency response training event should include date, time, place, content, name of trainer(s), and names of attendees. Records of personnel SSO training are kept on file at the Public Works Department Administrative Office (411 Main Street, Chico).

Appendix A - Overflow Response Standard Operating Procedure

Overflow Response SOP

The purpose of this Standard Operating Procedure (SOP) is to aid staff in prompt and responsible SSO response and is intended only as a condensed version of the Sanitary Sewer Overflow Response Plan (SSORP).

Addressing Service Calls

- The regular working hours are Monday through Friday from 6:30 a.m. to 3:00 p.m., except holidays. When a report of a sewer spill or backup is made, City staff route the call directly to the Underground Field Supervisor, who takes the information from the caller, and fills out the first section of the Checklist for Plugged Sewer Lines and Overflow Form (Checklist Form) found in SSORP Appendix D.
- The Underground Field Supervisor verbally communicates the information to field crew (do not leave a voicemail) along with any information collected on the Checklist Form.
- After working hours, calls are automatically routed to the Chico Police dispatcher who takes essential information and then notifies the appropriate Responder, who responds to the incident.
- The response measures will be based on the information provided by the caller (weather and traffic conditions, small back up vs. sewage flowing on the ground, etc). If additional help is needed, the Underground Field Supervisor will contact other employees, contractors, and/or equipment suppliers as listed in the External Emergency Contact List (SSORP Appendix B) and the City Responders Contact List (SSORP Appendix C).

Responding to SSOs

- The Responder shall visit the site immediately in an attempt to minimize or eliminate an overflow. Respond with the combination sewer jet rodder cleaning truck and/or spill response vehicle depending on the situation.
- Upon arrival at the site, clearly assess the situation and comply with all safety precautions (traffic, confined space, etc.) and verify the existence of a sewer system spill or backup.
- Identify and assess the affected area and extent/impact of the spill and request additional help as needed for line cleaning or repair, containment, recovery, lab analysis and site cleanup.
- Using the appropriate cleaning equipment, set up downstream of the blockage and hydro clean upstream from a clear maintenance hole. Attempt to remove the blockage from the system and observe the flows to ensure that the blockage does not recur downstream.
- If the blockage cannot be cleared within a reasonable time or conveyance system requires construction repairs, contingency plans must be employed as needed, including containment, bypass pumping, contractual assistance etc. If assistance is required, immediately contact other employees, contractors and equipment suppliers as required. See External Emergency Contact List and City Responders Contact List (included as SSORP Appendices B and C, respectively).
- Use barricades, caution tape, cones, etc. as needed to keep the public away from a sewage release (SSORP Appendix E). Signs warning the public of a sewage release should be posted in the affected area if directed by Butte County Environmental Health Division. Warning signs should remain posted until Butte County Environmental Health Division or Regional Water Quality Control Board staff authorizes their removal.

- ❑ If the spill reaches a drainage channel or water body, refer to the sampling requirements in Chapter 4 and Appendix F of the SSORP.
- ❑ The response crew shall complete the Checklist Form (SSORP Appendix D) and provide copies as stated at the bottom of the report.
- ❑ SSO Notification and Reporting: Accurate and responsive reporting is vital. Refer to the SSO External Reporting Requirement Flow Chart (SSORP Figure 6-1).

Home or Business Back Ups

In the event of a backup into a home or business, SSORP Chapter 4 shall be used to guide staff through the process.

REFERENCES

Addressing Service Calls

- *Checklist for Plugged Sewer Lines and Overflow Form (SSORP Appendix D)*
- *External Emergency Contact List (SSORP Appendix B)*
- *City Responders Contact List (SSORP Appendix C)*

Responding to SSOs

- *Collection System Failure Analysis Form (SSORP Appendix I)*
- *Methods for Estimating Spill Volume (SSORP Appendix G)*
- *Sample Warning Sign (SSORP Appendix E)*
- *Water Quality Monitoring Program Plan (SSORP Appendix F)*
- *SSO External Reporting Requirement Flow Chart (SSORP Figure 6-1)*
- *Equipment Inventory (SSORP Appendix J)*

Appendix B - External Emergency Contact List

External Contact Information

Repairs/Construction

Company	Address	Contact Numbers
Walberg Construction **Primary City Contractor**	2791 Hwy 99W Corning, CA 96021	392-1654 824-0773
Franklin Construction	217 Flume St Chico, CA 95928	343-9600
R&R Horn, Inc	13504 Skypark Industrial Way Chico, CA 95973	342-8655
Santos Excavating	643 W. 4th Ave Chico, CA 95926	894-2274
Seward Schreder Construction	632 Entler Ave. Chico, CA 95928	899-1104

**All phone numbers are in the 530 area code unless noted.

Equipment Rental

Company	Address	Contact Numbers
All Star Rents	3291 Esplanade Chico, CA 95973	345-5281
Cresco Equipment Rentals	2530 South Whitman Pl Chico, CA 95928	894-7757
Rental Guys	1720 Nord Ave Chico, CA 95926	343-0219
U-Haul Rentals	600 Country Dr Chico, CA 95928	893-8601
United Rentals	2855 Fair St Chico, CA 95928	894-7799

**All phone numbers are in the 530 area code unless noted.

Appendix C - City Responders Contact List

Internal Contact Information

The Public Works Department Emergency Callout Roster (including names, titles, and contact phone numbers) is maintained at the Chico Police Department – Dispatch and is attached as page 2.

The Chico Police Dispatcher can be reached at 530-895-4911 or 911 in emergency situations.

CITY OF CHICO - PUBLIC WORKS DEPARTMENT - OPERATIONS, MAINTENANCE, FLEET, PARKS AND STREET TREE DIVISIONS
EMERGENCY CALL-OUT ROSTER - CONTACT PERSONS LISTED IN PRIORITY ORDER
AFTER 3:00 **P.M.,**WEEKENDS & HOLIDAYS CONTACT NON-EMERGENCY DISPATCH AT 895-4912

Appendix D - Checklist for Plugged Sewer Lines and Overflow Form

Checklist for Plugged Sewer Line and Overflow Form

Fill out Checklist for Plugged Sewer Line. If an overflow has occurred, fill out the additional section of the form for an overflow.

