

Appendix E - Element 6: (Overflow Emergency Response Plan)

APPENDIX E – Element 6 (Overflow Emergency Response Plan) Supporting Documents

1. Overflow Emergency Response Plan
2. List of Contacts for Overflow Emergency Response Plan
3. Procedures for Estimating the Volume of Sewer Overflows.
4. Sanitary Sewer Overflow Report Form.

OVERFLOW EMERGENCY RESPONSE PLAN

PURPOSE:

This Overflow Emergency Response Plan is prepared to protect public health and the environment, satisfy regulatory agencies and waste discharge permit conditions for managing Sanitary Sewer Overflows (SSOs), and minimize risk of enforcement actions against the City in the event of an overflow.

PROCEDURES:

I. Overflow Detection

City employees or the public may detect an overflow. The Public Works Department (PWD) is primarily responsible for receiving phone calls from the public notifying the City of possible overflows from the wastewater conveyance system. The emergency response shall be available 24 hours per day, 365 days per year. During normal working hours, the call will be routed to the PWD receptionist. During off-hours the call will be routed to the PWD on-call employee. The PWD receptionist or on-call employee receiving the call will be responsible for the following procedures:

- 1) **First Step** - At a minimum, the following information should be recorded when taking the call:
 - (a) Full name of caller (first/last name)
 - (b) Caller's contact information (phone number, address, company name, etc.)
 - (c) Date and time call received
 - (d) Location of possible overflow (address and nearest cross street)
 - (e) Description of the problem
 - (f) Time problem was first observed by the caller
 - (g) Observations of the caller
 - (h) Other relevant information that will enable the PWD to quickly locate, assess, and stop the overflow (e.g. estimated spill volume, suspected cause of spill, are any hazardous chemicals involved)
- 2) **Second Step** – After completing the call, notify O & M staff via the radio as soon as possible in the following order (move to the next person on the list if no answer to first caller):
 - (a) Kirk Cloyd, O & M Superintendent
 - (b) Mike Edrington, Utility Supervisor
 - (c) Staff Person doing Work Orders
 - (d) On-call radio

Appendix E - Element 6: (Overflow Emergency Response Plan)

- 3) **Third Step** – Send an email with the following information to the *Emergency Spill Response Group* (distribution list found in outlook)
 - (a) Information taken from call (First Step)
 - (b) Name of employee whom spill was reported to (Second Step)
- 4) **Fourth Step (if applies)**
 - (a) After the initial call, we may have other callers reporting the spill. Please take their name & number and return their call once the problem has been resolved.

The SCADA system will automatically dial the on-call operator in the event of equipment failure or detection of a possible overflow. Sanitary sewer overflows detected by the SCADA system or any personnel in the course of their normal duties shall be immediately reported to their supervisor.

II. Initial Response

Failure of any element within the City-owned and operated wastewater conveyance system that threatens to cause or causes a SSO will trigger a response to isolate and correct the problem. Crews and equipment shall be available to respond to any sewer overflow locations.

Upon receipt of a report of sewage overflow, all response crew members shall proceed to the Corporate Yard where they will gather all necessary equipment and resources before proceeding to the site of the SSO. Delays or conflicts in assignments and issues regarding equipment and resources should be reported to their supervisor.

In the event of a spill or overflow, it is the responder's role to protect public health, the environment, and property from wastewater overflows and to restore the area to normal as soon as possible. Specifically, the responder should:

- Upon arrival at the site of the sewer overflow, note the time of arrival, assess the situation, develop an approach to contain the sewage and eliminate the cause of the overflow.
- Take photographs if time permits.
- Dispatch crews shall promptly notify their supervisor, if available, of preliminary information and potential impacts. If the supervisor is not available, the Superintendent of O&M should be notified.
- Immediately notify the Superintendent of O&M or the Public Works Director by telephone of all sanitary sewer overflows that could be greater than 1,000 gallons, that may have entered a body of water or that may have caused damage to private property.
- Establish safety parameter and control zones with cones, barricade, signs, vehicles or terrain.
- If hazardous conditions that may cause illness or injury are encountered, immediately notify the Superintendent of O&M for guidance before taking further action.

