

# City of Loma Linda

## Sewer Spill Emergency

### Response Plan

Effective Date: \_\_\_\_\_

Revised Date: \_\_\_\_\_

Approved by: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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## 1. PURPOSE

The purpose of the City of Loma Linda Spill Emergency Response Plan (SERP) is to support a prompt, orderly and effective response to spills (sanitary), reduce spill volumes, and collect information for prevention of future spills. A “spill” in this document is defined, by State Water Board Order No. WQ 2022-0103-DWQ as a discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure.

The SERP provides guidelines for City personnel to follow in responding to, cleaning up, reporting, and properly documenting spills that may occur within the City’s service area. This SERP satisfies the State Water Board Order No. WQ 2022-0103-DWQ, which require wastewater collection agencies to have a Spill Emergency Response Plan.

Additionally, the SERP outlines procedures for responding to sanitary sewer spill backups into structures as required by the City’s insurer. “Backup” is a term typically used by insurers to describe property damage resulting from exposure and contact to untreated or partially treated sewage.

## 2. POLICY

The City’s employees are required to report all spills from agency owned sewer mains and publicly owned laterals found and to take the appropriate action to secure the spill area, properly report to the appropriate regulatory agencies, relieve the cause of the spill, and ensure that the affected area is cleaned as soon as possible to minimize health hazards to the public and protect the environment. The City’s goal is to respond to sewer system spills as soon as possible following notification. The City will follow reporting procedures regarding sewer spills as set forth by the Colorado River Regional Water Quality Control Board and the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR).

## 3. DEFINITIONS AS USED IN THIS SERP

**ANNUAL REPORT:** An Annual Report (previously termed as Collection System Questionnaire in previous State Water Board Order No. 2006-0003-DWQ) is a mandatory report in which the City provides a calendar-year update of its efforts to prevent spills.

**BASIN PLAN:** A Basin Plan is a water quality control plan specific to a Regional Water Quality Control Board (Regional Water Board), that serves as regulations to: (1) define and designate beneficial uses of surface and groundwaters, (2) establish water quality objectives for protection of beneficial uses, and (3) provide implementation measures.

**BENEFICIAL USES:** The term “Beneficial Uses” is a Water Code term, defined as the uses of the waters of the State that may be protected against water quality degradation. Examples of beneficial uses include but are not limited to, municipal, domestic, agricultural, and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

**CALIFORNIA INTEGRATED WATER QUALITY SYSTEM (CIWQS):** CIWQS is the statewide database that provides for mandatory electronic reporting as required in State and Regional Water Board-issued waste discharge requirements.

**DATA SUBMITTER:** A Data Submitter is an individual designated and authorized by the City’s Legally Responsible Official to enter spill data into the online CIWQS Sanitary Sewer System Database. A Data Submitter does not have the authority of a Legally Responsible Official to certify reporting entered into the online CIWQS Sanitary Sewer System Database.

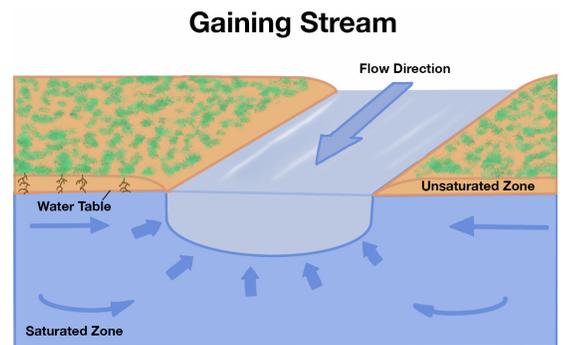
**DRAINAGE CONVEYANCE SYSTEM:** A drainage conveyance system is a publicly- or privately-owned separate storm sewer system, including but not limited to drainage canals, channels, pipelines, pump stations, detention basins, infiltration basins/facilities, or other facilities constructed to transport stormwater and non-stormwater flows.

**ENVIRONMENTALLY SENSITIVE AREA:** An environmentally sensitive area is a designated agricultural and/or wildlife area identified to need special natural landscape protection due to its wildlife or historical value.

**EXFILTRATION:** Exfiltration is the underground exiting of sewage from a sanitary sewer system through cracks, offset or separated joints, or failed infrastructure due to corrosion or other factors.

**FOG – Fats, Oils, and Grease:** Refers to fats, oils, and grease typically associated with food preparation and cooking activities that can cause blockages in the sanitary sewer system.

**HYDROLOGICALLY CONNECTED:** Two waterbodies are hydrologically connected when one waterbody flows, or has the potential to flow, into the other waterbody. For the purpose of the SWRCB Order, groundwater is hydrologically connected to a surface water when the groundwater feeds into the surface water. See image, right. The surface waterbody in this example is termed a gaining stream as it gains flow from surrounding groundwater.



**LATERAL (INCLUDING LOWER AND UPPER LATERAL):** A lateral is an underground segment of smaller diameter pipe that transports sewage from a customer's building or property (residential, commercial, or industrial) to the City's main sewer line in a street or easement. Upper and lower lateral boundary definitions are subject to local jurisdictional codes and ordinances, or private system ownership. A lower lateral is the portion of the lateral located between the sanitary sewer system main, and either the property line, sewer clean out, curb line, established utility easement boundary, or other jurisdictional locations. An upper lateral is the portion of the lateral from the property line, sewer clean out, curb line, established utility easement boundary, or other jurisdictional locations, to the building or property.

**LEGALLY RESPONSIBLE OFFICIAL:** A Legally Responsible Official is an official representative, designated by the City, with authority to sign and certify submitted information and documents required by State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR).

**MAINLINE SEWER:** Refers to City wastewater collection system piping downstream of the sewer laterals that is not a private sewer lateral connection to a building.

**MAINTENANCE HOLE OR MANHOLE:** Refers to an engineered structure that is intended to provide access to a sanitary sewer for maintenance and inspection

**NOTIFICATION OF A SPILL:** Refers to the time at which the City becomes aware of a spill event through observation or notification by the public or other source.

**NUISANCE:** For the purpose of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), a nuisance, as defined in Water Code section 13050(m), is anything that meets all of the following requirements:

- Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property;
- Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and

- Occurs during, or as a result of, the treatment or disposal of wastes.

**PREVENTATIVE MAINTENANCE:** Refers to maintenance activities intended to prevent failures of the wastewater collection system facilities (e.g. cleaning, CCTV, inspection).

**PRIVATE LATERAL SEWAGE SPILL** – Spills that are caused by blockages or other problems within a privately-owned lateral.

**PRIVATE SANITARY SEWER SYSTEM:** A private sanitary sewer system is a sanitary sewer system of any size that is owned and/or operated by a private individual, company, corporation, or organization. A private sanitary sewer system may or may not connect into a publicly owned sanitary sewer system.

**PRIVATE SEWER LATERAL:** A private sewer lateral is the privately-owned lateral that transports sewage from private property(ies) into a sanitary sewer system.

**POTENTIAL TO DISCHARGE, POTENTIAL DISCHARGE:** Potential to Discharge, or Potential Discharge, means any exiting of sewage from a sanitary sewer system which can reasonably be expected to discharge into a water of the State based on the size of the sewage spill, proximity to a drainage conveyance system, and the nature of the surrounding environment.

**RECEIVING WATER:** A receiving water is a water of the State that receives a discharge of waste.

**SANITARY SEWER SYSTEM:** A sanitary sewer system is a system that is designed to convey sewage, including but not limited to, pipes, manholes, pump stations, siphons, wet wells, diversion structures and/or other pertinent infrastructure, upstream of a wastewater treatment plant headworks, including:

- Laterals owned and/or operated by the City;
- Satellite sewer systems; and/or
- Temporary conveyance and storage facilities, including but not limited to temporary piping, vaults, construction trenches, wet wells, impoundments, tanks, and diversion structures.

For purpose of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), sanitary sewer systems include only systems owned and/or operated by the City.

**SATELLITE SEWER SYSTEM:** A satellite sewer system is a portion of a sanitary sewer system owned or operated by a different owner than the owner of the downstream wastewater treatment facility ultimately treating the sewage.

**SEWAGE:** Sewage, and its associated wastewater, is untreated or partially treated domestic, municipal, commercial and/or industrial waste (including sewage sludge), and any mixture of these wastes with inflow or infiltration of storm-water or groundwater, conveyed in a sanitary sewer system.

**SEWER BACKUP** A sanitary sewer spill resulting from a sanitary sewer system overflow, operational failure, and/or infrastructure failure in a publicly owned sewer system, with an appearance point and subsequent discharge into a structure.

**SPILL:** A spill is a discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure. Exfiltration of sewage is not considered to be a spill under the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR) if the exfiltrated sewage remains in the subsurface and does not reach a surface water of the State.

- **Category 1 Spill:**

A Category 1 spill is a spill of any volume of sewage from or caused by a sanitary sewer system regulated under the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR) that results in a discharge to:

- A surface water, including a surface water body that contains no flow or volume of water; or
- A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly.

Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water, unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility.

A spill from a City-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the City shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR).

- **Category 2 Spill**

A Category 2 spill is a spill of 1,000 gallons or greater, from or caused by a sanitary sewer system regulated under the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR) that does not discharge to a surface water. A spill of 1,000 gallons or greater that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system, is a Category 2 spill.

- **Category 3 Spill**

A Category 3 spill is a spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR) that does not discharge to a surface water. A spill of equal to or greater than 50 gallons and less than 1,000 gallons, that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 3 spill.

- **Category 4 Spill**

A Category 4 spill is a spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR) that does not discharge to a surface water. A spill of less than 50 gallons that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 4 spill.

**TRAINING:** Training is in-house or external education and guidance needed that provides the knowledge, skills, and abilities to comply with the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR).

**WASH DOWN WATER:** Wash down water is water used to clean a spill area.

**WASTE:** Waste, as defined in Water Code section 13050(d), includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.

**WATERS OF THE STATE:** Waters of the State are surface waters or groundwater within boundaries of the state as defined in Water Code section 13050(e), in which the State and Regional Water Boards have authority to protect beneficial uses. Waters of the State include, but are not limited to, groundwater aquifers, surface waters, saline waters, natural washes and pools, wetlands, sloughs, and estuaries, regardless of flow or whether water exists during dry conditions. Waters of the State include waters of the United States.

**WATERS OF THE UNITED STATES:** Waters of the United States are surface waters or waterbodies that are subject to federal jurisdiction in accordance with the Clean Water Act.

**WATER QUALITY OBJECTIVE:** A water quality objective is the limit or maximum amount of pollutant, waste constituent or characteristic, or parameter level established in statewide water quality control plans and Regional Water Boards' Basin Plans, for the reasonable protection of beneficial uses of surface waters and groundwater and the prevention of nuisance.

#### **4. STATE REGULATORY REQUIREMENTS FOR ELEMENT 6, SPILL EMERGENCY RESPONSE PLAN**

The Sewer System Management Plan (SSMP) must include an up to date Spill Emergency Response Plan (SERP) to ensure prompt detection of and response to spills to reduce spill volumes and collect information for prevention of future spills. The SERP must include procedures to:

- Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner;
- Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State;
- Comply with the notification, monitoring and reporting requirements of State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), State law and regulations, and applicable Regional Water Board Orders;
- Ensure that appropriate staff and contractors implement the SERP and are appropriately trained;
- Address emergency system operations, traffic control and other necessary response activities;
- Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system;
- Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State;
- Remove sewage from the drainage conveyance system;
- Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters;
- Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery;
- Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event;
- Conduct post-spill assessments of spill response activities;
- Document and report spill events as required in State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR); and
- Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update it as needed.

The Sewer System Management Plan is available to the public by submitting an electronic copy to the State Water Board.

## 5. SPILL EMERGENCY RESPONSE PLAN OBJECTIVES

The Spill Emergency Response Plan includes measures to protect public health and the environment. The City will respond to spills from its system(s) in a timely manner that minimizes water quality impacts and nuisance by:

- Immediately stopping the spill and preventing/minimizing a discharge to waters of the State;
- Intercepting sewage flows to prevent/minimize spill volume discharged into waters of the State;
- Thoroughly recovering, cleaning up and disposing of sewage and wash down water; and
- Cleaning publicly accessible areas while preventing discharges to waters of the State.

Additionally, City Staff will:

- Work safely;
- Properly document each spill event in a separate file including photos and/or video where applicable;
- Collect information for prevention of future spills;
- Minimize public contact with the spilled wastewater;
- Mitigate the impact of the spill;
- Meet the regulatory reporting requirements;
- Evaluate the causes of failure related to spills;
- Perform post-spill response evaluation for adherence to procedures and effectiveness of response; and
- Revise response procedures, modify maintenance practices or provide additional training based on the results from the debrief and failure analysis of spills, if needed.

## 6. SPILL DETECTION AND NOTIFICATION

*ref. State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), ATTACHMENT D, Element 6, Page D-6*

The processes that are employed to notify the City of the occurrence of a spill include: observation by the public, receipt of an alarm, or observation by City staff during the normal course of their work.

### 6.1 LIFT STATION ALARMS

The City operates 1 wastewater lift station. In the event of a station failure the SCADA alarm system is activated and the City is contacted. To prevent spills, wastewater from the wet well can either be pumped into a vacuum truck for disposal to a nearby sanitary sewer manhole or bypassed around the station into the sanitary sewer system.

### 6.2 PUBLIC OBSERVATION

Public observation is the most common way that the City is notified of blockages and spills. Contact numbers and information for reporting sewer spills and backups are on the City's website: [https://www.lomalinda-ca.gov/our\\_city/departments/public\\_works/water\\_\\_\\_sewer](https://www.lomalinda-ca.gov/our_city/departments/public_works/water___sewer). The City's telephone number for reporting sewer problems is (909) 799-4410.

- **Normal Work Hours:** Public Works Admin will receive calls for sewer service requests. They will record the caller's name, address and nature of the problem and begin a work order in iWorks. They will then call the Sewer Crew and relay the information. The Sewer Crew will respond and perform an investigation and note findings and actions taken, if any, on the Service Request form and then route back to Public Works Admin to enter into iWorks and close the Work Order. If the service request results in a spill, the Sewer Crew will also complete the Spill Response Workbook.
- **After Hours:** The County Dispatch will receive calls for sewer service requests after hours. They will record the caller's name, address and nature of the problem and notify the On-Call Employee. The On-Call Employee will respond and perform an investigation and note findings and actions taken, if any, on the Service Request Form and then route back to Public Works Admin the next business day to enter into iWorks and close the Work Order. If the service request results in a spill, the Sewer Crew will also complete the Spill Response Workbook.

When calls are received, either during normal work hours or after hours, the individual receiving the call will collect and include in the spill event file, at a minimum, the following information to record the complaint:

- Date, time, and method of notification,
- Date and time the complainant first noticed the spill, if available,
- Narrative description of the complaint, including any information the caller provided regarding whether the spill has reached surface waters or a drainage conveyance system, if available,
- Complainant's contact information, if available, and
- Final resolution of the complaint.

If the spill or backup is not in the City's service area the individual receiving the call provides the customer with the contact information for the responsible agency, and then notifies that agency.

### **6.3 CITY STAFF OBSERVATION**

City staff conducts periodic inspections of its sewer system facilities as part of their routine activities. Any problems noted with the sewer system facilities are reported to appropriate City staff that, in turn, responds to emergency situations. Work orders are issued to correct non-emergency conditions.

### **6.4 CONTRACTOR OBSERVATION**

Contractors working on the City sewer system will be informed of contractor spill response procedures. Contractors working on behalf of property owners will be provided spill response information by the Permit Center or Engineering Division when they pull a permit. The following procedures are to be followed in the event that a contractor/plumber causes or witnesses a sanitary sewer spill. If the contractor/plumber causes or witnesses a spill they should:

1. Immediately notify the City at (909) 799-4410 and provide the following information if available:
  - a. Date, time contractor first noticed the spill
  - b. Description of the contractor's observation, including any information regarding whether the spill has reached surface waters or a drainage conveyance system
  - c. Contractor's contact information
2. Protect storm drains.

3. Protect the public.
4. Direct ALL media and public relations requests to the Public Works Director.

### 6.5 NO OBSERVATION

If there are no witnesses or no call was received for a spill, the City staff will contact nearby residences or business owners in the vicinity of the spill, in an attempt to obtain information that brackets a given start time that the spill began. This information will be collected and documented on the Sanitary Sewer Spill Report in the Sanitary Sewer Spill/Backup Response Workbook.

## 7. SPILL RESPONSE PROCEDURES (Ref. State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), ATTACHMENT D Element 6 page D-6)

### 7.1 SEWER SPILL/BACKUP RESPONSE SUMMARY

The City will respond to spills as soon as feasible following notification of a spill/backup.

If it is not possible that the spill/backup is due to a failure in the City-owned/maintained sewer lines the Sewer Crew performs the following:

- Follows the instructions in the Sanitary Sewer Spill/Backup Response Workbook.
- If the customer is not home the Sewer Crew completes the Door Hanger and leaves it on the customer's door.
- If the customer is home the Sewer Crew:
  - Explains that the blockage is in the customer's lateral and the City does not have legal authority to maintain or perform work on privately owned laterals.
  - Recommends to the customer that they hire a licensed contractor to clear their line.
  - Gives the customer the Your Responsibilities as a Private Property Owner pages from the Sanitary Sewer Spill/Backup Response Workbook.

If it is is possible that the spill/backup is due to a failure in the City-owned/maintained sewer lines the Sewer Crew:

- Follows the instructions in the Sanitary Sewer Spill/Backup Response Workbook.
- Notifies Utilities Superintendent of the incident.
- Relieves blockage and cleans impacted areas.
- Forwards the completed Sanitary Sewer Spill/Backup Response Workbook to the Utilities Superintendent.

The Utilities Maintenance Technician III, Utilities Superintendent, and/or the Public Works Director performs required regulatory reporting in accordance with the Sanitary Sewer Spill/Backup Response Workbook's Regulatory Reporting section.

If the overflow has impacted private property, the Sewer Crew:

- Follows the instructions in the Sanitary Sewer Spill/Backup Response Workbook.

- Provides the customer with forms and information as indicated in the Sanitary Sewer Spill/Backup Response Workbook.
- Forwards the completed Sanitary Sewer Spill/Backup Response Workbook to Utilities Superintendent.

The Utilities Superintendent notifies the City Human Resources Department of incident.

The City Human Resources Department or designee:

- Reviews incident reports, claim form and other incident information.
- Communicates with claimant as appropriate.
- Properly documents in writing all activities and communications before approving the final event file.

## **7.2 FIRST RESPONDER PRIORITIES**

The first responder's priorities are:

- Prompt response to spills.
- To follow safe work practices.
- To respond promptly with the appropriate and necessary equipment.
- To reduce spill volume and contain the spill wherever feasible.
- To restore the flow as soon as practicable.
- To minimize public access to and/or contact with the spilled sewage.
- To promptly notify the Utilities Superintendent in event of a spill needing additional resources, and/or impacting environmentally sensitive areas.
- To return the spilled sewage to the sewer system.
- To restore the area to its original condition (or as close as possible). Collect information for the prevention of future spills.
- Properly document the spill and response activities on the forms provided in the Sanitary Sewer Spill/Backup Response Workbook, including photos and/or video where practicable.

## **7.3 SAFETY**

The first responder is responsible for following safety procedures at all times. Special safety precautions must be observed when performing sewer work. There may be times when City personnel responding to a sewer system event are not familiar with potential safety hazards peculiar to sewer work. In such cases it is appropriate to take the time to discuss safety issues, consider the order of work, and check safety equipment before beginning response activities.

If the first responders encounter access restrictions or unsafe conditions that prevent its compliance with spill response requirements or monitoring requirements in State Water Board Order No. WQ 2022-0103-DWQ (SSS-WDR), the City provides written documentation of access restrictions and/or safety hazards in the corresponding required report.

#### **7.4 INITIAL RESPONSE**

The first responder must respond to the site of the spill/backup and visually check for potential sewer stoppages. The first responder will:

- Note arrival time at the site of the spill/backup.
- Verify the existence of a public sewer system spill or backup.
- Identify and assess the affected area and extent of spill.
- Assess the spill location(s) and spread using photography, global positioning system (GPS), and other best available tools.
- Contact caller if time permits.
- Document the spill according to the requirements described in Section 10 of this SERP, including taking photos and/or videos of overflowing manhole(s)/cleanout(s).
- Take steps to contain, recover, and return the spill to the sanitary sewer as feasible. For procedures refer to the Sanitary Sewer Spill/Backup Response Workbook.
- Protect surface waters to the extent practicable. For procedures refer to the Sanitary Sewer Spill/Backup Response Workbook.
- Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event.

#### **7.5 INITIATE SPILL CONTAINMENT MEASURES**

The first responder will 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 air plugs, sandbags, and/or plastic mats 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 or sandbags.
- Vacuum retrieve sewage whenever practicable.
- Pump around the blockage/pipe failure.

Containment efforts will be documented. For procedures refer to the Sanitary Sewer Spill/Backup Response Workbook.

#### **7.6 RESTORE FLOW**

Using the appropriate cleaning equipment, set up downstream of the blockage and hydro-clean upstream from a clear manhole. Attempt to remove the blockage from the system and observe the flows to ensure that the blockage does not reoccur downstream. If the blockage cannot be cleared within a reasonable time from arrival, or sewer requires construction repairs to restore flow, then initiate containment and/or bypass pumping. If other

assistance is required, immediately contact the Utilities Superintendent. For procedures refer to the Sanitary Sewer Spill/Backup Response Workbook.

## 7.7 EQUIPMENT

This section provides a list of specialized equipment that may be used to support this Spill Emergency Response Plan.

- *Closed Circuit Television (CCTV) Inspection Unit* – A CCTV Inspection Unit is required to determine the root cause for all spills from gravity sewers.
- *Camera* -- A digital or disposable camera (photo, video or phone) is required to record the conditions upon arrival, during clean up, and upon departure.
- *Emergency Response Trucks* -- A utility body pickup truck, or open bed is required to store and transport the equipment needed to effectively respond to sewer emergencies. The equipment and tools will include containment and clean up materials.
- *Portable Generators, Portable Pumps, Piping, and Hoses* – Equipment used to bypass pump, divert, or power equipment to mitigate a spill.
- *Combination Sewer Cleaning Trucks* -- Combination high velocity sewer cleaning trucks with vacuum tanks are required to clear blockages in gravity sewers, vacuum spilled sewage, and wash down the impacted area following the spill event.
- *Air plugs, sandbags and plastic mats*
- *Spill Sampling Kits*
- *Portable Lights*

Standard operating procedures for equipment that may be necessary in the event of a sanitary sewer overflow or backup can be found in the Corp Yard.

## 8. RECOVERY AND CLEANUP (Ref. State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), Element 6, ATTACHMENT D, Page D-6)

The recovery and cleanup phase begins immediately after the flow has been restored and the spilled sewage has been contained to the extent possible. The spill recovery and cleanup procedures are described in the following sections.

### 8.1 ESTIMATE THE FLOW AND VOLUME OF SPILLED SEWAGE

A variety of approaches exist for estimating the volume of a sanitary sewer spill. The Sewer Crew members should use the method most appropriate to the sewer overflow in question and reference the Sanitary Sewer Spill/Backup Response Workbook which provides four (4) methods:

- Eyeball Estimation Method
- Duration and Flow Rate Calculation Method

- Area/Volume Method
- Upstream Connections Method

In addition, the following will be documented on the Sewer Spill Report form:

1. Description, photographs, and GPS coordinates of the system location where the spill originated. If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field;
2. Estimated total spill volume exiting the system;
3. Description and photographs of the extent of the spill and spill boundaries;
4. Did the spill reach a drainage conveyance system? If yes:
  - Description of the drainage conveyance system transporting the spill;
  - Photographs of the drainage conveyance system entry location(s);
  - Estimated spill volume that reached the drainage conveyance system;
  - Estimated spill volume fully recovered from the drainage conveyance system;
  - Estimated spill volume remaining within the drainage conveyance system
  - Estimated spill volume discharged to a groundwater infiltration basin or facility, if applicable;
  - Estimated spill travel time from the point of entry into the drainage conveyance system to the point of discharge into the receiving water.
5. Estimated total spill volume recovered.