Checklist for Plugged Sewer Line

DATE_____

Time Notified: _____am/pm

By Whom _____ Caller's Phone # _____

Time Start: _____am/pm

Time Finish: _____ am/pm

After Hours Callout: Y___ N ___

Work Day: Y___ N ___

Call In: Y___ N ___

1. Problem location or address (including cross-street):
   _____
   _____
   _____
2. City main line checked:
   a. PROPERTY OWNER'S Responsibility (See NOTE below)
   Y___ N___
3. City line plugged: Y___ N___
   a. Set up at M/H #_____
   Footage to Obstruction _____
   b. Description of plug:
   Grease____ Roots____ Broken Pipe____ Rags____
   Other_____
4. Cleared line. Reporting Party advised. (See NOTE below)
   Y___ N___
5. **PROPERTY DAMAGE REPORTED BY RESIDENT**: **Y_____ N _____
6. **SANITARY SEWER OVERFLOW OR SPILL** **Y_____ N _____

Sanitary Sewer Overflow or Spill and/or Property damage reported: Immediately contact Supervisor, Public Works Manager, Public Works Director or Wastewater Treatment Manager. **IF there is property damage,

contact the City's LPA,York Insurance Services representatives and/or Risk Management for damage assessment and resolution/clean up.

	York	York	City of Chico
A.	#1 Shawn Miller	#2 Olivia Doney	#3 Chris Constantin
B.	Work 345-5998	Work 345-5883	Work 879-7300
C.	Cell 680-7272	Cell 864-4052	Cell 408-315-9732
D.	Home 345-4391		Risk Mgmt. 879-7910

7. Verify that upstream maintenance hole is clear before leaving site:
   Y___ N___

8. Hose down upstream maintenance holes and/or areas of overflow with fresh water, contain and vacuum spillage
   Y___ N___

9. Clean areas of spillage/overflow with water which is contained and vacuumed before leaving site.
   CAUTION: Be sure that debris tank door is locked shut.
   Y___ N___

10. **Refill** Jet Rodder water tanks. Y___ N___

NOTE. If reporting Party is not at home, fill out door hanger information card (see visor or clipboard on dashboard) and leave on reporting party's front door.

COMMENTS:

_____

_____

_____

_____

Senior Maintenance Worker:_____

Maintenance Worker:_____

Complete Additional Form Sections if an Overflow has occurred

FORM COMPLETED BY:	DATE:
U/S MAINTENANCE HOLE #: D/S MAINTENANCE HOLE #:	WORK ZONE:
SIZE OF LINE:	LENGTH OF LINE:
GPS COORDINATES (IF AVAILABLE):	
EASEMENT: YES ☐ NO ☐	
DATE OVERFLOW STARTED: TIME OVERFLOW STARTED:	DATE OVERFLOW STOPPED: TIME OVERFLOW STOPPED:
ESTIMATED CITY STAFF ARRIVAL DATE AND TIME:	
DURATION OF SSO:	EST. TOTAL VOLUME (GALLONS):
DESCRIBE HOW OVERFLOW QUANTITY WAS CALCULATED (APPENDIX G OF SSORP): ☐ EYEBALL ESTIMATE ☐ DURATION / FLOW RATE ☐ MEASURED VOLUME ☐ OTHER:_____	
RETURNED TO SEWER SYSTEM (GALLONS):	
VOLUME TO WATERS & NOT RECOVERED, INCLUDING SURFACE WATER, DRAINAGE CHANNEL, OR **NOT** RECOVERED FROM STORM DRAIN (GALLONS):	
DID SSO REACH RECEIVING WATERS? YES ☐ NO ☐	
RECEIVING WATER LOCATION: ☐ CATEGORY 1 – ANY VOLUME DISCHARGE THAT REACHES SURFACE WATER, DRAINAGE CHANNEL TRIBUTARY OR STORM DRAIN. ☐ CATEGORY 2 – DISCHARGE OF 1,000 GALS OR GREATER THAT DO NOT REACH SURFACE WATER, DRAINAGE CHANNEL TRIBUTARY OR STORM DRAIN. ☐ CATEGORY 3 – ALL OTHER DISCHARGES. ☐ PLSD – PRIVATE LATERAL SEWAGE DISCHARGE, DISCHARGES WITHIN A PRIVATELY OWNED SEWER LATERAL.	

Checklist for Plugged Sewer Line or Sanitary Sewer Backup or Overflow/Spill

WEATHER: SUNNY ☐ CLOUDY ☐ DRY ☐ RAINY ☐ RAIN FOR SEVERAL DAYS ☐

APPROXIMATE TEMPERATURE: _____

PRIMARY CAUSE:

☐ ROOTS ☐ GREASE ☐ DEBRIS ☐ VANDALISM ☐ PIPE FAILURE

☐ CONSTRUCTION DAMAGE ☐ PUMP STATION FAILURE ☐ POWER FAILURE

☐ CAPACITY (HEAVY RAIN) ☐ OTHER:_____

ADDITIONAL INFORMATION:

SOURCE OF SSO:

☐ MAINTENANCE HOLE ☐ GRAVITY MAIN ☐ FORCEMAIN ☐ CLEAN OUT ☐ PRIVATE LATERAL

☐ PUMP STATION:_____(NAME) ☐ OTHER:_____

BLOCKAGE LOCATION:

UPSTREAM MH#: _____ DOWNSTREAM MH#: _____ OVERFLOW MH#: _____

SSO APPEARANCE POINT(S):

NUMBER OF POINTS:	DESCRIPTION OF POINT(S):
LOCATION(S) OF POINTS:	

WATER QUALITY MONITORING:
(mandatory only for SSOs ≥50,000 gallons that entered surface waters)

SAMPLES COLLECTED: YES ☐ NO ☐	BY WHO?	SAMPLE DATE: SAMPLE TIME:

SAMPLE LOCATION(S): ☐___ FT UPSTREAM ☐___ FT DOWNSTREAM ☐AT DISCHARGE

CONDITIONS THAT MAY INFLUENCE SAMPLE RESULTS:
☐ STORM DRAIN DISCHARGES ☐ STREAM DISCHARGES ☐OTHER:_____

PARAMETERS FOR ANALYSIS: ☐ AMMONIA ☐ FECAL COLIFORM ☐OTHER:_____
(ATTACH SAMPLE RESULTS OR RECORD ON LAST "ADDITIONAL NOTES" PAGE.)