Appendix E - Element 6: (Overflow Emergency Response Plan)

- The Superintendent of O&M shall alert the Lathrop Manteca Fire Department (LMFD) and request a hazardous materials response team.
- The maintenance personnel shall wait until the LMFD hazardous materials response team has determined it is safe for the sewer maintenance response team to proceed with containment, and cleanup activities.
- Contain or divert sewage, if possible, to prevent entry into a storm drain, body of water or environmentally sensitive areas. Use earthen berms, sand bags, air plugs in storm drains, vacuum unit or other available methods to contain or divert the flow. Determine if bypass pumping is feasible and, if so, have support staff divert flow around the blockage to the downstream manhole.
- Eliminate the cause of the overflow and restore the flow in the collection system. In most cases, this will be accomplished by removing a root, grease or debris blockage in the sewer pipe using a hydrojet. Note the time that the flow is restored.
- If the blockage cannot be removed within 30 minutes of arrival, notify the maintenance supervisor, the Superintendent of O&M or the Public Works Director immediately. Remain on site and follow directions.
- After the overflow has been stopped and repairs have been made, return any sewage that can be collected back to the sewer system using the vacuum unit or trash pump. Note the time this activity began.

III. Recovery and Clean-up (Mitigation)

Perform site clean up by removing signs of all gross contamination such as toilet paper, solids and grease with a rake or with a vacuum unit. Wash down the affected area with clean water, contain the water and dispose of the water in the sewer. In environmentally sensitive areas, obtain guidance from the governing state and federal agencies, such as the Department of Fish and Game (DFG) or United States Coast Guard, on clean up procedures to prevent causing more damage. Clean up procedures in sensitive areas may cause more harm than the sewer overflow event.

The potential for human health issues and adverse environmental impacts resulting from sanitary sewer overflows can be reduced by following these clean up and mitigation procedures. The procedures described are for dry weather conditions. During wet weather conditions modify these procedures as necessary when storm waters are high and flushing is impractical. Cleanup flushing should be accomplished only with clean water.

Paved Areas

Collect all signs of gross contamination by hand or with the use of rakes or brooms as appropriate and dispose as solid waste. Pressure-wash the affected area with clean water until the wash water is clear. Contain and vacuum the wash water. Allow the affected area to dry and repeat the process if necessary. For paved areas on private property, use a disinfectant solution for the final flush.

Areas with Bare Soil or Vegetation

Collect all signs of gross contamination by hand or with the use of rakes as appropriate and dispose as solid waste. Flush the affected area with clean water until the wash water

Appendix E - Element 6: (Overflow Emergency Response Plan)

is clear. The volume of the flushing water should be approximately three times the amount of sanitary sewage volume that contaminated the area. Contain and vacuum up the wash water. Allow the affected area to dry and repeat the process if necessary.

Environmentally Sensitive Areas

Environmentally sensitive areas include streams, creeks and riparian habitat. Obtain guidance from the governing state and federal agencies if an environmentally sensitive area is impacted. In some cases, the disturbance caused by cleanup activities may be more damaging than the sewer overflow event. Divert and contain sewage quickly to minimize impact to these areas. Any water used to clean up these areas should be de-chlorinated prior to use to minimize impacts to aquatic life.

IV. Public Access and Warning

Set up barricades and post warning signs in cases where public health may be at risk by contact with sewage or sewage contamination. Warning signs should contain the words “Raw Sewage, Avoid Contact”. Place the barricades and signs at points of public access in an effort to warn the public in that immediate area.

Inspect all sewer overflow locations the following day. Identify any signs of gross contamination. Verify whether barricades and warning signs are still needed and whether the signs are still in place, especially at points of public access.

Check barricade signs daily until approval to remove signs is received from the San Joaquin County Department of Environmental Health.

V. Water Quality Sampling and Analysis

Water quality samples shall be taken in any body of water receiving sewage to determine the extent of the contamination. Water quality sampling should be performed to:

1. Determine the extent of the area that has been impacted by sewage contamination
2. Determine when the area is safe for public contact.

Perform water quality sampling when it is suspected that over 1000 gallons of sewage has entered a body of water or if there is a large, noticeable discharge and/or pooling of wastewater entering, or potentially entering a creek or waterway.

Water quality sampling should be performed by trained City personnel, or through a water quality testing laboratory that is under contract with the City.

If water quality samples are taken, the following information should be recorded:

- The date, exact place, and time of sampling or measurements.
- The individual(s) who performed the sampling or measurements.
- The date(s) analyses were performed.
- The individual(s) who performed the analyses.
- The analytical technique or method used.
- The results of such analyses.

