Sanitary Sewer Overflow Response and Reporting Program

Effective: October 16, 2024

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SSORRP

Review and Revision

Review Date: 10/16/24

Reviewers:

Jeff Melvin, Sewer Maintenance Superintendent — 10/16/2024 Date

Brian Rohling, P.E., Chief Civil Engineer — 10/16/24 Date

Margaret Tanner, P.E., Deputy Director — 10/16/2024 Date

Approved by (Responsible Official):

David Denard, P.E., Director — 10/16/2024 Date

Revision	Page Number(s)	Description of Change
1	ii	Replaced “ESD Form RF1-1” with “Cityworks SSO Inspection Form”
2	1	Updated first paragraph as a result of CD termination
3	2	Updated personnel
4	3	Updated personnel
5	10	Deleted sentences concerning EPA in second paragraph
6	13	Updated “SSO_ADEM_SR” to “SSO_ADEM_SR2”
7	17,23	Replaced “ESD Form RF1-1” with “Cityworks SSO Inspection Form”
8	37	Appendix A – replaced ESD Form RF1-1 with Cityworks SSO Inspection Form

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Acronyms

ADEM	Alabama Department of Environmental Management
AEPCS	Alabama Environmental Permitting and Compliance System
CMOM	Capacity, Management, Operations, and Maintenance
DCNR	Alabama Department of Conservation and Natural Resources
IMS	Information Management System
JCESD	Jefferson County Environmental Services Department
JCDH	Jefferson County Department of Health
N/A	Not applicable
PEI	Principal Engineering Inspector
SCMS	Sewer Construction Maintenance Supervisor
SMS	Sewer Maintenance Superintendent
SSO	Sanitary sewer overflow
SSORRP	Sanitary Sewer Overflow Response and Reporting Program
TVI	Television Inspection
USEPA	United States Environmental Protection Agency

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Sanitary Sewer Overflow Response and Reporting Program

Section 1 Introduction

1.1 Purpose

On October 21, 1996, Jefferson County (County) entered into a Consent Decree with the United States Environmental Protection Agency (USEPA). As part of the Consent Decree, the Jefferson County Environmental Services Department (JCESD) was required to report to the USEPA all Sanitary Sewer Overflows (SSOs) as defined in the Decree.[1] Following the termination of the Consent Decree, the JCESD now only reports SSOs to the Alabama Department of Environmental Management (ADEM) and the Jefferson County Department of Health (JCDH).

The purpose of the Sanitary Sewer Overflow Response and Reporting Program (SSORRP) is to provide policies and procedures for the response to and reporting of SSOs in an effort to protect public health and the environment, and to meet applicable regulatory requirements.

1.2 Distribution of the SSORRP

This **SSORRP** will be made available to all individuals involved in responding to and reporting SSOs within the JCESD. Copies of this program will be distributed to the following JCESD personnel:

- Director
- Deputy Directors
- Engineering Staff
- Inspection Staff
- Line Maintenance Personnel
- Television Inspection (TVI) Personnel
- Pump Station Operations Personnel
- Sewer Line Construction Personnel

A copy of this plan is available for download at http://www.jeffcoes.org/Default.asp?ID=47&pg=PROGRAMS.

[1] As defined in JCESD's Consent Decree, Civil Action No. 93-G-2492-S, "*"Sanitary Sewer Overflow," "SSO," and "Overflow" shall mean any discharge of wastewater from the County Collection System prior to treatment at a permitted treatment facility. SSO's include, but are not limited to, discharges from manholes, pipes, or pump stations*."

1.3 Personnel Training

JCESD will provide training sessions upon the adoption of this program to all personnel involved in responding to and reporting of SSOs. New personnel will be trained as soon as practicable after hire. All JCESD operations and maintenance personnel listed in Section 1.2 will be provided training sessions as needed to refresh them of the adopted procedures. The training sessions and personnel trained will be documented for tracking purposes.

As this **SSORRP** is updated, additional training sessions will be conducted to retrain personnel on new and/or changed procedures.

1.4 ADEM-Mandated Sanitary Sewer Overflow Response Plan Requirements

ADEM's draft National Pollution Discharge Elimination System Permit for the Cahaba Wastewater Treatment Plant includes specific requirements for JCESD's Sanitary Sewer Overflow Response Plan. While this plan (Sanitary Sewer Overflow Response and Reporting Program) contains details on the majority of the required plan components, other JCESD Capacity, Management, Operations and Maintenance (CMOM) Program plans address other components. **Table 1** on the following page presents a "crosswalk" between the requirements and the corresponding JCESD's CMOM Program Plan(s) where relevant information can be found.

1.5 SSORRP Plan Review and Update Commitment

JCESD commits to reviewing and evaluating this SSORRP plan at least once every three years. The documented plan review and evaluation will be signed and dated by the responsible JCESD official or appointed designee.

In addition, when requested by the ADEM Director (or designee), JCESD will provide the SSORRP plan to ADEM. Within 30 days of receipt of notification from ADEM, JCESD will modify any noted plan deficiency, and certify to ADEM that the appropriate modifications have been made.

Table 1. SSORRP / NPDES Permit Requirement Crosswalk

Cahaba WWTP NPDES Permit No. AL0023027 Requirements Part IV. Specific Requirements, Conditions, and Limitations G. Sanitary Sewer Overflow Response Plan						Jefferson County ESD CMOM Programs
Section	**Issue**					**Program Plan, Section**
1.	SSO Response Plan	a.	General Information	(1)	Population of City/Town	**CMOM Program Organization**, Collection System Background Information
				(2)	Number of Customers Served	
				(3)	Designated Sub basins	
				(4)	Estimated Linear Feet of Sewers	
				(5)	Number of Pump/Lift Stations in System	
		b.	Responsibility Information	(1)	SSO Response Coordinators (Key Positions)	**SSORRP**, Section 2 and **Customer Service Program**, Responding to Complaints/Service Requests
				(2)	SSO Responders (Key Positions)	
		c.	SSO and Surface Water Assessment	(1)	Likely SSO Locations	**Overflow Tracking Program**, Trend Analysis and **Engineering Program**, Continuous Sewer System Assessment Program, Program Implementation
				(2)	General Collection System Map	**Water Quality Monitoring**, Program Overview
				(3)	Classified Swimming Surface Waterbodies	
				(4)	Locally Known Swimming Surface Waterbodies	
		d.	Public Reporting of SSOs	(1)	Contact Information for Public to Report SSO	**SSORRP**, Section 2.1 and **Customer Service Program**, Service Request Management, Service Request Program Implementation
				(2)	Information Requested from Person Reporting the SSO	**Customer Service Program**, Service Request Management, Service Request Program Implementation
				(3)	Communication Procedures for Reported SSO	**SSORRP**, Section 2.3 and **Customer Service Program**, Service Request Management, Service Request Program Implementation
		e.	SSO Notification Procedures for Department, County, and Affected Entities			**SSORRP**, Section 2.3
		f.	SSO Notification Methods for the Public	(1)	List of Feasible Methods for Public Notification	
				(2)	Minimum Required Information for Public Notification	
				(3)	Determination of Public Notification Method	
		g.	Standard Procedures	(1)	General SSO Response Procedures	**SSORRP**, Section 2.3 and **Standard Operating Procedures and Work Process Documentation for Collection System Field Operations** (**SOP Handbook**), SSORRP SOP
				(2)	SSO Collection and Disposal Procedures	
				(3)	Coordination of Instream Water Quality Monitoring	**Water Quality Monitoring**, Program Implementation
				(4)	Applicable Document References	n/a
		h.	Date, Titles, and Signatures of SSO Response Plan Author/Reviews/Modifications			**SSORRP**, Signature Page
2.	SSO Response Plan Implementation					**SSORRP**, Title Page
3.	Department Review of SSO Response Plan	a.	Plan Availability for Review			**SSORRP**, Section 1.5
		b.	Director Notification of Required Plan Modifications			
		c.	Modification Timeframe			
4.	SSO Response Plan Administrative Procedures	a.	Availability of Plan Copy At Permitted/Approved Facility			**SSORRP**, Section 1.2
		b.	Plan Availability Upon Public Request			**SSORRP**, Section 1.2 and **Overflow Tracking Program**, Program Overview
		c.	Personnel Training Required for Implementation			**SSORRP**, Section 1.3 and **Training Program**, Program Implementation
		d.	Designated SSO Response Plan Review and Evaluation Timeframe			**SSORRP**, Section 1.5

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Section 2 – SSO Notification

2.1 SSO Call Center

JCESD operates a Call Center that is continually monitored twenty-four hours a day to receive calls regarding SSOs and backups. These calls may be received from other utilities, municipalities, JCESD staff, the public, or any individual that believes an SSO is occurring. Any JCESD employee that discovers an SSO or evidence of an SSO will call the Call Center to report the details of the event. The phone number to report an SSO is 205-942-0681.