## **8.2 RECOVERY OF SPILLED SEWAGE**

Vacuum up and/or pump the spilled sewage and wash down water and discharge it back into the sanitary sewer system. Thoroughly recover and dispose of sewage and wash down water.

## **8.3 CLEAN-UP AND DISINFECTION**

Clean up procedures will be implemented to reduce the potential for human health issues and adverse environmental impacts associated with a spill event. The procedures described are for dry weather conditions and will be modified as required for wet weather conditions. Where cleanup is beyond the capabilities of City staff, a cleanup contractor will be used.

### *Private Property*

City crews are responsible for the cleanup when the property damage is minor in nature and is outside of private building dwellings, such as in front, side and backyards, easements, etc. In all other cases, affected property owners can call a water damage restoration contractor to complete the cleanup and restoration. If the overflow into property is the definite cause of City system failure, the property owner can call out a water damage restoration contractor to complete the cleanup and restoration. In both cases, property owners may submit a claim form.

#### *Hard Surface Areas*

Collect all signs of sewage solids and sewage-related material either by protected hand or with the use of rakes and brooms. Wash down the affected area with clean water and/or deozyme or similar non-toxic biodegradable surface disinfectant until the water runs clear. The flushing volume will be approximately three times the estimated volume of the spill. Take steps to contain and vacuum up the wastewater. Allow area to dry. Repeat the process if additional cleaning is required.

#### *Landscaped and Unimproved Natural Vegetation*

Collect all signs of sewage solids and sewage-related material either by protected hand or with the use of rakes and brooms. Wash down the affected area with clean water until the water runs clear. The flushing volume will be approximately three times the estimated volume of the spill. Either contain or vacuum up the wash water so that none is released. Allow the area to dry. Repeat the process if additional cleaning is required.

#### *Natural Waterways*

The Department of Fish and Wildlife will be notified by CalOES for spills greater than or equal to 1,000 gallons. For spills less than 1,000 gallons, contact San Bernardino County Environmental Health for direction.

#### *Wet Weather Modifications*

Collect all signs of sewage solids and sewage-related material either by protected hand or with the use of rakes and brooms. Omit flushing and sampling during heavy storm events (i.e., sheet of rainwater across paved surfaces) with heavy runoff where flushing is not required and sampling would not provide meaningful results.

### **8.4 PUBLIC NOTIFICATION**

Signs will be posted and barricades put in place to keep vehicles and pedestrians away from contact with spilled sewage. San Bernardino County Environmental Health instructions and directions regarding placement and language of public warnings will be followed. Additionally, the Utilities Maintenance Service Technician III will use their best judgment regarding supplemental sign placement in order to protect the public and local environment. Signs will not be removed until directed by San Bernardino County Environmental Health or the Utilities Maintenance Service Technician III.

Creeks, streams and beaches that have been contaminated as a result of a spill will be posted at visible access locations until the risk of contamination has subsided to acceptable background bacteria levels. Document the number and location of posted signs. The area and warning signs, once posted, will be checked every day to ensure that they are still in place. Photographs of sign placement will be taken.

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

When contact with the local media is deemed necessary, the Public Works Director or their designee will provide the media with all relevant information.

**9. WATER QUALITY** (Ref. State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), *Element 6, Attachment A - DEFINITIONS page A-5, Attachment E1 2.3 through 2.4 pages E1-5 through E1-8*)

**9.1 SURFACE WATERS OF CONCERN**

The following waters of the State are in the City's service area:

- Santa Ana River

**9.2 WATER QUALITY SAMPLING AND TESTING**

For sewage spills in which an estimated 50,000 gallons or greater are discharged into a surface water, the City will conduct the following water quality sampling as soon as possible but no later than **18 hours** after the City's knowledge of a potential discharge to a surface water. Collect one water sample, each day of the duration of the spill, at:

- The DCS-001 location as described in section 9.5 (Receiving Water Sampling Locations) below, if sewage discharges to a surface water via a drainage conveyance system; and/or
- Each of the three receiving water sampling locations in section 9.5 (Receiving Water Sampling Locations) below;

If the receiving water has no flow during the duration of the spill, the City must report "No Sampling Due To No Flow" for its receiving water sampling locations.

The Sewer Crew will collect water quality samples in accordance with State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR).

The Sewer Crew staff collecting the samples will complete the Chain of Custody prior to transferring ownership of the samples to the Clinical Lab of San Bernardino.

The Clinical Lab of San Bernardino shall analyze the collected receiving water samples for the following constituents:

- Ammonia, and
- E. coli and Enterococcus per the Region 7 Basin Plan Water Quality Objectives:
  - In waters designated for water contact recreation (REC I) or noncontact water recreation (REC II), the following bacterial objectives apply. Although the objectives are expressed as fecal coliforms, E. coli, and enterococci bacteria, they address pathogenic microorganisms in general<sup>37</sup>(e.g., bacteria, viruses, and fungi).
    - E. coli:
      - REC 1: 126 per 100ml
      - REC II: 630 per 100 ml
    - Enterococcus:
      - REC 1: 33 per 100ml
      - REC II: 165 per 100 ml
  - Nor shall any sample exceed the following maximum allowable:
    - E. coli:
      - REC 1: 400 per 100ml
      - REC II: 2000 per 100 ml

- Enterococcus:
  - REC 1: 100 per 100ml
  - REC II: 305 per 100 ml

Dependent on the receiving water(s), sampling of bacterial indicators shall be sufficient to determine post-spill (after the spill) compliance with the water quality objectives and bacterial standards of the California Ocean Plan or the California Inland Surface Water Enclosed Bays, and Estuaries Plan, including the frequency and/or number of post-spill receiving water samples as may be specified in the applicable plans.

The City shall collect and analyze additional samples as required by the applicable Regional Water Board Executive Officer or designee.

### 9.3 LAB SELECTION

#### *Analytical Lab*

Samples collected for spill response and background monitoring purposes will be analyzed at Clinical Lab of San Bernardino, which is accredited through the California State Water Resources Control Board Environmental Laboratory Accreditation Program (ELAP). ELAP provides evaluation and accreditation of environmental testing laboratories to ensure the quality of analytical data used for regulatory purposes to meet the requirements of the State's drinking water, wastewater, shellfish, food, and hazardous waste programs. The State agencies that monitor the environment use the analytical data from these accredited labs. The ELAP-accredited laboratories have demonstrated capability to analyze environmental samples using approved methods.

#### *Getting Samples to the Lab*

At all times, sample hold times identified below will be observed in accordance with the following:

Analytical Parameter	Maximum Holding Time	Required Container Type	Required Preservative	Minimum Amount
Ammonia (NH <sub>3</sub> as N); SM 4500NH <sub>3</sub> B/C or B/G	28 days	Plastic / Glass	H <sub>2</sub> SO <sub>4</sub> pH <2 +0-6°C	200 mL
Coliform, Total / Fecal; SM 9221 B/E	8 hours – wastewater/storm- water 30 hours – drinking water	Plastic (sterile)	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> + 0-10°C; No regulatory temp. req. for drinking water)	100 mL
Coliform, Total / E.Coli; SM 9223 B (Present/Ab- sent or Quantitray)	8 hours	Plastic (sterile)	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> + 0-10°C; No regulatory temp. req. for DW	100 mL
Enterococcus by Enter- olett	8 hours	Plastic (sterile)	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> + 0-10°C	100 mL

Once samples are collected, they will be transported by the Sewer Crew to the lab to be processed.

### 9.4 WATER QUALITY ANALYSIS SPECIFICATIONS

Spill monitoring must be representative of the monitored activity (40 Code of Federal Regulations section 122.41(j)(1)).

Sufficiently Sensitive Methods

Sample analysis must be conducted according to sufficiently sensitive test methods approved under 40 Code of Federal Regulations Part 136 for the sample analysis of pollutants. For the purposes of State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), a method is sufficiently sensitive when the minimum level of the analytical method approved under 40 Code of Federal Regulations Part 136 is at or below the receiving water pollutant criteria.

Environmental Laboratory Accreditation Program-Accredited Laboratories

The analysis of water quality samples required per State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR) must be performed by a laboratory that has accreditation pursuant to Article 3(commencing with section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code. (Water Code section 13176(a).) The State Water Board accredits laboratories through its Environmental Laboratory Accreditation Program (ELAP).

**9.5 RECEIVING WATER SAMPLING LOCATIONS**

Receiving water samples shall be collected at the following locations.

**Sampling of Flow in Drainage Conveyance System (DCS) Prior to Discharge**

<b>Sampling Location</b>	<b>Sampling Location Description</b>
DCS-001	A point in a drainage conveyance system before the drainage conveyance system flow discharges into a receiving water.

**Receiving Surface Water Sampling (RSW)<sup>1</sup>**

<b>Sampling Location</b>	<b>Sampling Location Description</b>
RSW-001: Point of Discharge	A point in the receiving water where sewage initially enters the receiving water.
RSW-001U: Upstream of Point of Discharge	A point in the receiving water, upstream of the point of sewage discharge, to capture ambient conditions absent of sewage discharge impacts.
RSW-001D: Downstream of Point of Discharge	A point in the receiving water, downstream of the point of sewage discharge, where the spill material is fully mixed with the receiving water.

**9.6 STREAM VELOCITY MEASUREMENTS**

If sampling is performed after the spill has stopped, the velocity of the impacted surface water must be determined to estimate spill travel time and select an accurate Downstream sample location. One way to measure the spill travel time is to use a velocity probe (such as a Global Water FP111-S Flow Probe) to determine the rate of

<sup>1</sup> The City must use its best professional judgment to determine the upstream and downstream distances based on receiving water flow, accessibility to upstream/downstream waterbody banks, and size of visible sewage plume.

flow in the water body. In cases where a water velocity probe is used, the manufacturer's instructions will be followed.

## 9.7 SAMPLE TYPES

### *Grab Samples*

Grab samples are appropriate for the characterization of surface waters at a particular time and place, to provide information about minimum and maximum concentrations, and to allow for the collection of variable sample volume.

Grab samples may be collected directly into the sample container, or a clean decontaminated intermediate container may be used if a wading sample is not possible or safe. If an intermediate container is used, when in the field, double rinse the sampling device (bucket, automatic sampler) with sample water prior to collecting the sample and be sure to discard rinse water downstream of where sample will be collected. If samples are collected in a bucket and distributed into a consolidation collection container, swirl the contents of the bucket as it is being poured into the consolidation collection container to avoid settling of solids (and pour in back-and-forth pattern – e.g., 1-2-3-3-2-1).

- **Grab Sample:** A grab sample is defined as an individual sample collected at a given time. Grab samples represent only the condition that exists at the time the sample is collected (US EPA 1977).
- **Surface Grab Sample:** A sample collected at the water surface (i.e., skimming) directly into the sample container or into an intermediate container such as a clean bucket. A single or discrete sample collected at a single location.

### *Field Blanks*

Field Blanks are used to evaluate the potential for contamination of a sample by site contaminants from a source not associated with the sample collected (e.g., airborne dust, etc.). Sterile, deionized water is taken into the field in a sealed container. This is the stock water. The stock water is then poured into the sample container. The containers and sample submission forms are labeled as "Field Blank." The same template selected for the test samples should be used. Field blanks are subject to the same holding time limitations as samples. The appropriate FIELD QC box on the sample Chain of Custody form should be checked.

## 9.8 SAMPLE LABELING AND CHAIN OF CUSTODY PROCEDURES

At a minimum, the following grab samples will be collected:

- **Field Blank:** See Section 9.7 for discussion.
- **Upstream:** A point in the receiving water, upstream of the point of sewage discharge, to capture ambient conditions absent of sewage discharge impacts.
- **Source:** A point in the receiving water where sewage initially enters the receiving water. See Section 9.6 for information on determining velocity of the surface water in order to determine the Source sample location.
- **"Downstream" of spill:** A point in the receiving water, downstream of the point of sewage discharge, where the spill material is fully mixed with the receiving water. This location will vary with the velocity of the surface water to be sampled (*see Section 9.6*).

- A point in a drainage conveyance system before the drainage conveyance system flow discharges into a receiving water.

Photos or video of each sample location will be taken, properly labeled with date, time, and view direction and a map of the photo locations completed. Photos and videos shall include relevant landmarks to identify sampling locations and their surroundings.

Due to the evidentiary nature of samples collected during enforcement investigations, possession must be traceable from the time the samples are collected until they are analyzed. To maintain and document sample possession, a Surface Water Sample Chain of Custody Record (see Sewer Spill/Backup Response Workbook) must be completed. A sample is under custody if:

- It is in your possession, or
- It is in your view, after being in your possession, or
- It was in your possession and under your control to prevent tampering, or
- It is in a designated secure area.

As few people as possible should handle samples. The person taking the samples is personally responsible for the care and custody of the samples collected until they are transferred or dispatched properly.

Samples are accompanied by a chain of custody record. When transferring the possession of samples, the individuals relinquishing and receiving will sign, date, and note the time on the record. This record documents sample custody transfer from the sampler, often through another person, to the analyst at the laboratory. The samples are typically transferred to the sample-receiving custodian at the laboratory.

## **9.9 SAMPLING EQUIPMENT**

The following are examples of sampling equipment used by the City:

- Sampling pole with fixed container
- Sampling pole with removable container
- Sampling pail and rope
- Stream velocity meter
- Grab-n-Go Sample Kit

## **9.10 GRAB-N-GO SAMPLING KIT**

The City maintains a Grab-n-Go sampling kit located with Utilities Maintenance Technician III. The kit is inspected quarterly by the Utilities Maintenance Technician III. Additionally, any City employee utilizing the kit is responsible for decontaminating sampling equipment and field monitoring devices and replenishing the kit.

Spill Sample Collection Kit Inventory:

- Cooler
- Surface Water Sampling SOP (in Sewer Spill/Backup Response Workbook)
- Ice Pack
- 5 Ammonia sample bottles
- 15 Bacti sample bottles

- Minimum of 20 blank sample bottle labels
- Digital camera or smart phone camera
- Latex gloves
- Safety glasses/goggles
- Waterproof Pen
- Surface Water Sampling Worksheet (in Sewer Spill/Backup Response Workbook)
- Chain of Custody form (in Sewer Spill/Backup Response Workbook)

### **9.11 DECONTAMINATION PROCEDURES**

Removing or neutralizing contaminants from sampling equipment minimizes the likelihood of sample cross contamination, reduces or eliminates transfer of contaminants to clean areas, and prevents the mixing of incompatible substances.

Gross contamination can be removed by physical decontamination procedures. These abrasive and non-abrasive methods include the use of brushes, air and wet blasting, and high- and low- pressure water cleaning.

The decontamination procedures for the sample types and sampling equipment (other than sample bottles, which are provided to Sewer Crew in a “ready to be used” condition by the lab) used at the City may be summarized as follows:

1. Physical removal
2. Tap water rinse
3. Air dry

### **9.12 SAMPLING PROCEDURES**

#### **9.12.1 Sample Location and Identification Procedures**

Samples will be collected by the Sewer Crew. It is impossible to establish hard and fast rules concerning sampling locations. However, the following general guidelines should be applied whenever surface waters are sampled:

- The sampling location should be far enough upstream or downstream of confluences or point sources so that the surface water and spill volume is well mixed. Natural turbulence can be used to provide a good mixture.
- Samples should be collected at a location where the velocity is sufficient to prevent deposition of solids, and to the extent practical, should be in straight reach having uniform flow. All flow in the reach should be represented, so divided flow areas should be avoided, and samples should be taken towards the middle of the reach where feasible.
- Sampler must always stand downstream of the collection vessel, and sample “into the current.” Care must be taken to avoid introducing re-suspended sediment into the sample.

#### **9.12.2 Surface Water Sampling Standard Operating Procedure (SOP)**

The Surface Water Sampling SOP, Section G in the Sewer Spill/Backup Response Workbook, provides step-by-step procedures to collect samples and deliver them for analysis in accordance with State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), Element 6.

### 9.12.3 Follow Up Sampling

Sampling will be repeated every 24 hours, or as directed by the RWQCB or the San Bernardino County Environmental Health, until such time as one of the following criteria have been met:

- The San Bernardino County Environmental Health or the RWQCB indicates follow up sampling is no longer required, or
- Both the ammonia and bacteria levels downstream are approximately equal to or less than the upstream levels.

### 9.13 SAFETY AND ACCESS EXCEPTIONS

If the City encounters access restrictions or unsafe conditions that prevents its compliance with spill response requirements or monitoring requirements in State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), the City shall provide documentation of access restrictions and/or safety hazards in the corresponding required report.

Personal safety of staff engaged in any fieldwork activity (e.g. in transit, walking or hiking, and any field activities while at the sample site) is of primary importance. Staff should never place themselves in dangerous or risky situations. Any hazards that are known by field personnel should be communicated to other members of the field crew.

Fieldwork should be postponed if there is indication that engagement in the field activity could cause bodily harm. Working during lightning storms, in heavy vegetation or poison oak, near aggressive wildlife or domestic animals, traversing steep or rugged terrain, unstable slopes or creek banks, near swiftly moving water or potential flash flood conditions, or during snowy weather is not considered "normal risk." If any member of the field crew is uncomfortable with a reasonable self-determined hazardous field condition, it is that person's responsibility to bring this to the attention of the onsite field supervisor or their supervisor. A "reasonable self-determined hazardous field condition" is defined as other than normal risk. Supervisors shall not dismiss any person's spoken concerns that field conditions are too hazardous to complete the work assignment.

The person taking the samples must have adequate protection, including protective clothing. They must wear gloves, as protection against chemical and/or bacteriological hazards, while they are sampling or handling samples that are known or suspected to be hazardous (e.g. visible solids or sheens, downstream from sewage spills, etc.), or if hands have open wounds. The type of gloves worn shall be determined by the sampling circumstance and type of pollutants expected – for instance longer gloves are needed when samples must be taken well below the surface.

When in a boat or wading in a stream and where the danger of drowning exists, a personal floatation device shall be worn at all times in addition to following the other requirements of Title 8 CCR 1602 Working Over or Near Water. Other protective measures shall be taken in accordance with City safety procedures.

Upon arrival at a sampling site, safety equipment such as signs, cones, lights, etc. shall be set out as appropriate. Vehicles shall be parked in locations and directions to minimize traffic disruption and avoid sample contamination. Photos should be ultimately taken of the placement of all safety equipment and signage.

The following guidelines apply to all fieldwork by City staff.

- No sample or measurement is worth the risk of injury.

- All staff shall use proper personnel protective gear as appropriate for the incident (e.g., life preservers, gloves, goggles, etc.)
- Field sampling crews should consist of at least two members unless otherwise approved by a supervisor.
- Be conscious of the whereabouts of rattlesnakes, mountain lions, and other dangerous animals.
- Open body wounds are entry sites for infection; take the necessary precautions for self-protection.
- If there is storm activity in the work area, wait for safer conditions to develop or postpone the sampling.
- Do not sample at night without approval from your supervisor.
- Do not trespass on private property or posted restricted public lands without prior permission and written approval from property owner or administrator.
- If strange or suspicious looking people are in the work area, either wait for them to leave or postpone the work to a later time. Do not force confrontations with strangers and back away from any confrontations with the public. Be courteous and understanding of public concerns of the situation.
- Take the necessary precautions against exposure to harmful weather conditions such as heat, wind, snow, cold, rain, etc.
- Carefully evaluate a given on-site situation to determine if the task can be performed safely.
- Streams will not be entered unless the responding employees have the necessary protective footwear (e.g. rubber boots, waders) and the footwear does not pose an additional risk to worker safety (e.g. waders filling with water if the employee slips in the stream).
- Streams will not be entered if deemed unsafe to do so by the most senior employee on the responding crew and if entered, will only be done so in accordance with Title 8 CCR Section 1602 Work Over or Near Water.

#### **9.14 SPILL TECHNICAL REPORT: Spill Technical Report for Individual Category 1 Spill in which 50,000 Gallons or Greater Discharged into a Surface Water**

For any spill in which 50,000 gallons or greater discharged into a surface water, **within 45 calendar days** of the spill end date, the Utilities Maintenance Technician III shall submit a Spill Technical Report to the online CIWQS Sanitary Sewer System Database. The Spill Technical Report, at minimum, must include the following information:

1. Spill causes and circumstances, including at minimum:
  - Complete and detailed explanation of how and when the spill was discovered;
  - Photographs illustrating the spill origin, the extent and reach of the spill, drainage conveyance system entrance and exit, receiving water, and post-cleanup site conditions;
  - Diagram showing the spill failure point, appearance point(s), the spill flow path, and ultimate destinations;
  - Detailed description of the methodology employed, and available data used to calculate the discharge volume and, if applicable, the recovered spill volume;
  - Detailed description of the spill cause(s);
  - Description of the pipe material, and estimated age of the pipe material, at the failure location;
  - Description of the impact of the spill;

- Copy of original field crew records used to document the spill; and
  - Historical maintenance records for the failure location.
2. City’s response to the spill:
- Chronological narrative description of all actions taken by the City to terminate the spill;
  - Explanation of how the Sewer System Management Plan Spill Emergency Response Plan was implemented to respond to and mitigate the spill; and
  - Final corrective action(s) completed and a schedule for planned corrective actions, including:
    - Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable,
    - Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences, and
    - Necessary modifications to the Emergency Spill Response Plan to incorporate lessons learned in responding to and mitigating the spill.
3. Water Quality Monitoring, including at minimum:
- Description of all water quality sampling activities conducted;
  - List of pollutant and parameters monitored, sampled and analyzed; as required in Section 9.2.
  - Laboratory results, including laboratory reports;
  - Detailed location map illustrating all water quality sampling points; and
  - Other regulatory agencies receiving sample results (if applicable).
5. Evaluation of spill impact(s), including a description of short-term and long-term impact(s) to beneficial uses of the surface water.

**9.15 TRAINING**

Training will be provided in accordance with the table below:

<b>Surface Water Sampling Training Program</b>	
Who Is Trained to Collect Surface Water Samples?	Sewer Crew
Training Curriculum	At a minimum, training shall include: <ul style="list-style-type: none"> <li>• The City of Loma Linda Water Quality Monitoring Plan</li> <li>• Sampling technique, including hands on practice</li> <li>• Sampling equipment calibration, use and decontamination procedures, including hands on practice</li> <li>• Sampling safety</li> <li>• Completion of the Sampling Equipment Calibration/Maintenance Log, Surface Water Sampling Report and Chain of Custody</li> </ul>
Training Documentation	Attendees shall be required to sign-in to all training on the appropriate forms used by the City.
Refresher Training Frequency	Annual

Who is Responsible for Ensuring Training Occurs?	Utilities Superintendent
Required Training Records	Employee training sign in log
Who is Responsible for Maintaining Records?	Utilities Superintendent

**10. NOTIFICATION, REPORTING, MONITORING AND RECORDKEEPING REQUIREMENTS**

*ref. ORDER WQ 2022-0103-DWQ Attachment E-1 and E-2*

**10.1 REPORTING REQUIREMENTS**

All reporting required in State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR) must be submitted electronically to the online CIWQS Sanitary Sewer System Database (<https://ciwqs.waterboards.ca.gov>), unless specified otherwise in State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR). Electronic reporting may solely be conducted by a Legally Responsible Official or Data Submitter(s) previously designated by the Legally Responsible Official, as required in section 5.8 (Designation of Data Submitters) of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR).