Appendix E - Element 6: (Overflow Emergency Response Plan)

Sampling and Testing Procedures by City Staff

Sampling for ammonia should be conducted both upstream and downstream of the point where sewage entered the receiving water. Ammonia is a unique indicator of sewage contamination. Samples should be taken every 50 feet both upstream and downstream of the point where sewage entered the receiving water until ammonia is no longer detected in the receiving water. The testing is inexpensive and fast and will determine the limits of sewage contamination. The sampling and analysis should be performed following the directions contained in the Nitrogen Ammonia Test Strip Kit (www.hach.com) and the results recorded. More comprehensive testing should be performed on portions of the water body shown to be positive for ammonia. Samples should be analyzed for total coliform, fecal coliform, and dissolved oxygen. Each sampling location should be documented and follow up sampling should be performed in the same sampling locations for affected areas.

Testing by San Joaquin Department of Environmental Health

The City should inform the San Joaquin County Department of Environmental Health (SJCDEH) of any sewage contamination in a body of water that may pose a threat to human health. This provides the SJCDEH the opportunity to perform water sampling and testing and make the final determination that the water body is no longer contaminated.

VI. Investigation and Documentation

Investigate and document all sanitary sewer overflows. This information is useful in determining modifications to the operations and maintenance program, capital program decision making, and to respond to regulatory inquiries.

It is the responsibility of the appropriate PWD personnel or the response crew to gather all spill response data and communicate this data back to the Superintendent of O&M as soon as possible. Information obtained on the SSO shall be reported on a Sanitary Sewer Overflow Report Form, and kept in a file created for each SSO event.

Perform a preliminary estimate of the sewer overflow volume using the methods outlined in this Appendix.

Fill out the attached Sanitary Sewer Overflow Report, note time and take photographs prior to leaving the site.

Submit the Sanitary Sewer Overflow Report. For major sewer overflows, submit the form with immediately available information to the Maintenance Supervisor, Superintendent of O&M, or the Public Works Director as soon as possible. For minor sewer overflows, submit the Internal Overflow Report to the Maintenance Supervisor, Superintendent of O&M, or Public Works Director by 4:00 P.M. for overflows occurring during business hours or by 9:00 A.M. for overflows occurring outside of regular business hours.

Appendix E - Element 6: (Overflow Emergency Response Plan)

Sewer Overflow Investigation

The goal of a sewer overflow investigation is to determine the cause of the sewer overflow and to identify appropriate corrective actions to minimize the recurrence of that type of event. The investigation should follow immediately after the spill response is complete. Table E-1 lists the activities that should be performed following a sewer overflow for both major overflows and minor overflows.

**TABLE E-1
CITY OF LATHROP
SEWER SYSTEM MANAGEMENT PLAN
SEWER OVERFLOW INVESTIGATION ACTIVITIES**

Investigation Activities	Overflows	
	Major ^a	Minor ^b
Interview field personnel that responded to the sewer overflow	X	X
Review maintenance history of pipes and manholes where the blockage or failure occurred	X	X
Inspect the manhole or sewer pipe where the blockage or failure occurred using closed circuit television (CCTV)	X	X
Inspect the sewer overflow site and the affected area	X	X
Review available flow data and SCADA data (if appropriate)	X	X
Review sewer overflow volume estimate	X	X
Review water quality results	X	X
Evaluate corrective actions	X	X
Record results of investigation on Sewer Overflow Report	X	X

^a Major Overflow is a discharge of sewage that equal or exceed 1000 gallons

^b Minor Overflow is a discharge of sewage resulting from a failure in the collection system

Sewer Overflow Tracking

Sewer overflows should be tracked on a map marking the location of all known sewer overflows. The map should identify the specific pipe or manhole that contained the blockage or failure. The sewer overflow event should also be documented in the maintenance management system.

Sewer Spill Documentation

Each sewer overflow, regardless of volume, should be documented in a unique file. The file should contain pertinent information that may be necessary to respond to future

Appendix E - Element 6: (Overflow Emergency Response Plan)

regulatory audits or actions. A checklist of the information that should be included in the sewer overflow documentation file is provided in Table E-2. Use the following guidelines to document the spill:

1. Provide accurate flow measurements and duration of the spill. Refer to the end of this Appendix E for methods of sewer overflow volume estimates.
2. Provide a map of the problem location (manhole/s involved) and where the spill discharged (storm drain, field, stream, City of Lathrop, Sewer System Facilities Map).
3. Take photos of events if possible.