The Call Center is physically manned by dispatchers 16 hours per day from 7:00 AM to 11:00 PM. Between the hours of 11:00 PM to 7:00 AM, an automated voice mail system plays a recorded message which instructs the caller to leave a detailed message of the problem. The automated system then notifies the Sewer Maintenance Superintendent and the on-call supervisor. Supervisors are rotated through an on-call schedule to respond outside normal work hours.

The Communication Operator IIs (referred to as "Dispatchers") on duty log information including, but not limited to: the complaint/service request address, caller's name, and service request details into Cityworks IMS, the JCESD's information management system.

2.2 Notification of JCESD Personnel

Crews are manned seven days per week from 7:00 AM to 7:30 PM, except for holidays that occur during the week (7:00 am to 3:30 pm). Following the receipt of a possible overflow call during business hours, the Dispatcher notifies a crew from the Shades Valley Line Maintenance facility or the Village Creek Line Maintenance facility and the crew responds to the call as appropriate.

During business hours, the managing supervisor of the responding crew or an inspector is also notified via email or cell phone. The Sewer Maintenance Superintendent, Sewer Construction/Maintenance Supervisor and Principal Engineering Inspectors are also notified of any possible SSO occurrence via email to their cell phone. After hours, the on-call supervisor notifies the on-call maintenance crew for response. **Table 2** lists the JCESD personnel that are notified of potential SSO-related service requests.

2.3 Notification of Regulatory Agencies and the Public

If an SSO is determined to reach surface waters in accordance with Section 3.3, a *Sewer Overflow Advisory* is sent to the ADEM, the JCDH, local officials, and JCESD employees by their respective notification method. (see **Table 3**).

Table 2. JCESD Personnel Notified of Potential SSO-Related Service Requests

Position	Name	Phone Number	Email Address
Sewer Maintenance Superintendent	Jeff Melvin	205-215-4308	melvinj@jccal.org
Sewer Construction Maintenance Supervisor	Justin Sebert	205-470-8866	sebertj@jccal.org
Principal Engineering Inspector	Donald Patterson	205-317-2614	pattersond@jccal.org
Principal Engineering Inspector	Ryan Tingle	205-902-1387	tinglej@jccal.org
Sewer Video Supervisor	Don Goodwin	205-296-2012	goodwind@jccal.org
Sewer Construction Maintenance Supervisor	Boone Blackmon	205-213-9641	blackmonj@jccal.org
Sewer Construction Maintenance Supervisor	Josh Defnall	205-332-0760	defnallj@jccal.org
Sewer Construction Maintenance Supervisor	Vacant	205-xxx-xxxx	name@jccal.org
Public Works Supervisor	Vacant	205-xxx-xxxx	name@jccal.org
Public Works Supervisor	Vacant	205-xxx-xxxx	name@jccal.org
Sewer Service Inspector	Jason Ashley	205-601-5052	ashleyj@jccal.org
Sewer Service Inspector	Chris Cummings	205-368-3287	cummingsc@jccal.org

Table 3. Regulatory Agencies, Officials, and Media Outlets Notified if SSO Reaches Surface Water

Agency	Contact	Phone Number*	Email Address/ Notification System
ADEM – 24-HR Report	AEPCS**	NA	https://e2.adem.alabama.gov/NPDES
ADEM – 5-Day Report	AEPCS**	NA	https://e2.adem.alabama.gov/NPDES
JCDH – 24-HR Report	Scott Hofer	NA	Everbridge Notification
JCDH – 5-Day Report	Scott Hofer	NA	cep@jcdh.org
JCESD Director	David Denard	205-325-5979(O)	denardd@jccal.org
JCESD Deputy Director	Daniel White	205-214-8610(O)	whited@jccal.org
JCESD Deputy Director	Margaret Tanner	205-215-7445(C)	tannerma@jccal.org
JCESD Deputy Director	Vacant	205-XXX-XXXX	name@jccal.org
JCESD Chief Civil Engineer	Brian Rohling	205-521-7512(O)	rohlingb@jccal.org
SMS	Jeff Melvin	205-215-4308(C)	melvinj@jccal.org
SCMS	Justin Sebert	205-470-8866(C)	sebertj@jccal.org
PEI	Donald Patterson	205-317-2614(C)	pattersond@jccal.org
PEI	Ryan Tingle	205-902-1387(C)	tinglej@jccal.org
County Manager	Cal Markert	205-731-2880(O)	markertc@jccal.org

*O – Office, C - Cell

**AEPCS - Alabama Environmental Permitting and Compliance System

As shown in **Figure 1**, *Sewer Overflow Advisories* are also listed on the JCESD website at http://www.jeffcoes.org/Default.asp?ID=44&pg=SSO+DATABASEl

Date	Location	City	Zip	Affected Waterway	Downstream Of	Reason
2021-03-08	467 ANTWERP AVE	BIRMINGHAM	35212	NONE	GEORGIA RD	Roots, Grease or Debris
2021-03-04	404 OAKWOOD AVENUE	HUEYTOWN	35203	NONE	N/A	Construction Activity
2021-03-01	8344 VASSAR AVE.	BIRMINGHAM	35206	NONE	83RD ST. SOUTH	Roots, Grease or Debris
2021-02-26	1527 TIN MILL RD	BIRMINGHAM	35061	NONE	N/A	Construction Activity
2021-02-26	808 45TH ST	BIRMINGHAM	35208	NONE	N/A	Roots, Grease or Debris
2021-02-24	3036 MASSEY ROAD	VESTAVIA HILLS	35216	Patton Creek - IDN: 00152856	SOUTHBURY CIR	Roots, Grease or Debris
2021-02-19	4201 AVENUE T	BIRMINGHAM	35208	Valley Creek - IDN: 00128387	WARRIOR ROAD	Roots, Grease or Debris
2021-02-18	1220 SWEETWATER CIR	COUNTY LINE	35235	NONE	OTIS RD	Surcharge from Rain
2021-02-18	1413 EUFAULA AVE	BIRMINGHAM	35208	Village Creek - IDN: 00153848	16TH STREET SW	Roots, Grease or Debris
2021-02-18	1537 & 1625 JEFFERSON AVE	BIRMINGHAM	35211	Valley Creek - IDN: 00128387	16TH PLACE SW	Roots, Grease or Debris

1 2 3 4 5 6 7 8 9 10 ...

Figure 1. Sanitary Sewer Overflow Advisory Webpage

If it is determined that a significant danger to public health exists due to contact with affected surface waters, the portable sign shown in **Figure 2** will be placed in the immediate vicinity of the SSO. The portable sign shown in **Figure 3** will be placed at likely points of public access to the affected downstream surface waters. The signage will remain in the area until the SSO has ceased and sufficient time has elapsed to mitigate its effects.

The rationale for determining whether an SSO poses a significant danger to the public includes, but is not limited to: the volume of the overflow, the size of the receiving stream, weather conditions, upstream and downstream fecal coliform testing results (if available), accessibility of the area near and downstream of the SSO, population density and the presence of sensitive or public facilities such as schools, parks, etc. If it is determined that there is a threat for exposure by a specific individual or group, JCESD will notify them directly.

Finally, Citizens may also sign up through the Jefferson County EMA *Everbridge Notification* system to be alerted via phone, texts, and/or email of a SSO within their vicinity.

Figure 2. **Portable Warning Sign Posted Near Discharge Source in Area that May Endanger Human Health**

Figure 3. **Portable Surface Water Warning Sign Posted Near Surface Waters**

ADEM's Sanitary Sewer Overflow Map, as shown in **Figure 4**, is available through its e-Maps Portal at http://www.adem.alabama.gov/emaps.cnt. This map allows users, including the general public, to see the locations of SSOs that have been reported to the Department for up to 10 days after the SSO has ceased. This platform serves as a dynamic communication method for parties interested in locating where SSOs have occurred.

