

# CMOM ANNUAL REPORT FY2016

September 30, 2016



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## **Capacity, Management, Operations and Maintenance (CMOM) Plan Overview**

In accordance with National Pollutant Discharge Elimination System (NPDES) Permit No. NM0022250 (Permit), the Albuquerque Bernalillo County Water Utility Authority (Water Authority) prepared a Capacity, Management, Operations and Maintenance (CMOM) Plan with Emphasis on the Fats, Oils and Grease (FOG) Policy. The effective date of the Water Authority's permit is October 1, 2012.

The CMOM Plan consists of the following documents:

1. FOG Policy
2. CMOM Annual Report
3. CMOM Program Self-Assessment

The FY2016 CMOM Annual Report follows previous FY2013-15 reports. The three previous reports, as well as the most recent, can be accessed at [http://www.abcwua.org/Sewer\\_System.aspx](http://www.abcwua.org/Sewer_System.aspx).

### **Report Purpose**

As indicated by its name, the CMOM Annual Report will be reissued to describe CMOM activities in the previous fiscal year (July 1 to June 30). This CMOM Annual Report covers July 1, 2015 to June 30, 2016. The CMOM Annual Report provides summary descriptions of CMOM activities (past and planned) and is intended to be a communication tool. The report is intended for Water Authority staff, regulatory authorities, customers, and the general public.

### **Permit Requirements**

The Water Authority discharges to the Rio Grande under authority of NPDES Permit No. NM0022250 (Permit). Under this Permit, the Water Authority operates the Southside Water Reclamation Plant (SWRP) and the Collection System. The following are the Permit requirements that impact the collection system.

1. The Water Authority must submit a (monthly) Discharge Monitoring Report (DMR) in tabular form for all overflows. (Part I, Paragraph C.6).
2. The Water Authority must develop a Capacity, Management, Operation and Maintenance (CMOM) Plan with emphasis on the Fats, Oils and Grease (FOG) Policy. The FOG Policy will be a re-evaluation of the existing FOG Sewer Use and Wastewater Control (SCO) Ordinance. The goal of the FOG Policy will be to reduce Sanitary Sewer Overflows (SSOs). The FOG Policy may address such items as an inventory of repeat Food Service Establishments (FSE) sources of SSO and routine grease trap inspection programs at FSE with increased frequencies at repeat FOG SSO FSEs. Additional elements of the FOG Policy may be sewer line inspections, such as video recording and required sewer line cleaning activities if warranted at repeat sites.

### **CMOM Program Self-Assessment**

EPA states (see <http://www.epa.gov/npdes/pubs/cmomselfreview.pdf>): "An important component of a successful CMOM program is to periodically collect information on current systems and activities and develop a "snapshot-in-time" analysis. From this analysis, the utility

establishes its performance goals and plans its CMOM program activities.” The Water Authority developed Self-Audits as a part of the FY2013 and FY2014 reports. Because the data provided in the Self-Audit does not significantly change year-to-year, the next update will coincide with the FY2019 CMOM Report.

## **FOG Policy**

The Water Authority’s FOG Policy is a separate document. The FOG Policy was developed as a requirement of the NPDES Permit effective on October 1, 2012 and subsequently approved by the United States Environmental Protection Agency (EPA). The policy was developed to work in conjunction with the Water Authority Sewer Use and Wastewater Control Ordinance (SUO) and Enforcement Response Plan (ERP) to reduce the rate of SSOs in the collection system and decrease FOG loading at the SWRP. The policy describes expectations for FOG dischargers such as Food Service Establishments (FSEs) and waste haulers, and the steps the Water Authority is taking to mitigate FOG.

The FOG Policy sets a Water Authority goal of inspecting every FSE at least once every three years. Details of what is expected of the FSE in terms of Grease Removal System (GRS) functionality, pumping schedule, maintenance, and recordkeeping are identified. The FOG policy explains the Water Authority use of the 25% solids and grease rule (25 Percent Rule) to determine if a GRS is filled to capacity. The policy also contains Best Management Practices (BMPs) such as scraping plates, using screens, and not using emulsifiers, etc.