Checklist for Plugged Sewer Line or Sanitary Sewer Backup or Overflow/Spill

FINAL SSO DESTINATION(S): ☐ STORM DRAIN ☐ BUILDING ☐ YARD/LAND ☐ SURFACE WATER (NAME:_____) ☐ NO WATER INVOLVED ☐ CAPTURED FROM STORM DRAIN (100%) ☐ OTHER:_____
DESCRIBE CLEANUP METHOD:
SPILL RESPONSE COMPLETION DATE:
PICTURES/VIDEO TAKEN: YES ☐ NO ☐ SAVED LOCATION:
AFFECTED AREA:
DESCRIBE PROPERTY DAMAGE:
SIGNS POSTED: YES NO ☐ NEIGHBORS NOTIFIED: YES ☐ NO ☐
BARRICADED: YES ☐ NO
REGULATORY AGENCY NOTIFIED (OES): YES ☐ NO ☐ *(for Category 1 SSO ≥1,000 gallons)*
DATE: TIME: OES SSO#:
CONTACTS/DETAILS:
CALLER/CUSTOMER NOTIFIED RE: STATUS: YES NO
IF NOT, WHY:
FOLLOW-UP MEASURES:

SKETCH OF AREA: (INCLUDE MAINTENANCE HOLES, INTERSECTIONS, STOPPAGE LOCATION, ETC.)

ADDITIONAL NOTES:

Appendix E - Sample Warning Sign

KEEP OUT

CONTAMINATED WATER

STREAM/LAKE WATER MAY CAUSE ILLNESS

BY ORDER OF THE HEALTH OFFICER
BUTTE COUNTY ENVIRONMENTAL HEALTH DIVISION
FOR FURTHER INFORMATION
CALL: (530) 891-2727

OR CALL
CITY OF CHICO PUBLIC WORKS DEPARTMENT
(530) 894-4200

WARNING

WATER CONTACT MAY CAUSE ILLNESS

¡ AVISO!

EL CONTACTO CON AGUA PUEDE CAUSAR ENFERMEDADES

BY ORDER OF THE HEALTH OFFICER
BUTTE COUNTY ENVIRONMENTAL HEALTH DIVISIOIN
FOR FURTHER INFORMATION
CALL: (530) 891-2727

OR CALL
CITY OF CHICO PUBLIC WORKS DEPARTMENT
(530) 894-4200

Appendix F - Water Quality Monitoring Program Plan

Sanitary Sewer Overflow
Water Quality Monitoring Program Plan
Updated July 2014

Water Quality Monitoring – Key Elements

- **Trigger for Water Quality Sampling.**
  - State Water Resources Control Board (SWRCB) - Sampling must be performed for sanitary sewer overflows (SSOs) that are 50,000 gallons or greater and reach surface water.
  - County EHD (Environmental Health Division) - Sampling must be performed for SSOs that reach surface water if County EHD staff indicates that sampling is necessary.
- **Safety and Access.** Water quality sampling should only be performed if it is safe to do so and access to the surface water is not restricted. Unsafe conditions include, but are not limited to, *heavy rains, slippery and/or steep riverbanks, and visibility issues.* When sampling is not possible, details of the situation should be recorded in the certified Category 1 SSO Report and the SSO Technical Report submitted to the CIWQS Online SSO Database.
- **When to Sample.** Sampling must be performed (when and if it is safe to do so) within 48 hours of City staff becoming aware of the SSO. Water quality sampling should not interfere with stopping the SSO.
- **Where to Sample.** Sampling should account for spill travel time in surface water (see Sample Collection Procedure below). The County EHD may require sampling at additional sites.
- **Optional Follow-Up Monitoring.** It may be appropriate to conduct additional monitoring by sampling and/or visual inspection, depending on the original monitoring results. For example, follow-up monitoring could be conducted until the water body has reverted to an estimated baseline condition if an impact from the SSO is observed or if directed by County EHD.

Water Quality Sampling – Protocols (for sampling required by SWRCB)

(The protocol for sampling required by County EHD is located on page 5.)

Sampling Parameters required for Analyses:
- Ammonia (labeled "A" on sample bottles)
- Fecal coliform bacteria (labeled "B" on sample bottles)

SSO Sample Collection Kit Inventory:
- 3 sterile sample bottles labeled A
- 3 sterile sample bottles labeled B
- Cooler
- Ice Pack (stored in freezer)
- Safety gloves
- Safety glasses
- Sampling pole
- Pen
- Velocity probe
- WPCP laboratory chain of custody form
- Laboratory requisition form

Sampling Locations:
- "Upstream" of SSO
- Immediate vicinity where SSO enters water body ("source")
- "Downstream" of SSO

Sample Collection Procedure:
1) Retrieve SSO Sample Collection Kit (cooler) from the Industrial Waste Inspector Office *(WPCP, 4827 Chico River Road, Chico, CA).*

- Determine which analyses are required and retrieve the necessary samples bottles (see *SSO Sample Collection Kit Inventory).*

2) Obtain ice from freezer & place in cooler.

3) Determine the point that the SSO entered waterway and, if possible, photograph this location. Try to include a reference point in the photo.

4) If sampling is performed after the SSO has stopped, estimate SSO travel time. This may be done by observing or dropping floatable debris in the surface water and timing how long it takes to travel over a measured distance (e.g., 100 feet). Include sections in the surface water where there are bends, bottlenecks, or other characteristics that may slow down the flow. If the first measurement is uncertain, this time estimate may be performed three to five times, and the values averaged to determine the estimated travel time. The velocity in the upper portion of the water body can then be calculated by dividing the measured distance by the average time.

   An alternative way to measure the SSO travel time is to use a velocity probe (such as a Global Water FP111-S Flow Probe) to determine the rate of flow in the water body.

5) Determine the "source" location for water quality sampling by accounting for SSO travel time.