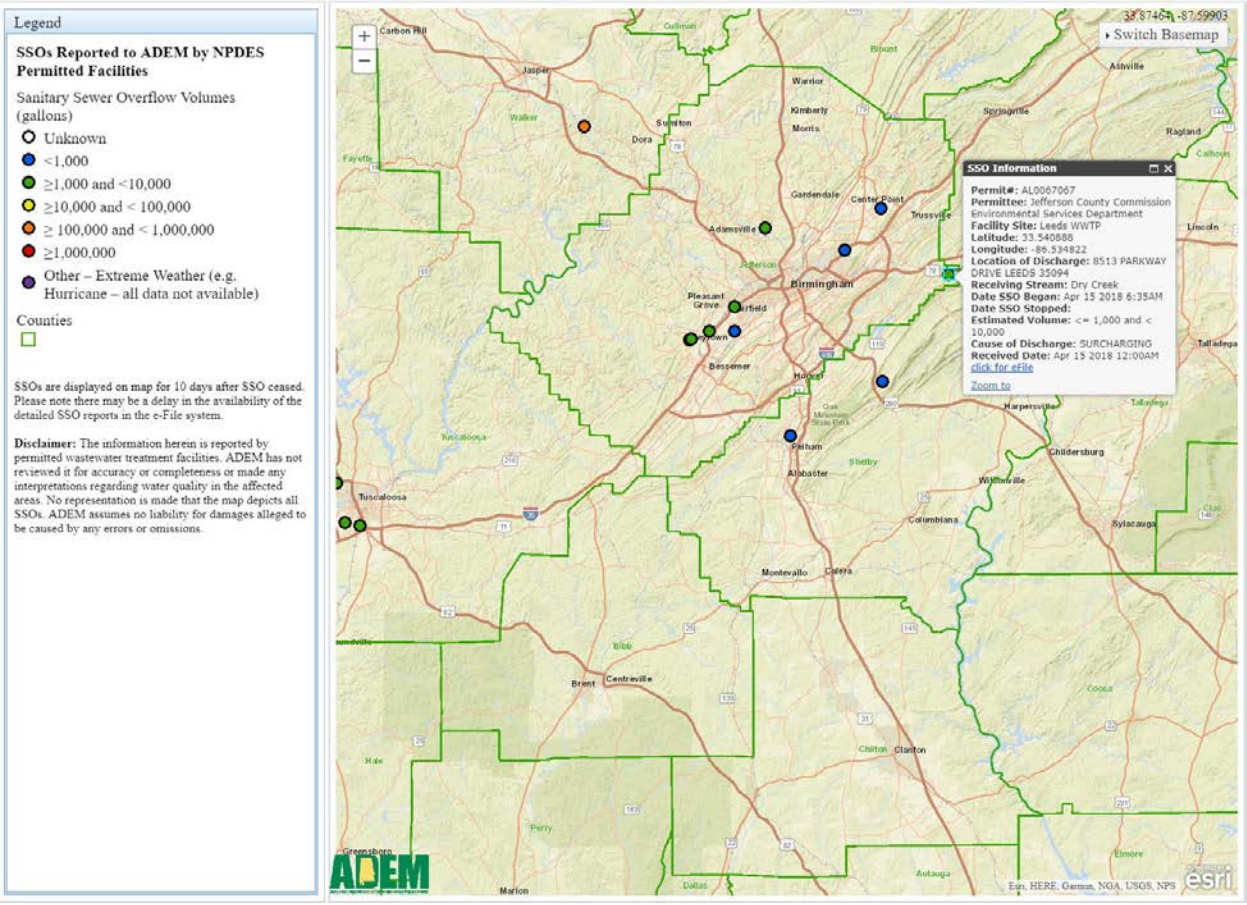

Figure 4. Screenshot of ADEM's Sanitary Sewer Overflow Map

Within *24 hours* of any SSO, ADEM will be notified via the Alabama Environmental Permitting and Compliance System, and the JCDH will be notified via the Jefferson County EMA *Everbridge Notification* system. A *5-Day Follow-up Report* with details of the event is submitted to ADEM through the Alabama Environmental Permitting and Compliance System. The JCDH receives a *5-Day Follow-up Report* through their designated email address.

If an SSO is attributed to grease–related causes and not attributable to a food service facility, the personnel of the Grease Control Program will alert the nearby public of the overflow in an effort to limit the introduction of grease to the system and prevent future overflows.

The Grease Control Program Inspectors will place door hangers (see **Figure 5**) on the doors of the residences in the area neighboring the overflow following the event. This notification may occur significantly after the SSO has occurred and is not intended to serve as an immediate public health warning.

Figure 5. Door Hanger Placed by Grease Control Inspectors Following a Grease-Related SSO

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Section 3 - SSO Determination

3.1 Cause of SSO

The Line Maintenance crew supervisor that responds to the call initially determines the primary cause of the SSO. In cases where the Line Maintenance crew supervisor is not able to make that determination, a Supervisor or Inspector will assist. Determination of the cause will include the following:

1.) In those instances where assistance is needed to investigate the SSO to determine the cause, a Supervisor or inspector will be contacted. This includes but is not limited to: Sewer Maintenance Superintendent, Sewer Construction/Maintenance Supervisor, Principal Engineering Inspector, Public Works Supervisor, Sewer Video Operations Supervisor, or Sewer Service Inspector.

2.) The name of the Line Maintenance crew supervisor, Supervisor, or Inspector reviewing the call is to be put on the Service Request for that call.

- Example of Wet Weather Event: “Name (Public Works Supervisor) verified that all proper procedures for investigating an overflow due to surcharge were met. The lines were traced all the way to the trunk line if surcharge is present. Name and Crew #number believe that the probable cause of this overflow is due to a surcharge.”

- Example of Dry Weather Event: “Name (Public Works Supervisor) verified that all proper procedures for investigating an overflow due to a blockage were met. Name and Crew #number believe that the probable cause of this overflow is due to a grease blockage.”

3.) During a rain event, the investigation will include opening manholes and tracing the surcharged sewer flow to the trunk line and washing or rodding in an attempt to remove any potential blockage. Following the rain event, follow up inspections will be performed to determine whether the SSO was due to general surcharge from infiltration and inflow-induced flows or a blockage.

4.) During a non-rain event, every attempt should be made to determine the cause of the SSO based on visual inspection. If the SSO is caused by a blockage, the type of blockage should be determined based on the material removed during the cleaning process. If the SSO is caused by Construction Damage, Vandalism, a Line Break or other external cause, a picture should be made of the cause for documentation. In addition, if there is a line break in a creek or intermittent stream, the responding crew should check far enough in either direction until there is no sign of threat to the sewer line.

5.) If a manhole or cleanout is overflowing due to general surcharge or not due to a surcharge, the code should be “SSO_ADEM_SR2” on the Service Request.

6.) Following an SSO, sewer lines in the area will be television inspected along with a Supervisor or Inspector to proof the cleaning of the pipe, find any sources of infiltration/inflow and to

determine if any other cause might have contributed to an SSO during a rain event or non-rain event.

7.) In cases where further investigation shows that the original attributed cause is not the actual cause of the SSO, the Service Request, and any associated reports and database should be corrected in accordance with Section 7.

- Example Correction Statement: "TV Crew #number inspected the overflow location along with Name (Public Works Supervisor) on January 1, 2018 and found that the overflow was not due to surcharging from rain but was due to a collapsed pipe".

3.2 Source of SSO

The Line Maintenance crew that responds to the call along with a Supervisor or Inspector determines the discharge source of the SSO and whether the contributing asset (service lateral, pipe, manhole, pump station, etc.) is privately or County maintained. All service laterals are privately maintained and are defined as any connection outside the tee at the County-maintained line. Privately-maintained collector lines shall be determined from Cityworks and other records. Upon the report of a discharge from a cleanout, purported service lateral or backup within a structure, the County-maintained line shall be inspected and, if the County main is not determined to be obstructed or surcharged, the contributing factor shall be determined to be private.

If the discharge source is maintained by the County and the factors contributing to the SSO are due to the County, the SSO is reported in accordance with Section 2 of the **SSORRP**. If the discharge source is not maintained by the County, but the contributing factors are due to the County, the SSO is reported in accordance with Section 2 of the **SSORRP**. If the discharge source is privately maintained and the factors contributing to the SSO are not due to the County, the SSO is not reported in accordance with Section 2 of the **SSORRP**, but it is documented on the Service Request within Cityworks, and the JCDH is notified. Backups that are contained within a structure are also recorded on a service request within Cityworks. If a backup exits the structure, it is classified as a SSO and is reported in accordance with Section 2 of the **SSORRP**.

The criteria listed in **Table 4** is used in the decision-making process regarding the reporting of an SSO.

Table 4. SSO Reporting Requirements Based on SSO Source

Source	Maintained	Contributing Factors	Reportable by JCESD in Accordance with SSORRP Section 2
Manhole, service lateral, cleanout, pipe, pump station	County	County	Yes
Manhole, service lateral, cleanout, pipe, pump station	Privately	County	Yes
Manhole, service lateral, cleanout, pipe, pump station	Privately	Private	No. Documented on Service Request. JCDH notified.

3.3 Destination of SSO

The Line Maintenance crew that responds to the call along with a Supervisor or Inspector determines the destination of the SSO and whether an *Everbridge Notification* is to be sent and the Portable SSO Signs (**Figures 4 and 5**) placed. As previously discussed, the *Sewer Overflow Advisory* is sent when a SSO reaches "surface waters." "Surface waters" for the purposes of this document are generally defined herein as flowing or standing waters of any river, stream, watercourse, pond or lake, natural or artificial. This does not include waters which are entirely confined and retained completely upon a single property and are not readily accessible to the public.

The following definitions and the criteria listed in are used to aid in this decision-making process.