Pumper requirements are also covered in the FOG Policy. Full evacuation of a GRS is required each time pumping occurs. The pumper must leave the FSE documentation in the form of manifests that contain pertinent information such as date, time, volume pumped, and the condition of the GRS. The FOG Policy lists the minimum service to be provided by the pumper.

Enforcement of FOG violations and hauled wastewater violations is described in the FOG Policy. The FOG Policy works in conjunction with the ERP to set administrative assessments for violations.

The FOG Policy also sets forth the process for identifying new sources of FOG. The Water Authority Pretreatment Program will update the FOG database on an annual basis. The FOG Policy sets a goal that the Water Authority will meet with the City of Albuquerque, Bernalillo County, the Village of Los Ranchos, the Village of Corrales, plumbers, and the New Mexico Restaurant Association on a semiannual basis to discuss FOG issues.

In developing the FOG Policy, the Water Authority held a meeting with the hauled wastewater permit holders on July 22, 2013 and a public meeting on July 25, 2013 to discuss the proposed Policy. The final FOG Policy was submitted to the EPA on September 27, 2013 and updated in the Pretreatment Program modification documents sent to EPA on June 2, 2014. No comments from EPA were received regarding either submission, thus indicating approval.

## **FOG Enforcement**

In FY2015, the Water Authority Pretreatment Program conducted 1,570 FSE inspections (of 2,110 FSE sites) with 1877 passing for a compliance rate of 89%. Of the 317 failing inspections, 209 FSEs corrected the deficiencies and called for a re-inspection within seven (7) days. The

remaining 108 FSEs did not take corrective action and thus were issued Notices of Violation (NOVs) of which 57 were for no GRS, 69 were for non-functioning GRS, 12 were for GRS needs pumping, and 67 were for missing manifests.

In response to SSOs, 55 FSE inspections were conducted with 24 failing. Within the seven day grace period, 12 FSEs corrected the deficiency. After the seven day grace period, 12 NOVs were issued. In addition, Water Authority Pretreatment personnel distributed FOG brochures to FSEs, single-family residences and apartment complexes upstream of the SSOs.

Additionally, the Water Authority's Public Information Office advanced radio, print and television public outreach for the purpose of improving the Water Authority's FOG Policy.

## SSO Analyses

### Permit Requirements

The Permit requires a CMOM Plan with an emphasis on FOG Policy. The Plan goal is to reduce impacts on the sewer system caused by FOG and the Policy goal is to reduce SSOs. The FOG Policy states that the Pretreatment Program will investigate all SSOs related to large amounts of grease. The policy is to take enforcement actions for violations of FOG requirements with priority on FSEs causing repeat SSOs.

### SSO Study Team

To meet these requirements, the Water Authority created an SSO Study Team. The Team is comprised of:

1. Collection Section – Gravity Superintendent, Assistant Superintendent, Close Circuit Television (CCTV) Supervisor, and Research Analyst;
2. NPDES Pretreatment –Industrial Pretreatment Engineer and Pollution Prevention Specialist.

The Mission Statement for the Study Team is: *The SSO Study Team will work inter-divisionally to study, analyze and determine causes of previous SSOs to mitigate future SSOs in the Collection System.*

The Study Team procedure is:

1. Tabulate all 10-40s, 10-42s and 10-48s (see Table 1 for definitions).
2. Ensure all segments responsible for causing 10-42s and 10-48s are televised.
3. The Research Analyst will review and analyze all CCTV inspections to determine causes (if possible) and document findings.
4. To conduct meetings with the SSO Study Team to review and analyze CCTV that needs further investigation for resolution.
5. Recommend/implement and document mitigations (if possible) based on analysis.
6. Coordinate with NPDES Pretreatment concerning grease issues discovered during analysis.

**Table 1 Sewer Trouble Definitions**

<b>Sewer Trouble Definitions</b>		
10-40	Sewer Backup	A gravity line blockage that does not result in a spill, or in the vacuum system, a low vacuum (low vac) that causes a customer service disruption. Does not result in an SSO Reportable (10-42) or a Property Damage (10-48).
10-42	SSO Reportable	An overflow of sewage from the system that may impact surface waters. These are reported to the EPA and other locally impacted stakeholders.
10-48	Property Damage	An overflow of sewage from the system that results in damage to private property. These are not reportable under current definitions.