   - If the SSO is occurring, the "source" location is the point where the SSO is entering the waterway.
   - If the SSO has stopped, calculate the approximate downstream distance from the original SSO location by dividing the time since the SSO occurred by the estimated velocity. This is the approximate downstream distance from the SSO discharge point to the "source" sampling location.

6) Put on safety gloves and safety glasses from the SSO Sample Collection Kit.

7) For each parameter, label the sample bottles with the location names (e.g., "Upstream", "Source", and "Downstream").

8) **Upstream Sample Collection:** Collect the upstream samples first. Move approximately one hundred feet (100') upstream of Source location. Label each of the sample bottles marked "Upstream" with the date and time.

   a. (If possible) take a photo of the sample location, including a reference point in the photo.

   b. Fill the labeled bottles against the direction of the water flow just below the surface in knee deep water, approximately 3 feet deep (full arm's length), without rinsing. Fill bottle leaving about 1" of air to allow for mixing. If needed, extend the sampling pole to the fullest length to reach deeper water depth. Avoid sampling debris or surface scum and minimize contact with bank or beach bed as water fouling may occur.

   c. Immediately place cap securely on bottle to avoid leaks and contamination. Dry bottle.

   d. Place each sample bottle in the cooler after collection.

   Source Sample Collection: Collect the "source" samples next. Move approximately ten feet (10') downstream of the Source location. Label each of the sample bottles marked "Source" with the date and time.

   a. (If possible) take a photo of the sample location, including a reference point in the photo.

b. Fill the labeled bottles against the direction of the water flow just below the surface in knee deep water, approximately 3 feet deep (full arm's length), without rinsing. Fill bottle leaving about 1" of air to allow for mixing. If needed, extend the sampling pole to the fullest length to reach deeper water depth. Avoid sampling debris or surface scum and minimize contact with bank or beach bed as water fouling may occur.

c. Immediately place cap securely on bottle to avoid leaks and contamination. Dry bottle.

d. Place each sample bottle in the cooler after collection.

Downstream Sample Collection: Lastly, collect the downstream sample. Move one hundred feet (100') downstream of the source location. Label each of the sample bottles marked "Downstream" with the date and time.

a. (If possible) take a photo of the sample location, including a reference point in the photo.

b. Fill the labeled bottles against the direction of the water flow just below the surface in knee deep water, approximately 3 feet deep (full arm's length), without rinsing. Fill bottle leaving about 1" of air to allow for mixing. If needed, extend the sampling pole to the fullest length to reach deeper water depth. Avoid sampling debris or surface scum and minimize contact with bank or beach bed as water fouling may occur.

c. Immediately place cap securely on bottle to avoid leaks and contamination. Dry bottle.

d. Place each sample bottle in the cooler after collection.

9) If additional sites are required and specified by County EHD, continue to perform sampling at these additional sites according to sampling procedures in the previous step.

10) Complete the laboratory requisition slip with requested information: site, bottle number, collector, date and time of collection, type of sample, analyses requested, name and phone number of responsible person for reporting purposes, and deliverer name.

11) Transport the cooler containing the samples for bacterial analyses & the completed laboratory requisition slip to the laboratory as soon as possible after sample collection*. The parameter with the shortest holding time is **8 hours** (from sample collection to beginning of analysis), but sample analyses should begin as soon as possible after sample collection because that will achieve the most accurate result. Also, the laboratory needs time to process the samples, before beginning the analyses.

12) If samples were collected for ammonia, transport the cooler with the remaining samples for ammonia to the City of Chico Water Pollution Control Plant laboratory for ammonia analyses. If laboratory staff are not present, place the samples in a laboratory refrigerator, fill out a laboratory chain of custody form, and contact available laboratory staff.

13) Restock the SSO Sample Collection Kit with the items listed on page 1.

14) After the analyses have been performed (see "Water Quality Analyses Protocols" below) and the results have been reviewed and finalized, report them to County EHD and check if any of the following conditions are satisfied:

- Both the ammonia and bacteria levels downstream are approximately equal to or less than the upstream levels;

* Water samples may be taken to the **Butte County Public Health Laboratory: 695 Oleander Avenue, Chico, CA, 95926**. The samples must be brought to the Public Health Laboratory within 8 hours of collection, before 3:00 PM, for processing. If the Public Health Laboratory is closed, utilize an alternate testing laboratory that is certified for the required water quality tests.

- The concentration of ammonia is below 2.139 mg/L as N; or
- The fecal coliform bacteria levels are below 400 MPN/ 100 mL.

As soon as one of the above conditions are satisfied and (if applicable) County EHD indicates that additional monitoring is not needed, monitoring for this SSO may stop. If none are satisfied, repeat the Sample Collection Procedure steps until either or both of the conditions are satisfied or other information is available to suggest the SSO is no longer causing a potentially adverse effect on the waterbody.

Warnings for Sample Collection:

- **Avoid Contamination.** Be careful. Make every effort not to touch the inside of the collection bottle and the inner surface of the lid or bottle rim. Sample containers may also contain chemicals and/or preservatives.
- **Deliver Sample(s) to Lab(s) Immediately.** All samples need to be delivered to the laboratory expeditiously due to the limited hold time required for maintaining sample integrity.

Water Quality Analyses – Protocols

Laboratory:
Samples will be sent to an accredited or certified laboratory. The laboratory methods will be performed according to the laboratory's Standard Operating Procedures (SOPs).

Maintenance and Calibration of Monitoring Instruments and Devices:
All laboratory monitoring instruments and devices used for water quality analyses are maintained and calibrated according to the SOPs to ensure their continued accuracy, including field measuring devices like the velocity probe. The SSO Sample Collection Kit is checked by the City staff annually to verify its contents, and City staff replace chemical preservatives in the sample bottles at that time.

Reporting Requirements

The *Wastewater Treatment Manager or Public Works Director* is responsible for submitting water quality monitoring information with the certified Category 1 SSO report in the CIWQS Online SSO Database, which must be submitted within 15 calendar days of the SSO end date.