Creek or river:	During wet or dry weather has continuous flowing water
Drainage ditch or storm drain:	During wet weather has continuous flowing water, or
	During dry weather does not have continuous flowing water
Ground absorbed:	Contained within an area that does not reach a creek, river, drainage ditch or storm drain as described above

Table 5. SSO Destination Criteria and Notification Actions

Event	Destination	Action
Any SSO that enters a creek or river	Surface waters	JCESD notifies ADEM, JCDH, local officials and media. *Surface Water Sign* placed near receiving water.
Wet Weather SSO that enters a drainage ditch or storm drain	Surface waters	JCESD notifies ADEM, JCDH, local officials and media. *Surface Water Sign* placed near receiving water if receiving water can be determined and/or *Warning Sign* placed in an area that may endanger human health.
Dry weather SSO that is greater than 10,000[1] gallons and enters a drainage ditch or storm drain	Field determination[2]	JCESD notifies ADEM, JCDH, local officials and media. *Surface Water Sign* placed near receiving water if receiving water can be determined and/or *Warning Sign* placed in an area that may endanger human health.
Dry weather SSO that is less than 10,000[1] gallons and enters a drainage ditch or storm drain	Field determination[2]	If in an area that may endanger human health, *Warning Sign* placed.
Wet weather or Dry weather SSO that is ground absorbed	Non-surface waters	If in an area that may endanger human health, *Warning Sign* placed.

[1]Based on an equivalent flow rate of 166 gallons per minute (gpm) for 60 minutes. 166 gpm equals an average flow height of 5" from a manhole with the cover in place or an average flow height of ½" from a manhole with the cover removed as seen in Appendix D.
[2]In cases of a field determination, the responding Supervisor or Inspector along with the line maintenance crew will visually inspect the surrounding area and trace downstream to determine whether the SSO reaches flowing water. In cases where the destination is indeterminate, it shall be assumed to have reached surface waters.
NOTE: ESD Form RF2-1 and ESD Form RF3-1 are sent to ADEM and JCDH for all Dry Weather and Wet Weather Events.

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Section 4 – SSO Volume Estimation

4.1 SSO Worksheets

JCESD has adopted procedures for estimating SSO volumes based on the type of overflow that has occurred. The Line Maintenance personnel utilize the *SSO Volume Estimating Worksheet for Manholes* (**ESD Form WS1-1**), the *SSO Volume Estimating Worksheet for Service Cleanouts* (**ESD Form WS2-1**), or the *SSO Volume Estimating Worksheet for Pipes or Cleanouts* (**ESD Form WS3-1**).

All worksheets require personnel to record the time the SSO was reported, the time they arrived, and the time that the SSO stopped. Following the SSO event, the estimated volume is calculated and inserted into the *Wastewater Discharge Reporting Form* (**Cityworks SSO Inpection Form**) that is completed by the ESD Line Maintenance personnel responding to the SSO. The *Wastewater Discharge Reporting Form* is then submitted to the dispatcher, SMS, SCMS, or PEI.

4.2 SSO Field Data

When the JCESD Line Maintenance personnel first arrive on-site to the SSO, digital photographs of the overflow and the surrounding area will be taken in accordance with the *SSO Picture Procedure* (**Appendix C**) and inserted on the *SSO Picture Form* (**Appendix C**). If there is not an active SSO when the crew arrives, pictures will be taken of any evidence that will document the occurrence and uploaded to the Cityworks Asset Management System . The digital photographs aid in identifying the address where the SSO occurred, the correct manhole or cleanout, and provide evidence of the event. All Line Maintenance crews are supplied with the equipment needed to take digital images of the overflow occurrence. A measuring stick with highly visible marking is used by crews to measure and document the height of discharge from manholes and cleanouts, and ponded water depth.

The estimated height of the overflow shall be measured with the provided measuring stick as accurately as possible; however, given the dynamic and transient nature of collection system hydraulics, steady-state height estimates may be difficult. Field personnel should, therefore, record the average, estimated height of the observed flow. In circumstances where the Line Maintenance personnel cannot safely access the SSO point to utilize the measuring stick, a visual field estimate will be made.

All relevant field data shall be gathered on-site and recorded on the provided forms. Whenever possible, data should be recorded in the field as soon as possible after the event. Other field information should be provided as necessary as comments on or attached to the provided forms. Field crews are encouraged to gather and record any additional information.

4.3 SSO Volume Estimating Worksheet for Manholes

The *SSO Volume Estimating Worksheet for Manholes* (**ESD Form WS1-1** and **Appendix B**) and the *Tables for Estimated SSO Flow Out of Manholes* (**Appendix D**) enable the Line Maintenance personnel to estimate the overflow volume. If the manhole is not overflowing when the personnel arrive, a ponding calculation is utilized to estimate the overflow volume.

4.4 SSO Volume Estimating Worksheet for Service Cleanouts

The *SSO Volume Estimating Worksheet for Service Cleanouts* (**ESD Form WS2-1**) enables the Line Maintenance personnel to estimate the overflow volume from cleanouts. If the cleanout is not overflowing when the personnel arrive, a ponding calculation is utilized to estimate the overflow volume and recorded on the *SSO Volume Estimating Worksheet for Pipes or Cleanouts* (**ESD Form WS3-1**).

4.5 SSO Volume Estimating Worksheet for Pipes or Cleanouts

The *SSO Volume Estimating Worksheet for Pipes or Cleanouts* (**ESD Form WS3-1**) allows the ESD personnel to estimate the overflow volume using the number of residential connections upstream of the overflow or the ponding calculation if the pipe is not overflowing upon arrival.

4.6 SSO Volume Estimating by Other Methods

While the methods provided in **Sections 4.3** to **4.5** are to be the primary methods for estimation, there are occasions where other methods may be employed due to: insufficient field data to use standard methods, those standard methods produce results which are not reasonable or consistent with field observations, the nature of the overflow may be non-standard, or a more accurate estimation method may be available. These alternate estimation sources and methods may be used by JCESD engineering staff and include: Manning or other hydraulic flow equations, actual run times of a pump station and calculated pumping capacity, data collected by SCADA or other remote collection devices, and long-term flow monitor network data. Rationale for using non-standard estimation methods shall be based on the professional engineer's judgment and shall be sufficiently reviewed and documented.

Section 5 - Mitigation

Once the first Line Maintenance personnel arrives on-site and determines that there is an SSO, the process begins to identify and eliminate the root cause of the SSO. The JCESD Line Maintenance division can employ the use of hand and/or power rod turning machines, jet-washer trucks, and combination jet-washer/vacuum trucks to eliminate blockages in the sanitary sewer.

If there is a pipe break, the JCESD Sewer Line Construction division maintains a supply of pipe of varying sizes and materials, as well as manhole bases, risers, covers, and frames. Portable bypass pumps are available to bypass sanitary sewer flow from an upstream manhole to a downstream manhole when a blockage cannot be immediately eliminated, or a pipe repaired. If practical, the SSO will be contained with sand bags and/or a berm with the aid of the Sewer Line Construction division.

Utilizing the tools available to them, the personnel of the JCESD will make every effort to stop the SSO as expeditiously as possible. In circumstances where, in their judgment, the safety of JCESD personnel currently assigned to the SSO is threatened or a higher priority incident arises, as determined by an JCESD supervisor, JCESD personnel may suspend mitigation efforts until conditions allow a return to work. In the event an active SSO is left unattended, the site shall be secured by barricades or other means and a warning sign shall be placed at the site.

After the SSO has stopped and the cause remedied, clean-up of the impacted area begins. Hand tools including shovels, rakes, and brooms are carried on the Line Maintenance trucks and are used to collect any solids that remain for proper disposal. Combination trucks are utilized to vacuum up any liquids and/or solids that might remain following an event. A disinfectant product is also carried on the Line Maintenance trucks and applied to the area surrounding the SSO for disinfection. Follow-up visits to the impacted area may be required to return the location to pre-event conditions.

If staff observe or it is reported that a SSO that reaches the Waters of the State may have resulted in a fish kill, in addition to notifying ADEM for the SSO, JCESD will notify ADEM's Birmingham Field Office as well as the Alabama Department of Conservation and Natural Resources (DCNR). DCNR will investigate the cause of the fish kill and provide responsible cleanup.

In the event that JCESD identifies an overflow or discharge that that reaches the Waters of the State but was not caused by JCESD's sanitary sewer system, JCESD shall immediately notify ADEM's Birmingham Field Office as well as the DCNR if there appears to be any adverse impacts on the fish and wildlife in the vicinity or downstream of the event.

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Section 6 - Safety

JCESD personnel are made aware of the potential hazards of contact with untreated wastewater and other, associated safety hazards in responding to an SSO. Among the equipment issued to the personnel are safety glasses, reflective vests, rubber gloves, boots, and rain suits. Hepatitis inoculations are also offered to the JCESD personnel that may come in contact with untreated wastewater.

Supervisors should use sound judgment in deciding when responding to an SSO places JCESD personnel in unreasonable danger or harm. For example, there may be times where an SSO is surrounded by swift flowing or deep water and the personnel are advised not to enter due to the risk of being swept away or drowning. There are also weather conditions such as tornadoes, lighting storms, or icy roads that can prevent a crew from responding. Supervisors should document the unsafe conditions and report to their Manager if working conditions prevent the JCESD from responding and remain on-site until further instructions are received.