The City shall report any information that is protected by the Homeland Security Act, by email to SanitarySewer@waterboards.ca.gov, with a brief explanation of the protection provided by the Homeland Security Act for the subject report to be protected from unauthorized disclosure and/or public access, and for official Water Board regulatory purposes only.

Refer to APPENDIX A for detailed reporting requirements by spill category.

**10.2 REGULATOR REQUIRED NOTIFICATIONS**

**10.2.1 Spill Category 1: Spills to Surface Waters**

Spill Requirement	Due	Method
Notification	<b>Within two (2) hours</b> of the City’s knowledge of a Category 1 spill of 1,000 gallons or greater, discharging or threatening to discharge to surface waters notify the California Office of Emergency Services and obtain a notification control number.	California Office of Emergency Services at: (800) 852-7550 (Section 1 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))
Monitoring	<ul style="list-style-type: none"> <li>Conduct spill-specific monitoring;</li> <li>Conduct water quality sampling of the receiving water within <b>18 hours</b> of initial knowledge of spill of 50,000 gallons or greater to surface waters.</li> </ul>	(Section 2 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))

Reporting	<ul style="list-style-type: none"> <li>• Submit Draft Spill Report <b>within three (3) business days</b> of the City’s knowledge of the spill;</li> <li>• Submit Certified Spill Report <b>within 15 calendar days</b> of the spill end date;</li> <li>• Submit Technical Report <b>within 45 calendar days</b> after the spill end date for a Category 1 spill in which <b>50,000 gallons or greater</b> discharged to surface waters; and</li> <li>• Submit Amended Spill Report <b>within 90 calendar days</b> after the spill end date.</li> </ul>	(Section 3.1 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))
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**10.2.2 Spill Category 2: Spills of 1,000 Gallons or Greater That Do Not Discharge to Surface Waters**

Spill Requirements	Due	Method
Notification	<b>Within two (2) hours</b> of the City’s knowledge of a Category 2 spill of 1,000 gallons or greater threatening to discharge to waters of the State: Notify California Office of Emergency Services and obtain a notification control number.	California Office of Emergency Services at: (800) 852-7550 (Section 1 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))
Monitoring	Conduct spill-specific monitoring.	(Section 2 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))
Reporting	<ul style="list-style-type: none"> <li>• Submit Draft Spill Report <b>within three (3) business days</b> of the City’s knowledge of the spill;</li> <li>• Submit Certified Spill Report <b>within 15 calendar days</b> of the spill end date; and</li> <li>• Submit Amended Spill Report <b>within 90 calendar days</b> after the spill end date.</li> </ul>	(Section 3.2 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))

**10.2.3 Spill Category 3: Spills of Equal or Greater than 50 Gallons and Less than 1,000 Gallons That Does Not Discharge to Surface Waters**

Spill Requirements	Due	Method
Notification	Not Applicable	Not Applicable
Monitoring	Conduct spill-specific monitoring.	(Section 2 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))
Reporting	<ul style="list-style-type: none"> <li>• Submit monthly Certified Spill Report to the online CIWQS Sanitary Sewer</li> </ul>	(Section 3.3 and 3.5 of Attachment E1 of the State Water Board Order No. WQ

	<p>System Database within <b>30 calendar days</b> after the end of the month in which the spills occur; and</p> <ul style="list-style-type: none"> <li>• Submit Amended Spill Reports <b>within 90 calendar days</b> after the Certified Spill Report due date.</li> </ul>	2022-0103-DWQ (SSSWDR))
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**10.2.4 Spill Category 4: Spills Less Than 50 Gallons That Do Not Discharge to Surface Waters**

Spill Requirements	Due	Method
Notification	Not Applicable	Not Applicable
Monitoring	Conduct spill-specific monitoring.	(Section 2 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))
Reporting	<ul style="list-style-type: none"> <li>• If, during any calendar month, Category 4 spills occur, certify monthly, the estimated total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills into the online CIWQS Sanitary Sewer System Database, within 30 days after the end of the calendar month in which the spills occurred.</li> <li>• Upload and certify a report, in an acceptable digital format, of all Category 4 spills to the online CIWQS Sanitary Sewer System Database, by February 1<sup>st</sup> after the end of the calendar year in which the spills occur.</li> </ul>	(Section 3.4, 3.6, 3.7 and 4.4 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))

**10.2.5 City Owned and/or Operated Lateral Spills That Do Not Discharge to Surface Waters**

Spill Requirements	Due	Method
Notification	<p><b>Within two (2) hours</b> of the City's knowledge of a spill of 1,000 gallons or greater, from an City- owned and/or operated lateral, discharging or threatening to discharge to waters of the State:</p> <p>Notify California Office of Emergency Services and obtain a notification control number.</p> <p>Not applicable to a spill of less than 1,000 gallons.</p>	<p>California Office of Emergency Services at: (800) 852-7550</p> <p>(Section 1 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))</p>

Monitoring	Conduct visual monitoring.	(Section 2 of Attachment E1 of the State Water Board ORDER WQ 2022-0103-DWQ)
Reporting	<ul style="list-style-type: none"> <li>• Upload and certify a report, in an acceptable digital format, of all lateral spills (that do not discharge to a surface water) to the online CIWQS Sanitary Sewer System Database, by February 1<sup>st</sup> after the end of the calendar year in which the spills occur.</li> <li>• Report a lateral spill of any volume that discharges to a surface water as a Category 1 spill.</li> </ul>	(Sections 3.6, 3.7 and 4.4 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))

### 10.3 COMPLAINT RECORDS

The City maintains records of all complaints received whether or not they result in sanitary sewer overflows. These complaint records include, but are not limited to, records documenting how the City responded to notifications of spills. Each complaint record must, at a minimum, include the following information:

- Date, time, and method of notification,
- Date and time the complainant first noticed the spill, if available,
- Narrative description of the complaint, including any information the caller provided regarding whether the spill has reached surface waters or a drainage conveyance system, if available,
- Complainant’s contact information, if available, and
- Final resolution of the complaint;

All complaint records will be maintained in iWorks for a minimum of five years whether or not they result in a spill. Spill files (field notes, spill/Backup Response Workbook) are kept in the Utilities Maintenance Technician III's office.

### 11. POST-SPILL ASSESSMENTS OF SPILL RESPONSE ACTIVITIES

(ref. State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), *Element 6, ATTACHMENT D, Page D-6*)

Every spill event is an opportunity to evaluate the City adherence to response and reporting procedures and effectiveness of the response. Each spill event is unique, with its own elements and challenges including volume, cause, location, terrain, climate, and other parameters.

As soon as possible after spill events all the participants, from the person who received the call to the last person to leave the site, will meet to review the procedures used and to discuss what worked and where improvements could be made in responding to and mitigating future spill events. The results of the debriefing will be documented and tracked to ensure the action items are completed as scheduled.

### **11.1 FAILURE ANALYSIS INVESTIGATION**

The objective of the failure analysis investigation is to determine the “root cause” of the spill and to identify corrective action(s) needed that will reduce or eliminate future potential for the spill to recur or for other spills to occur.

The investigation will include reviewing all relevant data to determine appropriate corrective action(s) for the line segment. The investigation may include:

- Reviewing and completing the Sanitary Sewer Spill Report and any other documents related to the incident
- Reviewing the incident timeline and other documentation regarding the incident
- Reviewing communications with the reporting party and witness
- Reviewing volume estimate, volume recovered estimate, volume estimation assumptions and associated drawings
- Reviewing available photographs
- Interviewing staff that responded to the spill
- Reviewing past maintenance records
- Reviewing past CCTV records,
- Conducting a CCTV inspection to determine the condition of all line segments immediately following the spill and reviewing the video and logs,
- Reviewing any Fats, Oils, Roots and Grease (FROG) related information or results
- Post spill debrief records
- Interviews with the public at the spill location

The product of the failure analysis investigation will be the determination of the root cause and the identification and scheduling of the corrective actions. The Collection System Failure Analysis Form (in Sanitary Sewer Spill/Backup Response Workbook) will be used to document the investigation.

## **12. SPILL RESPONSE TRAINING**

*(ref. State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), Element 6, Attachment D 4.3 page D-5 and Element 6 page D-6)*

This section provides information on the training that is required to support this Spill Emergency Response Plan.

### **12.1 INITIAL AND ANNUAL REFRESHER TRAINING**

All City personnel who may have a role in responding to, reporting, and/or mitigating a sewer system spill will receive training on the contents of this SERP. All new employees will receive training before they are placed in a position where they may have to respond. Current employees will receive annual refresher training on this SERP and the procedures to be followed. The City will document all training.

Affected employees will receive annual training on the following topics by knowledgeable trainers:

- The requirements of State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), Element 6
- The City's Spill Emergency Response Plan procedures and practice drills
- Containment and cleanup methods
- Researching and documenting Sanitary Sewer Spill Start Times
- Skilled estimation of spill volume for field operators
- Impacted Surface Waters: Sample location selection, sampling, and documentation procedures
- Electronic CIWQS reporting procedures for staff submitting data
- State Water Resources Control Board Employee Knowledge Expectations

Through SWRCB Employee Knowledge Expectations training, the employee will be able to answer the following:

1. Please briefly describe your name and job title.
2. Please describe for us approximately when you started in this field and how long you have worked for your agency.
3. Please expand on your current position duties and role in responding in the field to any spill complaints.
4. Please describe your SOPs used to respond/mitigate spills when they occur.
5. Describe any training your agency provides or sends you to for conducting spill volume estimates.
6. We are interested in learning more about how your historical spill response activities have worked in the field. We understand from discussions with management earlier that you use the SERP from the SSMP. Please elaborate on how you implement and utilize the procedures in the plan.
7. Historically, before any recent changes, can you please walk us through how you would typically receive and respond to any spill complaints in the field?
8. Can you tell us who is responsible for estimating spill volumes discharged? If it is you, please describe how you go about estimating the spill volume that you record on the work order/service request forms?
9. What other information do you collect or record other than what is written on the work order form?
10. Describe if and when you ever talk with people that call in spills (either onsite or via telephone) to further check out when the spill might have occurred based on what they or others know? If you do this, can you tell us where this information is recorded?
11. We understand you may be instructed to take pictures of some sewer spills/backups into structures. Other than these spills, when else would you typically take any pictures of a spill?
12. Please walk us through anything else you'd like to add to help us better understand how your field crews respond and mitigate spill complaints.

## **12.2 SPILL RESPONSE DRILLS**

Periodic training drills or field exercises will be held to ensure that employees are up to date on these procedures, equipment is in working order, and the required materials are readily available. The training drills will cover scenarios typically observed during sewer related emergencies (e.g. mainline blockage, mainline failure, and lateral blockage). The results and the observations during the drills will be recorded and action items will be tracked to ensure completion.

## **12.3 SPILL TRAINING RECORD KEEPING**

Records will be kept of all training that is provided in support of this SERP for 5 years. The records for all scheduled training courses and for each overflow emergency response training event will include date, time, place, content, name of trainer(s), names and titles of attendees, brief narrative description of the training, including training method(s) and training materials and/or equipment used.

## **12.4 CONTRACTORS WORKING ON CITY SEWER FACILITIES**

All contractors working on City sewer facilities will be required to follow the spill response instructions on the Sanitary Sewer Spill Response Instructions for Contractors (Appendix C). Additional training may be required depending on the nature of the work on any or all of the following:

- The requirements of State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), Element 6
- Communication procedures to City in the event a spill is caused or witnessed
- The City's Spill Emergency Response Plan procedures and practice drills
- Skilled estimation of spill volume for field operators
- Electronic CIWQS reporting procedures for staff submitting data

## **13. SEWER BACKUP INTO/ONTO PRIVATE PROPERTY CLAIMS HANDLING POLICY**

It is the policy of the City that a claims form shall be offered to anyone wishing to file a claim. The following procedures will be observed for all sewer overflows/backups into/onto private property:

- City staff will offer a City claim form irrespective of fault whenever it is possible that the sanitary sewer backup may have resulted from an apparent blockage in the City-owned sewer lines or whenever a City customer requests a claim form. The claim may later be rejected if subsequent investigations into the cause of the loss indicate the City was not at fault.
- It is the responsibility of the Sewer Crew to gather information regarding the incident and notify the Utilities Superintendent or their designee.
- It is the responsibility of the City Human Resources Department or their designee to review all claims and to oversee the adjustment and administration of the claim to closure.

**14. AUTHORITY**

This SERP is written in accordance with the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR).

**15. APPENDICES**

- A. Reporting Requirements by Spill Category
- B. Door Hanger
- C. Sanitary Sewer Spill Response Instructions for Contractors
- D. Sanitary Sewer Spill/Backup Response Workbook

APPENDIX A:  
Reporting Requirements by Spill Category

## REPORTING REQUIREMENTS FOR INDIVIDUAL CATEGORY 1 SPILL REPORTING

### Draft Spill Report

**Within three (3) business days** of the City's knowledge of a Category 1 spill, the City shall submit a Draft Spill Report to the online CIWQS Sanitary Sewer System Database.

The Draft Spill Report must, at minimum, include the following items:

1. Contact information: Name and telephone number of City contact person to respond to spill-specific questions;
2. Spill location name;
3. Date and time the City was notified of, or self-discovered, the spill;
4. Operator arrival time;
5. Estimated spill start date and time;
6. Date and time the City notified the California Office of Emergency Services, and the assigned control number;
7. Description, photographs, and GPS coordinates of the system location where the spill originated; If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field;
8. Estimated total spill volume exiting the system;
9. Description and photographs of the extent of the spill and spill boundaries;
10. Did the spill reach a drainage conveyance system? If Yes:
  - a. Description of the drainage conveyance system transporting the spill;
  - b. Photographs of the drainage conveyance system entry location(s);
  - c. Estimated spill volume fully recovered from the drainage conveyance system;
  - d. Estimated spill volume remaining within the drainage conveyance system;
  - e. Description and photographs of all discharge point(s) into the surface water;
  - f. Estimated spill volume that discharged to surface waters; and
  - g. Estimated total spill volume recovered.

### Certified Spill Report

**Within 15 calendar days** of the spill end date, the City shall submit a Certified Spill Report for Category 1 spills, to the online CIWQS Sanitary Sewer System Database.

Upon completion of the Certified Spill Report, the online CIWQS Sanitary Sewer System Database will issue a final spill event identification number.

*(Category 1 continued)*

The Certified Spill Report must, at minimum, include the following mandatory information in addition to all information in the Draft Spill Report:

1. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill;
2. Spill end date and time;
3. Description of how the spill volume estimations were calculated, including at a minimum:
  - a. The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
  - b. The methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time;
4. Spill cause(s) (for example, root intrusion, grease deposition, etc.);
5. System failure location (for example, main, lateral, pump station, etc.);
6. Description of the pipe material, and estimated age of the pipe material, at the failure location;
7. Description of the impact of the spill;
8. Whether or not the spill was associated with a storm event;
9. Description of spill response activities including description of immediate spill containment and cleanup efforts;
10. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps;
11. Spill response completion date;
12. Detailed narrative of investigation and investigation findings of cause of spill;
13. Reasons for an ongoing investigation (as applicable) and the expected date of completion;
14. Name and type of receiving water body(s);
15. Description of the water body(s), including but not limited to:
  - a. Observed impacts on aquatic life,
  - b. Public closure, restricted public access, temporary restricted use, and/or posted health warnings due to spill,
  - c. Responsible entity for closing/restricting use of water body, and
  - d. Number of days closed/restricted as a result of the spill.
16. Whether or not the spill was located within 1,000 feet of a municipal surface water intake; and
17. If water quality samples were collected, identify sample locations and the parameters the water quality samples were analyzed for. If no samples were taken, Not Applicable shall be selected.

*(Category 1 continued)*

**Amended Certified Spill Reports**

The City shall update or add additional information to a Certified Spill Report within **90 calendar days** of the spill end date by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The City shall certify the amended report.

After **90 calendar days**, the City shall contact the State Water Board at [SanitarySewer@waterboards.ca.gov](mailto:SanitarySewer@waterboards.ca.gov) to request to amend a Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the Amended Spill Report due date.

## REPORTING REQUIREMENTS FOR INDIVIDUAL CATEGORY 2 SPILL REPORTING

### Draft Spill Report

**Within three (3) business days** of the City's knowledge of a Category 2 spill, the City shall submit a Draft Spill Report to the online CIWQS Sanitary Sewer System Database.

The Draft Spill Report must, at minimum, include the following items:

1. Contact information: Name and telephone number of City contact person to respond to spill-specific questions;
2. Spill location name;
3. Date and time the City was notified of, or self-discovered, the spill;
4. Operator arrival time;
5. Estimated spill start date and time;
6. Date and time the City notified the California Office of Emergency Services, and the assigned control number;
7. Description, photographs, and GPS coordinates of the system location where the spill originated; If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field;
8. Estimated total spill volume exiting the system;
9. Description and photographs of the extent of the spill and spill boundaries;
10. Did the spill reach a drainage conveyance system? If Yes:
  - Description of the drainage conveyance system transporting the spill;
  - Photographs of the drainage conveyance system entry location(s);
  - Estimated spill volume fully recovered from the drainage conveyance system;
  - Estimated spill volume remaining within the drainage conveyance system;
11. Estimated spill volume discharged to a groundwater infiltration basin or facility, if applicable; and
12. Estimated total spill volume recovered.

### Certified Spill Report

**Within 15 calendar days** of the spill end date, the City shall submit a Certified Spill Report for the Category 2 spill, to the online CIWQS Sanitary Sewer System Database (<https://ciwqs.waterboards.ca.gov>). Upon completion of the Certified Spill Report, the online CIWQS Sanitary Sewer System Database will issue a final spill event identification number.

The Certified Spill Report must, at minimum, include the following mandatory information in addition to all information in the Draft Spill Report:

1. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill;

*(Category 2 continued)*

2. Spill end date and time;
3. Description of how the spill volume estimations were calculated, including at a minimum:
  - The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
  - The methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time;
4. Spill cause(s) (for example, root intrusion, grease deposition, etc.);
5. System failure location (for example, main, pump station, etc.);
6. Description of the pipe/infrastructure material, and estimated age of the pipe material, at the failure location;
7. Description of the impact of the spill;
8. Whether or not the spill was associated with a storm event;
9. Description of spill response activities including description of immediate spill containment and cleanup efforts;
10. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps;
11. Spill response completion date;
12. Detailed narrative of investigation and investigation findings of cause of spill;
13. Reasons for an ongoing investigation (as applicable) and the expected date of completion; and
14. Whether or not the spill was located within 1,000 feet of a municipal surface water intake.

### **Amended Certified Spill Reports**

The City shall update or add additional information to a Certified Spill Report within **90 calendar days** of the spill end date by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The City shall certify the amended report.

After **90 calendar days**, the City shall contact the State Water Board at [SanitarySewer@waterboards.ca.gov](mailto:SanitarySewer@waterboards.ca.gov) to request to amend a Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the Amended Spill Report due date.

## REPORTING REQUIREMENTS FOR INDIVIDUAL CATEGORY 3 SPILL REPORTING

### Monthly Certified Spill Reporting

The City shall report and certify all Category 3 spills to the online CIWQS Sanitary Sewer System Database within 30 calendar days after the end of the month in which the spills occurred. (For example, all Category 3 spills occurring in the month of February shall be reported and certified by March 30<sup>th</sup>). After the Legally Responsible Official certifies the spills, the online CIWQS Sanitary Sewer System Database will issue a spill event identification number for each spill.

The monthly reporting of all Category 3 spills must include the following items for each spill:

1. Contact information: Name and telephone number of City contact person to respond to spill-specific questions;
2. Spill location name;
3. Date and time the City was notified of, or self-discovered, the spill;
4. Operator arrival time;
5. Estimated spill start date and time;
6. Description, photographs, and GPS coordinates where the spill originated. If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field;
7. Estimated total spill volume exiting the system;
8. Description and photographs of the extent of the spill and spill boundaries;
9. Did the spill reach a drainage conveyance system? If Yes:
  - a. Description of the drainage conveyance system transporting the spill;
  - b. Photographs of the drainage conveyance system entry location(s);
  - c. Estimated spill volume fully recovered from the drainage conveyance system; and
  - d. Estimated spill volume discharged to a groundwater infiltration basin or facility, if applicable.
10. Estimated total spill volume recovered;
11. Description of the spill event destination(s), including GPS coordinates, if available, that represent the full spread and reaches of the spill;
12. Spill end date and time;
13. Description of how the spill volume estimations were calculated, including, at minimum:
  - a. The methodology and type of data relied upon, including supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
  - b. The methodology and type of data relied upon to estimate the spill start time, on-going spill rate at time of arrival (if applicable), and the spill end time;
14. Spill cause(s) (for example, root intrusion, grease deposition, etc.);

*(Category 3 Continued)*

15. System failure location (for example, main, pump station, etc.);
16. Description of the pipe/infrastructure material, and estimated age of the pipe/infrastructure material, at the failure location;
17. Description of the impact of the spill;
18. Whether or not the spill was associated with a storm event;
19. Description of spill response activities including description of immediate spill containment and cleanup efforts;
20. Description of spill corrective actions, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of the major milestones for those steps; including, at minimum:
  - a. Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable, and
  - b. Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences at the same spill event location, including:
    - Adjusted schedule/method of preventive maintenance,
    - Planned rehabilitation or replacement of sanitary sewer asset,
    - Inspected, repaired asset(s), or replaced defective asset(s),
    - Capital improvements,
    - Documentation verifying immediately implemented system modifications and operating/maintenance modifications,
    - Description of spill response activities,
    - Spill response completion date, and
    - Ongoing investigation efforts, and expected completion date of investigation to determine the full cause of spill;
21. Detailed narrative of investigation and investigation findings of cause of spill.

**Amended Certified Spill Reports**

**Within 90 calendar days of the certified Spill Report due date**, the City may update or add additional information to a certified Spill Report by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The City shall certify the amended report.

**After 90 calendar days**, the Legally Responsible Official shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a certified Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the 90-day timeframe for amending the certified Spill Report, as provided above.

## **REPORTING REQUIREMENTS FOR INDIVIDUAL CATEGORY 4 SPILL REPORTING**

### **Monthly Certified Spill Reporting**

The City shall report and certify the estimated total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills to the online CIWQS Sanitary Sewer System Database, within 30 calendar days after the end of the month in which the spills occurred.

### **Annual Certified Spill Reporting of Category 4 and/or Lateral Spills**

For all Category 4 spills and spills from its owned and/or operated laterals that are caused by a failure or blockage in the lateral and that do not discharge to a surface water, the City shall:

- Maintain records per section 4.4. of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR). The City shall provide records upon request by State Water Board or Regional Water Board staff.
- Annually upload and certify a report, in an appropriate digital format, of all recordkeeping of spills to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occurred.

A spill from an City-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the City shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR).

### **Monthly Certification of “No-Spills” Or “Category 4 Spills” and/or “Non-Category 1 Lateral Spills”**

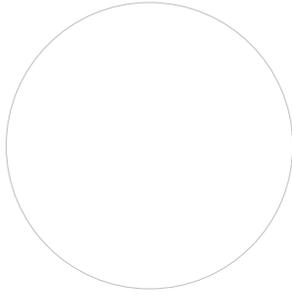
If either (1) no spills occur during a calendar month or (2) only Category 4, and/or City-owned and/or operated lateral spills (that do not discharge to a surface water) occur during a calendar month, the City shall certify, within 30 calendar days after the end of each calendar month, either a “No-Spill” certification statement, or a “Category 4 Spills” and/or “Non-Category 1 Lateral Spills” certification statement, in the online CIWQS Sanitary Sewer System Database, certifying that there were either no spills, or Category 4 and/or Non-Category 1 Lateral Spills that will be reported annually (per section 3.6 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR)) for the designated month.