**TABLE E-2
SANITARY SEWER OVERFLOW
DOCUMENTATION ACTIVITIES CHECKLIST**

Documentation Item	In File
Service Call Data:	<input type="checkbox"/>
Date and time received	<input type="checkbox"/>
Caller name	<input type="checkbox"/>
Caller address	<input type="checkbox"/>
Caller telephone number	<input type="checkbox"/>
Location of Sewer overflow	<input type="checkbox"/>
Description of the problem	<input type="checkbox"/>
Sewer Overflow Report	<input type="checkbox"/>
Map showing location of the overflow and the location of the cause	<input type="checkbox"/>
Notes regarding directions provided by the regulators	<input type="checkbox"/>
Photographs:	<input type="checkbox"/>
Overflow site upon arrival	<input type="checkbox"/>
Actions taken during response (including people, equipment, activities)	<input type="checkbox"/>
Upon completion of clean up and mitigation	<input type="checkbox"/>
CCTV videotape and inspection pictures showing defects	<input type="checkbox"/>
Record of completion of corrective action	<input type="checkbox"/>

VII. Regulatory Notification and Reporting

The State Order establishes three SSO Categories, as defined below:

Appendix E - Element 6: (Overflow Emergency Response Plan)

1. Category 1: All discharges of sewage that equal or exceed 1,000 gallons, result in a discharge to a drainage channel and/or surface water; discharge to a storm drainpipe that was not fully captured and returned to the sanitary sewer system.
2. Category 2: All other discharges of sewage resulting from a failure in the collection system.
3. Private Lateral Sewage Discharges: Sewage discharges that are caused by blockages or other problems within a privately owned lateral.

The State Order requires reporting of SSOs using an online SSO Database (Database). To report SSOs using the Database, the City must establish an account by registering through the California Integrated Water Quality System (CIWQS). Within thirty days of receiving an account and prior to recording SSOs in the Database, the City must complete a collection system questionnaire, which is to be updated at least every 12 months. If there are no SSOs during the calendar month, the City is responsible for providing, within 30 days after the end of each calendar month, a statement through the Database certifying that there were no SSOs for the designated month. In the event that the Database is not available, the City is required to fax all the requested information to the appropriate Regional Board office. The City must also enter all required information into the Database as soon as practical.

Private Lateral Sewage Discharge Reporting

Sewage discharges that meet the criteria for Private Lateral sewage discharges may be reported to the Database based on City discretion. If a Private Lateral sewage discharge is recorded in the Database, the City must identify the sewage discharge as occurring and caused by a private lateral, and a responsible party (other than the City) should be identified, if known.

Category 2 Sanitary Sewer Overflow Reporting

Category 2 SSOs should be reported to the Regional Board using the Sanitary Sewer Overflow Report Form included at the end of this Appendix as soon as possible, yet no later than the close of work on the fifth day following notification of the SSO to the City.

Category 2 SSOs shall be reported using the Database within 30 days after the end of the calendar month in which the SSO occurs (e.g. Category 2 SSOs occurring in the month of January must be entered into the Database by March 1). The following information should be included in the report:

- Latitude and longitude of the location of SSO.
- Applicable Regional Board, i.e. identify the region in which the SSO occurred.
- County where SSO occurred.
- Whether or not the SSO entered a drainage channel and/or surface water.
- Whether or not the SSO was discharged to a storm drain pipe that was not fully captured and returned to the sanitary sewer system.
- Estimated SSO volume in gallons.

Appendix E - Element 6: (Overflow Emergency Response Plan)

- SSO source (manhole, cleanout, etc.).
- SSO cause (mainline blockage, roots, etc.).
- Time of SSO notification or discovery.
- Estimated operator arrival time.
- SSO destination.
- Estimated SSO end time.
- SSO Certification. Upon SSO Certification, the Database will issue a Final SSO Identification (ID) Number.

Category 1 Sanitary Sewer Overflow Reporting

A Category 1 SSO or a spill that is deemed an immediate health risk through excessive contact with people, crops or animals requires posting of the area. The Regional Board should be verbally notified immediately and a follow-up written report should be submitted within five working days.

Initial Reporting

Category 1 SSOs should initially be reported by telephone to the Office of Emergency Services (OES), the State Board, the Regional Board, and the SJCDEH. The City of Manteca should be notified if a sewer overflow from the City collection system occurs in Manteca's service area. The initial reports should be made as soon as possible without interfering with the response yet no later than 24 hours after the City was notified of the sewer overflow. The contact information for each agency is listed below and in Appendix A.

Office of Emergency Services (OES):

Call anytime: (800) 852-7550.

Be sure to obtain and record an OES spill control number on the Internal Sanitary Sewer Overflow Report Form. Provide the following information:

- Caller name.
- Caller agency.
- Caller telephone number.
- Date and time of sewer overflow.
- Location of sewer overflow (street address, city and county).
- Affected body of water (if any).
- Estimated volume of overflow (gallons).