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Section 7 - Quality Assurance/Quality Control

7.1 Line Maintenance

The JCESD has developed Check Lists (**Appendix E**) to be utilized by the JCESD personnel involved in the SSO reporting process to ensure accuracy of the data. When corrections are made to the data by JCESD personnel, the original data are struck through and the corrected data are noted, dated, and initialed on the reporting forms by the person making the revisions. An explanation for any data corrections and/or changes should be noted on the corrected form and/or an attachment if needed

Following the submission of the *Wastewater Discharge Reporting Form* (ESD Form RF1-1), the Dispatcher will use the *Service Request Check List* to verify that the form and Service Request are correct and complete. Any corrections are dated and initialed by the Dispatcher

The Sewer Construction/Maintenance Supervisor or Sewer Video Operations Supervisor then completes their respective *SSO Check List for Line Maintenance* after receiving the *Wastewater Discharge Reporting Form* (**Cityworks SSO Inpection Form**) and SSO pictures from the Line Maintenance personnel. The Supervisors date and initial any corrections made on **Cityworks SSO Inpection Form** and/or the SSO Volume Estimating Worksheet. The Sewer Construction/Maintenance Supervisor or Sewer Video Operations Supervisor forwards **Cityworks SSO Inpection Form**, the SSO pictures, his completed check list and the *Service Request Check List* to the Principal Engineering Inspector.

The Sewer Maintenance Superintendent, Sewer Construction/Maintenance Supervisor or Principal Engineering Inspector will review the previously completed check lists to see if corrections are needed prior to completing his respective *5 Day Check List for Line Maintenance* and submitting the *5 Day Follow-up Report* (ESD Form RF3-1). The Sewer Maintenance Superintendent , Sewer Construction/Maintenance Supervisor/Principal Engineering Inspector dates and initials any remarks or corrections. If significant corrections and/or changes are required, the Line Maintenance crew supervisor responsible for completing the *Wastewater Discharge Reporting Form* will be contacted to review the form with the Sewer Maintenance Superintendent , Sewer Construction/Maintenance Supervisor or Principal Engineering Inspector. At the end of the month, for each SSO, copies of the Service Requests, check lists, and completed forms are packaged and forwarded to the JCESD engineering staff.

7.2 Engineering

The package of SSOs for the previous month is sent to the JCESD engineering staff prior to submission to the USEPA the following month. The SSO package is first reviewed by a Senior Civil Engineer or Chief Civil Engineer who completes the *SSO Check List for Administration* for each SSO, notes any corrections and signs and dates the check list.

After the review by a Senior Civil Engineer or Chief Civil Engineer, a second Chief Civil Engineer reviews the *SSO Check List for Administration* and enters the SSO data in the Access database for that specific month.

Once all data have been entered, the SSO data is printed from the Access database and compared to the SSO package and the *SSO Check List for Administration* for each SSO by an additional Chief Civil Engineer who notes any omissions and/or corrections prior to preparation and submission to the USEPA.

The JCESD Engineers initial, date, and sign for any remarks or corrections made on the *SSO Check List for Administration or 5 Day Follow-up Report*.

The GIS Database Supervisor receives the final Access database and imports the information into Cityworks to represent the data geographically and ensure that the SSO corresponds with the reported location and provides corrections to the Chief Civil Engineer, as appropriate.

Following the completion of the review process, the Sewer Maintenance Superintendent, Sewer Construction/Maintenance Supervisor or Principal Engineering Inspector are provided the corrections/changes for their copy of the SSO reporting forms.

7.3 Coordination Meetings

Once a month, Line Maintenance, County Engineering staff, Barton Laboratory and outside consultant representatives meet to discuss recent SSO occurrences and follow up on actions taken to prevent future SSOs.

7.4 Records

All original and corrected forms related to an individual SSO are kept together in a file by month and year at the Shades Valley Administration Building for historical and reporting purposes. Copies can be requested by contacting the Sewer Maintenance Superintendent.

APPENDICES

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Appendix A SSO Reporting Forms

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CITYWORKS SSO INSPECTION FORM

Id:

Location:

Status: Resolution:

Insp. Date: Inspected By:

Dispatch Information

Everbridge/Health Department Notification Date

Press Release Date

Efforts to Notify Public

- [ ] Press Release
- [ ] Placement of Signs
- [ ] Notice Not Required
- [ ] Other (please specify)

Efforts to Notify Public- "Other" Comment Box

Answer

ADEM notified within 24 hours?

ADEM Notification Method

ADEM Notification Date

ADEM eSSO Report ID

Answer

SSO ID

Answer

Other Officials Notified

Answer

Public Water Supply Intake Locations Affected?

Overflow Asset ID

Overflow Location Private Cleanout/Minisystem

Answer

Additional Escape Location

Latitude

Answer

Longitude

Answer

Waste Water Permit Number

- ☐ CAHABA- AL0023027
- ☐ FIVE MILE- AL0026913
- ☐ LEEDS- AL0067067
- ☐ PRUDES CREEK- AL0056120
- ☐ TRUSSVILLE- AL0022934
- ☐ TURKEY CREEK- AL0022926
- ☐ VALLEY- AL0023655
- ☐ VILLAGE- AL0023647
- ☐ WARRIOR- AL0050881

Field/Crew Information

Spill Start Date

Spill Start Time

Answer

Spill Start Time (AM/PM)

Spill End Date

Spill End Time

Answer

Spill End Time (AM/PM)

Spill Duration (Minutes)

Answer

Plume Height (Inches)

Answer

Gallons Per Minute (from Table)

Answer

Calculated Volume

Answer

Volume Estimation Method

Ponding Width (Feet)

Answer

Ponding Length (Feet)

Answer

Ponding Depth (Inches)

Answer

Ponding Volume (Gallons)

Answer

Estimated Discharge Volume (Gallons)

Answer

Spill Escaping System at

- [ ] Manhole
- [ ] Lift Station
- [ ] Broken Line
- [ ] Cleanout
- [ ] Treatment Plant
- [ ] ARV
- [ ] Other

Spill Escaping System at Other Location

Answer

Corrective Actions Taken

- [ ] Blockage Removed
- [ ] Additional Rehab Considered
- [ ] Project Planned to Repair/Replace
- [ ] Line Repaired
- [ ] Pump Station Repaired
- [ ] Other
- [ ] Manhole Repaired
- [ ] Power Related

Other Corrective Actions Taken

Answer

Destination of Discharge

- [ ] Ground Absorbed
- [ ] Backup into Building/Residence
- [ ] Creek or River
- [ ] Storm Drain
- [ ] Drainage Ditch
- [ ] Other

Preliminary Primary Cause

Preliminary Secondary Cause

- [ ] Capacity
- [ ] Debris
- [ ] Vandalism
- [ ] Grease
- [ ] Gravity Main Break
- [ ] Equipment Failure
- [ ] Force Main Break
- [ ] Power Outage
- [ ] Roots
- [ ] Rocks
- [ ] Rags
- [ ] Infiltration or Inflow- Surcharged
- [ ] Construction Related
- [ ] Other

Preliminary Other Description

Answer

Wet Weather

Estimated Weather Duration (Hours)?

Answer

Flooding from Rain in Spill Area

Was the affected area cleaned?

Was the affected area disinfected?

Photo Taken?

Office Information

Blockage Location Asset

Did discharge reach a designated swimming water?

Monitoring of the Receiving Water is

- [ ] Complete (Monitoring results are attached or have been submitted to ADEM)
- [ ] Ongoing (Monitoring results will be submitted to ADEM upon completion)
- [ ] Not Performed

First named Creek or River that receives the flow

Answer

Other potential health or environmental impacts?

Answer

Confirmed Spill End Date

Confirmed Spill End Time

Answer

Confirmed Spill End Time (AM/PM)

Caused by Extreme Weather?