Appendix 1 identifies all 10-42s and 10-48s, and the overflows that resulted in both a 10-42 and a 10-48. When documenting the number of Sewer Troubles of different types, for example in Figure 1, the 10-42 item includes all overflows that may impact surface waters, including those that also had property damage; the 10-48 item includes overflows that only resulted in property damage. This prevents double-counting the number of overflow occurrences.

All 10-40s, 42s and -48s were CCTV inspected, although only 10-42s are “reportable”, i.e., required to be reported to the EPA, et al. All 10-42s and -48s were then examined by the Study Team and a Cause and Mitigation were determined.

**Table 2 Types of Causes for SSOs**

<b>Cause(s) of SSO from DMR</b>		<b>Causes determined from CCTV</b>
<b>CO</b> - Construction	<b>DB</b> - Debris	<b>SC</b> - Surcharged
<b>CU</b> -Cause Unknown	<b>RK</b> -Rocks	<b>SL</b> - Sag in Line
<b>EQ</b> - Equipment Failure	<b>GR</b> - Grease	<b>IT</b> - Intruding Tap
<b>SGG</b> -Sand, grit or gravel	<b>RT</b> - Roots	<b>MH</b> - Manhole
<b>LF</b> - Line Failure	<b>RN</b> - Rainfall	<b>OJ</b> - Offset Joint
<b>V</b> - Vandalism	<b>RGS</b> -Rags	
<b>RGR</b> - Roots / Grease	<b>BP</b> -Burped	

## Causes & Mitigations

The Cause(s) were selected from the above table that identifies SSO causes from the DMR and CCTV. The monthly SSO DMR has a specific list of Causes that are based on system observations made by an Operator or Supervisor at the site of an SSO. The CCTV data provided to the Study Team often results in a different, more refined Cause or Causes. Table 3 provides the causes determined by the Study team for FY2016. (Note: Percentages may not add up to 100%, as they are rounded to the nearest percent.)

**Table 3 Summary of Causes from SSO Study**

<b>FY2016 10-42, 10-48 Causes</b>	<b>Total</b>	<b>% of Total</b>
Burped	9	15%
Construction	6	10%
Cause Unknown	10	17%
Debris	6	10%
Equipment Failure	2	3%
Grease	13	22%
Grease/Roots	1	2%
Grease/Surcharged	1	2%
Manhole	1	2%
Offset Joint	1	2%
Roots	8	13%
Roots/Intruding Tap	1	2%
Sag in Line/Roots	1	2%
<b>Grand Total</b>	<b>60</b>	

Mitigations are the steps that the Team identified to prevent a recurrence of an SSO, at least for the identified Cause. Specific Mitigations are very dependent on the conditions observed from the CCTV video and report. Table 4 provides a summary of the various Mitigations. The Mitigations are tracked through completion or implementation. (Note: Percentages may not add up to 100%, as they are rounded to the nearest percent.)