Once a final estimated volume is calculated, notify the OES of the updated volume if this differs from the original information provided to the OES.

Central Valley Regional Water Quality Control Board (Regional Board):

Call during working hours (weekdays 8 am - 5 pm): (916) 464-3291

Call OES after working hours, weekends, or holidays

Appendix E - Element 6: (Overflow Emergency Response Plan)

When leaving a message with the Regional Board, provide name, agency, return telephone number, and the following information:

- Date and time of occurrence.
- Location (street address (or nearest address), and cross streets).
- Volume.
- Flow rate.
- Duration.
- Surface water bodies impacted.
- Responding agencies if known.
- Cause of spill or overflow.
- Cleanup actions, repairs taken, or cleanup in process.

State Board (Online SSO System)

All Category 1 SSOs must be reported to the State Board as soon as:

1. The City has knowledge of the discharge;
2. Reporting is possible; and
3. Reporting can be provided without substantially impeding cleanup or other emergency measures.

Initial reporting of Category 1 SSOs must be reported to the Database as soon as possible but no later than 3 business days after the City is made aware of the SSO. Minimum information that must be contained in the 3-day report must include the following:

1. All information listed for Category 2 SSOs, except for SSO destination.
2. Estimated SSO volume that reached surface water, drainage channel, or not recovered from a storm drain.
3. Estimated SSO amount recovered.
4. Response and corrective action taken.
5. If samples were taken, identify which regulatory agencies received sample results (if applicable). If no samples were taken, select NA.
6. Parameters that samples were analyzed for (if applicable).
7. Identification of whether or not health warnings were posted.
8. Beaches impacted (if applicable). If no beach was impacted, select NA.
9. Whether or not there is an ongoing investigation.

Appendix E - Element 6: (Overflow Emergency Response Plan)

10. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps.
11. OES control number (if applicable).
12. Date OES was called (if applicable).
13. Time OES was called (if applicable).
14. Identification of whether or not San Joaquin Department of Environmental Health (SJDEH) Officers were called.
15. Date SJDEH Officer was called (if applicable).
16. Time SJDEH Officer was called (if applicable).

A final certified report must be completed through the Database, within 15 calendar days of the conclusion of SSO response and remediation. Additional information may be added to the certified report, in the form of an attachment, at any time.

San Joaquin County Department of Environmental Health (SJCDEH):

Call: (209) 468-3420.

In case of a fish kill:

Immediately notify OES and the California Department of Fish and Game at (916) 227-2245 and provide updates as needed.

Spill into South San Joaquin Irrigation District (SSJID) Canal:

Contact SSJID at (209) 823-3101.

Formal Reporting

Category 1 SSOs should be reported to the Regional Board using the Sanitary Sewer Overflow Report Form as soon as possible, yet no later than the close of work on the fifth day following notification of the sewer overflow to the City. A copy of the form is included in Appendix E. In the event that additional information becomes available, (e.g. laboratory data), a revised report should be submitted as soon as possible. SSO reporting should be made available to local agencies and individuals as the situation dictates. Individuals, departments and agencies that require reports or that may need to be considered are as follows:

1. Report to the OES if the overflow of the spill is over 1,000 gallons. Report should be sent as soon as possible.
2. Report to the State Board using the Database.

Appendix E - Element 6: (Overflow Emergency Response Plan)

3. The report to the Regional Board must be submitted within 5 working days of the event.
4. Local Agencies and individuals:
 - a. Internal Managers: Public Works Director, City Manager, Public Information Officer.
 - b. Police Department: Roadblock, traffic control, etc.
 - c. Public Services: Close areas such as parks, shopping centers, etc.
 - d. Water Department: Impact on drinking water storage or supply.
 - e. Local residents and businesses may be impacted.

Record Keeping

The State Order Monitoring and Reporting Program (MRP) include the following requirements for record keeping.

1. Individual SSO records shall be maintained by the City for a minimum of five years from the date of the SSO. This period may be extended when requested by a Regional Board Executive Officer.
2. SSO records shall be made available for review upon State or Regional Board staff's request.
3. SSO monitoring instruments and devices that are used by the City to conduct water quality monitoring for SSOs shall be properly maintained and calibrated as necessary to ensure their continued accuracy.
4. The City shall retain records of all SSOs, such as, but not limited to and when applicable:
 - a. Record of Certified report, as submitted to the Database.
 - b. All original recordings for continuous monitoring instrumentation.
 - c. Service call records and complaint logs of calls received by the City.
 - d. SSO calls.
 - e. SSO records.
 - f. Steps that have been and will be taken to prevent the SSO from recurring and a schedule to implement those steps.
 - g. Work orders, work completed, and any other maintenance records from the previous 5 years which are associated with responses and investigations of system problems related to SSOs.
 - h. A list and description of complaints from customers or others from the previous 5 years.
 - i. Documentation of performance and implementation measures for the previous 5 years.