Confirmed Primary Cause

Confirmed Secondary Cause

- [ ] Capacity
- [ ] Debris
- [ ] Vandalism
- [ ] Grease
- [ ] Gravity Main Break
- [ ] Equipment Failure
- [ ] Force Main Break
- [ ] Power Outage
- [ ] Roots
- [ ] Rocks
- [ ] Rags
- [ ] Infiltration or Inflow- Surcharged
- [ ] Construction Related
- [ ] Other

Confirmed Other Description

Answer

Confirmed Volume for Reports (Gallons)

Answer

Reset

Comments

Observation:

Repairs:

Recommendation:

Cond. Score: 0

Jefferson County, AL
Environmental Services Department
Suite A-300
716 Richard Arrington Jr. Boulevard, N
Birmingham, AL 35203

WASTEWATER DISCHARGE REPORTING FORM
SSO - 5 - DAY FOLLOW - UP REPORT

Reported Information — Service Request Number:

Photos Taken: ☑ Yes ☐ No Number of Photos Taken: _____

Date Reported: _____ Time SSO Began _____ Time SSO Stopped _____

Caller Name: _____ Caller Phone No.: _____

Reported Location Street Address: _____

Overflow Location Nearest Address: _____

Collection System Permit # _____ Overflowing Manhole Number: _____
Enter Mini-system number if overflow is from a cleanout

Latitude/Longitude of discharge (**REQUIRED**)
[Report coordinated in decimal degrees to the precision indicated (e.g. 32.463022°,-86.397067°)]
_____ ° Latitude
- _____ ° Longitude

Municipality			☑ County Maintained		☐ Notification of Public
☐ Adamsville	☐ Graysville	☐ Mountain Brook	☐ Cahaba	☐ Turkey Creek	☐ Press Release
☐ Bessemer	☐ Homewood	☐ Midfield	☐ Five Mile	☐ Valley	☐ Placement of Signs
☐ Birmingham	☐ Hoover	☐ Pleasant Grove	☐ Leeds	☐ Village	☐ Other (Describe)
☐ Brighton	☐ Hueytown	☐ Tarrant	☐ Prudes	☐ Warrior	
☐ Center Point	☐ Irondale	☐ Trussville	☐ Trussville		
☐ Fairfield	☐ Leeds	☐ Vestavia			
☐ Fultondale	☐ Lipscomb	☐ Warrior			
☐ Gardendale		☐ Unincorporated			

Field Observation (If County Investigated)

Destination of Discharge: ☐ Ground absorbed ☐ Drainage Ditch ☐ Storm Drain ☐ Creek or River _____

Monitoring of the receiving water is: ☐ Complete ☐ Ongoing

Did the discharge reach a designated swimming water? ☐ Yes ☐ No ☐ Unknown

Estimated Discharge Volume: ☐ Volume not determinable ☐ Estimated Volume (Gallons) _____

Discharge Source: ☐ Cleanout ☐ Manhole ☐ Pipe ☐ Pump Station ☐ Treatment Plant ☐ Other _____

Known or Suspected Discharge Cause: (Check all that apply)
☐ Construction Damage ☐ Debris ☐ Infiltration/Inflow ☐ Force Main Break ☐ Gravity Main Break
☐ Grease ☐ Power outage ☐ P.S. Equipment Failure ☐ Rags ☐ Rocks
☐ Roots ☐ Surcharge from rain ☐ Vandalism ☐ Other _____

Comments _____

Recent Weather ☐ None **Rain:** ☐ Light ☐ Mod. ☐ Heavy Estimated Duration: _____

Was the SSO caused by an extreme weather event? ☐ Yes ☐ No If yes, describe the nature of the extreme weather event:

Conditions Contributing to the Discharge: Flooding from rain in overflow area: ☐ Yes ☐ No

Action Taken (If County Investigated)

☐ Blockage Removed ☐ Line Repaired ☐ Manhole Repaired ☐ Power Restored ☐ Additional Rehab Considered ☐ Project Planned to Replace/Repair Line ☐ Pump Station Repaired ☐ Other _____

Service Request Number: _____

Was the affected area: **Cleaned?** ☐ Yes ☐ No **Disinfected?** ☐ Yes ☐ No

Are you aware of any other potential health or environmental impacts? ☐ No ☐ Yes **If Yes, Please Describe**

SSO 24-Hour Notice FAXED? ☐ Yes ☐ No Date: _____

Were any public water supply intake locations affected? ☐ No ☐ Yes

Remarks:

Maintenance Supervisor's Signature: _____ Date _____

Brian Champion

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information.

ENVIRONMENTAL SERVICES - 477

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Appendix B SSO Volume Estimating Worksheets

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JEFFERSON COUNTY, AL

ENVIRONMENTAL SERVICES DEPARTMENT

Suite A-300
716 Richard Arrington Jr. Boulevard, N
Birmingham, AL 35203

SSO VOLUME ESTIMATING WORKSHEET FOR MANHOLES

Date: _____ Sewer Service Request Number: _____

If MANHOLE is overflowing or not overflowing at the time the crew arrives at the reported location, pictures will be taken in accordance with the SSO Picture Procedure. The Jefferson County SSO Volume Estimating Procedure will be used to determine the estimated flow rate.

Determine Duration

Time SSO Reported: _____ Time SSO Stopped: _____
(Dispatcher)

Time of Arrival: _____ * Duration of SSO: _____ Minutes

* DURATION OF SSO: If the MH is overflowing when crews arrive, then the SSO Start Time will be the Time SSO Reported (dispatcher) shown above. The duration of the SSO will be the difference between Time SSO Reported and Time SSO Stopped (minutes).

Determine Volume

○ *SSO Digital Photo Measurement - to be used when MH is overflowing upon crew arrival.*

_____ Average measured height from measuring stick.

_____ Cover On or Off _____ Table Used _____ GPM

Volume from Table - _____

Duration of SSO - _____ Minutes

Estimated Volume = _____ Gallons (est. rate in GPM X est. duration in minutes)

○ *Ponding Calculation - to be used when SSO originated from MH, is not overflowing upon crew arrival, but is contained in an area*

Volume of Sewage = length (ft) X width (ft) X depth (ft) X 7.48* _____ length (ft)

_____ width (ft)

* 7.48 gallons = 1 ft^3 _____ depth (ft)

Volume = _____ ft^3 **X** 7.48 = _____ Gallons

○ *Not Determinable - when an SSO from a MH is not overflowing upon crew arrival and rate can not be determined.*

Explain: _____

_____

_____

_____

_____

Crew # : _____ Signed: _____

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information.

JEFFERSON COUNTY, AL
ENVIRONMENTAL SERVICES DEPARTMENT
Suite A-300
716 Richard Arrington Jr. Boulevard, N
Birmingham, AL 35203

Date: Sewer Service Request Number:

SSO VOLUME ESTIMATING WORKSHEET FOR SERVICE CLEANOUTS

1 Determine diameter (d) of service cleanout. = _____ inches
2 Estimate height (h) of flow from service cleanout. = _____ inches
3 Determine estimated flow rate (Q) from charts below. = _____ gpm
4 Estimate time (t) of discharge. = _____ minutes
5 Multiply step 3 & 4 to obtain estimated volume. = _____ Gallons

4" Diameter Cleanout	
h (in)	Q (gpm)
0.25	6
0.5	14
0.75	24
1	35
1.5	60
2	86
2.5	108
3	128
3.5	145
4	160
4.5	173
5	184
6	205
7	223
8	239
9	254
10	268
11	282
12	295
14	320
16	345
18	367
20	388

6" Diameter Cleanout	
h (in)	Q (gpm)
0.25	9
0.5	23
0.75	40
1	58
1.5	100
2	150
2.5	205
3	250
3.5	293
4	330
4.5	365
5	395
6	445
7	485
8	520
9	550
10	585
11	631
12	650
14	705
16	755
18	800
20	850

Time SSO Reported:
(Dispatcher)
_____

Time of Arrival:
_____

Time SSO Stopped
_____

* Duration of SSO
_____
Minutes

*Duration of SSO: If the cleanout is overflowing when crews arrive, then the SSO start time will be the time SSO reported (dispatcher) shown above. The duration of SSO will be the difference between time SSO reported and time SSO stopped (minutes).

Crew #: _____ Signed: _____

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information.

Disclaimer:

This table was developed by the Jefferson County ESD utilizing *Chapter 14-Measurements in Pressure Conduits, Section 13-Trajectory Methods* of the *U.S. Department of the Interior Bureau of Reclamation Water Measurement Manual.* This table is provided as an example. Other Agencies may want to develop their own estimating tables.

JEFFERSON COUNTY, AL

ENVIRONMENTAL SERVICES DEPARTMENT

Suite A-300
716 Richard Arrington Jr. Boulevard, N
Birmingham, AL 35203

SSO VOLUME ESTIMATING WORKSHEET FOR PIPES OR CLEANOUTS

Date: _____ Sewer Service Request Number: _____

If CLEANOUT is overflowing or not overflowing at the time the crew arrives at the reported location, pictures will be taken in accordance with the SSO Picture Procedure. The Jefferson County SSO Volume Estimating Procedure will be used to determine the estimated flow rate.

Determine Duration

Time SSO Reported: _____ Time SSO Stopped: _____
(Dispatcher)

Time of Arrival: _____ * Duration of SSO: _____ Minutes

* DURATION OF SSO: If the PIPE is overflowing when crews arrive, then the SSO Start Time will be the Time SSO Reported (dispatcher) shown above. The duration of the SSO will be the difference between Time SSO Reported and Time SSO Stopped (minutes).

Determine Volume

○ *Determine number of residential connections upstream of overflow. Each residence contributes approximately 250 gal/day-res (100 gal/day-cap X 2.5 cap/res), or 10.5 gal/hr-res (0.175 gal/min-res).*

Res. Connections - _____ X 0.175 = _____ GPM
Duration of SSO - _____ Minutes
Estimated Volume = _____ Gallons (est. rate in GPM X est. duration in minutes)

○ *Ponding Calculation - to be used when SSO is not overflowing upon crew arrival, but is contained in an area.*

Volume of Sewage = length (ft) X width (ft) X depth (ft) X 7.48* _____ length (ft)
_____ width (ft)
* 7.48 gallons = 1 ft^3 _____ depth (ft)
Volume = _____ ft^3 **X** 7.48 = _____ Gallons

○ *Volume computed by Engineering Staff of ESD -*
Attach copy of supporting documentation and Engineer's name.