If a spill starts in one calendar month and ends in a subsequent calendar month, and the City has no further spills of any category, in the subsequent calendar month, the City shall certify “no-spills” for the subsequent calendar month.

If the City has no spills from its systems during a calendar month, but the City voluntarily reported a spill from a private lateral or a private system, the City shall certify “no-spills” for that calendar month.

If the City has spills from its owned and/or operated laterals during a calendar month, the City shall not certify “no spills” for that calendar month.

APPENDIX B:  
Door Hanger



**City of Loma Linda**

On (date) \_\_\_\_\_

at (location) \_\_\_\_\_

we responded to a reported blockage of the sanitary sewer service to your property.

We discovered a blockage in:

- The sanitary sewer main and cleared the line
- Your sanitary sewer lateral, which is your responsibility to maintain.

If you require assistance to clear your portion of the lateral you can search the internet for "Sewer Contractors" or "Plumbing Drains & Sewer Cleaning." If you plan to hire a contractor, we recommend getting estimates from more than one company.

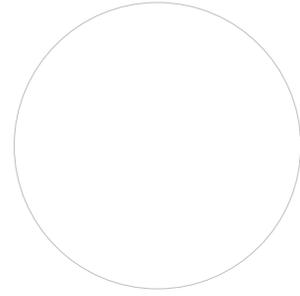
City representative notes: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

City representative name: \_\_\_\_\_  
\_\_\_\_\_

**For questions or comments, please call**

**City of Loma Linda  
(909) 799-4410**



**City of Loma Linda**

On (date) \_\_\_\_\_

at (location) \_\_\_\_\_

we responded to a reported blockage of the sanitary sewer service to your property.

We discovered a blockage in:

- The sanitary sewer main and cleared the line
- Your sanitary sewer lateral, which is your responsibility to maintain.

If you require assistance to clear your portion of the lateral you can search the internet for "Sewer Contractors" or "Plumbing Drains & Sewer Cleaning." If you plan to hire a contractor, we recommend getting estimates from more than one company.

City representative notes: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

City representative name: \_\_\_\_\_  
\_\_\_\_\_

**For questions or comments, please call**

**City of Loma Linda  
(909) 799-4410**

APPENDIX C:  
Sewer Spill Response Instructions for Contractors

# City of Loma Linda

## Spill Emergency Response Plan

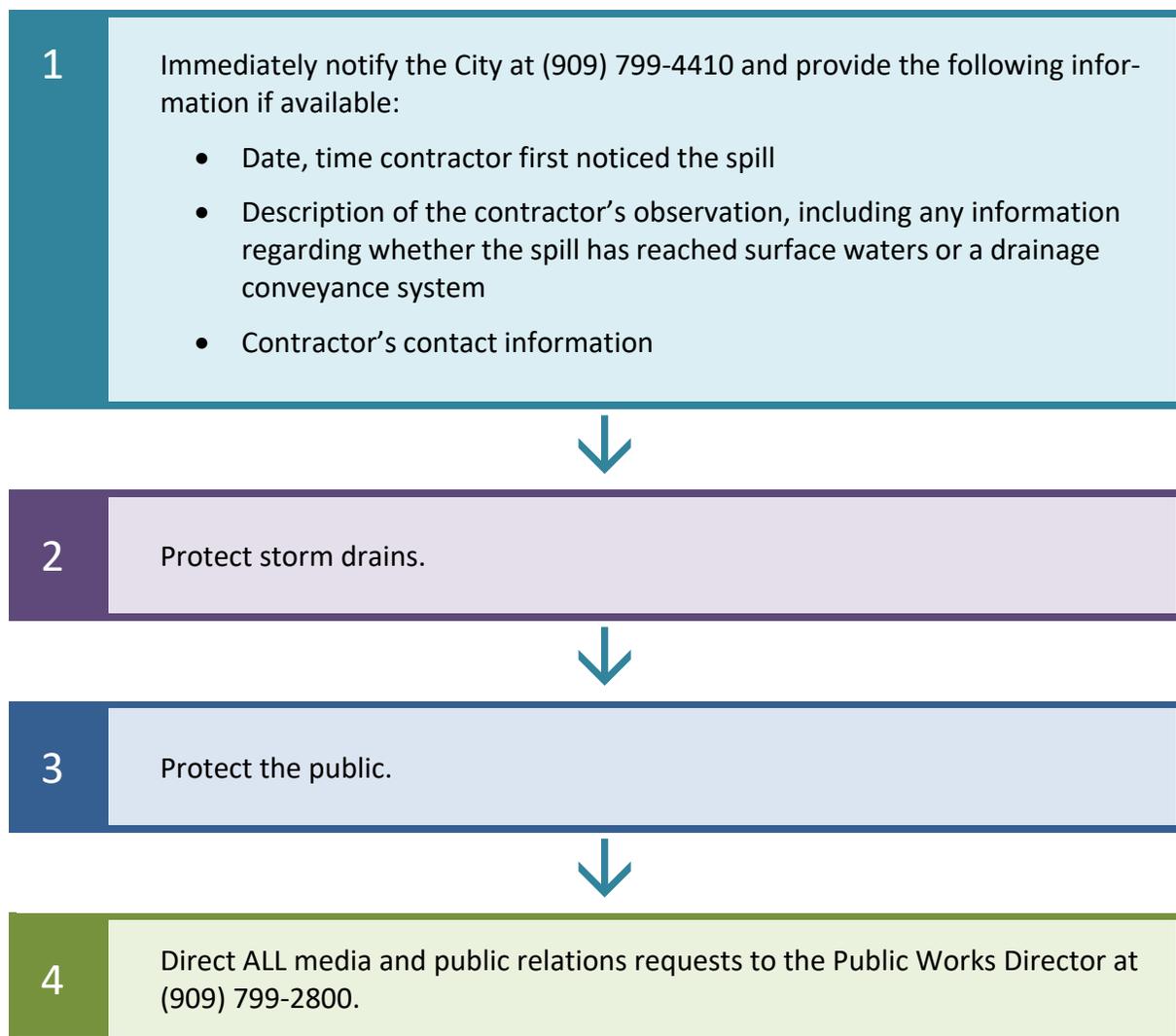
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### Sewer Spill Response Instructions for Contractors

For contractors working on the sanitary sewer system the City expects them to have, at all worksites, spill response materials necessary to block drainage conveyance system entry points near the work area and surface waters.

Additionally, contractor must be trained on spill response materials and equipment.

The following procedures are to be followed in the event that a contractor/plumber causes or witnesses a sanitary sewer spill. If the contractor/plumber causes or witnesses a spill they should:



APPENDIX D:  
Sewer Spill/Backup Response Workbook

# City of Loma Linda

## Sewer Spill Emergency Response Plan

# Sewer Spill/Backup Response Workbook



INSERT TAB:  
Tab A: Start Here

# Sanitary Sewer Spill/Backup Response Workbook

See the following page for contact information as needed.

- Make immediate notifications:
  - If this spill is discharging or threatening to discharge greater than or equal to 1,000 gallons to waters of the State, immediately contact CalOES at (800) 852-7550 within 2 hours and obtain a control number. Record this number on the following pages: A-4, B-2, and D-1 Page 1.
  - If there is a backup into a residence/business that may be due to a problem in the City’s sewer, notify the Utilities Superintendent at (909) 799-4410.
  - For media inquiries/requests contact the Public Works Director at (909) 799-2800.
- Refer to the Regulatory Reporting Guide in this Workbook for additional reporting requirements.

<b>SEWER CREW:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Refer to the Spill Event Checklist (A-4), follow the instructions on the Spill/Backup Response Flowchart (C-1), and complete forms in this Workbook as indicated.</li> <li><input type="checkbox"/> Complete the chain of custody record (to the right) and deliver this workbook to the Utilities Superintendent.</li> </ul>	<b>CHAIN OF CUSTODY</b>
	Print Name:
	Initial:
	Date:

<b>UTILITIES SUPERINTENDENT:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Review the Spill Event Checklist (A-4) and the forms in this Workbook. Contact the Sewer Crew for additional information if necessary.</li> <li><input type="checkbox"/> Confirm that all required regulatory notifications have been made (B-1).</li> <li><input type="checkbox"/> If this was a Sewer Backup, follow instructions on the Backup Forms Checklist (F-1).</li> <li><input type="checkbox"/> Complete the Post Spill Assessment (H-1) and Collection System Failure Analysis Form (H-2).</li> <li><input type="checkbox"/> Complete the Chain of Custody record (right) and forward Workbook to Data Submitter</li> </ul>	<b>CHAIN OF CUSTODY</b>
	Print Name:
	Initial:
	Date:

<b>DATA SUBMITTER:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Refer to Spill Event Checklist (A-4) Data Submitter Responsibilities</li> <li><input type="checkbox"/> Complete the chain of custody record (to the right) and deliver this workbook to a Legally Responsible Official (see A-2 for LROs).</li> </ul>	<b>CHAIN OF CUSTODY</b>
	Print Name:
	Initial:
	Date:

<b>LEGALLY RESPONSIBLE OFFICIAL:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Refer to Spill Event Checklist (A-4) Data Submitter Responsibilities</li> <li><input type="checkbox"/> Complete the chain of custody record (to the right) and file this Workbook with the spill file.</li> </ul>	<b>CHAIN OF CUSTODY</b>
	Print Name:
	Initial:
	Date:

**Contact Information**

Contact	Description	Telephone/Email/Address
CAL/OES	California Office of Emergency Services	(800) 852-7550
City Human Resources Department	Assistance with sewer backup customers	(909) 799-2814
Clinical Lab of San Bernardino	Water quality sample analysis	(909) 825-7693 21881 Barton Road Grand Terrace
Colorado River Regional Water Quality Control Board		(760) 346-7491
Houston-Harris Contractor	Sewer Cleaning/Repair Support Services	(909) 422-8990
Public Works Director	Media inquiries/requests	(909) 799-2800
Utilities Maintenance Tech III Utilities Superintendent Public Works Director	CalOES 2-hour notification and other regulatory notifications	(909) 478-4265 (909) 799-4410 (909) 799-2800
Utilities Superintendent	Outside Assistance / Mutual Aid	(909) 799-4410
Santa Ana Watershed Project Authority	Notify in case of spill	(951) 354-4220
San Bernardino County Environmental Health	<ul style="list-style-type: none"> <li>○ Notifications</li> <li>○ Sign placement guidance</li> </ul>	(800) 442-2283
State Water Resources Control Board	Walter Mobley	(916) 323-0878 Walter.Mobley@waterboards.ca.gov

**Authorized Personnel:**

The following are authorized to perform regulatory reporting of spills:

Job Title	Telephone
<b>Public Works Director</b>	(909) 799-2800
<b>Utilities Superintendent</b>	(909) 799-4410
<b>Utilities Maintenance Technician III</b>	(909) 478-4265

*The City’s Legally Responsible Official (LRO) is authorized to electronically sign and certify spill reports in CIWQS. The LRO is the Public Works Director.*

**NOTE:** All references to “SSWDR” refer to State Water Board Order No. WQ 2022-0103-DWQ.

**DRAINAGE CONVEYANCE SYSTEM:** A drainage conveyance system is a publicly- or privately-owned separate storm sewer system, including but not limited to drainage canals, channels, pipelines, pump stations, detention basins, infiltration basins/facilities, or other facilities constructed to transport stormwater and non-stormwater flows.

**SPILL:** A spill is a discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure. Exfiltration of sewage is not considered to be a spill under SSWDR if the exfiltrated sewage remains in the subsurface and does not reach a surface water of the State.

- **Category 1 Spill:**

A Category 1 spill is a spill of any volume of sewage from or caused by a sanitary sewer system regulated under SSWDR that results in a discharge to:

- A surface water, including a surface water body that contains no flow or volume of water; or
- A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly.

Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water, unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility.

A spill from an City-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the City shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of SSWDR.

- **Category 2 Spill**

A Category 2 spill is a spill of 1,000 gallons or greater, from or caused by a sanitary sewer system regulated under SSWDR that does not discharge to a surface water. A spill of 1,000 gallons or greater that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system, is a Category 2 spill.

- **Category 3 Spill**

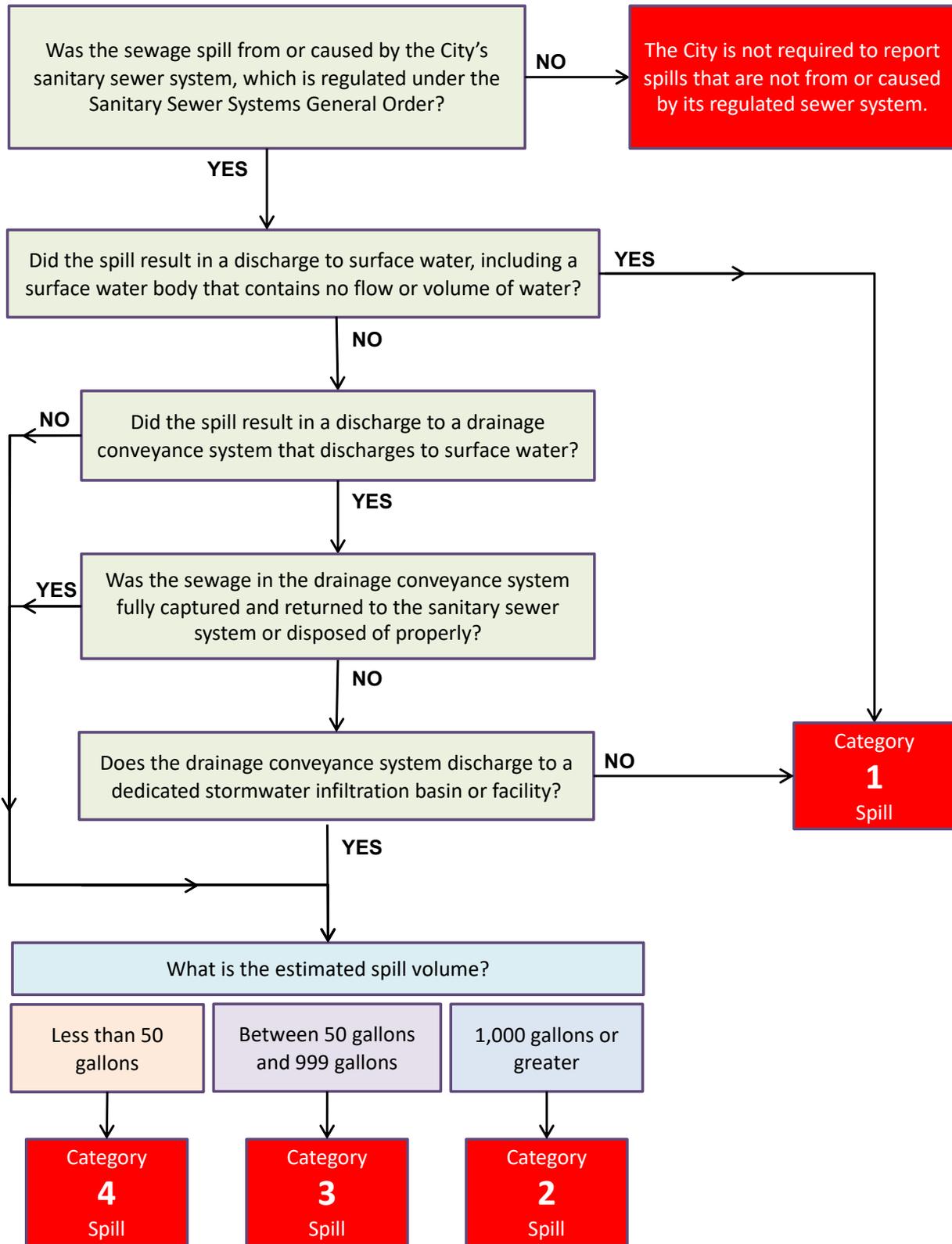
A Category 3 spill is a spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under SSWDR that does not discharge to a surface water. A spill of equal to or greater than 50 gallons and less than 1,000 gallons, that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 3 spill.

- **Category 4 Spill**

A Category 4 spill is a spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under SSWDR that does not discharge to a surface water. A spill of less than 50 gallons that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 4 spill.

**WATERS OF THE STATE:** Waters of the State are surface waters or groundwater within boundaries of the state as defined in Water Code section 13050(e), in which the State and Regional Water Boards have authority to protect beneficial uses. Waters of the State include, but are not limited to, groundwater aquifers, surface waters, saline waters, natural washes and pools, wetlands, sloughs, and estuaries, regardless of flow or whether water exists during dry conditions. Waters of the State include waters of the United States.

**INSTRUCTIONS: Answer each question in order and stop at the red box once you have determined the category.**



## Spill Event Checklist

Date of Spill: \_\_\_\_\_ Spill Location/Name: \_\_\_\_\_  
 CIWQS Event ID #: \_\_\_\_\_ Category?  1  2  3  4 OES#: \_\_\_\_\_  
 Property Damage?  Yes  No Service Request #: \_\_\_\_\_

### SEWER CREW RESPONSIBILITIES

- Effort made to contain and return a portion/all to the sanitary sewer
- Pictures/video taken of spill
- Pictures taken of affected/unaffected area
- If property damage, start that process
- Pictures taken of containment efforts
- If spill is Cat 1 > 1000 gallons or Cat 2 > 1000 gal threatening to discharge to waters of the State: OES Control # \_\_\_\_\_
- Were surface waters impacted?
- Impacted waters identified?
- Assess and document spill location and spread including photos
- Spill Report Form Complete (includes fields for all required fields in CIWQS, and a sketch of spill)
- Volume Estimation Worksheet(s) done
- Start Time Determination Form done
- Follow Water Quality Monitoring and Sampling procedures

### UTILITIES SUPERINTENDENT RESPONSIBILITIES

- Map of where samples were taken, if applicable
- For Cat 1 Spills 50,000 gallons or larger, obtain sampling results
- Ensure Technical Report is written
- Initial review of forms is complete (ensure consistency of dates, times, volumes, and other data)
- Review of photos and videos (label/date)
- Start folder for all documentation for this spill event. Put everything in it (Spill Report, Field Reports, Worksheets/Forms, follow-up work orders, notes, photos, drawings, CIWQS print outs, emails, etc.)
- Conduct Post Spill Assessment & complete form (H-1)
- Failure Analysis
  - TV to determine cause
  - Review Asset History
- Determine next steps to prevent recurrence
- Document findings and next steps on Spill Report

### DATA SUBMITTER RESPONSIBILITIES

- Submit Draft in CIWQS w/in 3 business days (for Categories 1 and 2 only)
- Print CIWQS Draft hard copy and email
- Review CIWQS, spill Report, Worksheets, CMMS, and any other documentation to ensure data is consistent (e.g. dates, times, volumes, cause, follow-up action, etc.)
- Attach photos, forms etc. to CIWQS
- Attach Technical Report to CIWQS, if applicable
- Submit Ready to Certify in CIWQS (with sufficient time for LRO review)
- Print CIWQS Ready to Certify and email
- Hand Workbook to LRO and complete Chain of Custody form

### LRO RESPONSIBILITIES

- LRO review Workbook and CIWQS verify accurate and consistent data
- Certify in CIWQS (within 15 calendar days for Categories 1 & 2, 30 days after the month for Category 3 & 4)
- Print Certified CIWQS and email
- Any changes? Change in CIWQS and hard copies and explain changes, print our current version
- Move completed Workbook and spill folder to spill files
- If any changes are made to SSMP
  - Update SSMP and link on CIWQS to SSMP
  - Add change to SSMP Change Log
  - Consider need to re-certify SSMP

INSERT TAB:  
Tab B: Regulatory Reporting

The City’s Legally Responsible Officials (LROs) are authorized to electronically sign and certify spill reports in CIWQS. See contact information for LROs on page A-2.

Deadline	Category 1 Spill*	Category 2 Spill**	Category 3 Spill**	Category 4 Spill**
2 hours after awareness of spill	Within two (2) hours of the City’s knowledge of a Category 1 spill of 1,000 gallons or greater, discharging or threatening to discharge to Waters of the State, notify CalOES and obtain a notification control number.	Within two (2) hours of the City’s knowledge of a Category 2 spill of 1,000 gallons or greater threatening to discharge to Waters of the State, notify CalOES and obtain a notification control number.	-	-
Within 18 hours of awareness of spill	Conduct water quality sampling of the receiving water within 18 hours of initial knowledge of spill of 50,000 gallons or greater to surface waters.	-	-	-
As soon as possible	Notify Santa Ana Watershed Project Authority			
3 Business Days after awareness of spill	Submit Draft Spill Report in the CIWQS database.	Submit Draft Spill Report in the CIWQS database.	-	-
15 Days after the spill end date	Submit Certified Spill Report within 15 calendar days of the spill end date. (Submit Amended Spill Report, as needed, within 90 calendar days after the spill end date.)	Submit Certified Spill Report within 15 calendar days of the spill end date. (Submit Amended Spill Report, as needed, within 90 calendar days after the spill end date.)	-	-
Within 30 calendar days after the end of the calendar month in which the spill occurs	-	-	Submit monthly Certified Spill Report to the online CIWQS Sanitary Sewer System Database  (Submit Amended Spill Report, as needed, within 90 calendar days after the Certified Spill Report due date.)	Certify monthly, the estimated total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills into the online CIWQS Sanitary Sewer System Database.
45 days after spill end date	Submit Technical Report within 45 calendar days after the spill end date for a Category 1 spill in which 50,000 gallons or greater discharged to surface waters; and	-	-	-
By February 1 <sup>st</sup> after the end of the calendar year in which the spills occur.	-	See ++ note below.	-	Upload and certify a report, in an acceptable digital format, of all Category 4 spills to the online CIWQS Sanitary Sewer System Database.

\* A spill from an Enrollee-owned and/or operated lateral that discharges to a surface water is a Category 1 spill.

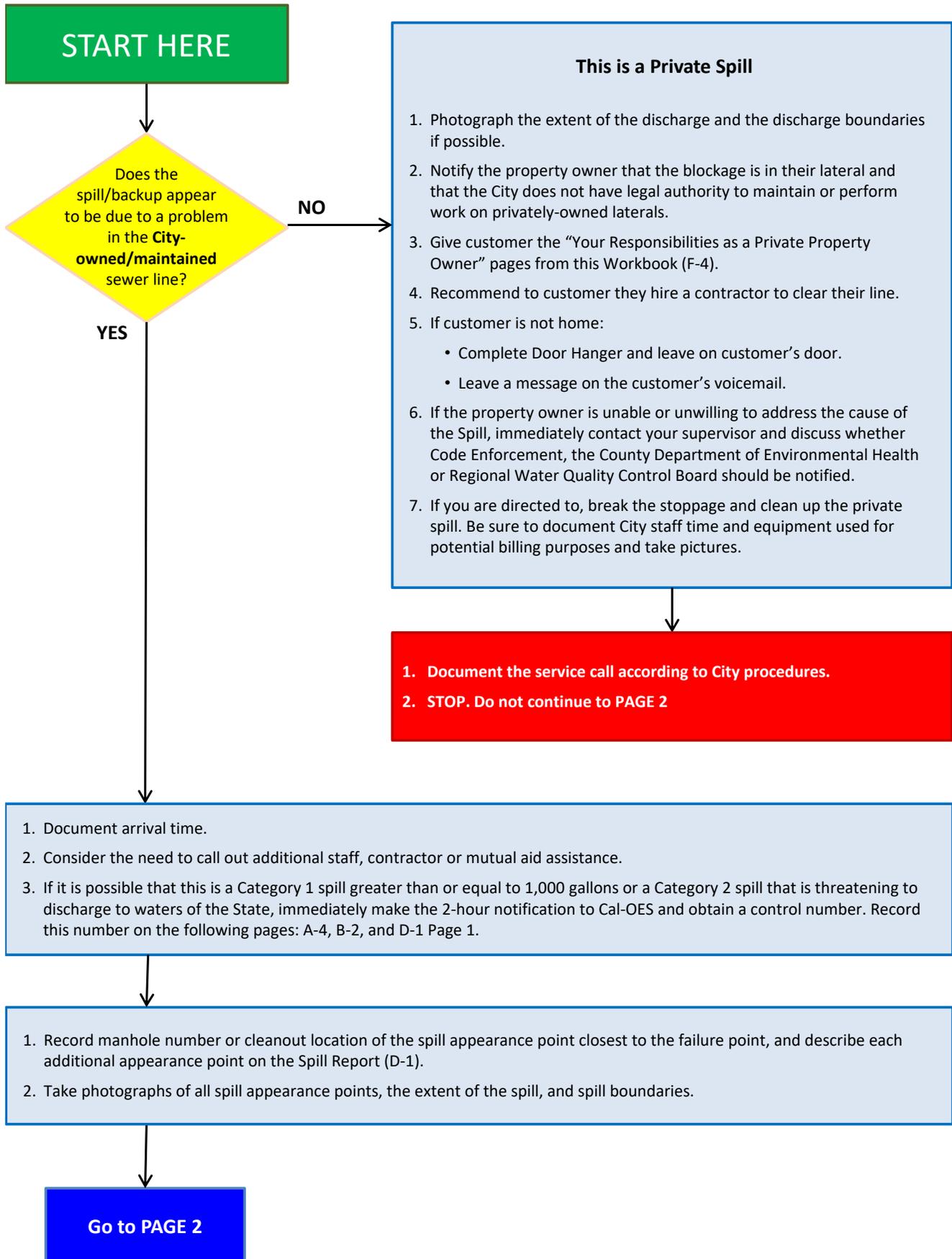
++ See following page for notes.