VIII. Equipment

This section provides a list of City-specialized equipment required to support this OERP.

VacCon Truck

A VacCon truck is required to clear blockages in gravity sewers and to vacuum up spilled sewage. The truck can also be used for wash down and cleanup.

Portable Pumps and Hoses

Portable pumps ranging in size from 2” to 6” are required to pump spilled sewage and/or contaminated water back into the sewer system.

Street Sweeper

A street sweeper may be used to assist in the cleanup of roadways and parking lots.

Closed Circuit Television (CCTV) Inspection Unit (or Lateral Inspection Unit)

A portable CCTV Inspection Unit is required to determine the root cause of all SSOs from gravity sewers. CCTV inspection services can be provided by a contractor.

Emergency Response Truck(s)/Trailer

A utility body truck and/or trailer is required to store and transport the equipment needed to effectively respond to sewer emergencies. The equipment and tools should include an electric eel rodding machine, sectional rods, generator, lights, and spill containment and cleanup materials.

Photographic Equipment

A digital, instant, or disposable camera is required to record the conditions upon arrival, during cleanup, and upon departure.

GPS Unit

A hand-held GPS unit (Global Positioning System) is required to determine the coordinates of spills for use in meeting RWQCB SSO reporting requirements.

IX. Training

This section provides information on the training that is required to support this OERP.

Initial and Annual Refresher Training

All Wastewater Section personnel and Duty personnel should be trained in sewage overflow response, which includes this plan. The training program should be updated annually.

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

SSO Response Exercises

Periodic training exercises will be held to ensure that employees are up to date on the procedures, to verify the equipment is in working order, and the required materials are readily

Appendix E - Element 6: (Overflow Emergency Response Plan)

available. The training exercises should cover scenarios typically observed during sewer-related emergencies (e.g. mainline blockage, mainline failure, force main failure, pump station failure, and lateral blockage). The results and the observations during the exercises should be recorded and action items should be tracked to ensure completion.

Record Keeping

Records shall be kept of all training that is provided in support of this plan. The records for all scheduled training courses and for each overflow emergency response training event should include date, time, place, content, name of trainer(s), and names of attendees

Appendix E - Element 6: (Overflow Emergency Response Plan)

**CITY OF LATHROP
OVERFLOW EMERGENCY RESPONSE PLAN
LIST OF CONTACTS**

Contact	Phone Number	Email Address
Public Works After Hours Emergency	(209) 992-0028	
Kirk Cloyd, O&M Superintendent	(209) 941-7475 (office) (209) 992-0047 (mobile)	kcloyd@ci.lathrop.ca.us
Mike Edrington, Utility Maintenance Supervisor	(209) 858-2125 (work) (209) 992-0048 (mobile)	medrington@ci.lathrop.ca.us
Rafael Pulido, Utility Operator	(209) 992-0022	rpulido@ci.lathrop.ca.us
Chris Hart, Utility Operator	(209) 992-0019	chart@ci.lathrop.ca.us
Steve Salvatore, Public Works Director	(209) 941-7491 (office) (209) 992-0014 (mobile)	ssalvatore@ci.lathrop.ca.us
Greg Gibson, Senior Civil Engineer	(209) 941-7442 (office) (209) 992-0017 (mobile)	ggibson@ci.lathrop.ca.us
Ryan Bouley, Senior Civil Engineer	(209) 941-7454 (office) (209) 992-0733 (mobile)	rbouley@ci.lathrop.ca.us
Juan Ochoa, Assistant Engineer	(209) 941-7447 (office) (209) 992-0728 (mobile)	jochoa@ci.lathrop.ca.us
Cary Keaten, Interim City Manager	(209) 941-7499 (office) (209) 992-0005 (mobile)	ckeaten@ci.lathrop.ca.us
City Clerk	(209) 941-7430	
Teresa Vargas, PW Admin	(209) 941-7431	tvargas@ci.lathrop.ca.us
Lathrop Fire Department - J Street Station	(209) 858-2331	
Lathrop Police Department, D. Delgado, Police Chief	(209) 468-4400	
Aaron Winer, VWNA (WRP-1)	(209) 858-1645	aaron.winer@veoliawaterna.com

PROCEDURES FOR ESTIMATING VOLUME OF SEWER OVERFLOWS

A variety of approaches exist for estimating the volume of a sanitary sewer overflow. This appendix documents five approaches that can be used. The individual preparing the estimate should select the approach most appropriate to the sewer overflow in question using the best information available. Every effort should be made to make the best possible estimate of the volume. Assistance from the engineering group within the PWD should be sought for larger sewer overflows.