Comments: _____

Crew # : _____ Signed: _____

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information.

Appendix C SSO Picture Procedure and SSO Picture Form

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SSO PICTURE PROCEDURE

Please follow all steps to ensure that SSO pictures comply with requirements.

1) Verify that camera time and date are correct prior to taking pictures.
2) Verify that the time and date stamp is set to be active within the camera.
3) First picture should be taken from the side of the manhole or cleanout to show the height of the discharge on the measuring stick.
4) Second picture should be taken from a distance and angle so that a landmark (i.e.,house, street sign, mailbox) is visible in the picture.
5) If the SSO has ceased upon arrival, pictures are to be taken of the area surrounding the overflow.
6) The minimum number of pictures taken should be two. Additional pictures should be taken if necessary.
7) Please note the address of the closest structure or building to the manhole or cleanout. ***(Reported Location)***
8) The pictures should be submitted to the Public Works Supervisor or Sewer Video Operations Supervisor along with the ***Reported Location*** the same day.
9) The Public Works Supervisor or Sewer Video Operations Supervisor will then forward the pictures along with the signed ***SSO Check List for Line Maintenance*** to the Principle Engineering Inspector.
10) The Principal Engineering Inspector should insert the pictures on the **SSO Picture Form** and insert the required information. ***(Service Request Number, Address of Reported Location, Manhole number for overflowing manhole, Mini-system number for overflowing cleanout)***
11) The Principal Engineering Inspector will save an electronic copy of the SSO Picture Form with a file name of the Service Request Number.

SSO PICTURE FORM

SERVICE REQUEST NUMBER	MANHOLE OR MINI SYSTEM NUMBER	ADDRESS

PEI's Intials _____

Version 1

Appendix D Tables for Estimated SSO Flow Rates Out of Manholes and Cleanouts

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TABLES FOR ESTIMATED SSO FLOW OUT OF MANHOLES

TABLE 'A'

ESTIMATED SSO FLOW OUT OF M/H WITH COVER IN PLACE

24" COVER

Height of spout above M/H rim **H** in inches	S S O FLOW **Q**		Min. Sewer size in which these flows are possible
	in gpm	in MGD	
1/4	1	0.001	
1/2	3	0.004	
3/4	6	0.008	
1	9	0.013	
1 1/4	12	0.018	
1 1/2	16	0.024	
1 3/4	21	0.030	
2	25	0.037	
2 1/4	31	0.045	
2 1/2	38	0.054	
2 3/4	45	0.065	
3	54	0.077	
3 1/4	64	0.092	
3 1/2	75	0.107	
3 3/4	87	0.125	
4	100	0.145	
4 1/4	115	0.166	
4 1/2	131	0.189	
4 3/4	148	0.214	
5	166	0.240	
5 1/4	185	0.266	
5 1/2	204	0.294	
5 3/4	224	0.322	6"
6	244	0.352	
6 1/4	265	0.382	
6 1/2	286	0.412	
6 3/4	308	0.444	
7	331	0.476	
7 1/4	354	0.509	
7 1/2	377	0.543	
7 3/4	401	0.578	8"
8	426	0.613	
8 1/4	451	0.649	
8 1/2	476	0.686	
8 3/4	502	0.723	
9	529	0.761	

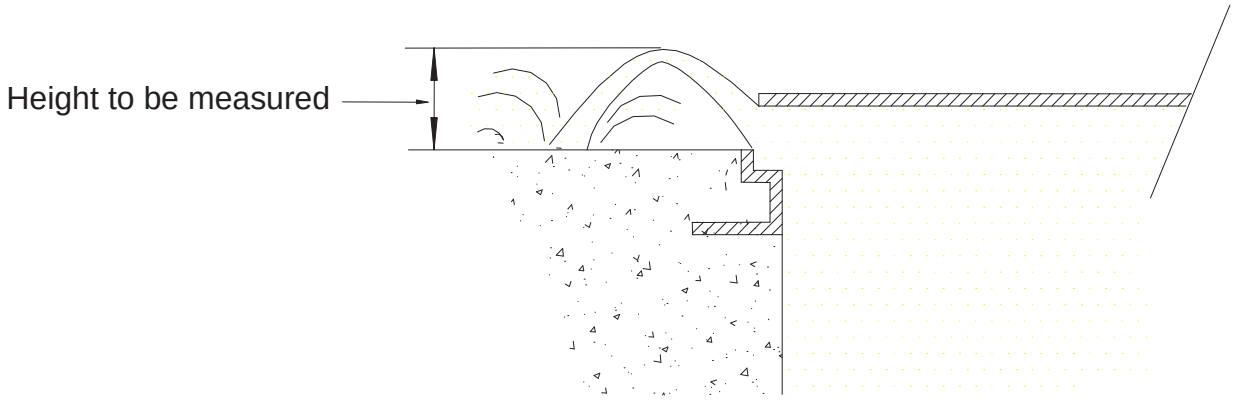
Disclaimer:
This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

The formula used to develop Table A measures the maximum height of the water coming out of the maintenance hole above the rim. The formula was taken from hydraulics and its application by A.H. Gibson (Constable & Co. Limited).

Example Overflow Estimation:

The maintenance hole cover is unseated and slightly elevated on a 24” casting. The maximum height of the discharge above the rim is 5 ¼ inches. According to Table A, these conditions would yield an SSO of 185 gallons per minute.

FLOW OUT OF M/H WITH COVER IN PLACE



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

TABLE 'B'

ESTIMATED SSO FLOW OUT OF M/H WITH COVER REMOVED

24" FRAME

Water Height above M/H frame **H** in inches	S S O FLOW **Q**		Min. Sewer size in which these flows are possible
	in gpm	in MGD	
1/8	28	0.04	
1/4	62	0.09	
3/8	111	0.16	
1/2	160	0.23	
5/8	215	0.31	6"
3/4	354	0.51	8"
7/8	569	0.82	10"
1	799	1.15	12"
1 1/8	1,035	1.49	
1 1/4	1,340	1.93	15"
1 3/8	1,660	2.39	
1 1/2	1,986	2.86	
1 5/8	2,396	3.45	18"
1 3/4	2,799	4.03	
1 7/8	3,132	4.51	
2	3,444	4.96	21"
2 1/8	3,750	5.4	
2 1/4	3,986	5.74	
2 3/8	4,215	6.07	
2 1/2	4,437	6.39	
2 5/8	4,569	6.58	24"
2 3/4	4,687	6.75	
2 7/8	4,799	6.91	
3	4,910	7.07	

Disclaimer:

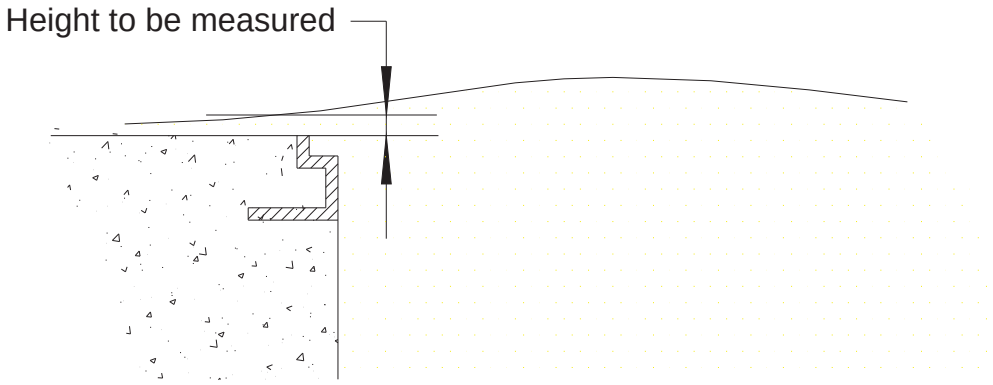
This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

The formula used to develop Table B for estimating SSO's out of maintenance holes without covers is based on discharge over curved weir -- bell mouth spillways for 2" to 12" diameter pipes. The formula was taken from hydraulics and its application by A.H. Gibson (Constable & Co. Limited).

Example Overflow Estimation:

The maintenance hole cover is off and the flow coming out of a 24″ frame maintenance hole at one inch (1") height will be approximately 799 gallons per minute.