The *Wastewater Treatment Manager or Public Works Director* is responsible for submitting information related to the Technical Report in the CIWQS Online SSO Database, which must be done within 45 calendar days of the SSO end date. The SSO Technical Report must include the following water quality monitoring information:

- Description of all water quality sampling activities conducted
- Analytical results and evaluation of the results
- Detailed location map showing all water quality sampling points

Water Quality Sampling – Protocol (for sampling required by County EHD)

Sampling Parameters required for Analyses:

- Fecal coliform bacteria (labeled "B" on sample bottles)
- Total coliform (labeled "C" on sample bottles)
- Enterococcus bacteria (labeled "D" on sample bottles)

SSO Sample Collection Kit Inventory:

- 3 sterile sample bottles labeled B †
- 3 sterile sample bottles labeled C †
- 3 sterile sample bottles labeled D †
- Cooler
- Ice Pack (stored in freezer)
- Safety gloves
- Safety glasses
- Sampling pole
- Pen
- Velocity probe
- WPCP laboratory chain of custody form
- Laboratory requisition form

Sampling Locations:

- "Upstream" of SSO
- Immediate vicinity where SSO enters water body ("source")
- "Downstream" of SSO
- Additional sites if required by the County EHD

Sample Collection Procedure:

Refer to the sample collection procedure steps on pages 1-4.

Warnings for Sample Collection:

Refer to the sample collection procedure steps on page 4.

† Additional sample bottles may be needed if County EHD requires sampling at additional sites. The number of samples bottles for each parameter should match the number of sampling sites.

Appendix G - Methods for Estimating Spill Volume

Methods for Estimating Spill Volume

A variety of approaches exist for estimating the volume of a sanitary sewer spill. This appendix documents the three methods that are most often employed. The person preparing the estimate should use the method most appropriate to the sewer overflow in question and use the best information available. Photographs are critical in using any of the spill volume methods. *Additional reference material available.

Method 1 Eyeball Estimate

The volume of small spills can be estimated using an "eyeball estimate". To use this method imagine the amount of water that would spill from a bucket or a barrel. A bucket contains 5 gallons and a barrel contains 50 gallons. If the spill is larger than 50 gallons, try to break the standing water into barrels and then multiply by 50 gallons. This method is useful for contained spills up to approximately 200 gallons.

Method 2 Area/Volume Calculations

The volume of most small spills that have been contained can be estimated using this method. The shape, dimensions, and the depth of the contained wastewater are needed. The shape and dimensions are used to calculate the area of the spills and the depth is used to calculate the volume.

Step 1 Sketch the shape of the contained sewage (see Figure 1).

Step 2 Measure or pace off the dimensions.

Step 3 Measure the depth at several locations and select an average.

Step 4 Convert the dimensions, including depth, to feet.

Step 5 Calculate the area in square feet using the following formulas:

Rectangle: Area = length (feet) x width (feet)

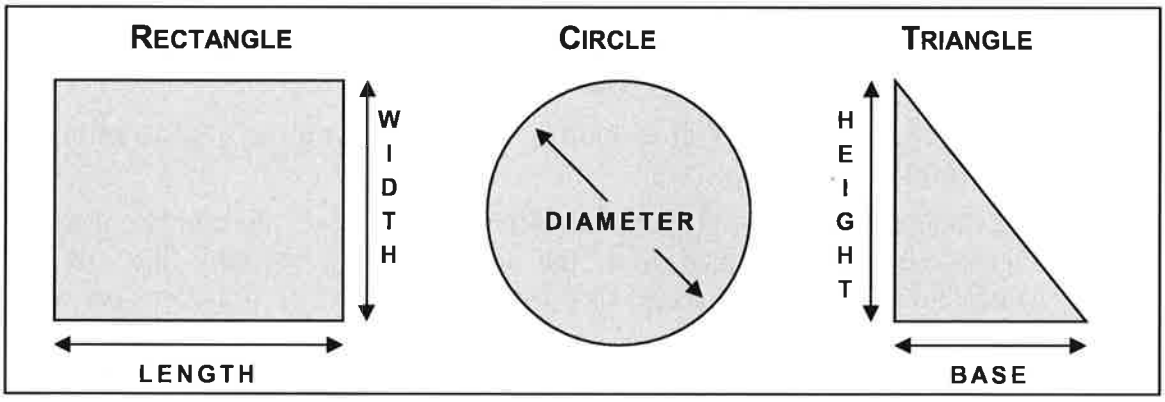
Circle: Area = diameter (feet) x diameter (feet) x .785

Triangle: Area = base (feet) x height (feet) x 0.5

Step 6 Multiply the area (square feet) times the depth (in feet) to obtain the volume in cubic feet.

Step 7 Multiply the volume in cubic feet by 7.5 to convert it to gallons

Figure 1: Common Shapes and Dimensions



Method 3 Duration and Flowrate

Calculating the volume of larger spills, where it is difficult or impossible to measure the area and depth, requires a different approach. In this method, the separate estimates are made of the duration of the spill and the flowrate. The methods of estimating duration and flowrate are:

Duration: The duration is the elapsed time from the time the spill started to the time that the flow was restored.

Start time: The start time is sometimes difficult to establish. Here are some approaches:

- Local residents can be used to establish start time. Inquire as to their observations. Spills that occur in rights-of-way are usually observed and reported promptly. Spills that occur out of the public view can go on longer. Sometimes observations like odors or sounds (e.g. water running in a normally dry creek bed) can be used to estimate the start time.
- Changes in flow on a downstream flowmeter can be used to establish the start time. Typically the daily flow peaks are "cut off" or flattened by the loss of flow. This can be identified by comparing hourly flow data during the spill event with flow data from prior days.
- Conditions at the spill site change over time. Initially there will be limited deposits of toilet paper and other sewage solids. After a few days to a week, the sewage solids form a light-colored residue. After a few weeks to a month, the sewage solids turn dark. The quantity of toilet paper and other materials of sewage origin increase over time. These observations can be used to estimate the start time in the absence of other information. Taking photographs to document the observations can be helpful if questions arise later in the process.
- It is important to remember that spills may not be continuous. Blockages are not usually complete (some flow continues). In this case the spill would occur during the peak flow periods (typically 10:00 to 12:00 and 13:00 to 16:00 each day). Spills that occur due to peak flows in excess of capacity will occur only during, and for a short period after, heavy rainfall.