Upstream Connections

If the flow is coming from a cleanout or a broken line, count the number of upstream connections and estimate the time that the flow has been occurring. Remember that the flow was probably flowing before noticed and reported. Each residence contributes about 270 gallons per day per connection or about 10 gallons per hour. Multiply the number of residences by 270 or 10 and by the number of days or hours, respectively. This provides the number of gallons.

Visual Estimate

If the flow is coming from a manhole, use the photographs in this appendix to estimate the flow. Select which photograph in gallons per minute is similar to the overflow you are experiencing and multiply it by 60, then multiply this by the estimated number of hours the overflow has been occurring. This will estimate the amount of overflow in gallons.

Pump Station Estimate

If the flow is coming from a pump station, use the previous days (same weather) flow and pump capacity to estimate the flow.

Eyeball Estimate

The volume of very small spills can be estimated using an eyeball estimate. To use this method, imagine the amount of water that would spill from a bucket or a barrel. A bucket contains 5 gallons and a barrel contains 50 gallons. If the spill is larger than 50 gallons, try to break the standing water into barrels and then multiply by 50 gallons. This method is useful for contained spills up to 100 gallons.

Measured Volume

The volume of most spills can be estimated using this method. The shape, dimension and depth of the spilled wastewater are needed. The shape and dimension are used to calculate the area of the spill and the depth is used to calculate the volume.

1. Sketch the shape of the contained sewage.
2. Measure or pace off the dimensions.
3. Measure the depth at several locations.
4. Convert the dimensions, including depth, to feet.

Appendix E - Element 6: (Overflow Emergency Response Plan)

5. Calculate the area using the following formulas:

Rectangle Area = length x width
Circle Area = diameter x 3.14
Triangle Area = $\frac{1}{2}$ x base x height

6. Multiply the area times the depth.
7. Multiply the volume by 7.5 to convert to gallons.

Duration and Flow Rate

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

1. Duration: The duration is the elapsed time from the start of the spill to the time the spill stopped.
2. Start Time: This is sometimes difficult to establish. Three methods to establish start time are as follows:
 - a. Local residents can be used to establish start time. Inquire as to their observations. Spills that occur in rights-of-ways are usually observed and reported in short order. Spills that occur out of public view can go on longer. Sometimes, observations like odors or sounds (e.g. water running in a normally dry creek bed) can be used to estimate the start time.
 - b. Changes in flow on a downstream flow meter can be used to establish the start time. Typically, the daily flow peaks are cut off or flattened by the loss of flow. This can be identified by comparing hourly flow data, when available.
 - c. Conditions at the spill site change with time. Initially, there will be limited deposits of grease and toilet paper. After a few days to a week, the grease forms a light colored residue. After a few weeks to a month, the grease turns dark. In both cases, the quantity toilet paper and other materials of sewage origin increase in amount. These changes with time can be used to estimate the start time in the absence of other information.
3. End Time: This is much easier to establish. Field crews on-site observe the blow down that occurs when the blockage has been removed. The blow down can be observed in downstream flow meters.
4. Flow Rate: The flow rate is the average flow that left the sewer system during the time of the spill. There are three ways to estimate the flow rate:

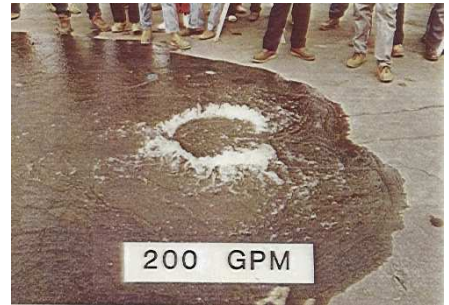
Appendix E - Element 6: (Overflow Emergency Response Plan)

- a. Manhole flow rate chart: This chart shows the sewage flowing from a manhole cover for a variety of flow rates. The observations of the field crew are used to select the approximate flow rate from the chart.
- b. Flow meter: Changes in flows in the downstream flow meters can be used to estimate the flow rate during the spill.
- c. Once the location is known, the number of upstream connections can be determined from the field books. Multiply the number of residences by 270 gallons per day per connection or 10 gallons per hour per connection.