++ Agency owned lateral spills (Cat 2-4) to be reported by Feb 1 of the following year.

- **Monthly Spill Reporting of Non-Category 1 Lateral Spills:** If either (1) no spills occur during a calendar month or (2) only Category 4, and/or Enrollee-owned and/or operated lateral spills (that do not discharge to a surface water) occur during a calendar month, the Enrollee shall certify, within 30 calendar days after the end of each calendar month, either a “No-Spill” certification statement, or a “Category 4 Spills” and/or “Non-Category 1 Lateral Spills” certification statement, in the online CIWQS Sanitary Sewer System Database, certifying that there were either no spills, or Category 4 and/or Non-Category 1 Lateral Spills that will be reported annually for the designated month.
- **Annual Certified Spill Reporting of Category 4 and/or Lateral Spills:** For all Category 4 spills and spills from its owned and/or operated laterals that are caused by a failure or blockage in the lateral and that do not discharge to a surface water, the Enrollee shall annually upload and certify a report, in an appropriate digital format, of all recordkeeping of spills to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occurred.



INSERT TAB:  
Tab C: Flowchart



Continue from PAGE 1

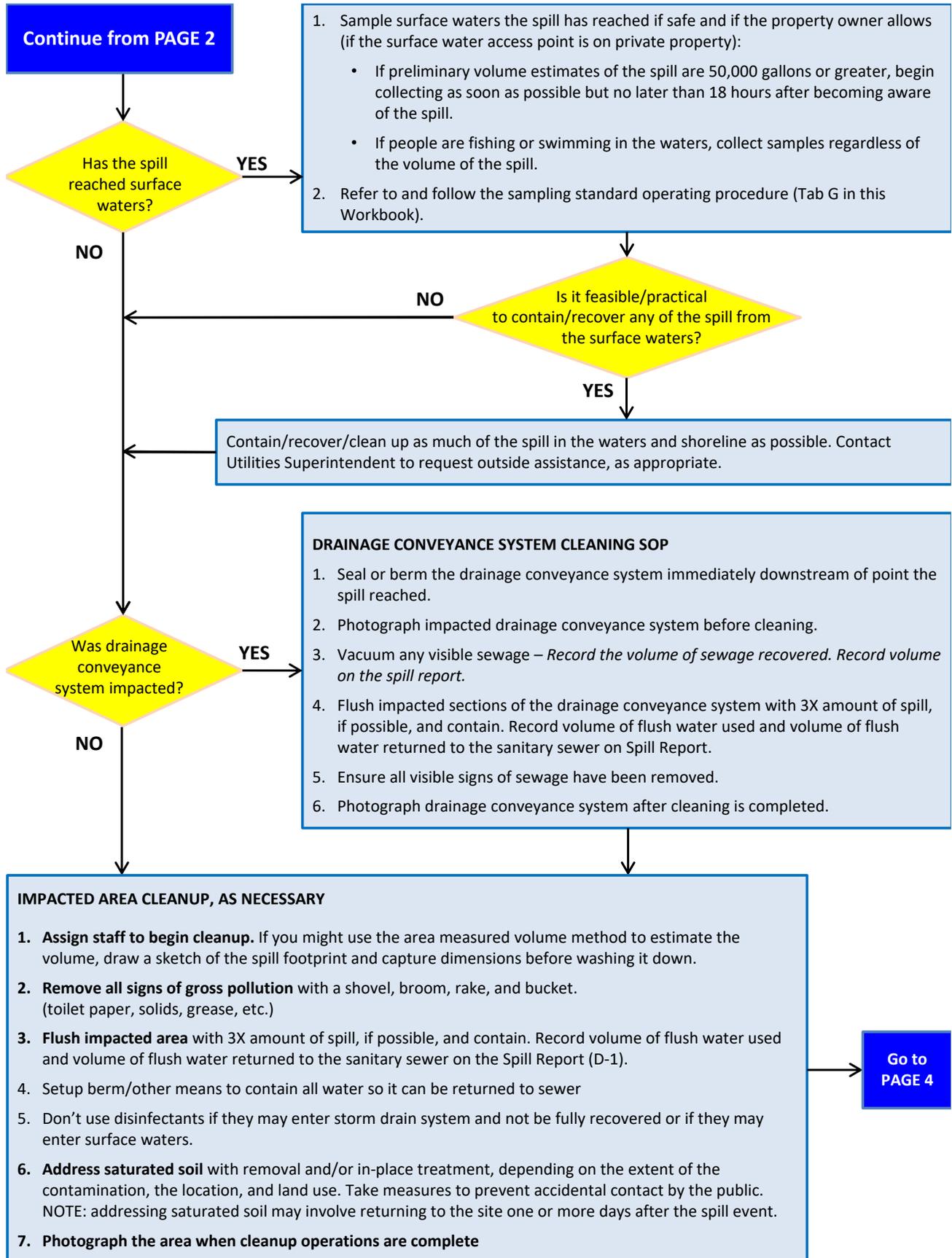
**BEGIN DIVERSION AND CONTAINMENT, AS NECESSARY**

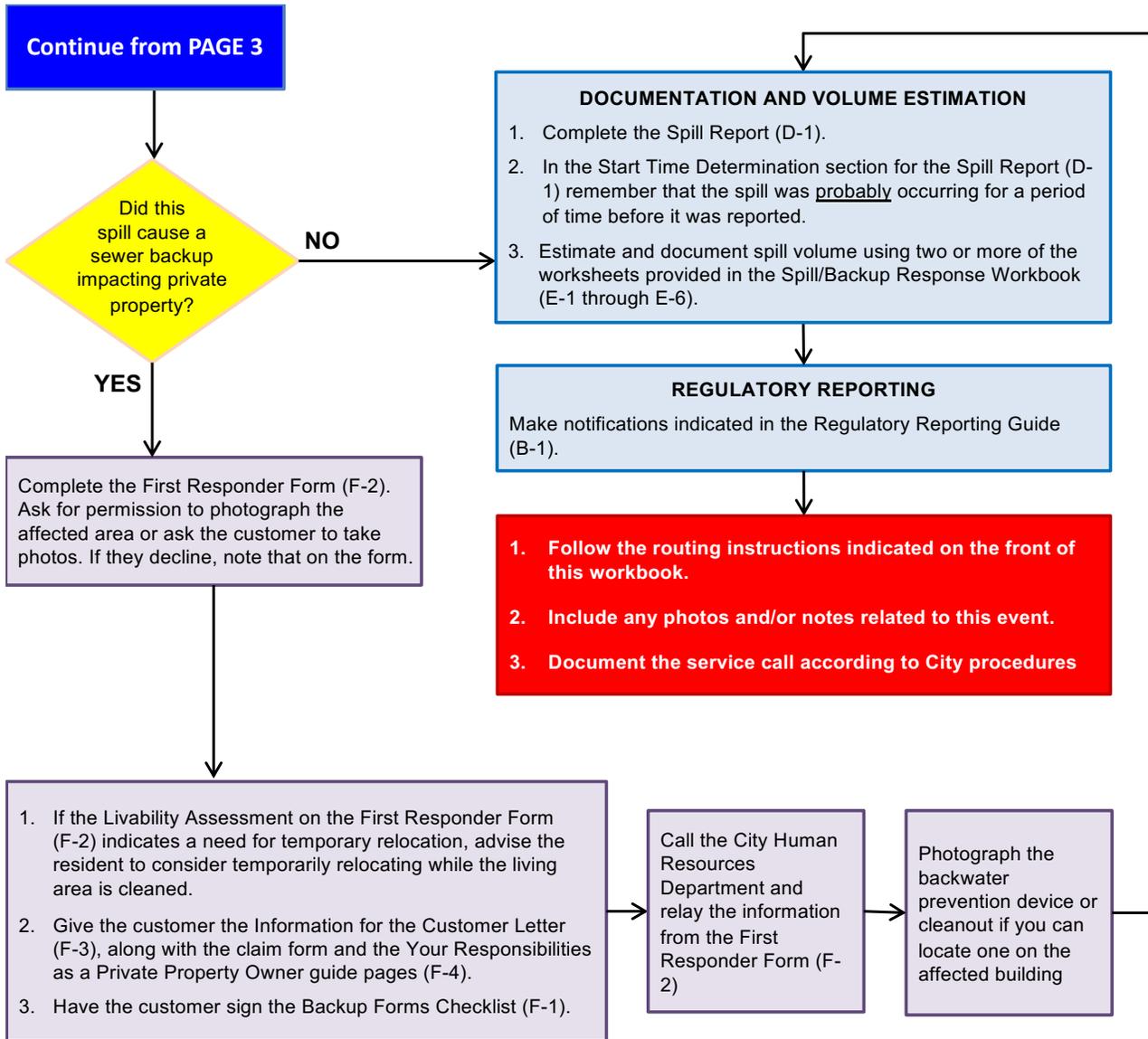
- 1. DIVERT AWAY FROM SENSITIVE AREAS:**
  - a. Cover unplugged storm drains w/mats, or use dirt/other material to divert sewage away from sensitive areas (e.g., schools, playgrounds, intersections, etc.)
  - b. ENSURE PUBLIC CONTACT DOES NOT OCCUR. Use cones/barricades to isolate area.
- 2. CONTAIN SPILL & RETURN TO SYSTEM, IF POSSIBLE:**
  - a. As practical, plug or block drainage conveyance system entry locations or use rubber mats to cover basin inlet and divert flow to a downstream sanitary sewer manhole (*barricade manhole if left open and monitor after barricade*) or area suitable to capture the spill for later collection.  
  
If any amount has already reached the drainage conveyance system, trace it downstream to a dry manhole and block it from entering surface waters. i.e., plugs, sandbags, or vacuum truck.
  - b. If you are confident that you can capture the spill in the drainage conveyance system, trace it downstream to a dry manhole and then divert the spill to the drainage conveyance system for later recovery and return to the sanitary sewer.
  - c. Use bypass pumps to pump around blockage until it can be removed.
  - d. Divert to low area of ground where it can be collected later.
- 3. PHOTOGRAPH each drainage conveyance system entry location.**

**ADDRESS CAUSE OF SPILL/BACKUP ASAP**

1. For spill/backups not related to a pump station, relieve the stoppage. Note the distance of the obstruction from the manhole and catch/remove debris that could cause another stoppage. After flow has returned to normal, clean the pipe thoroughly. Consider televising (CCTV) the affected line.
2. For pump station related spill/backups refer to that station's Emergency Response Plan.
3. Photograph staff activities while clearing the blockage.

Go to PAGE 3





INSERT TAB:  
Tab D: Spill Report

**Sanitary Sewer Spill Field Report**

Check spill category (see A-3 for definitions): CATEGORY 1    CATEGORY 2    CATEGORY 3    CATEGORY 4

CalOES NOTIFICATION*		
Date:	Time:	Assigned Control Number:

Names of the Persons Completing this Report	Contact Information

PHYSICAL LOCATION DETAILS	
Spill location name:	
Location description:	
Address of spill:	
City: <b>Loma Linda</b>	Cross Street:
Regional Water Quality Control Board: <b>Colorado River</b>	County: <b>San Bernardino</b>

DATE/TIME
Date and time the City was notified of, or self-discovered, the spill: _____
Operator arrival time: _____

PHOTOGRAPHS
Photos must be taken during the spill event. At a minimum, the following photos must be taken: <ul style="list-style-type: none"> <li><input type="radio"/> Appearance point closest to the failure point</li> <li><input type="radio"/> All discharge points into surface waters</li> <li><input type="radio"/> Extent of the spill and spill boundaries</li> <li><input type="radio"/> Location(s) of clean up</li> <li><input type="radio"/> Entry location of each drainage conveyance system the sewage entered</li> </ul>
Where are photographs stored?

\* Within two (2) hours of the City's knowledge of a Category 1 or Category 2 spill of 1,000 gallons or greater, discharging or threatening to discharge to waters of the State, notify CalOES and obtain a notification control number.

<b>SPILL ORIGATION</b>	
Description and GPS coordinates of the system location where the spill originated* : <i>Include manhole number or cleanout location of the spill appearance point closest to the failure point as applicable.</i>	
Latitude:	Longitude:
Number of additional appearance points:	
Spill appearance points: (Check all that apply) <input type="checkbox"/> Backflow Prevention Device <input type="checkbox"/> Combined Sewer Drain Inlet <small>(Combined Collection System Only)</small> <input type="checkbox"/> Force Main <input type="checkbox"/> Gravity Mainline <input type="checkbox"/> Inside Building/Structure <input type="checkbox"/> Lateral Clean Out (Private) <input type="checkbox"/> Lateral Clean Out (Public) <input type="checkbox"/> Lower Lateral (Private) <input type="checkbox"/> Lower Lateral (Public) <input type="checkbox"/> Manhole <input type="checkbox"/> Other Sewer System Structure <input type="checkbox"/> Pump Station <input type="checkbox"/> Upper Lateral (Private) <input type="checkbox"/> Upper Lateral (Public) <input type="checkbox"/> Other, describe:	
Describe each spill appearance point:	
Check to confirm photos were taken of all appearance points: <input type="checkbox"/>	

\* Note: If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the "Describe each spill appearance point" description section above. Take photos of spill appearance point(s).

<b>SPILL DESTINATION (Check all that apply)</b>	
Final spill destination(s): <input type="checkbox"/> Drainage Conveyance System That Discharges to Surface Water <input type="checkbox"/> Surface Water <input type="checkbox"/> Building or Structure <input type="checkbox"/> Drainage Conveyance System <input type="checkbox"/> Groundwater Infiltration Basic or Facility <input type="checkbox"/> Paved Surface <input type="checkbox"/> Street/Curb and Gutter <input type="checkbox"/> Unpaved Surface <input type="checkbox"/> Other, describe:	
Description of the spill event destination(s) including GPS coordinates if available that represent the full spread and reach of the spill.	
Latitude:	Longitude:
Latitude (if needed):	Longitude (if needed):
Latitude (if needed):	Longitude (if needed):
Latitude (if needed):	Longitude (if needed):
Check to confirm photos were taken of spill destination/boundaries: <input type="checkbox"/>	

<b>SPILL VOLUME</b>
Estimated total spill volume exiting the system: _____ gallons
Did the spill reach a drainage conveyance system? <input type="checkbox"/> YES <input type="checkbox"/> NO If yes: <ul style="list-style-type: none"> <li>• Estimated time the spill reached the drainage conveyance system: _____</li> <li>• Distance from drainage conveyance system to entry point to surface waters: _____ feet</li> <li>• Method to determine travel time from point of entry to drainage conveyance system to receiving waters: _____ _____</li> <li>• Describe the drainage conveyance system transporting the spill: _____ _____</li> </ul>
Estimated spill volume fully recovered from the drainage conveyance system: _____ gallons
Estimated spill volume remaining within the drainage conveyance system: _____ gallons
Check to confirm photos taken of entry location of drainage conveyance system the sewage entered: <input type="checkbox"/>
Did the spill reach surface water? <input type="checkbox"/> YES <input type="checkbox"/> NO If yes: <ul style="list-style-type: none"> <li>• Estimated time the spill entered the surface water: _____</li> <li>• Distance from spill appearance point to entry point to surface water: _____ feet</li> <li>• Method to determine travel time to receiving waters: _____ _____</li> <li>• Describe all discharge points: _____ _____</li> </ul>
Estimated spill volume that discharged to surface waters: _____ gallons
Estimated total spill volume recovered: _____ gallons
Check to confirm photos were taken of the following, as applicable: all discharge points into surface waters, waterbody bank erosion, floating matter, water surface sheen, discoloration of receiving water, any notable impacts to the receiving water: <input type="checkbox"/>
Did the spill discharge to a groundwater infiltration basin or facility? <input type="checkbox"/> YES <input type="checkbox"/> NO If yes, <ul style="list-style-type: none"> <li>• Estimated time the spill entered the groundwater infiltration basin or facility: _____</li> <li>• Estimated spill volume discharged to the groundwater infiltration basin or facility: _____ gallons</li> </ul>
Estimated spill volume that did NOT reach drainage conveyance system, surface water, or groundwater infiltration basin or facility: _____ gallons
Estimated Total Spill Volume Recovered: _____ gallons

**SPILL VOLUME** (continued)

Method and explanation of volume estimation methods used: (Check all that apply)

- Eyeball Estimate (worksheet included in Spill/Backup Response Workbook)
- Counting Upstream Connections (worksheet included in Spill/Backup Response Workbook)
- Duration and Flow Rate (worksheet included in Spill/Backup Response Workbook)
- Measured Volume (worksheet included in Spill/Backup Response Workbook)
- Other (provide worksheet/calculations)

Description of how the spill volume estimations were calculated, including at a minimum, the methodology, assumptions and types of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information, used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered):

<b>SPILL START TIME and END TIME DETERMINATION</b>	
Were there witnesses to the spill? <input type="checkbox"/> YES <input type="checkbox"/> NO If yes, provide Spill Witness Statements below:	
<b>Witness 1 Name:</b>	Witness 1 Contact Information:
Where did they see sewage spill from? <input type="checkbox"/> Manhole <input type="checkbox"/> Inside Building <input type="checkbox"/> Vent/Clean Out <input type="checkbox"/> Catch Basin <input type="checkbox"/> Wet Well/Lift Station <input type="checkbox"/> Other (describe):	
When did the witness notice the sewage spilling? _____ AM / PM Date ____ / ____ / ____	
Witness description of spill and affected area: Is it currently spilling? <input type="checkbox"/> YES <input type="checkbox"/> NO	
When did the witness last observe <b>NO Spill</b> occurring? _____ AM / PM Date ____ / ____ / ____	
Did the witness notice if the spill had reached the storm drain or surface waters?	
Comments:	
<b>Witness 2 Name:</b>	Witness 2 Contact Information:
Where did they see sewage spill from? <input type="checkbox"/> Manhole <input type="checkbox"/> Inside Building <input type="checkbox"/> Vent/Clean Out <input type="checkbox"/> Catch Basin <input type="checkbox"/> Wet Well/Lift Station <input type="checkbox"/> Other (describe):	
When did the witness notice the sewage spilling? _____ AM / PM Date ____ / ____ / ____	
Witness description of spill and affected area: Is it currently spilling? <input type="checkbox"/> YES <input type="checkbox"/> NO	
When did the witness last observe <b>NO Spill</b> occurring? _____ AM / PM Date ____ / ____ / ____	
Did the witness notice if the spill had reached the storm drain or surface waters?	
Comments:	
<b>Witness 3 Name:</b>	Witness 3 Contact Information:
Where did they see sewage spill from? <input type="checkbox"/> Manhole <input type="checkbox"/> Inside Building <input type="checkbox"/> Vent/Clean Out <input type="checkbox"/> Catch Basin <input type="checkbox"/> Wet Well/Lift Station <input type="checkbox"/> Other (describe):	
When did the witness notice the sewage spilling? _____ AM / PM Date ____ / ____ / ____	
Witness description of spill and affected area: Is it currently spilling? <input type="checkbox"/> YES <input type="checkbox"/> NO	
When did the witness last observe <b>NO Spill</b> occurring? _____ AM / PM Date ____ / ____ / ____	
Did the witness notice if the spill had reached the storm drain or surface waters?	
Comments:	

<b>SPILL START TIME and END TIME DETERMINATION (continued)</b>
<p>Are the volume of the spill and rate of flow known? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If yes, divide volume by rate of flow to get duration of spill event:</p> $\frac{\text{_____ Gallons}}{\text{Spill Volume}} \div \frac{\text{_____ GPM}}{\text{Flow Rate}} = \frac{\text{_____ Minutes}}{\text{Spill Duration}}$ <p>Subtract the duration from the spill end date/time to establish the spill start date/time:</p> $\frac{\text{_____}}{\text{Spill End Date/Time}} - \frac{\text{_____}}{\text{Duration}} = \frac{\text{_____}}{\text{Spill Start Time}}$ <p>Method to determine flow rate:</p>
<p>Solids Present? <input type="checkbox"/> None or small amount (indicates recent start)  <input type="checkbox"/> Significant amount of buildup</p>
<p>Staining? <input type="checkbox"/> None (indicates recent start)  <input type="checkbox"/> Minor  <input type="checkbox"/> Significant</p>
<p>Distance sewage has traveled from spill point:</p>
<p>Spill Start Time:</p>
<p>Spill End Date and Time:</p>
<p>How was end time determined?</p> <p><input type="checkbox"/> Broke stoppage</p> <p><input type="checkbox"/> Turned pump station back on</p> <p><input type="checkbox"/> Other, explain:</p>
<p>Description of the methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time.</p>

<b>SPILL CAUSE (check all that apply)</b>
<input type="checkbox"/> Air Relief Valve (ARV)/Blow Off Valve (BOV)/Backwater Valve Failure
<input type="checkbox"/> Construction Diversion Failure
<input type="checkbox"/> Collection System Maintenance Failure (Specify Below)
<input type="checkbox"/> Damage by Others Not Related to CS Construction/Maintenance (Specify Below)
<input type="checkbox"/> Debris from Construction
<input type="checkbox"/> Debris from Lateral
<input type="checkbox"/> Debris-General
<input type="checkbox"/> Debris-Rags
<input type="checkbox"/> Debris-wipes/Non-disposables
<input type="checkbox"/> Flow Exceeded Capacity (Separate CS Only)
<input type="checkbox"/> Fats, Oils and Grease (FOG)
<input type="checkbox"/> Inappropriate Discharge to CS
<input type="checkbox"/> Natural Disaster (Specify Below)
<input type="checkbox"/> Operator Error (Specify Below)
<input type="checkbox"/> Pipe Structural Problem/Failure – Installation
<input type="checkbox"/> Pipe Structural Problem/Failure – Controls
<input type="checkbox"/> Pump Station Failure – Power
<input type="checkbox"/> Pump Station Failure – Mechanical
<input type="checkbox"/> Pump Station Failure – Controls
<input type="checkbox"/> Rainfall Exceeded Design, I and I (Separate CS Only)
<input type="checkbox"/> Root Intrusion
<input type="checkbox"/> Siphon Failure
<input type="checkbox"/> Surcharged Pipe (Combines CS Only)
<input type="checkbox"/> Vandalism (Specify Below)
<input type="checkbox"/> Other, specify:

SYSTEM FAILURE LOCATION	
<p>System failure location:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Air Relief Valve (ARV)/Blow Off Valve (BOV) Failure</li> <li><input type="checkbox"/> Force Main</li> <li><input type="checkbox"/> Gravity Mainline</li> <li><input type="checkbox"/> Lower Lateral</li> <li><input type="checkbox"/> Manhole</li> <li><input type="checkbox"/> Pump Station Failure – Controls</li> <li><input type="checkbox"/> Pump Station Failure – Mechanical</li> <li><input type="checkbox"/> Pump Station Failure – Power</li> <li><input type="checkbox"/> Siphon</li> <li><input type="checkbox"/> Upper Lateral (Specify Below)</li> <li><input type="checkbox"/> Other, specify:</li> </ul>	
<p>Description of the pipe material at the failure location:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Copper</li> <li><input type="checkbox"/> Galvanized Steel</li> <li><input type="checkbox"/> Polyvinyl Chloride (PVC)</li> <li><input type="checkbox"/> Acrylonitrile Butadiene Styrene (ABS)</li> <li><input type="checkbox"/> Cross-Linked Polyethylene (PEX)</li> <li><input type="checkbox"/> Cast Iron</li> <li><input type="checkbox"/> Vitrified Clay</li> <li><input type="checkbox"/> Concrete</li> <li><input type="checkbox"/> Ductile Iron</li> <li><input type="checkbox"/> Fiberglass</li> <li><input type="checkbox"/> Other, specify:</li> </ul>	
Estimated age of sewer asset at the point of blockage or failure (if applicable):	years
Diameter of sewer pipe at the point of blockage or failure:	inches

**SPILL IMPACT**

Description of the impact of the spill:

**STORM EVENT**

Was spill associated with a storm event?  YES  NO

**SPILL RESPONSE ACTIVITIES (check all that apply)**

- Cleaned Up (Specify Below)
- Mitigated Effects of Spill (Specify Below)
- Contained All or Portion of Spill
- Restored Flow
- Returned All Spill to Sanitary Sewer System
- Returned Portion of Spill to Sanitary Sewer System
- Property Owner Notified
- Other Enforcement Agency Notified
- Other, specify:

Description of spill response activities including description of immediate spill containment and cleanup efforts:

<b>SPILL CORRECTIVE ACTION (check all that apply)</b>
<input type="checkbox"/> Added Sewer to Preventive Maintenance Program <input type="checkbox"/> Adjusted Schedule/Method of Preventive Maintenance <input type="checkbox"/> Enforcement Action Against FOG Source <input type="checkbox"/> Inspected Sewer Using CCTV to Determine Cause <input type="checkbox"/> Plan Rehabilitation or Replacement of Sewer <input type="checkbox"/> Repaired Facilities or Replaced Defect <input type="checkbox"/> Other, specify:
Refer to Collection System Failure Analysis Report for details about: <ul style="list-style-type: none"> <li>Spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps.</li> <li>Schedule of major milestones</li> </ul> Check to confirm completion of each report: <input type="checkbox"/> Post-Spill Assessment <input type="checkbox"/> Collection System Failure Analysis
Spill response completion date:

<b>INVESTIGATION</b>
Detailed narrative of investigation and investigation findings of cause of spill:
Is the City conducting an ongoing investigation? <input type="checkbox"/> YES <input type="checkbox"/> NO If yes, reasons for an ongoing investigation:
If yes, expected date of completion of investigation: _____

<b>SURFACE WATERS (Complete for Category 1 Spills Only)</b>		
Name of receiving water body	Type of receiving water body: Stream, Ocean, Wetland, Slough, Estuary, River, Lake, Reservoir, Vernal Pool, Wash, or Other (specify)	Description of the water body(s), including but not limited to: <ul style="list-style-type: none"> <li>○ Observed impacts on aquatic life,</li> <li>○ Public access impact(s): public closure, restricted public access, temporary restricted use, and/or other (specify below)</li> <li>○ Responsible entity for closing/restricting use of water body, and</li> <li>○ Number of days closed/restricted as a result of the spill.</li> </ul>

<b>MUNICIPAL INTAKE (Complete for Category 1 and 2 Spills Only)</b>		
Was the spill located within 1,000 feet of a municipal surface water intake?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Describe:		

**WATER SAMPLING**

Were water quality samples collected?  YES  NO  N/A

If yes, identify sample locations:

Identify parameters the water quality samples were analyzed for: (Check all that apply)

- Total Coliform Bacteria
- Fecal coliform bacteria
- E-coli
- Ammonia
- Other, specify:

INSERT TAB:  
Tab E: Volume Estimation

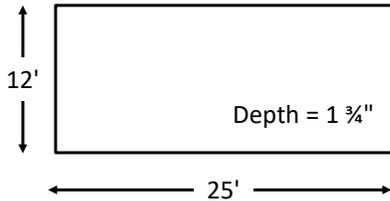
Miscellaneous Computations & Examples

<p>To convert inches to feet (NOTE: for the purposes of this worksheet, the unit of measurement will be in feet for formula examples)</p>	<p>Divide the inches by 12 or use the chart on the right. <b>Example 1:</b> <math>27" \div 12 = 2.25'</math> <b>Example 2:</b> <math>1\frac{3}{4}" = ?'</math> <math>1" (0.08') + \frac{3}{4}" (0.06') = 0.14'</math></p>
<p>Volume of one cubic foot</p>	<p>7.48 gallons of liquid</p>
<p><b>Area:</b> Two-dimensional measurement represented in square feet (SQ/FT or ft<sup>2</sup>)</p>	<p>Square/rectangle: Area = Length x Width Circle: Area = <math>\pi \times r^2</math> (where <math>\pi \approx 3.14</math> and <math>r = \text{radius} = \frac{1}{2} \text{ diameter}</math>) Triangle: Area = <math>\frac{1}{2} (\text{Base} \times \text{Height})</math></p>
<p><b>Volume:</b> Three-dimensional measurement represented in cubic feet (CU/FT or ft<sup>3</sup>)</p>	<p>Rectangle/square footprint: Volume = Length x Width x Depth Circle footprint (cylinder): Volume = <math>\pi \times r^2 \times \text{Depth}</math> (where <math>\pi \approx 3.14</math> and <math>r = \text{radius} = \frac{1}{2} \text{ diameter}</math>) Triangle footprint: Volume = <math>\frac{1}{2} (\text{Base} \times \text{Height}) \times \text{Depth}</math></p>
<p><b>Depth:</b> Wet Stain on Concrete or asphalt surface</p>	<p>If the depth is not measurable because it is only a wet stain, use the following estimated depths:</p> <ul style="list-style-type: none"> <li>○ Depth of a wet stain on concrete surface: 0.0026' (1/32")</li> <li>○ Depth of a wet stain on asphalt surface: 0.0013' (1/64")</li> </ul> <p>These were determined to be a reasonable depth to use on the respective surfaces through a process of trial and error. One gallon of water was poured onto both asphalt and concrete surfaces. Once the area was determined as accurately as possible, different depths were used to determine the volume of the wetted footprint until the formula produced a result that (closely) matched the one gallon spilled. This process was repeated several times.</p>
<p><b>Depth:</b> Contained or "Ponded" sewage</p>	<p>Measure actual depth of standing sewage whenever possible. When depth varies, measure several representative sample points and determine the average. Use that number in your formula to determine volume.</p>

**Miscellaneous Computations & Examples (continued)**

**Area/Volume of a Rectangle or Square**

Formula: Length x Width x Depth = Volume in **cubic feet**



$$\frac{25'}{\text{Length}} \times \frac{12'}{\text{Width}} \times \frac{0.14'}{\text{Depth}} = \underline{42 \text{ Cubic Feet}} \text{ Volume}$$

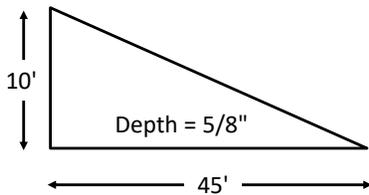
Multiply the volume by 7.48 gallons to determine the volume in **gallons**:

$$\frac{42 \text{ ft}^3}{\text{Volume}} \times \frac{7.48}{\text{gal/ft}^3} = \underline{314.16 \text{ gallons}} \text{ Volume}$$

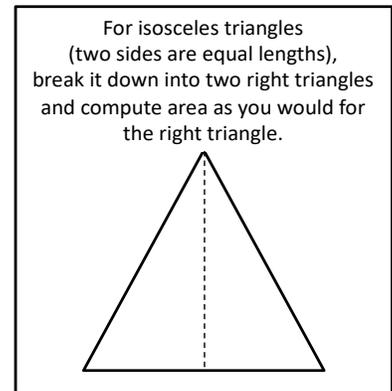
Convert Inches to Feet	
Inches	Feet
1/8"	0.01'
1/4"	0.02'
3/8"	0.03'
1/2"	0.04'
5/8"	0.05'
3/4"	0.06'
7/8"	0.07'
1"	0.08'
2"	0.17'
3"	0.25'
4"	0.33'
5"	0.42'
6"	0.50'
7"	0.58'
8"	0.67'
9"	0.75'
10"	0.83'
11"	0.92'
12"	1.00'

**Area/Volume of a Right Triangle**

Formula: Base x Height x Depth = Volume in **cubic feet**



$$0.5 \times \frac{45'}{\text{Base}} \times \frac{10'}{\text{Height}} \times \frac{0.05'}{\text{Depth}} \times \frac{7.48}{\text{gal/ft}^3} = \underline{84.15 \text{ gallons}} \text{ Volume}$$

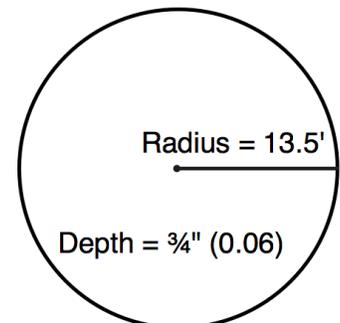


**Area/Volume of a Circle**

Formula:  $\pi \times r^2 \times \text{Depth} = \text{Volume in cubic feet}$

The radius is 1/2 the diameter, which is a straight line passing from side to side through the center of a circle.

$$\frac{13.5'}{\text{Radius}} \times \frac{13.5'}{\text{Radius}} \times 3.14 \times \frac{0.06'}{\text{Depth}} \times \frac{7.48}{\text{gal/ft}^3} = \underline{256.8 \text{ gallons}} \text{ Volume}$$



Spill Date: \_\_\_\_\_ Location: \_\_\_\_\_

*This method is invalid if surface conditions are wet (due to rainfall, irrigation, etc.) DO NOT use this method under these circumstances.*

- STEP 1: Position yourself so that you have a vantage point where you can see the entire spill.
- STEP 2: Imagine one or more buckets or barrels of water tipped over. Depending on the size of the spill, select a bucket or barrel size as a frame of reference. It may be necessary to use more than one bucket/barrel size.
- STEP 3: Estimate how many of each size bucket or barrel it would take to make an equivalent spill. Enter those numbers in Column A of the row in the table below that corresponds to the bucket/barrel sizes you are using as a frame of reference.
- STEP 4: Multiply the number in Column A by the multiplier in Column B. Enter the result in Column C.

	A	B	C
Size of bucket(s)/barrel(s)	How many of this size?	Multiplier	Estimated Spill Volume
		x 1 gallon	
		x 5 gallons	
		x 32 gallons	
		x 55 gallons	
		x ___ gallons	
Estimated Total Spill Volume:			

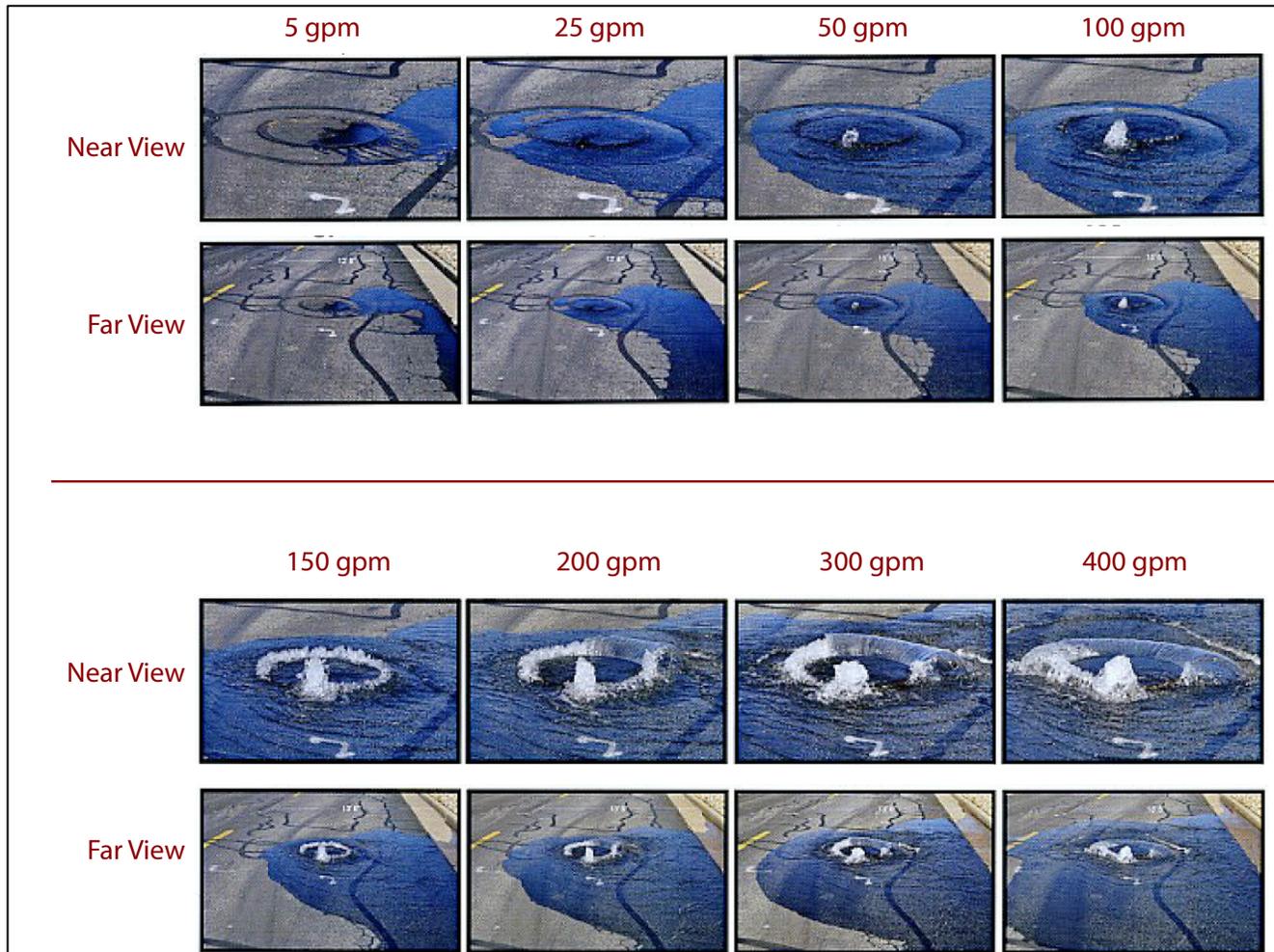
STEP 5: List assumptions made to arrive at the total estimated spill volume:

STEP 6: Take photographs. Where are photographs stored?

*The following photos must be taken: appearance point closest to the failure point, extent of the spill and spill boundaries, the entry location of each drainage conveyance system the sewage entered, all discharge points into surface waters (Category 1 spill only), and location(s) of clean up.*

Spill Date: \_\_\_\_\_ Location: \_\_\_\_\_

Compare the spill to reference images below to estimate flow rate of the current spill. **NOTE: If the manhole cover in your picture has vent holes or more than one pry hole, do not use these pictures for comparison.**



SSCSC Manhole Spill Gauge: CWEA Southern Section Collections Systems Committee. Spill Simulation courtesy of Eastern Municipal Water District.

Describe which reference photo(s) were used and any additional factors that influenced applying the reference photo data to the actual spill:

Flow Rate Based on Photo Comparison: \_\_\_\_\_ gallons per minute (gpm)

*(Continued on next page)*

Start Date and Time	1.
End Date and Time	2.
Spill Event Total Time Elapsed (subtract Line 1 from Line 2. Show in minutes.)	3.
Average Flow Rate GPM (Account for diurnal flow pattern)	4.
Total Volume Estimated Using Duration and Flow Method (Line 3 x Line 4)	5.

List assumptions made to arrive at the total estimated spill volume:

Take photographs. Where are photographs stored?

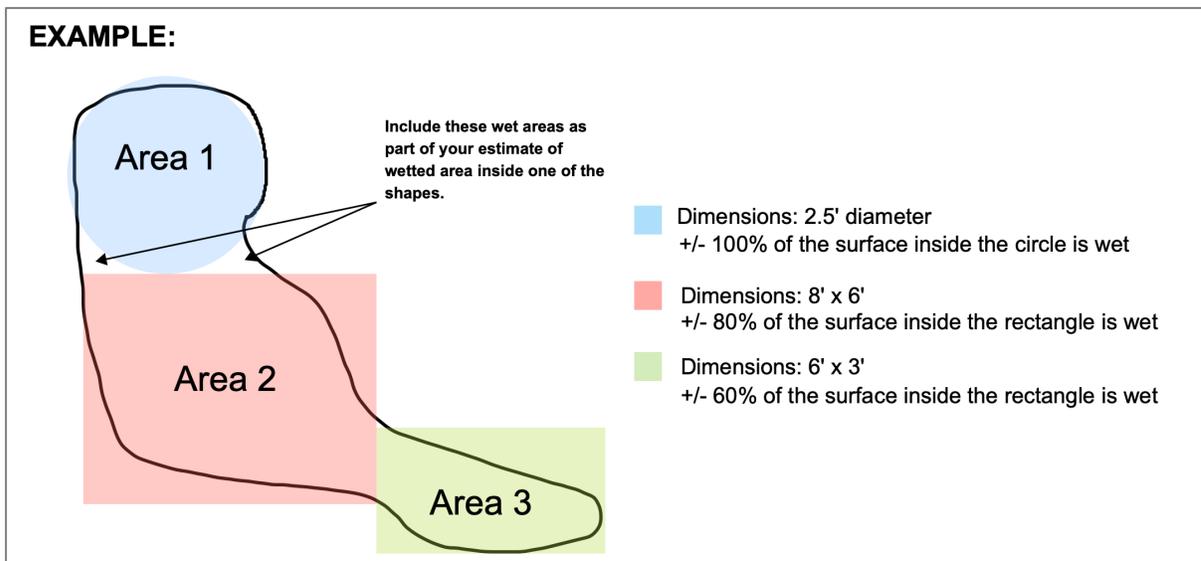
*The following photos must be taken: appearance point closest to the failure point, extent of the spill and spill boundaries, the entry location of each drainage conveyance system the sewage entered, all discharge points into surface waters (Category 1 spill only), and location(s) of clean up.*

Spill Date: \_\_\_\_\_ Location: \_\_\_\_\_

STEP 1: Describe spill area surface:  Asphalt  Concrete  Dirt  Landscape  Inside Building

Other: \_\_\_\_\_

STEP 2: Draw/sketch the outline (footprint) of the spill. Then break the footprint down into recognizable shapes. Label/identify each sketch outline area (Area 1, Area 2, etc.) See example below.



STEP 3: Calculate the area of the footprint by completing the table below for each area in Step 2. Measure actual depth of standing sewage whenever possible. When depth varies, measure several representative sample points and determine the average. If the depth is not measurable because it is only a wet stain, use the following estimated depths:

- Depth of a wet stain on concrete surface: 0.0026' (1/32")
- Depth of a wet stain on asphalt surface: 0.0013' (1/64")

**Rectangles:**

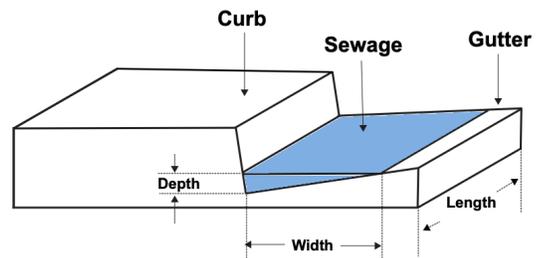
Area # (from labeled drawing)	Length	X	Width	X	% Wet	=	Area	X	Depth	=	Volume
→	ft	X	ft	X	%	=	ft <sup>2</sup>	X	ft	=	ft <sup>3</sup>
→	ft	X	ft	X	%	=	ft <sup>2</sup>	X	ft	=	ft <sup>3</sup>
→	ft	X	ft	X	%	=	ft <sup>2</sup>	X	ft	=	ft <sup>3</sup>

**Circles:**

Area # (from labeled drawing)	π	X	Radius	X	Radius	X	% Wet	=	Area	X	Depth	=	Volume
→	3.14	X	ft	X	ft	X	%	=	ft <sup>2</sup>	X	ft	=	ft <sup>3</sup>
→	3.14	X	ft	X	ft	X	%	=	ft <sup>2</sup>	X	ft	=	ft <sup>3</sup>
→	3.14	X	ft	X	ft	X	%	=	ft <sup>2</sup>	X	ft	=	ft <sup>3</sup>

STEP 4: If part of the spill is in a gutter, use the formula below to calculate the volume:

$$\frac{\text{Length}}{\text{Length}} \times \frac{\text{Depth}}{\text{Depth}} \times \frac{\text{Width}}{\text{Width}} \times 0.5 = \frac{\text{Volume}}{\text{Volume}} \text{ ft}^3$$



STEP 5: Calculate Total Spill Volume (sum of all of the volume calculations above): \_\_\_\_\_ ft<sup>3</sup>

STEP 6: Convert from cubic feet to gallons by multiplying by 7.48.

$$\frac{\text{spill volume in cubic feet}}{\text{spill volume in cubic feet}} \text{ ft}^3 \times 7.48 \text{ gallons} = \frac{\text{Total estimated volume}}{\text{Total estimated volume}} \text{ gallons}$$

STEP 7: List assumptions made to arrive at the total estimated spill volume. Adjust estimation up for moderate to severe cracking and/or roughness of surface (General Rule 20% to 40%):

STEP 8: Take photographs. Where are photographs stored?

*The following photos must be taken: appearance point closest to the failure point, extent of the spill and spill boundaries, the entry location of each drainage conveyance system the sewage entered, all discharge points into surface waters (Category 1 spill only), and location(s) of clean up.*

Spill Date: \_\_\_\_\_ Location: \_\_\_\_\_

Attach and/or reference system map and identify location of spill and buildings contributing to spill.

STEP 1: Determine the number of Equivalent Dwelling Units (EDUs) for this spill: \_\_\_\_\_ EDUs  
 NOTE: A single-family residential home = 1 EDU. For commercial buildings, refer to agency documentation.

STEP 2: This volume estimation method utilizes daily usage data based on flow rate studies of several jurisdictions in California. Column A shows how an average daily usage of 180 gallons per day is distributed during each 6-hour period. Adjust the table as necessary to accurately represent the actual data.

Complete Column E by entering the number of minutes the spill was active during each 6-hour time period. Multiply column D times Column E to calculate the gallons spilled during each time period. Add the numbers in Column F together for the Total Estimated spill Volume per EDU.