**Table 4 Summary Mitigations from SSO Study**

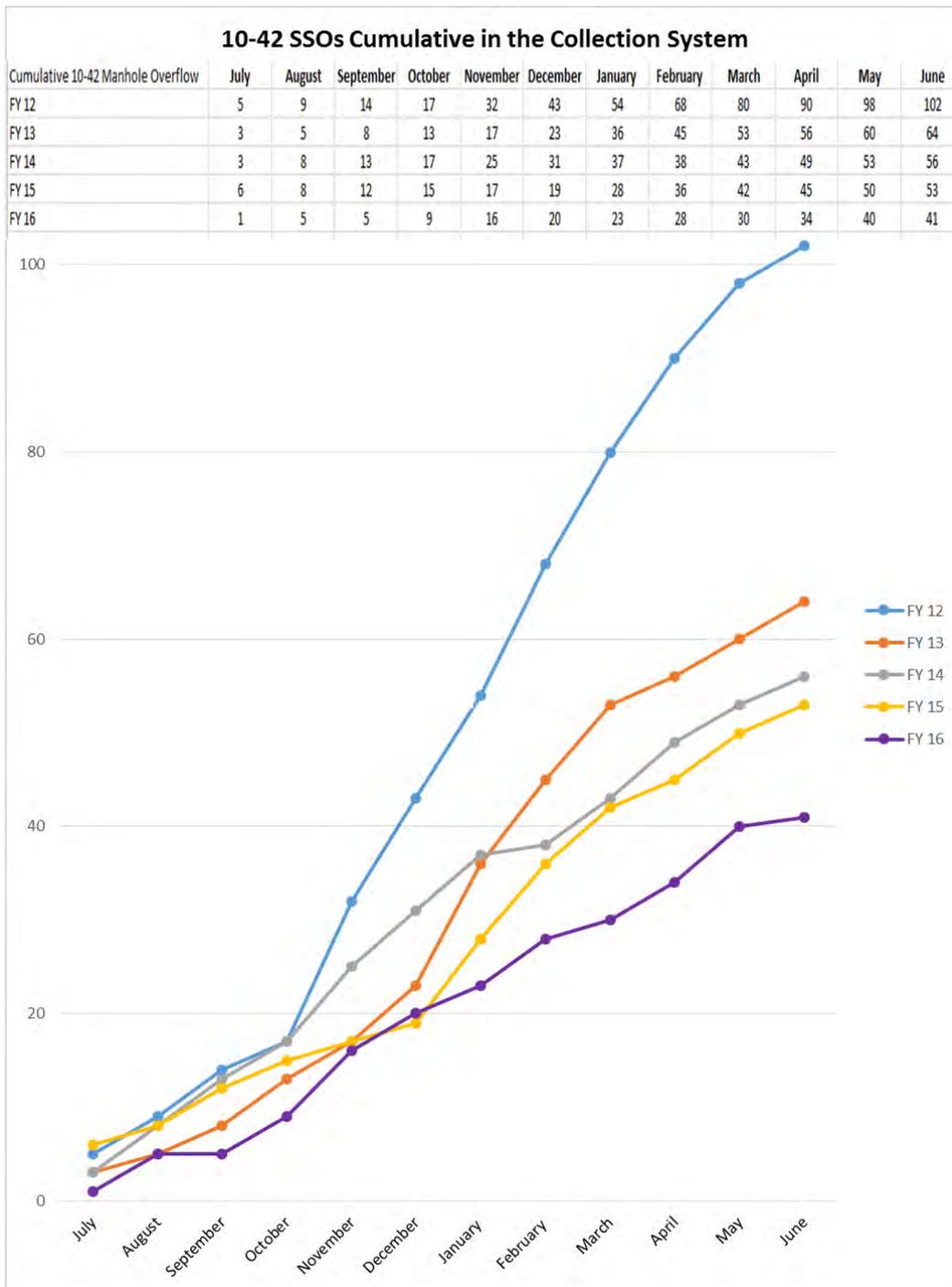
<b>FY2016 10-42, 10-48 Mitigations</b>	<b>Total</b>	<b>% of Total</b>
No Follow Up Needed	16	27%
Pretreatment Notified	4	7%
Pretreatment Notified/Rehab	3	5%
Pretreatment Notified/Special Instructions	3	5%
Rehab	7	12%
Special Cleaning	2	3%
Short Interval	8	13%
Short Interval/Special Instructions	1	2%
Special Instructions	13	22%
Special Instructions/Cut Intruding Tap	1	2%
Special Instructions/Rehab	1	2%
Special Instructions/Short Interval	1	2%
<b>Grand Total</b>	<b>60</b>	

**SSO Tabulation & Analysis**

Appendix 1 contains a list of every 10-42 and 10-48 event in FY2016. The table columns are grouped as follows:

1. The type, i.e., 10-42 or -48, is identified on the left. In two cases a single event was both a 10-42 and a 10-48, as indicated.
2. Next to the right are the data included in the monthly SSO DMRs. It is noted that a “Reported Cause” is listed. This is typically based on the observations of the Operator that reported the SSO.
3. Next to the right is data determined by the Study Team:
  - a. Cause
  - b. Mitigation
  - c. If Pretreatment follow-up is necessary
4. To the far right are follow-ups by NPDES Pretreatment
  - a. FSEs visited
  - b. Notice of Violation issued