Once duration and flow rate have been estimated, the volume of the spill is calculated by multiplying the duration in hours or days times the flow rate in gallons per hour or gallons per day.

Appendix E - Element 6: (Overflow Emergency Response Plan)

ESTIMATING WASTEWATER FLOWS



Appendix E - Element 6: (Overflow Emergency Response Plan)

SANITARY SEWER OVERFLOW REPORT FORM

To: California Regional Water Quality Control Board, Central Valley Region

VIA Fax – 916/464-4645

From: City of Lathrop, Public Works Department

390 Towne Centre Drive, Lathrop, CA 95330

SUBJECT: Report of Sanitary Sewer Overflow

Spill Location: _____ Date: _____

This report is (check one): ___ Preliminary ___ Final ___ Revised Final

Sewer System (check one): ___ WRP-1(MBR) ___ Manteca WQCF ___ Crossroads

Determine Spill Type: ___ Category 1 ___ Category 2

Note: If answer is yes to questions 2 or 3 below and/or the spill amount is over 1000 gallons the event is considered a Category 1 spill. If answer is no to both questions and the spill is under 1,000 gallons the event is considered a Category 2 spill.

1. Estimated Spill Volume: _____ gallons
2. Did the spill discharge to a drainage channel and/or surface water? _____
3. Did the spill discharge to a storm drainpipe that was not fully captured and returned to the sanitary sewer system? _____
4. Private lateral spill? _____
5. Name of responsible party (for private lateral spill only if known): _____

Physical Location Details

Spill Location Name: _____

Latitude of spill location: ___ deg. ___ min. ___ sec. OR ___ decimal degrees

Longitude of spill location: ___ deg. ___ min. ___ sec. OR ___ decimal degrees

Street Number: _____ Street Direction: _____

Street Name: _____ Street Type: _____ Suite/Apt: _____

Cross Street: _____

City: Lathrop State: CA Zip: 95330 County: San Joaquin

Spill location description: _____

Appendix E - Element 6: (Overflow Emergency Response Plan)

Regional Water Quality Control Board: Central Valley

Spill Details

Spill appearance point: _____

Final spill destination: _____

Estimated spill volume: _____ gallons Estimated spill volume recovered: _____ gallons

Estimated volume of spill that reached surface water, drainage channel, or not recovered from a storm drain: _____ gallons

Estimated spill start date/time: _____ (MM/DD/YY) ___:___ AM/PM

Date and time sanitary sewer system agency was notified of or discovered spill: _____ (MM/DD/YY) ___:___ AM/PM

Estimated Operator arrival date & time: _____ (MM/DD/YY) ___:___ AM/PM

Estimated spill end date & time: _____ (MM/DD/YY) ___:___ AM/PM

Spill Cause: _____

If spill caused by wet weather, choose size of storm: _____

Diameter of sewer pipe at the point of blockage or spill cause (if applicable): _____ inches

Material of sewer pipe at the point of blockage or spill cause (if applicable): _____ inches

Estimated age of sewer pipe at the point of blockage or spill cause (if applicable): _____ years

Spill response activities: _____

Spill response completion date & time: _____ (MM/DD/YY) ___:___ AM/PM

Visual inspection results from impacted receiving water: _____

Health warnings posted? _____ (yes/no)

Name of impacted beach(es) (enter NA if not applicable: _____

Name of impacted surface water(s) (enter NA if not applicable: _____

Is there an ongoing investigation? _____ (yes/no)

Water quality samples analyzed for: _____

Appendix E - Element 6: (Overflow Emergency Response Plan)

Water quality samples reported to: _____

Spill corrective action taken: _____

Overall Spill Description: _____

Notification Details

OES Control Number : _____

(Required for Category 1 spill report if estimated spill volume \geq 1000 gallons)

OES Called Date & Time; _____ (MM/DD/YY) ___:___ AM/PM

County health agency notified: _____ (yes/no)

County health agency notified date & time: _____ (MM/DD/YY) ___:___ AM/PM

RWQCB notified date & time: _____ (MM/DD/YY) ___:___ AM/PM

Other agency notified: _____

Was any of this spill report information submitted via fax to the RWQCB? : _____ (yes/no)

Date & time spill information was submitted via fax to the RWQCB:
_____ (MM/DD/YY) ___:___ AM/PM

Spill Related Parties

Party Name: _____

Organization: _____ Phone Number: _____

Description how party is related to the spill: _____