Time Period	Flow Rate Per EDU				Spill	
	A	B	C	D	E	F
	Gallons per Period	Hours per period	A ÷ B = Gallons per Hour	C ÷ 60 = Gallons per Minute	Minutes spill was active during period	D × E = Gallons spilled per period
6am-noon	72	6	12	0.20		
noon-6pm	36	6	6	0.10		
6pm-midnight	54	6	9	0.15		
midnight-6am	18	6	3	0.05		
<b>Total Estimated Spill Volume per EDU:</b>						

STEP 3: Multiply the Estimated spill Volume per EDU from Step 2 by the number of EDUs from Step 1.

$$\frac{\text{_____ gallons}}{\text{Volume per EDU}} \times \frac{\text{_____}}{\text{\# of EDUs}} = \frac{\text{_____ gallons}}{\text{Estimated spill Volume}}$$

STEP 4: Adjust spill volume as necessary considering other factors, such as activity that would cause a fluctuating flow rate (doing laundry, taking showers, etc.). Explain rationale below and indicate adjusted spill estimate (attach a separate page if necessary).

Total Estimated spill Volume: \_\_\_\_\_ gallons

STEP 7: List assumptions made to arrive at the total estimated spill volume:

STEP 8: Take photographs. Where are photographs stored?

*The following photos must be taken: appearance point closest to the failure point, extent of the spill and spill boundaries, the entry location of each drainage conveyance system the sewage entered, all discharge points into surface waters (Category 1 spill only), and location(s) of clean up.*



INSERT TAB:  
Tab F: Backup Forms

**Complete this form only if there is a backup into a residence or business.**

**Instructions to Sewer Crew:**

1. Tear forms listed below out of this workbook and hand to customer. *Leave this page (F-1) and the First Responder Form (F-2) in this workbook, do not give to Customer.*
2. Check each item that was provided to the customer.
3. Have customer sign below.

**Forms/Documents:**

- Form F-3: Customer Information Letter
- Form F-4: Your Responsibilities as a Private Property Owner

Forms Provided to:

\_\_\_\_\_   
Customer Name

\_\_\_\_\_   
Customer Signature

\_\_\_\_\_   
Date

Check here if customer declines to sign:

**Formularios / Documentos:**

- F-3: Carta de Información del Cliente
- F-4: Sus Responsabilidades Como Propietario de Una Propiedad Privada

Formularios Proporcionados a:

\_\_\_\_\_   
Nombre del cliente

\_\_\_\_\_   
Firma del cliente

\_\_\_\_\_   
Fecha

Marque aquí si el cliente se niega a firmar:

Forms Provided by:

\_\_\_\_\_   
Employee Name

\_\_\_\_\_   
Initial

\_\_\_\_\_   
Date

**Instructions to Utilities Superintendent:**

Send photos, including the photos of the documents given to the customer, and a copy of the First Responder form to the City Human Resources Department.

**Complete this form only if there is a backup into a residence or business.**

Fill out this form as completely as possible.

Ask customer if you may enter the home. If so, take photos of all damaged and undamaged areas.

PERSON COMPLETING THIS FORM:		PHONE:
Name: _____		DATE:
Title: _____		TIME:
TIME STAFF ARRIVED ON-SITE:		
RESIDENT NAME: <input type="checkbox"/> Owner <input type="checkbox"/> Renter ADDRESS:  PHONE:	IF RENT, PROPERTY MANAGER(S): OWNER:  ADDRESS:  PHONE:	
# OF PEOPLE LIVING AT RESIDENCE:		
Approximate Age of Home:	# of Bathrooms:	# of Rooms Affected:
Numbers of Photographs or Videos Taken: <input type="checkbox"/> Photographs _____ <input type="checkbox"/> Video _____ <input type="checkbox"/> Customer did not provide or allow photographs	Where are photos/video stored?	
Is nearest upstream manhole visibly higher than the drain/fixture that spilled? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Does property have a Property Line Cleanout or BPD? <input type="checkbox"/> Cleanout <input type="checkbox"/> BPD <input type="checkbox"/> Neither <input type="checkbox"/> Unknown		
If yes, was the Property Line Cleanout/BPD operational at the time of the spill?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Have there ever been any previous spills at this location?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Has the resident had any plumbing work done recently? <i>If YES, please describe:</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown

**GO TO PAGE 2**

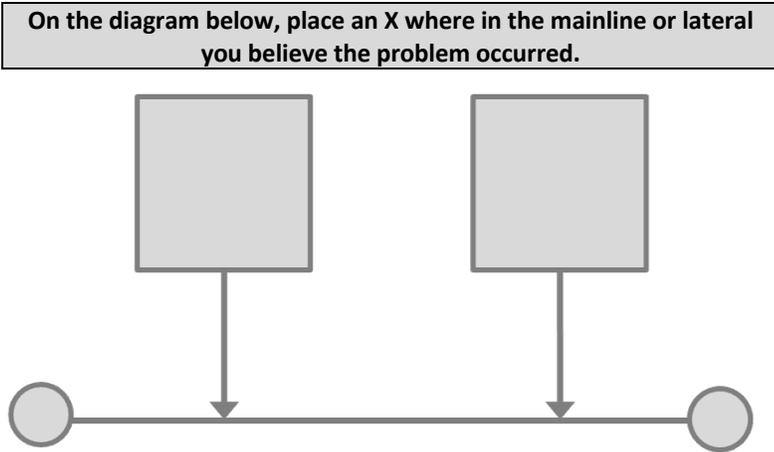
**LIVABILITY ASESMENT**

- Is there insufficient non-contaminated living space for residents to stay during cleaning including a functioning and non-contaminated bathroom?  Yes  No
- Are there any residents that are pregnant, are children, have severe allergies/asthma, have respiratory problems, and/or have a compromised immune system?  Yes  No
- Is the area a childcare or extended care facility?  Yes  No
- Is the food preparation area contaminated?  Yes  No
- Is it currently after 8pm, or if it is currently before 8pm will the cleaning and disinfection be completed after 10pm?  Yes  No

**If the answer to any of the questions above is YES, advise the resident to consider temporarily relocating while the living area is cleaned.**

**SANITARY SEWER LINE BLOCKAGE LOCATION**

PLEASE CHECK THE BOXES THAT DESCRIBE YOUR OBSERVATIONS:	
Building Cleanout Was: <input type="checkbox"/> Non-Existent <input type="checkbox"/> Full <input type="checkbox"/> Empty	Property Line Cleanout was: <input type="checkbox"/> Non-Existent <input type="checkbox"/> Full <input type="checkbox"/> Empty



Did sewage go under buildings?  Yes  No  Unsure

Recommended Follow-Up Action(s):

Dear Property Owner:

We recognize that sewer backup incidents can be stressful and require immediate response while all facts concerning how an incident occurred are still unknown. Rest assured that we do all we can to prevent this type of event from occurring in the first place. Nevertheless, occasionally tree roots or other debris in the sewer lines causes a backup into homes immediately upstream of the blockage. At this time the City is investigating the cause of this incident.

If the City is found to be responsible for the incident, we are committed to cleaning and restoring your property, and to protecting the health of those affected during the remediation process.

The cleaning contractor provided by the City has been selected because of their adherence to established protocols that are designed to assure to all parties thorough, cost-effective and expeditious cleaning services. You also have the right to select your own cleaning contractor, but the City does not guarantee payment of fees/expenses incurred and reserves the right to dispute fees/expenses deemed not usual and customary.

Depending on the extent of the backup our Sewer Crew may advise you to consider relocating temporarily while the living area is cleaned. In that case, if the City is found to be responsible for the backup you may submit a claim for reimbursement of reasonable lodging for one night. Additional lodging and other expenses may be discussed with the City Human Resources Department.

To discuss this matter, or to submit a claim, contact the City Human Resources Department at (909) 799-2814.

Sincerely,  
The City of Loma Linda

Estimado Propietario:

Reconocemos que los incidentes de la red de alcantarillado pueden ser estresantes y requieren una respuesta inmediata, mientras que todos los hechos relacionados con la forma en que ocurrió el incidente aún son desconocidos. Tenga la seguridad de que haremos todo lo posible para evitar que este tipo de evento ocurra en primer lugar. Sin embargo, ocasionalmente las raíces de los árboles u otros residuos en las líneas de alcantarillado causan una copia de seguridad en los hogares inmediatamente antes del bloqueo. En este momento el ciudad está investigando la causa de este incidente.

Si se determina que el ciudad es responsable del incidente, nos comprometemos a limpiar y restaurar su propiedad, ya proteger la salud de las personas afectadas durante el proceso de remediación.

El contratista de limpieza proporcionado por el Distrito ha sido seleccionado debido a su adhesión a los protocolos establecidos que están diseñados para garantizar a todas las partes servicios de limpieza exhaustivos, rentables y rápidos. También tiene derecho a seleccionar su propio contratista de limpieza, pero el ciudad no garantiza el pago de los honorarios / gastos incurridos y se reserva el derecho de disputar los honorarios / gastos que se consideren no habituales y habituales.

Dependiendo de la extensión de la copia de seguridad, nuestro Sewer Crew puede aconsejarle que considere reubicarse temporalmente mientras se limpia la sala de estar. En ese caso, si se determina que el ciudad es responsable de la copia de seguridad, puede presentar una reclamación de reembolso de alojamiento razonable por una noche. El alojamiento adicional y otros gastos pueden discutirse con el City Human Resources Department.

Para discutir este asunto, comuníquese con el City Human Resources Department al (909) 799-2814. Para presentar un reclamo por daños comuníquese con la City Human Resources Department al (909) 799-2814.

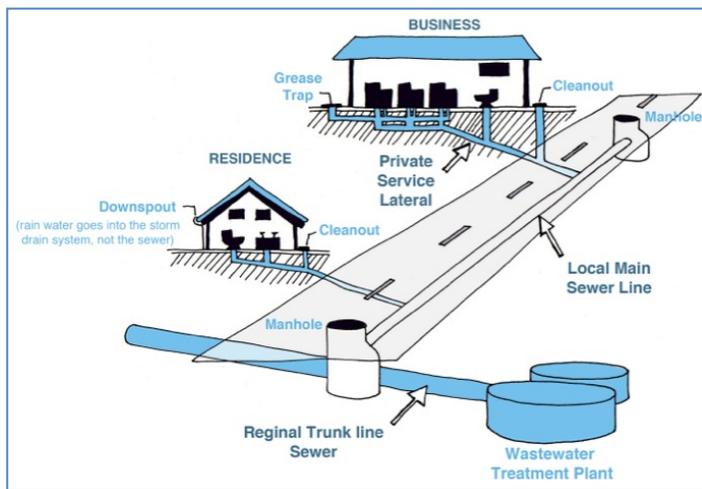
Sinceramente,  
The City of Loma Linda

**How a Sewer System Works**

A property owner's sewer pipes are called **service laterals** and are connected to larger local main and regional trunk lines. Service laterals run from the connection at the home to the connection with the public sewer. Depending on your location, a portion of the lateral is the responsibility of the property owner and must be maintained by the property owner.

**How do sewage spills happen?**

Sewage spills occur when the wastewater in underground pipes spills through a manhole, cleanout, or broken pipe. Most spills are relatively small and can be stopped and cleaned up quickly, but left unattended they can cause health hazards, damage to homes and businesses, and threaten the environment, local waterways, and beaches. Common causes of sewage spills include grease build-up, tree roots, broken/cracked pipes, missing or broken cleanout caps, undersized sewers, and groundwater/rainwater entering the sewer system through pipe defects and illegal connections.



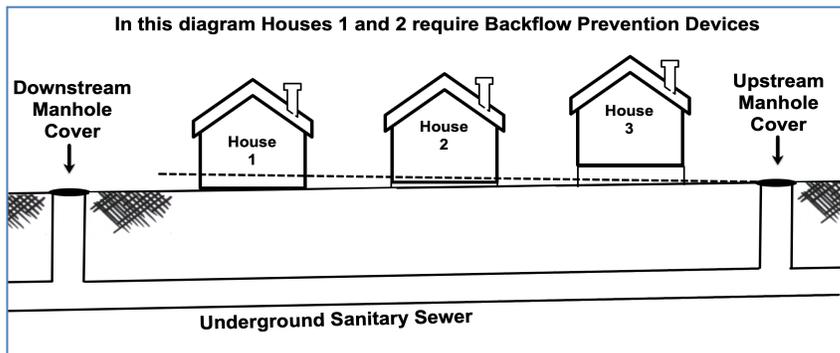
**Prevent most sewage backups with a Backflow Prevention Device**

This type of device can help prevent sewage backups into homes and businesses. If you don't already have a Backflow Prevention Device, contact a professional plumber or contractor to install one as soon as possible.

**Is my home required to have a backflow prevention device?**

Section 710.1 of the Uniform Plumbing Code (U.P.C.) states: *“Drainage piping serving fixtures which have flood level rims located below the elevation of the next upstream manhole cover or private sewer serving such drainage piping **shall** be protected from backflow of sewage by installing an approved type of backwater valve.”* The intent of Section 710.1 is to protect the building interior from mainline sewer spills or surcharges.

Additionally, U.P.C. 710.6 states: *“Backwater valves **shall** be located where they will be accessible for inspection and repair at all times and, unless continuously exposed, shall be enclosed in a masonry pit fitted with an adequately sized removable cover.”*



### Spill cleanup inside the home:

For large clean ups, a professional cleaning firm should be contacted to clean up impacted areas. If you hire a contractor, it is recommended to get estimates from more than one company. Sometimes, homeowner's insurance will pay for the necessary cleaning due to sewer backups. Not all policies have this coverage, so check with your agent.

If you decide to clean up a small spill inside your home, protect yourself from contamination by observing the following safety measures. Those persons whose resistance to infection is compromised should not attempt this type of clean up.

### Other Tips:

- Keep children and pets out of the affected area.
- Turn off heating/air conditioning systems
- Wear rubber boots, rubber gloves, and goggles during cleanup.
- Discard items that cannot be washed and disinfected (such as: mattresses, rugs, cosmetics, toys, etc.)
- Remove and discard drywall and insulation that has been contaminated with sewage or flood waters.
- Thoroughly clean all hard surfaces (such as flooring, concrete, molding, wood and metal furniture, countertops, appliances, sinks and other plumbing fixtures) with hot water and laundry or dish detergent.
- Help the drying process with fans, air conditioning units, and dehumidifiers.
- After completing cleanup, wash your hands with soap and water. Use water that has been boiled for 1 minute (allow the water to cool before washing your hands) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash clothes worn during cleanup in hot water & detergent (wash apart from uncontaminated clothes).
- Wash clothes contaminated with sewage in hot water and detergent. Consider using a Laundromat until your onsite wastewater system has been professionally inspected and serviced.

**Seek immediate attention if you become injured or ill during or after the cleanup process.**

### Spill cleanup outside the home:

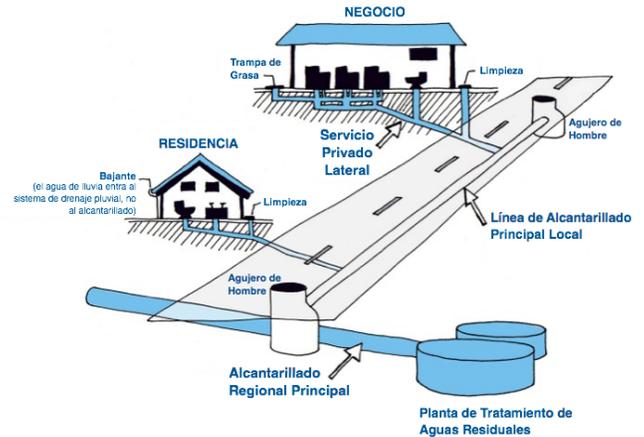
- Keep children and pets out of the affected area until cleanup has been completed.
- Wear rubber boots, rubber gloves, and goggles during cleanup of affected area.
- Clean up sewage solids (fecal material) and place in properly functioning toilet or double bag and place in garbage container.
- On hard surfaces areas such as asphalt or concrete, it is safe to use a 2% bleach solution, or ½ cup of bleach to 5 gallons of water, but don't allow it to reach a storm drain as the bleach can harm the environment.
- After cleanup, wash hands with soap and water. Use water that has been boiled for 1 minute (allow to cool before washing your hands) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash clothes worn during cleanup in hot water and detergent (wash apart from uncontaminated clothes).
- Wash clothes contaminated with sewage in hot water and detergent. Consider using a laundromat until your onsite wastewater system has been professionally inspected and serviced.

### Cómo funciona un sistema de alcantarillado

Las tuberías de alcantarillado de un propietario se denominan servicios laterales y están conectadas a líneas troncales principales y regionales locales más grandes. Los servicios laterales se ejecutan desde la conexión en el hogar hasta la conexión con el sistema de alcantarillado del Distrito. Estos laterales son responsabilidad del propietario y deben ser mantenidos por el propietario.

### ¿Cómo ocurren los derrames de aguas residuales?

Los derrames de aguas residuales ocurren cuando las aguas residuales en las tuberías subterráneas se desbordan a través de un pozo de acceso, limpieza o tubería rota. La mayoría de los derrames son relativamente pequeños y se pueden detener y limpiar rápidamente, pero si se los deja desatendidos, pueden causar riesgos para la salud, dañar viviendas y negocios y amenazar el medio ambiente, las vías fluviales locales y las playas. Las causas comunes de derrames de aguas residuales incluyen acumulación de grasa, raíces de árboles, tuberías rotas / agrietadas, tapas de limpieza faltantes o rotas, alcantarillas de tamaño insuficiente y aguas subterráneas / pluviales que ingresan al sistema de alcantarillado a través de defectos en las tuberías y conexiones ilegales.



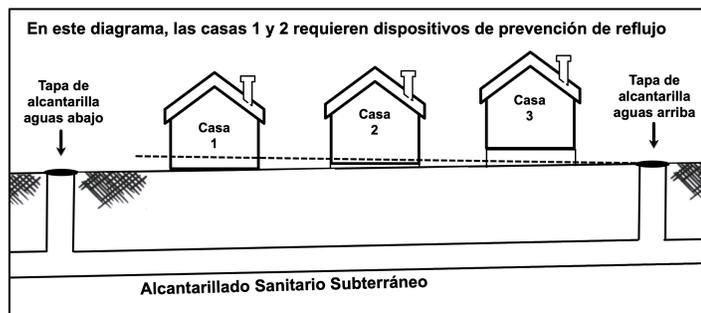
### Prevenga la mayoría de las copias de seguridad de aguas residuales con un dispositivo de prevención de reflujo

Este tipo de dispositivo puede ayudar a prevenir las copias de seguridad de aguas residuales en hogares y empresas. Si aún no tiene un dispositivo de prevención de reflujo, comuníquese con un plomero o contratista profesional para instalar uno lo antes posible.

### ¿Se requiere que mi hogar tenga un dispositivo de prevención de reflujo?

La Sección 710.1 del Código Uniforme de Plomería (UPC) establece: "Los accesorios de tuberías de drenaje que tienen llantas de nivel de inundación ubicadas debajo de la elevación de la siguiente boca de alcantarilla corriente arriba o la alcantarilla privada que atiende dicha tubería de drenaje deben protegerse contra el reflujo de aguas residuales al instalar un tipo de válvula de evacuación ". La intención de la Sección 710.1 es proteger el interior del edificio de los desagües o sobrecargas de alcantarillado de la línea principal.

Adicionalmente, U.P.C. 710.6 dice: Las válvulas de aguas residuales deben ubicarse donde puedan ser inspeccionadas y reparadas en todo momento y, a menos que estén continuamente expuestas, deben estar encerradas en un pozo de mampostería equipado con una cubierta removible del tamaño adecuado.



### Limpieza de derrames dentro de la casa:

Para grandes limpiezas, se debe contactar a una empresa de limpieza profesional para limpiar las áreas afectadas. Si contrata a un contratista, se recomienda obtener estimaciones de más de una compañía. A veces, el seguro del propietario de vivienda pagará la limpieza necesaria debido a las reservas de alcantarillado. No todas las pólizas tienen esta cobertura, así que consulte con su agente.

Si decide limpiar un pequeño derrame dentro de su casa, protéjase de la contaminación observando las siguientes medidas de seguridad. Aquellas personas cuya resistencia a la infección esté comprometida no deben intentar este tipo de limpieza.

### Otros consejos:

- Mantenga a los niños y mascotas fuera del área afectada.
- Apague los sistemas de calefacción / aire acondicionado
- Use botas de goma, guantes de goma y gafas durante la limpieza.
- Deseche los artículos que no se puedan lavar y desinfectar (como: colchones, alfombras, cosméticos, juguetes, etc.)
- Retire y deseche los paneles de yeso y el aislamiento contaminado con aguas residuales o aguas de inundación.
- Limpie a fondo todas las superficies duras (como pisos, concreto, molduras, muebles de madera y metal, mostradores, electrodomésticos, fregaderos y otros accesorios de plomería) con agua caliente y ropa o detergente para platos.
- Ayude al proceso de secado con ventiladores, unidades de aire acondicionado y deshumidificadores.
- Después de completar la limpieza, lávese las manos con agua y jabón. Use agua que haya sido hervida por 1 minuto (deje que el agua se enfríe antes de lavarse las manos) O use agua que haya sido desinfectada (solución de 1/8 cucharadita de lejía doméstica por 1 galón de agua). Dejar reposar durante 30 min. Si el agua está turbia, use 1/4 cucharadita de lejía de uso doméstico por 1 galón de agua.
- Lave la ropa usada durante la limpieza con agua caliente y detergente (lave aparte de la ropa no contaminada).
- Lavar la ropa contaminada con aguas residuales en agua caliente y detergente. Considere usar una lavandería hasta que su sistema de aguas residuales en el sitio haya sido inspeccionado y reparado profesionalmente.

**Busque atención inmediata si se lesiona o se enferma durante o después del proceso de limpieza.**

### Limpieza de derrames fuera de la casa:

- Mantenga a los niños y las mascotas fuera del área afectada hasta que se haya completado la limpieza.
- Use botas de goma, guantes de goma y gafas protectoras durante la limpieza del área afectada.
- Limpie los sólidos de alcantarillado (material fecal) y colóquelos en un inodoro o bolsa doble que funcione correctamente y colóquelos en un contenedor de basura.
- En áreas de superficies duras como el asfalto o el concreto, es seguro usar una solución de lejía al 2%, o 1/2 taza de lejía a 5 galones de agua, pero no permita que llegue a un drenaje de tormenta ya que la lejía puede dañar la ambiente.
- Después de la limpieza, lávese las manos con agua y jabón. Use agua que haya sido hervida por 1 minuto (deje enfriar antes de lavarse las manos) O use agua que haya sido desinfectada (solución de 1/8 cucharadita de cloro por 1 galón de agua). Dejar reposar durante 30 min. Si el agua está turbia, use 1/4 cucharadita de lejía de uso doméstico por 1 galón de agua.
- Lave la ropa usada durante la limpieza con agua caliente y detergente (lave aparte de la ropa no contaminada).
- Lavar la ropa contaminada con aguas residuales en agua caliente y detergente. Considere usar una lavandería hasta que su sistema de aguas residuales en el sitio haya sido inspeccionado y reparado profesionalmente.