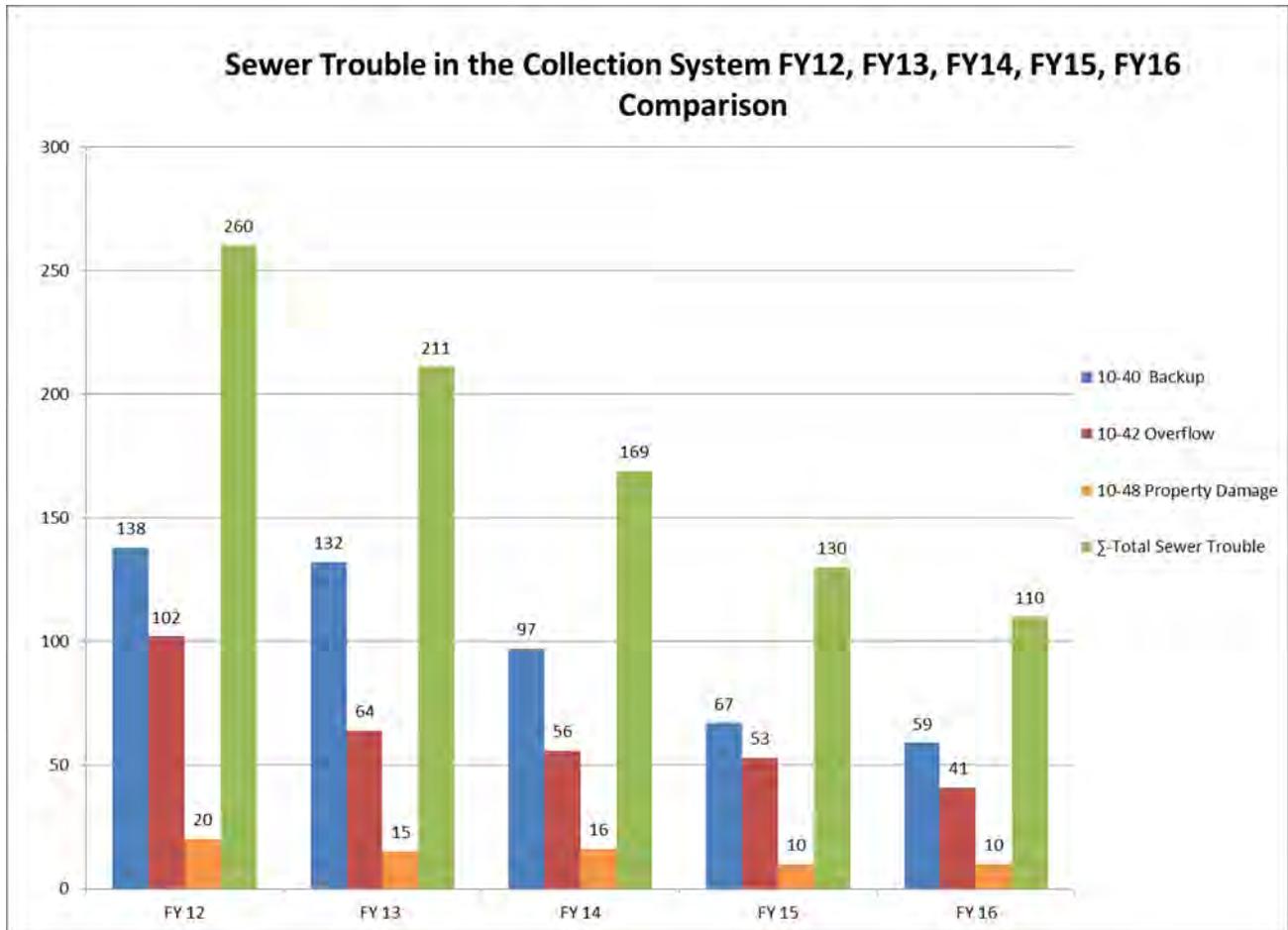
Figure 1 shows the cumulative 10-42s by month for FY2012-16.



**Figure 1 FY2016 Reportable SSOs**

The SSO Rate is defined as 100 times the number of SSOs in a year divided by the miles of sewer in the system. The Water Authority system has a total of approximately 2,414 miles of line (p. 8 of the Self-Audit). The SSO rate is therefore 4.5, 2.8, 2.5, 2.3 and 1.7 for FY2012-16 respectively.