FLOW OUT OF M/H WITH COVER REMOVED (TABLE "B")



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

TABLE 'C'

ESTIMATED SSO FLOW OUT OF M/H PICK HOLE

Height of spout above M/H cover **H** in inches	SSO FLOW **Q** in gpm
1/8	1.0
1/4	1.4
3/8	1.7
1/2	1.9
5/8	2.2
3/4	2.4
7/8	2.6
1	2.7
1 1/8	2.9
1 1/4	3.1
1 3/8	3.2
1 1/2	3.4
1 5/8	3.5
1 3/4	3.6
1 7/8	3.7
2	3.9
2 1/8	4.0
2 1/4	4.1
2 3/8	4.2
2 1/2	4.3
2 5/8	4.4
2 3/4	4.5
2 7/8	4.6
3	4.7
3 1/8	4.8
3 1/4	4.9
3 3/8	5.0
3 1/2	5.1
3 5/8	5.2
3 3/4	5.3
3 7/8	5.4
4	5.5
4 1/8	5.6
4 1/4	5.6
4 3/8	5.7
4 1/2	5.8
4 5/8	5.9
4 3/4	6.0
4 7/8	6.0
5	6.1

Height of spout above M/H cover **H** in inches	SSO FLOW **Q** in gpm	
5 1/8	6.2	
5 1/4	6.3	
5 3/8	6.3	
5 1/2	6.4	
5 5/8	6.5	
5 3/4	6.6	
5 7/8	6.6	
6	6.7	
6 1/8	6.8	
6 1/4	6.8	
6 3/8	6.9	
6 1/2	7.0	← Unrestrained M/H cover will start to lift
6 5/8	7.0	
6 3/4	7.1	
6 7/8	7.2	
7	7.2	
7 1/8	7.3	
7 1/4	7.4	
7 3/8	7.4	
7 1/2	7.5	
7 5/8	7.6	
7 3/4	7.6	
7 7/8	7.7	
8	7.7	
8 1/8	7.8	
8 1/4	7.9	
8 3/8	7.9	
8 1/2	8.0	
8 5/8	8.0	
8 3/4	8.1	
8 7/8	8.1	
9	8.2	
9 1/8	8.3	
9 1/4	8.3	
9 3/8	8.4	
9 1/2	8.4	
9 5/8	8.5	
9 3/4	8.5	
9 7/8	8.6	
10	8.7	

Note: This chart is based on a 7/8 inch diameter pick hole

Disclaimer: This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

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Appendix E Checklists for SSO Reporting

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SERVICE REQUEST CHECK LIST

YES	NO	N/A	
☐	☐	☐	Customer's Name
☐	☐	☐	Customer's Complete Address (No Abbreviations, Except in Directional)
☐	☐	☐	Problem Address (If different than caller address)
☐	☐	☐	City
☐	☐	☐	Zip Code
☐	☐	☐	Customer's Phone Number(s)
☐	☐	☐	Complete Customer Comments on problem having
☐	☐	☐	Sewer Basin (proper format - located on wall behind both computers)
☐	☐	☐	Map Page (Proper Format 46-Z13)
☐	☐	☐	Crew Dispatched to call
☐	☐	☐	Mini System Number
☐	☐	☐	Crew Arrival Time noted on request
☐	☐	☐	Complete Crew Comments
☐	☐	☐	Proper Code from Crew's Comments
☐	☐	☐	Closed Call (unless waiting for another crew)
☐	☐	☐	Did Crew talk with Homeowner/Business Owner?

Backup in Home/Business

☐	☐	☐	Were Pictures Taken? If so by whom?
☐	☐	☐	Was SERVPRO called? Who did you speak with? Time?

Broken Sewer Line

☐	☐	☐	Who is handling repair?

Cleanout Overflow

Overflow stopped at (time)?

Called into ADEM (Date & Time) *** Note these two are separate do not join together ***

Faxed ADEM & Health Department (Date & Time) *** Note (see above)***

WWTP Permit Number (located on wall behind computer monitor)

Called Wrong Utility

Company called? Who did you speak with?

GCP

Did crew discover grease or other debris/roots in line? Was Code changed?

MH Overflow

Overflow stopped at (time)?

Overflowing Manhole Number(s)?

Called into ADEM (Date & Time) *** Note these two are separate do not join together ***

Faxed ADEM & Health Department (Date & Time) *** Note (see above)***

WWTP Permit Number (located on wall behind computer monitor)

If line was Surcharging was it checked every 2 hours?

Date & Times Surcharge was checked

Overflow~BSL

Overflow stopped at (time)?

Overflowing Manhole Number(s)?

Called into ADEM (Date & Time) *** Note these two are separate do not join together ***

Faxed ADEM & Health Department (Date & Time) *** Note (see above)***

WWTP Permit Number (located on wall behind computer monitor)

TV Inspection Codes

Locate Manhole - Was Manhole Number listed?

SSO CHECK LIST FOR LINE MAINTENANCE

PUBLIC WORKS SUPERVISOR/ SEWER VIDEO OPERATIONS SUPERVISOR

Please verify that information is correct by placing a check in the box prior to each statement. If information is not correct make a note at the bottom of the next page and follow procedures as outlined in the SSORRP.

YES	NO	N/A	
			Service Request Number
			Date Reported
			Time SSO Began
			Time SSO Stopped
			Caller's Name
			Caller's Phone Number
			Reported Location *(Make sure that the reported location is not the caller's location unless they are the same.)*
			Street Address
			City
			Zip Code
			Collection System Permit
			Overflowing Manhole Number *(If overflow is from a cleanout, mini-system should be recorded.)*
			Municipality
			Basin
			Notification of Public
			Destination of Discharge
			Estimated Volume
			Discharge Source
			Discharge Cause
			Recent Weather

Service Request Number

YES	NO	N/A	
☐	☐	☐	Conditions Contributing to the Discharge
☐	☐	☐	Action Taken
☐	☐	☐	24 Hour Notice Faxed
☐	☐	☐	Date & Time
☐	☐	☐	Health Department/ Other

CORRECTIONS

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete unless noted above.

Signature _____ Date _____

5 DAY CHECK LIST FOR LINE MAINTENANCE

PRINCIPAL ENGINEERING INSPECTOR

Please verify that information is correct by placing a check in the box prior to each statement. If information is not correct make a note at the bottom of the next page. If a correction is required, the 5 day report should be corrected prior to submitting and procedures followed as outlined in the SSORRP.

YES	NO	N/A	
☐	☐	☐	Service Request Number ☐
☐	☐	☐	Date Reported
☐	☐	☐	Time SSO Began
☐	☐	☐	Time SSO Stopped
☐	☐	☐	Caller's Name
☐	☐	☐	Caller's Phone Number
☐	☐	☐	Reported Location *(Make sure that the reported location is not the caller's location unless they are the same.)*
☐	☐	☐	Street Address
☐	☐	☐	City
☐	☐	☐	Zip Code
☐	☐	☐	Collection System Permit
☐	☐	☐	Overflowing Manhole Number *(If overflow is from a cleanout, mini-system should be recorded.)*
☐	☐	☐	Municipality
☐	☐	☐	Basin
☐	☐	☐	Notification of Public
☐	☐	☐	Destination of Discharge
☐	☐	☐	Estimated Volume
☐	☐	☐	Discharge Source
☐	☐	☐	Discharge Cause
☐	☐	☐	Recent Weather

Service Request Number

YES	NO	N/A	
☐	☐	☐	Conditions Contributing to the Discharge
☐	☐	☐	Action Taken
☐	☐	☐	24 Hour Notice Faxed
☐	☐	☐	Date & Time
☐	☐	☐	Health Department/ Other

CORRECTIONS

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete unless noted above.

Signature _____ Date _____

SSO CHECK LIST FOR ADMINISTRATION

Please verify that information is correct by placing a check in the box prior to each statement. If information is not correct make a note at the bottom of the next page and follow procedures as outlined in the SSORRP.

YES	NO	N/A	
☐	☐	☐	Service Request Number ☐
☐	☐	☐	Date Reported
☐	☐	☐	Time SSO Began
☐	☐	☐	Time SSO Stopped
☐	☐	☐	Caller's Name
☐	☐	☐	Caller's Phone Number
☐	☐	☐	Reported Location *(Make sure that the reported location is not the caller's location unless they are the same.)*
☐	☐	☐	Street Address
☐	☐	☐	City
☐	☐	☐	Zip Code
☐	☐	☐	Collection System Permit
☐	☐	☐	Overflowing Manhole Number *(If overflow is from a cleanout, mini-system should be recorded.)*
☐	☐	☐	Municipality
☐	☐	☐	Basin *(Village - East or West)* *(Five Mile - Up or Down)* ***CIRCLE SELECTION***
☐	☐	☐	Notification of Public
☐	☐	☐	Destination of Discharge
☐	☐	☐	Estimated Volume
☐	☐	☐	Discharge Source
☐	☐	☐	Discharge Cause
☐	☐	☐	Recent Weather

Service Request Number

YES	NO	N/A	
☐	☐	☐	Conditions Contributing to the Discharge
☐	☐	☐	Action Taken
☐	☐	☐	24 Hour Notice Faxed
☐	☐	☐	Date & Time
☐	☐	☐	Health Department/ Other

CORRECTIONS

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete unless noted above.

Signature _____ Date _____