**INSERT TAB:**

Tab G: SAMPLING SOP

Table of Contents (this page)..... G-1  
Specifications & Requirements ..... -2  
Introduction & Overview ..... -3  
Equipment & Safety ..... -4  
Before Sampling ..... -5  
Surface Water Sampling ..... -6  
After Sampling ..... -7  
Attachment E1 Summary ..... -8  
Quick-Reference Guide ..... -9  
Surface Water Sampling Worksheet..... -10  
Surface Water Sample Chain of Custody Record ..... -11



<b>Process:</b>	<i>Surface Water Sampling</i>
<b>Personnel Required:</b>	<ul style="list-style-type: none"> <li>• 1</li> </ul>
<b>Personal Protective Equipment:</b>	<ul style="list-style-type: none"> <li>• Safety Glasses</li> <li>• Rubber Gloves</li> </ul>
<b>License Required:</b>	<ul style="list-style-type: none"> <li>• None required</li> </ul>
<b>Common Hazards:</b>	<ul style="list-style-type: none"> <li>• Drowning or submersion</li> <li>• Slip, trip, and fall</li> <li>• Exposure</li> <li>• Insect/Wildlife</li> <li>• Weather</li> <li>• Boat/Watercraft</li> <li>• Physical Strain or Injury</li> </ul>
<b>Safe Operation Guidelines:</b>	<ul style="list-style-type: none"> <li>• Wear proper PPE</li> <li>• Be aware of currents, depth, and unstable banks</li> <li>• Do not eat, drink or smoke while sampling</li> <li>• Avoid cross-contamination</li> <li>• Label all samples clearly</li> </ul>
<b>Lab Contact Information</b>	<p>Clinical Lab of San Bernardino                  (909) 825-7693                  21881 Barton Road                  Grand Terrace</p>

Surface water sampling helps to ensure water quality by identifying areas of concern and potential failure mechanisms that may impact surface waters or stormwater infrastructure in the service area.



### Minimize Impacts

Surface water sampling allows for the proper evaluation of potential contamination following a sanitary sewer spill.



Having a thorough understanding of the service area and its various challenges can help responders be better prepared to minimize the impacts of a spill on local surface waters and stormwater infrastructure.

Before beginning the sampling process there are several important steps that must be taken to ensure that the samples collected are representative of the water quality in the area being monitored.

**These steps include:**

**1. Gathering the necessary equipment:**

- The surface water sampling worksheet, chain of custody, sampling pole, sample containers, and PPE are essential tools that must be prepared and organized before sampling can begin.

**2. Donning appropriate personal protective equipment:**

- To protect against exposure to potentially harmful contaminants and the sulfuric acid preservative in the Ammonia sample bottles, workers must wear gloves, eye protection, and other personal protective equipment, as needed.

**3. Determining the point of spill entry into the waterway:**

- It's important to locate the point at which any spill entered the waterway in order to collect the required samples: point of entry into the surface water, downstream, and upstream.



**The approximate stream velocity and time since the spill flow to the surface water stopped should be determined to calculate the appropriate distance to move downstream to collect:**

- 1. The downstream sample,**
- 2. Move upstream to collect the spill entry point sample,**
- 3. And move further upstream to collect the upstream or reference sample.**



### Personal Protective Equipment

Personal Protective Equipment (PPE) should be used when conducting surface water sampling. The PPE that is required includes:

- Gloves
- Eye Protection



### Sampling Equipment

In addition to PPE, other sampling equipment is necessary:

- Sample Bottles & Containers
- Cooler with Ice, or Ice packs
- Sampling Pole, or
- Rope & Bucket



**The use of PPE and proper sampling equipment is important for the safety of the sampler and for ensuring accurate and reliable sampling results.**

Test Type	Sample Locations			
	Spill Area	Downstream of Spill	Upstream of Spill	Drainage Conveyance System (as applicable)
Ammonia/Nitrogen	1 pint with H <sub>2</sub> SO <sub>4</sub>			
Enterococcus	1 bacti bottle	1 bacti bottle	1 bacti bottle	1 bacti bottle
Fecal Coliforms	1 bacti bottle	1 bacti bottle	1 bacti bottle	1 bacti bottle
e. Coli	1 bacti bottle	1 bacti bottle	1 bacti bottle	1 bacti bottle

**Water samples must be collected in different bottles for various tests and then transported in a cooler with ice packs.**

For each of the three sampling sites (plus drainage conveyance system as applicable), one bottle is needed for ammonia/nitrogen testing, and one bacti bottle is required for each type of bacteria being tested.

Additionally, one field blank sample is required for each constituent. Field blank sample bottles are filled with sterilized water during sampling to serve as quality control on the sampler's sampling methods.

Since the sample bottles contain sterilized water, bacteria and ammonia should not be present in the water. If the lab analysis shows the presence of bacteria or ammonia, it indicates that the sampler's method may not have been correct, and the other bacti samples may have been contaminated.

### Surface Water Sampling – Preparation

	<p style="text-align: right;"><b>Step 1 of 4</b></p> <p>Prepare the cooler for sample storage by adding an instant ice pack, ice pack, or ice to keep the samples cold during transport to the lab.</p>
---	---

**Step 2 of 4**



Identify the point of the spill where the wastewater entered the waterway and take a photograph of this location with a reference point in the picture.

**Step 3 of 4**

Surface Water Sample Collection Chain of Custody Record									
Customer Name		Customer Address		Customer Telephone		Program Name		Sampled By	
<input type="checkbox"/> Hazardous Waste		<input type="checkbox"/> Unknown Material		Well Code		CONTRACT LAB INFORMATION		DOE	
Program Name		Phone #		Ship Date		Turnaround Requirement		<input type="checkbox"/> None <input type="checkbox"/> 24hr	
Lab Program Classifier		Cover		Analyte Requested		SADC Requirements		<input type="checkbox"/> Lab Review <input type="checkbox"/> Sample returned	
SAMPLE COLLECTION INFORMATION									
Date	Time	Type	Sample Location	Sample Label ID	Volume (L)	Temp (C)	PH	DO (mg/L)	Remarks
LIMA		<input type="checkbox"/> System			2	A	B	B	D
		<input type="checkbox"/> Storm Drain			2	A	B	B	D
		<input type="checkbox"/> Downstream			2	A	B	B	D
		<input type="checkbox"/> Field Blank			2	O	B	B	D
*Storm: P = Public Water, W = Wastewater, A = Ambient Water, G = Groundwater, S = Soil, B = Biosolids, I = Industrial, O = Other (specify in remarks)									
Reference		Date	Time	Reference ID	Date	Time	Transporting Agency		
							<input type="checkbox"/> USFS <input type="checkbox"/> EPA <input type="checkbox"/> Other		
Sample Handling Documentation									
Container sealed? <input type="checkbox"/> Yes <input type="checkbox"/> No		Closed container? <input type="checkbox"/> Yes <input type="checkbox"/> No		Packed/overpacked? <input type="checkbox"/> Yes <input type="checkbox"/> No		Cooled appropriately? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Cooled? <input type="checkbox"/> Yes <input type="checkbox"/> No		Sample stored? <input type="checkbox"/> Yes <input type="checkbox"/> No		Container? <input type="checkbox"/> Yes <input type="checkbox"/> No					
Sample distributed? <input type="checkbox"/> Lab bench <input type="checkbox"/> Lab field <input type="checkbox"/> Mobile container		Disposal date: _____		Disposed by: _____		Other: _____			
COC Distribution: _____		Lab Address: _____		Lab Phone: _____		Lab Fax: _____			
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Begin completing the *Surface Water Sampling Worksheet* to record the relevant information about the sampling location and collected samples.

**Step 4 of 4**



To determine which direction is upstream and downstream for sample collection, you should observe the direction of water movement from the point of discharge.

The purpose of this procedure is to provide a standard for collecting surface water samples to assess water quality, avoid contamination, and ensure that samples can be accurately labeled and transported to the lab for processing.

**Notes:**

Start by collecting downstream samples first.

In order to determine where the downstream sample is located in a stream, creek, or river, you will need to determine the velocity of the surface water. This can be accomplished through the use of a stream velocity meter or by measuring off a distance along the bank and timing how long it takes for a floating object to travel that distance.

Use the formula on the *Surface Water Sampling Worksheet* to calculate the stream velocity. Once known, determine the time that the spill **has not been** entering the surface water.

This, along with the stream velocity, will inform you how far downstream you need to travel to collect the downstream sample.



**Step 1 of 9**

Don the appropriate PPE from your sampling kit. This should include latex or rubber gloves and safety glasses.



**Step 2 of 9**

Label all samples with their location (refer to table on G-8), your name, and the date and time they are collected. Record this information on the surface water sampling worksheet.



**Step 3 of 9**

Take photos of each sample location and ensure a reference point is visible in each photo. In the photo (left), the dock and sign serve as excellent reference points.



**Step 4 of 9**

Remove the seal from the Ammonia sample container just prior to collecting your sample, as applicable.

To reduce the likelihood of contamination, remove the cap immediately before collecting each sample.



**Step 5 of 9**

To prevent sample contamination, do not allow the inside of the cap to touch anything while you are obtaining the sample.



**Step 6 of 9**

When filling the ammonia nitrogen sample bottle, don't overfill it because it contains sulfuric acid. Sweep the bottle or dipper upstream and out of the water without disturbing the bottom sediment. Remember to leave the sulfuric acid in the bottle and avoid skin contact.



**Step 7 of 9**

Fill the Ammonia sample bottle to the fill line, and immediately replace the cap. If there is no clear fill line, fill it to the “neck” of the bottle.



**Step 8 of 9**

Open the Bacteria sample container and allow water to gently flow into the bottle just to the fill line.



Repeat the sampling process for all sample points, and **provide a “field blank”** sample using sterile water, which verifies the quality of the samples.



**Step 9 of 9**

Place all samples in the cooler on the ice pack. To ensure accurate analysis, the Bacti samples must be transported to the lab within 6 hours of the time of collection.

**Step 1 of 4: Documentation**

All samples must be labeled with their location, your name, and the date and time they were collected. Refer to the state requirements found on the last page of this document. Record this information on the chain of custody form and the surface water sampling worksheet.

**Chain of Custody Record**

**Surface Water Sampling Worksheet**

**Westborough Water District Water Quality Monitoring Program Plan  
 Surface Water Sample Collection Chain of Custody Record**

Customer Name: ABC Supply Inc.  Hazardous Waste  PCB  
 Customer Address: 555 Post Valley  Unknown Material  WOF  
 Customer Telephone: 555-555-1212 Mail Code: CONTRACT LAB INFORMATION Turnaround Requirement  
 Program Name: Spill Remediation 207 Ship to:  Normal (21 days)  Rush  
 Lab Program Coordinator: Phone # \_\_\_\_\_ Fax # \_\_\_\_\_ Ship Date:  Rush  Other  
 Sampled By: David Patzer Counter: \_\_\_\_\_

LMS# (Issued by Lab)	Date	Time	Type	Sample Location	Sample Label ID	#Containers	Material	Analysis Requested				GAGC Requirements		Remarks/Notes
								Ammonia	Coliform	Enterococcus	Fecal Coliform	Lead	Special (see attached)	
	2/10/23	12:30	<input type="checkbox"/> <input type="checkbox"/>	Upstream	RSW-001 LL	2	A	<input type="checkbox"/>						
	2/10/23	12:35	<input type="checkbox"/> <input type="checkbox"/>	Entry Point	RSW-001	2	A	<input type="checkbox"/>						
	2/10/23	12:45	<input type="checkbox"/> <input type="checkbox"/>	Downstream	RSW-001 D	2	A	<input type="checkbox"/>						
			<input type="checkbox"/> <input type="checkbox"/>	Field Blank	FB-1	2	O	<input type="checkbox"/>	Sterile deionized water					

\*Matrix: P = Potable Water, W = Wastewater, A = Ambient Water, G = Groundwater, S = Soil, B = Biofilms, I = Industrial, O = Other (specify in remarks)

Relinquished: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Relinquished to: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Transport/Shipping Information:  UPS  FedEx  Other

Sample Receiving Documentation: Container intact?  Yes  No Correct container?  Yes  No Field preserved?  Yes  No Custody tape intact?  Yes  No  
 Cooled?  Yes  No Temp. Break?  Yes  No Comments: \_\_\_\_\_ Disposed by: \_\_\_\_\_ (initials) \_\_\_\_\_  
 Sample distribution:  Lab bench  Ice chest  Walk-in cooler/shelf # \_\_\_\_\_ Disposal Date: \_\_\_\_\_  
 C-C Distribution: Date: \_\_\_\_\_ By: \_\_\_\_\_ Lab Admin File  Picking Mgr  Lab Prop. Cont.  Lab Prep. Cont.  Delivery courier  Pick-up: Other

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**Surface Water Sampling Worksheet** Westborough Water District Water Quality Monitoring Program Plan

Sample Date: 2/10/23 Sample Time: 12:30 AM [PM] Sample Location: Suburban Slough  
 Sampler(s) Name(s): David Patzer  
 Sampler(s) Signature(s): [Signature]

What is being sampled?  Stream  Pond  Lake  River  Other:  Rain  Snow  
 Weather at time of sampling:  Sunny  Overcast  Partly Cloudy  Snowing  Freezing  Raining  Hailing  Snowing

If the SSO was not actively entering the surface water during sampling:  
 A. Stream Velocity: 3 CPS  
 B. How Long Has the SSO NOT Been Entering the Surface Water? 5 minutes X Ebb/Flow = 300 seconds  
 C. How Far Downstream Did You Travel To Collect the SOURCE Sample? 0 X 0 = Feet = 0 Feet  
 D. Explain why you travelled a different distance, if you did, to collect the source sample: N/A

Sample Location	# of Samples	Photo ID of Sample Location	Visual Observations and/or Interferences
Upstream	2	RSW-001 LL	None near stream, 100 feet from sample point
Source	2	RSW-001	
Downstream	2	RSW-001 D	
Field Blank	1	FB-1	

\*Collect duplicate bacteria samples at each location

**PMSI CHECKLIST**

All Samples Labeled with:  
 Date in six-digit number indicating the year, month, day of collection  
 Time a four-digit number indicating military time of collection, e.g. 0954  
 Sample Location, Upstream, Source, or Downstream  
 Sampler: each sampler is identified  
 Parameters/Preservation: analysis to be conducted for sample/sample preservation

Chain of Custody Completed  
 Samples on Ice in Cooler  
 Pictures Taken of Each Sample Location and the Photo ID# Noted Above  
 All Sampling Equipment Collected

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**Step 2 of 4: Contact the Lab**

Inform the lab that the following samples require processing: ammonia-nitrogen, total/fecal coliform, e. Coli, and/or enterococcus. Provide any additional information the lab may require.

**Step 3 of 4: Transport Samples**

Place the samples in the cooler on the ice pack and transport them to the lab within 6 hours of collection time. Complete the chain of custody form and ensure all samples are properly secured during transport.

**Step 4 of 4: Post Warning Signs**

If directed by your supervisor or the county environmental health division, post warning signs in the affected area. Keep track of sign locations and remove warning signs and lift restrictions only when authorized to do so.

The Enrollee shall collect receiving water samples at the following locations:

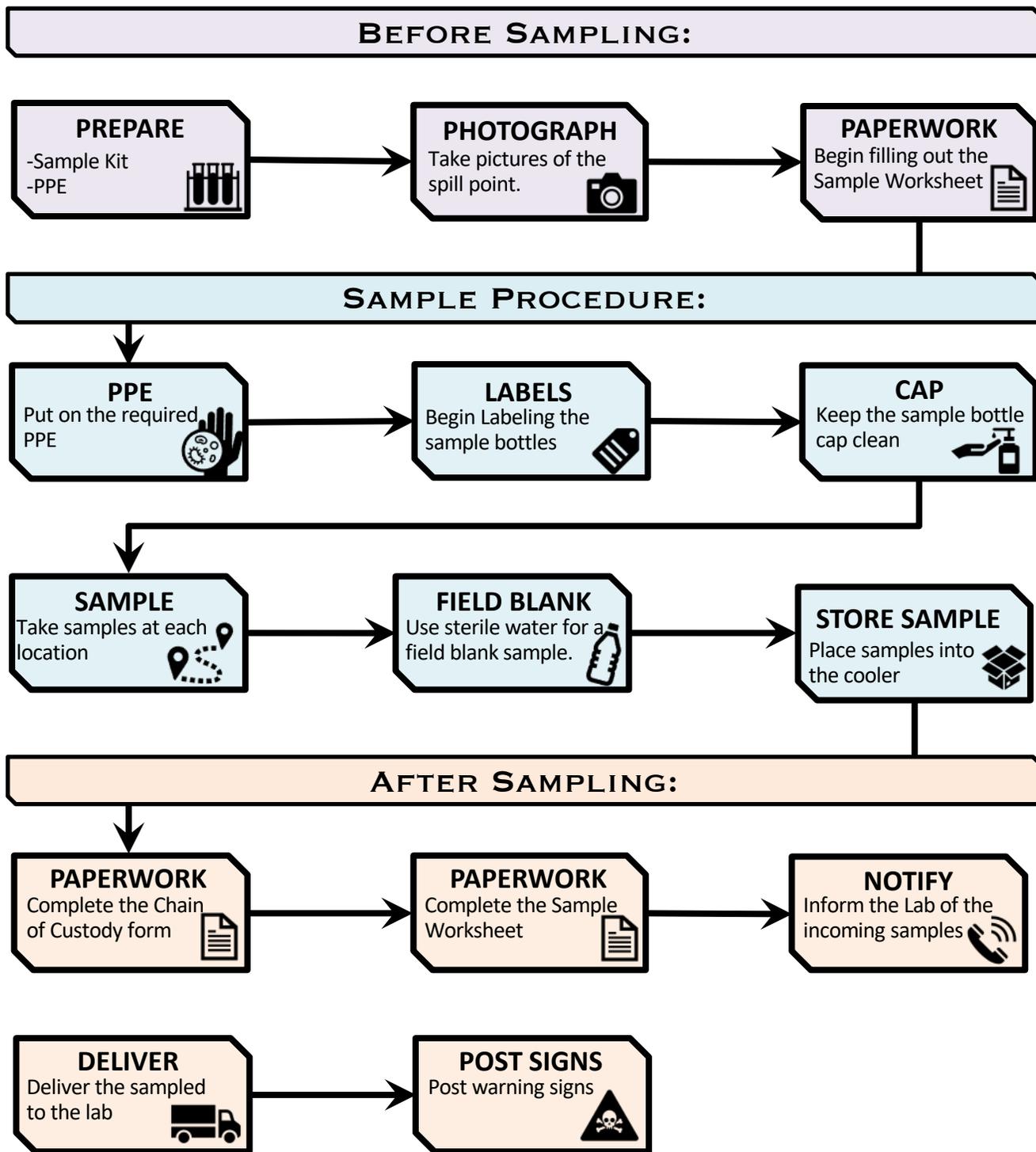
**Sampling of Flow in Drainage Conveyance System (DCS) Prior to Discharge**

Sampling Location	Sampling Location Description
DCS-001	A point in a drainage conveyance system before the drainage conveyance system flow discharges into a receiving water.

**Receiving Surface Water Sampling (RSW<sup>1</sup>)**

Sampling Location	Sampling Location Description
RSW-001 Point of Discharge	A point in the receiving water where sewage initially enters the receiving water.
RSW-001U Upstream of Point of Discharge	A point in the receiving water, upstream of the point of sewage discharge, to capture ambient conditions absent of sewage discharge impacts.
RSW-001D Downstream of Point of Discharge	A point in the receiving water, downstream of the point of sewage discharge, where the spill material is fully mixed with the receiving water.

<sup>1</sup>The Enrollee must use its best professional judgment to determine the upstream and downstream distances based on receiving water flow, accessibility to upstream/downstream waterbody banks, and size of visible sewage plume.



Sample Date:	Sample Time: <input type="checkbox"/> AM <input type="checkbox"/> PM	Sample Location:		
Sampler(s)' Name(s):				
Sampler(s)' Signature(s):				
What is being sampled? <input type="checkbox"/> Stream <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> River <input type="checkbox"/> Other:		If the spill was not actively entering the surface water during sampling: A. Stream Velocity: _____ CFS B. How Long Has the spill <b>NOT</b> Been Entering the Surface Water? _____ minutes X 60sec/min = _____ seconds C. How Far Downstream Did You Travel To Collect The SOURCE Sample? (A X C = Feet): _____ feet D. Explain why you travelled a different distance, if you did, to collect the source sample:		
Weather at time of sampling: <input type="checkbox"/> Sunny <input type="checkbox"/> Overcast <input type="checkbox"/> Sprinkling <input type="checkbox"/> Raining				
Was the spill actively entering the surface water during Sampling? <input type="checkbox"/> YES <input type="checkbox"/> NO If no, complete A-D in the gray box to the right.				
Sample Location	Sample Label	# of Samples*	Photo ID# of Sample Location	Visual Observations and/or Interferences
Drainage Conveyance	DCS-001	4		
Source*	RSW-001	4		
Upstream*	RSW-001U	4		
Downstream*	RSW-001D	4		
Field Blank*	Field Blank	4		

\* Collect duplicate bacteria samples at each location

FINISH CHECKLIST	NOTES / OBSERVATIONS
<input type="checkbox"/> <b>All Samples Labeled with:</b> <input type="checkbox"/> Date: a six-digit number indicating the year, month, day of collection <input type="checkbox"/> Time: a four-digit number indicating military time of collection. e.g. 0954 <input type="checkbox"/> Sample Location: Drainage Conveyance, Source, Upstream, or Downstream <input type="checkbox"/> Samplers: each sampler is identified <input type="checkbox"/> Parameter/preservative: analysis to be conducted for sample/sample preservation <input type="checkbox"/> <b>Chain of Custody Completed</b> <input type="checkbox"/> <b>Samples on Ice in Cooler</b> <input type="checkbox"/> <b>Pictures Taken of Each Sample Location and the Photo ID/# Noted Above</b> <input type="checkbox"/> <b>All Sampling Equipment Collected</b>	



INSERT TAB:  
Tab H: POST-SPILL

SPILL LOCATION	
Spill location name:	
Address of spill:	

NOTIFICATION AND COMMUNICATION PROCEDURES	
Were notification procedures adhered to?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Were notification procedures effective?	<input type="checkbox"/> Yes <input type="checkbox"/> No

RESPONSE PROCEDURES	
Were response time goals met?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Were safety procedures adhered to?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Were safety procedures effective?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Were initial response procedures adhered to?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Were initial response procedures effective?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Were containment procedures adhered to?	<input type="checkbox"/> Yes <input type="checkbox"/> No

RESPONSE PROCEDURES (continued)	
Were containment procedures effective?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Were clean up and recovery procedures adhered to?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Were clean up and recovery procedures effective?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Were sewer back up procedures adhered to?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Were sewer back up procedures effective?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Were chain of custody procedures adhered to?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Was failure analysis investigation performed and documented?	<input type="checkbox"/> Yes <input type="checkbox"/> No
REPORTING AND NOTIFICATION PROCEDURES	
Were reporting and notification timeline requirements met?	<input type="checkbox"/> Yes <input type="checkbox"/> No

<b>DOCUMENTATION</b>	
Was spill file created?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Was QA/QC performed to ensure field data matched CIWQS data?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>RECOMMENDED CHANGES</b>	
<input type="checkbox"/> N/A	
<b>ATTENDEES</b>	
<b>FACILITATED BY</b>	
	Date:

**OFFICE USE ONLY**

Incident Report #		Prepared By	
<b>Spill/Backup Information</b>			
Cause			
<b>Summary of Historical Spills/Backups/Service Calls/Other Problems</b>			
Date	Cause	Date Last Cleaned	Crew
Records Reviewed By:		Record Review Date:	
<b>Summary of CCTV Information</b>			
CCTV Inspection Date		File Name/Number	
CCTV File Reviewed By		CCTV Review Date	
Observations			

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<b>Recommendations</b>					
✓	Type	Specific Actions	Who is Responsible?	Completion Deadline	Who Will Verify Completion?
	No Changes or Repairs Required	n/a	n/a	n/a	n/a
	Added sewer to preventive maintenance program				
	Adjusted schedule/method of preventive maintenance				
	Enforcement action against FOG source				
	Plan rehabilitation or replacement of sewer				
	Repaired facilities or replaced defect				
	Change(s) to Spill Response Procedures				
	Training				
	Misc.				
Comments/Notes:					
Reviewed By:				Review Date:	