Figure 2 shows the total sewer troubles, i.e. 10-40s, -42s, and -48s by year for FY2012-16. This graph does not include 10-48s due to “burps” which are not due to a blockage or other failure resulting in the overflow of sewage. Instead, air displaced during the Vactor jetting cleaning can under certain circumstances force out the water in the home fixture P-traps, e.g. toilets and sinks. These sometimes result in claims and are therefore included in the Property Damage totals for completeness and consistency. The burps for FY2012-16 have been 1, 0, 5, 5, and 9 respectively. The increase in burps is possibly due to more aggressive efforts to thoroughly clean the lines. If so, it is possible the increased burps are associated with the decrease of 10-42s over the same time. The burps are identified in Appendix 1.



**Figure 2 Sewer Trouble Comparison**

### Volume Spilled and Recovered

Via the OERP, the Water Authority has implemented a policy of capturing spills and documenting actions. Appendix 2 provides estimated spill volumes and volumes recovered for the 41 reported SSOs for FY2016. In FY2016, it is estimated that approximately 27% of the sewage spilled was captured. Of the 40,449 gallons estimated not to be recovered, none was identified as directly reaching the Rio Grande.

## **Actions Implemented and On-Going Programs**

### **General**

Below are gaps that were identified in the FY2015 CMOM Report and were closed in FY2016, or are on-going programs, or both. In addition to the commitments made in the FY2015 CMOM Report, the following additional actions were taken to expand the Water Authority's ability to operate and maintain the system.

1. Purchase orders have been issued for two new Vactors which will be obtained and put into service in FY2017.
2. As follow up to a 10-40, two storm drain inlets in the 1500 block of San Lorenzo Ave. NW were found to be connected to the sanitary system. These laterals were plugged at the manhole and the City informed for their follow-up.
3. Public advertising addressed the need to dispose wipes in a trash can, not the sink or toilet. As a portion of the routine anti-grease advertising campaign, this was included in a radio spot, public restrooms, and bill stuffer.
4. Modified the Vactor cleaning SOP in response to lessons learned on a 10-48 caused by a rebar caught on a drop manhole fitting.

### **FOG Policy Implementation:**

FOG Policy is an on-going program. Long-term recommendations were made in the FY2014 CMOM Report. The following are on-going efforts to meet the long-term FY2014 recommendations:

1. Develop a link between the Linko FOG database utilized by NPDES Pretreatment and the Maximo work order system used by the Collection Section.
2. Began creating a FSE flier in Spanish. The Pretreatment Section, in conjunction with the Public Information Office, will continue to develop FSE fliers in languages other than English.
3. Satellite Community agreements require that FSE connections be coordinated with the Water Authority.
4. The Pretreatment Program continued issuing NOV's for not complying with the record keeping requirements of the SUO and FOG policy.
5. The Pretreatment Program continued issuing NOV's for not complying with the direct access provisions of the SUO and FOG policy.

### **Collection System Capital Implementation Program (CIP) Funding**

This is an on-going program. The following recommendation is made in the FY2013 CMOM Report: "Based on the need for additional funding, the Water Authority Board approved rate increases for three of the next five fiscal years beginning in FY2014. The rate increases assist the Water Authority in increasing CIP funding for the Collection System."

The Water Authority has approved and implemented 5% revenue rate adjustments in FY2014, FY2015 and FY2016. Recent and future rate increases is allowing the Water Authority to increase its capital asset renewal program by \$5-million per year. The current objective is to

increase the renewal program spending level to \$76-million per year (\$2010 dollars), which is approximately double what was being spent prior to 2015.

This completes this recommendation.