End time: The end time is usually much easier to establish. Field crews on-site observe the "blow down" that occurs when the blockage has been removed. The "blow down" can also be observed in downstream flowmeters.

Flow Rate: The flowrate is the average flow that left the sewer system during the time of the spill. There are three common ways to estimate the flowrate:

- The Manhole Flowrate Chart: This chart, attached as Page 4, shows sewage flowing from manhole covers at a variety of flowrates. The observations of the field crew can be used to select the appropriate flowrate from the chart. If possible, photographs are useful in documenting basis for the flowrate estimate.
- Flowmeter: Changes in flows in downstream flowmeters can be used to estimate the flowrate during the spill.
- Counting Connections: Once the location of the spill is known, the number of upstream connections can be determined from the sewer maps. Multiply the number of connections by 200 to 250 gallons per day per connection or 8 to 10 gallons per hour per connection.

  For example: 22 upstream connections x 9 gallons per hour per connection

= 198 gallons per hour / 60 minutes per hour

= 3.3 gallons per minute

Spill Volume: Once duration and flowrate have been estimated, the volume of the spill is the product of the duration in hours or days and the flowrate in gallons per hour or gallons per day.

For example:

Spill start time = 11:00

Spill end time = 14:00

Spill duration = 3 hours

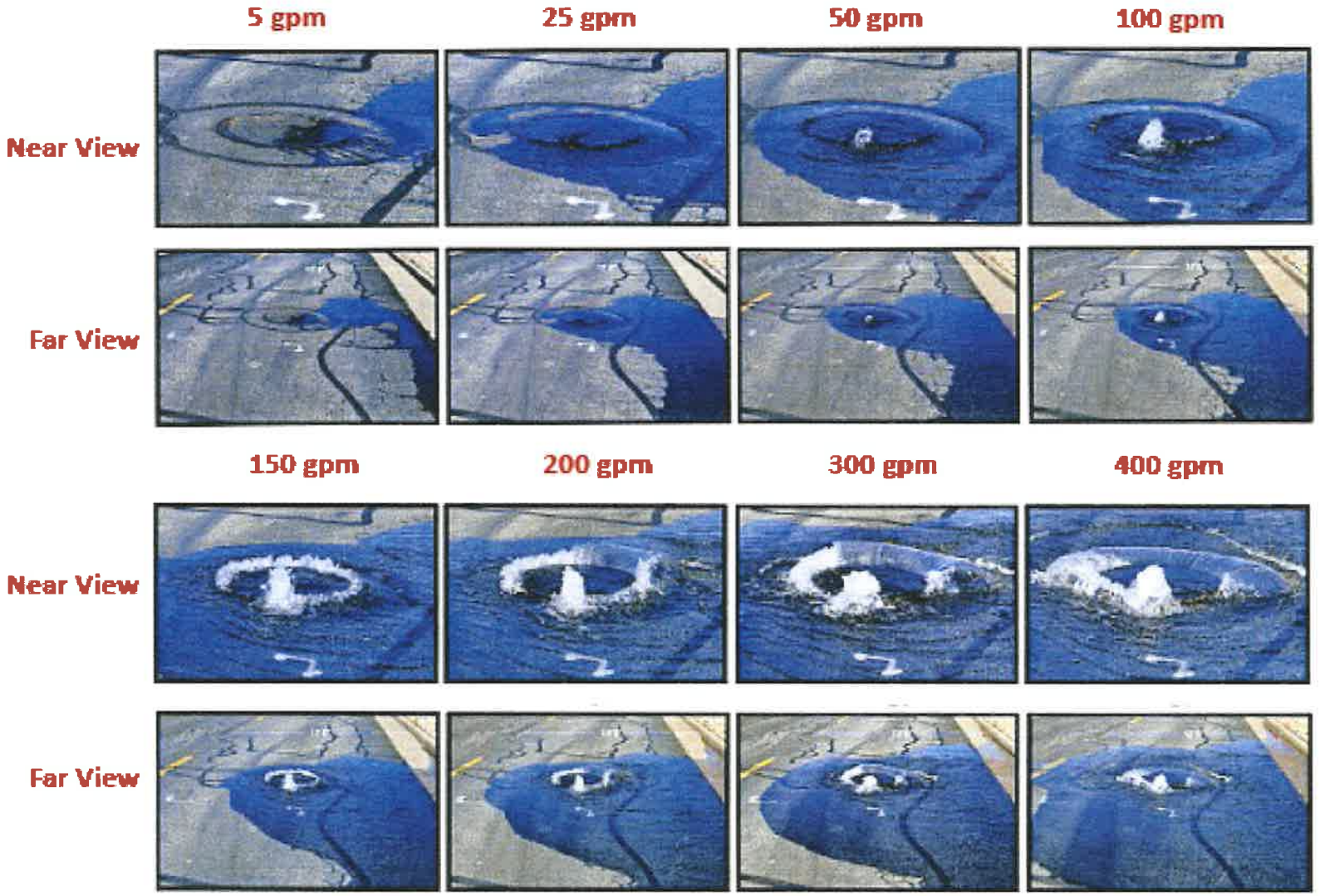
3.3 gallons per minute X 3 hours X 60 minutes per hour = 594 gallons

* For additional SSO estimating reference materials refer to: SMART Sewer Overflow Volume Estimation Workbook available at:

Public Works Manager's Office

Wastewater Treatment Manger's Office

Underground Field Supervisor


5 gpm
25 gpm
50 gpm
100 gpm
Near View
Far View
150 gpm
200 gpm
300 gpm
400 gpm
Near View
Far View

Appendix H - Liability Third Party Administrator Sewer Backup Summary Report

Liability Third Party Administrator
Sewer Backup Summary Report

District's Site Arrival Time: _____ Time Cleaning Contractor Called: _____

Section A

DATE: TIME: EMPLOYEE NAME:

RESIDENT: PROPERTY MANAGER(S):
STREET ADDRESS: STREET ADDRESS:
CITY, STATE AND ZIP: CITY, STATE AND ZIP:
PHONE: PHONE:

CAUSE OF FLOODING:

LOCATION/SEWER: □ STREET □ REAR EASEMENT □ MAINTENANCE HOLE # _____TO_____
□ MAINLINE □ SERVICE LINE □ DOUBLE-WYE

DAMAGE: □ BLACK WATER □ GREY WATER □ FRESH WATER

OF PEOPLE LIVING AT RESIDENCE:

Comments:

CLEANING SERVICES: □ REQUESTED BY OWNER – WAIT FOR CLEANING CONTRACTOR TO ARRIVE
□ DECLINED BY OWNER – ENSURE DECLINATION FORM 4B IS SIGNED

Section B

APPROXIMATE AGE OF HOME: _____ # OF BATHROOMS:_____ # OF ROOMS AFFECTED: _____

APPROXIMATE AMOUNT OF SPILL: _____(GALLONS)

APPROXIMATE TIME SEWAGE HAS BEEN SITTING:_____(*HOURS/DAYS*)

NUMBER OF PICTURES TAKEN: _____ DIGITAL OR FILM? _____

DOES THE CUSTOMER HAVE A BACKFLOW PREVENTION DEVICE (BPD)? □ YES □ NO
IF YES, WAS THE BPD OPERATIONAL AT THE TIME OF THE OVERFLOW? □ YES □ NO

HAVE THERE BEEN ANY PREVIOUS SPILLS AT THIS LOCATION? □ YES □ NO □ UNKNOWN

TYPE OF FLOORING IN THE ROOM AFFECTED:

□ TILE CONDITION OF TILE AND SEAMS (CRACKING, VISIBLE OPEN SPACES, ETC.)

□ CARPET
□ WOOD CONDITION OF FLOORING AND JOINTS (CRACKING, VISIBLE OPEN SPACES, ETC.)

□ OTHER PLEASE IDENTIFY:

HAS THE RESIDENT HAD ANY PLUMBING WORK DONE RECENTLY? □ YES □ NO □ UNKNOWN

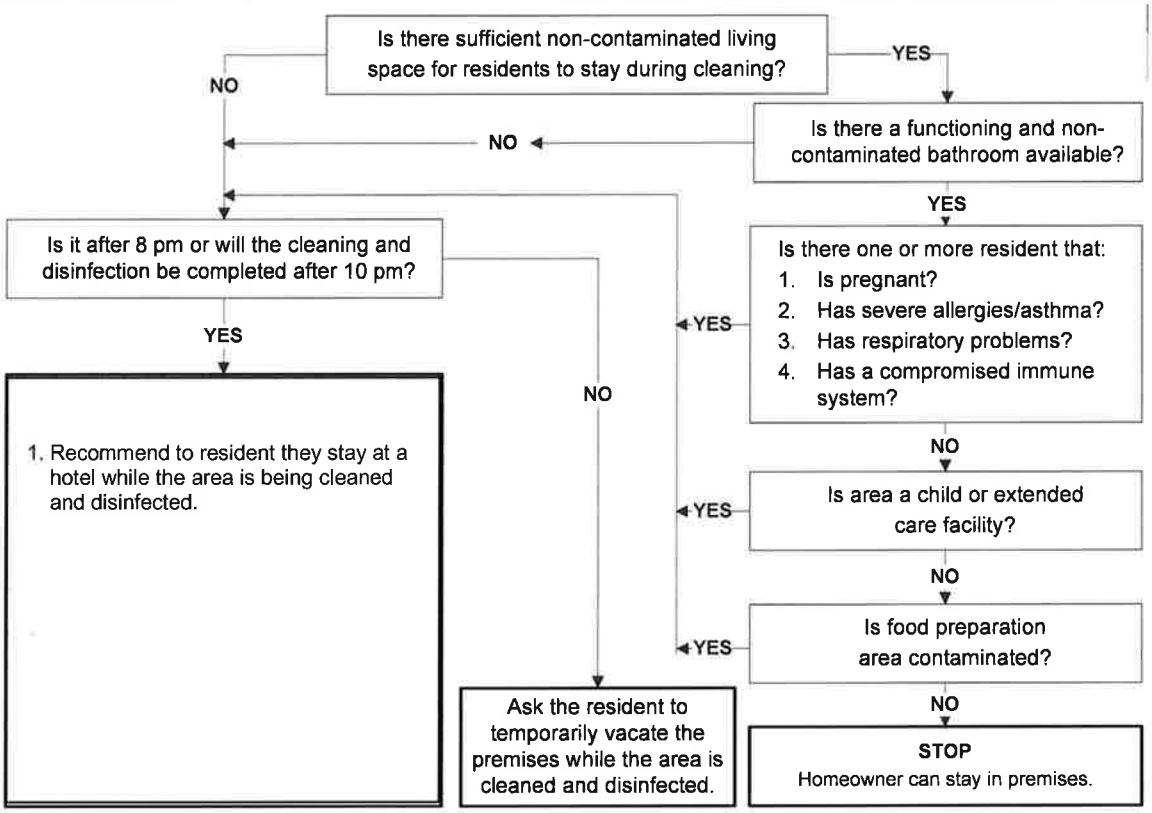
IF YES, PLEASE DESCRIBE:

ARE THERE BASEBOARDS: □ YES □ NO BASEBOARD MATERIAL: _____

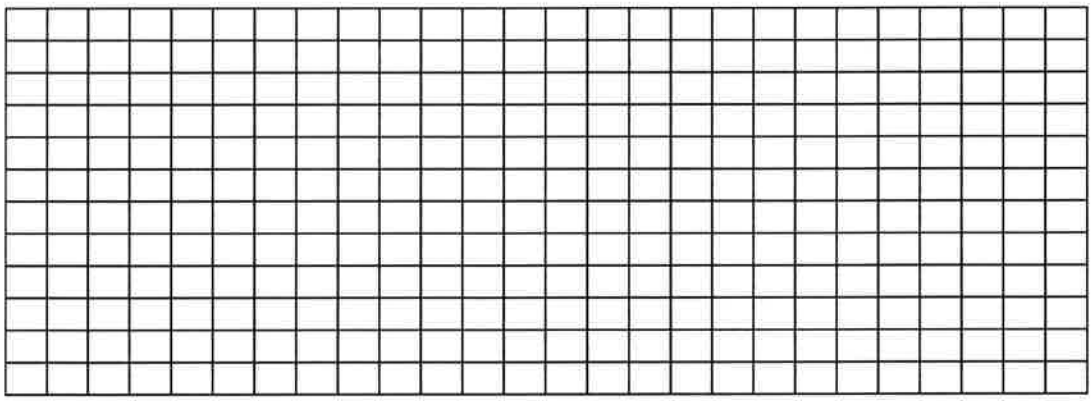
CONDITION OF BASEBOARDS:

□ BASEBOARD BOTTOM HAS TIGHT SEAL WITH WALL
□ BASEBOARD TOP HAS TIGHT SEAL WITH WALL
□ BASEBOARD HAS SPACE BETWEEN BOTTOM & FLOOR
□ BASEBOARD HAS SPACE BETWEEN BASEBOARD & WALL

SECTION C: LIVABILITY ASSESSMENT



PLEASE DIAGRAM THE ROOMS AFFECTED (SHADE THE AREAS MOST HEAVILY)



SECTION D: CLEANING CONTRACTOR

COMPANY NAME: PHONE: ARRIVAL TIME:

COMMENTS:

Appendix I - Collection System Failure Analysis Form

Collection System Failure Analysis Form

CIWQS Event ID:		Prepared By:	
SSO/Backup Information			
Event Date/Time:	Address:		
Volume Spilled:	Volume Recovered:		
Cause:			
Summary of Historical SSOs / Backups / Service Calls / Other Problems			
Date	**Cause**	**Date Last Cleaned**	**Crew**
Records Reviewed By:		Record Review Date:	
Summary of CCTV Information			
CCTV Inspection Date:		Tape Name/Number:	
CCTV Tape Reviewed By:		CCTV Review Date:	
Observations:			
Recommendations			
	No Changes or Repairs Required		
	Maintenance Equipment		
	Maintenance Frequency		
	Repair (Location and Type)		
	Add to Capital Improvement Rehabilitation/Replacement List: Yes ☐ No ☐		
Underground Field Supervisor: Review Date:			
Public Works Manager: Review Date:			

Appendix J - Equipment Inventory

CITY OF CHICO
EQUIPMENT LIST

VEHICLE VIN #	LICENSE #	VEH ID #	DEPT #	VEH #	YEAR	EQUIPMENT DESCRIPTION	LIFE EXP
1GBJC34KXLE222016	E340808		670	4959	1991	CHEVY 1-TON RODDER-CHAMPI0N	20
7027SN1021940	SE433276		670	6027	1994	6-INCH PORTABLE PUMP -WEDCO	20
S/N 7AM04709	N/A		670	8555	1999	CATERPILLAR FORKLIFT	20
1FTNF20LX2EA37184	1082536		670	9196	2002	FORD 3/4 TON PICKUP	10
F01414	N/A		670	9276	2001	REAR'S FLAIL MOWER	10
0628005	N/A	WPCP	670	9290	1999	DETROIT 1500 KW GENERATOR (WPCP-1)	GENSET
P100193369	N/A		670	9393	2002	LANDA PORTABLE PRESSURE WASHER	10
1FVABTBV93DK34857	1133526		670	9420	2003	FREIGHTLINER/SLUDGE DUMP	15
5ASAK27422F027876	E035342		630	9567	2002	GEM UTILITY ELECTRIC	10
1GDJG31U531174935	1156878		670	9685	2003	GMC SAVANA TV VAN	15
1GCCS196048167132	1156836		670	9851	2004	CHEVY COLORADO EXT CAB (MARC SULIK)	10
1GCCS196X48164822	1156839		670	9855	2004	CHEVY COLORADO EXT CAB (INSPECTORS)	10
1GCCS196048167907	1156835		670	9856	2004	CHEVY COLORADO EXT CAB (JASON)	10
1FVACYCS64HN27625	1182435		670	9883	2004	VAC-CON SEWER TRUCK	10
4HXSU08145C085392	1194973		670	10037	2005	CARSON UTILITY TRLR	15
ALP251476	N/A		670	10049	2005	CASE IH TRACTOR/LOADER	15
5524912	N/A		670	10458	2005	MULTIQUIP MODEL GA-6HEA GEN	15
5ASAK27475F038232	1194947		670	10051	2005	GEM ELECTRIC CART	10
2FZAATDC66AU28582	1201573		670	10064	2005	VAC-CON SEWER TRUCK	10
5ASAK27416F039989	1234262		670	10089	2006	GEM ELECTRIC CART	10
4XARF68A96D034498			670	10094	2006	POLARIS 6X6 MINI JET	10
850-068Q-40447	1249444		670	10100	2007	TRAILER MOUNTED ELECTRIC GENERATOR	25
1FDWF36Y67EB06050	1249383		670	10107	2007	FORD F350 4X2 SUPERCAB UTIL/RACK	10
21788389			670	10161	2007	CUMMINS GENERATOR (NW LIFT OFF EATON)	25
52810			670	10162	2007	GUARDIAN GENERATOR (COHASSET SALV A.)	25
CAT00C44AN4E00549			670	10164	2007	CATERPILLAR GENERATOR (W.LASSEN/CUSSICK)	25
CAT00C44LN4E00827			670	10165	2007	CATERPILLAR GENERATOR (CREEKSIDE/END EATON)	25
1FDAF5GY8AEB38445	1341999		670	10199	2010	FORD F-550 SERVICE TRUCK	15
100053811100450			670	10354	2011	LANDA PRESSURE WASHER PGHW535324E	15
00C66HN6D00683			670	10370	2010	CATERPILLAR D175-2 GENERATOR	20
6041851 CO-GEN			670	10371	2010	GE JENBACHER GENERATOR JMC208GS-B/N.L	25
3512CASBG00528			670	10372	2010	CATERPILLAR GENERATOR 3512C GD	25
2801330			670	10373	2012	CUSHMAN TITAN UTILITY CART	10
1FDRF3E62EEA86180	1440915		670	10405	2014	FORD F-350 W/ CRANE	12