### **Overflow Emergency Response Plan (OERP)**

This is an on-going program to update the OERP as required. In FY2014, the following modifications were made to the OERP:

1. Page 5: Made modifications to who to call if the sewer problem is in a private system and code enforcement must be contacted.
  - a. Added Kevin Daggett as a secondary contact regarding private spills into City streets.
  - b. Similarly added our other MS4 contacts to be alerted if a private spill impacts their facility.
  - c. Agreed with City Planning to simplify to a single number for City Code Enforcement. The City will be responsible to route the information to the correct person within the City.
  - d. Added a number and title for the Village of Los Ranchos.
  - e. Changed a number for NMED.
2. Page 6: Modified process on response to severe pipe conditions.
3. Page 8: Updated telephone number.
4. Page 11: Updated contact information for MRGCD.
5. All pages: Added “Authority” to our name.

The Collection Section is the “owner” of the OERP. The Collection Section creates the components of the OERP, routes for internal review (specifically including the Compliance Division), and the completed portions are approved for posting to SharePoint by the Collection Section Manager. Appendix 3 provides the OERP which was in effect at the end of FY2016.

In accordance with the OERP, the Water Authority coordinated with the appropriate MS4 Permittees on two spills that occurred on 11/12/2015 and 2/9/2016. The spill at 12:04 p.m. on 11/12/2015 reached the Calabacillas Arroyo which is an AMAFCA facility. AMAFCA assisted by installing a dirt berm for containing the spill until it could be treated with HTH and removed as much as possible. The 2/19/2016 spill reached a storm drain and over a mile downstream, reached the Piedras Marcadas Dam which is an AMAFCA facility. AMAFCA was contacted and the following information was provided: the flow was being contained on a concrete channel by a sill installed for the purpose of containing contaminated flow prior to reaching a pervious area; the proper route and gate access were identified for Vactors to drive to this location. Per the OERP, wash water with HTH was applied to the inlet the spill entered and was removed at the Piedras Marcadas Dam sill.

### **Force Main Inspection Program**

This is an on-going program in which the alignment is annually inspected for all force mains and valves found in field are compared to those in the GIS mapping and this information is stored in Maximo. In FY16, a valve connecting the Lift Station 24 force mains was found. The need to locate this critical valve was identified as a result of the FY15 inspections.

## **Closed Circuit Television (CCTV)**

This is an on-going program. The following recommendation is made in the FY2013 CMOM Report: “CCTV inspections of the collection system as follows: 1) Small diameter main lines less than 15”: In four of five years, televise approximately 5% per year of the small diameter system. Televise high risk lines based on current Asset Management Plan and subsequent in-house analysis. 2) Large diameter lines 15” and larger: Every fifth year, televise as much as possible acknowledging access limitations of the unlined concrete lines 15” and larger. Anticipated schedule: 3) FY2014-17: 5% of the small diameter each year. 2) FY18: Large diameter unlined concrete pipe.”

The CCTV program will continue. Anticipated schedule:

1. FY17: 5% of the small diameter.
2. FY18: Large diameter unlined concrete pipe.
3. FY19: 5% of the small diameter. (Any small diameter inspections accomplished in FY18 will be allocated to meeting the FY19 goal.)
4. FY20: 5% of the small diameter.

The FY2016 portion of this recommendation is complete.

It is currently estimated that that the system includes 1988 miles of small diameter gravity pipe. In FY2016, approximately 99.4 miles of small diameter line was televised, i.e. 5.0%.

## **Cleaning Program Goal**

This is an on-going program. The following recommendation is made in the FY2013 CMOM Report: “The Water Authority will establish and monitor a goal of cleaning all gravity small diameter lines every ten years. (This will be accomplished through the existing Sub-Basin program.) The Water Authority will continue the program of high-frequency maintenance of known problem locations within the system. (This will be accomplished through the existing Short Interval program.) The frequency of Short Interval cleaning will vary in accordance with system performance and risk factors, maintenance history, and the latest maintenance findings.”

The FY2016 portion of this recommendation is complete. In FY2016, the Water Authority cleaned approximately 284.5 miles under the Sub-Basin program. This is equal to approximately 14.3% of the small diameter system which exceeds the 10% pace implicit in cleaning every ten years. Likewise, the Short Interval cleaning program was maintained with approximately an additional 230.1 miles cleaned. The total length of all types of small diameter cleaning, exclusive of interceptors, was approximately 584.3 miles.

The cleaning program continues with the same goals.

## **Root Foaming**

The following recommendation is made in the FY2013 CMOM Report: “Starting in FY15, implement a 3-year pilot program. Root foam selected lines that meet the root infested and / or inaccessibility criteria. Compare effectiveness to mechanical cleaning currently practiced and provide recommendation.”

The Root Foaming Pilot Project is a three year program. The FY15 and FY16 groups were foamed in June 2015 and March 2016 respectively. Per vendor recommendations, the FY15

group will be retreated approximately June 2017. This will complete the foaming application of the Pilot Project. For both of the treated groups, control groups (equivalent to the treated lines as measured by PACP evaluation) were selected. The treated and control groups will be compared over time to determine if foaming is advantageous. Interim inspection of the FY15 treated and control group was inconclusive.

### **FOG Buster**

The following recommendation is made in the FY2013 CMOM Report: “Starting in FY15, implement a 3-year pilot program. Equip two units with FOG Buster equipment and utilize to clean lines known to be impacted by FOG. Compare effectiveness to mechanical cleaning currently practiced and provide recommendation.”

Per this recommendation, the equipment was purchased and installed. One high FOG segment was selected and cleaned utilizing FOG Buster in the downstream portion while the upstream portion was cleaned using water. On March 8, 2016, the line was re-CCTVed and the results were inconclusive. The recommendation at this time is to focus on the foaming efforts and only consider FOG Buster for unusual conditions that should first involve FSE enforcement.

This completes this recommendation.

### **Generator Plan**

The following recommendation is made in the FY2015 CMOM Report: “in FY2016, a test will be run simulating a simultaneous power failure at two vacuum stations.” This recommendation follows the completion of the FY2014 CMOM recommendation to develop an SOP for portable generators.

The test was run on March 31, 2016 simulating the simultaneous failure of power at Vacuum Stations 67 and 69. Improvements to the SOP were identified and implemented through the process of preparing for, and actually performing the test.

In FY2017, it is recommended to run a test at two vacuum stations in which power is actually cut and the portable generators are hooked up.

### **Shunt Trip Testing**

The following recommendation is made in the FY2015 CMOM Report: “The design is complete and construction is under contract. In FY2016, Lift Stations 20 and 24 will be tested utilizing the shunt trips, simulating a power failure.” This recommendation follows the completion of the FY2014 CMOM recommendation to “During FY2015, design shunt trips, or equivalent, for Lift Stations 20 and 24.”

The construction is complete and the recommended testing was performed. Regular testing will be performed as part of the routine O&M. Maximo recurring Work Orders have been created to assure this is done.

This completes this recommendation.

## **Manhole Base Sketches & Follow-Up**

The following recommendation is made in the FY2015 CMOM Report: “In FY2016, require manhole base sketches from cleaning and CCTV crews to identify need for channelizing. Follow-up with construction as appropriate.”

A form was created for use by cleaning and CCTV crews. In addition to addressing manhole hydraulics, the form requires information on flow direction vs. GIS mapping, on the cleaning nozzle(s) utilized, and on the use of a chute. During FY2016, the hydraulics were improved at 23 manhole bases after being identified by a field crew. This form and its requirements have been integrated as a part of the routine O&M.

This completes this recommendation.

## **Written SOPs**

The following recommendation is made in the FY2015 CMOM Report: “In FY2016, develop and implement SOPs for routine cleaning, for responding to sewer blockages, and for completion of overflow response forms. This is in addition to the “Use of Portable Generators at Sanitary Lift Stations and Vacuum Stations” and the SOP for Shunt Trip Testing, both of which are discussed above.”

This was accomplished and SOPs were posted to SharePoint. The Vactor Cleaning SOP addresses Vactor operation for routine cleaning and responding to blockages. The SOP for Response and Documentation of a Sanitary Sewer Overflow (10-42) provides procedures for responding to an SSO and in the completion and correction of the various reporting forms. The OERP is incorporated as an appendix in this SOP. This SOP requires a second Vactor to respond to 10-42s during normal work hours when multiple units are in operation. In FY2016, SOPs were developed and posted to SharePoint for a number of additional items including: Setup and Installation of OdaLog® Low Range Sampling System (LRSS) for Biofilter and Scrubber Testing; Creating Follow Up Work Order Packages – Cleaning and CCTV; Flow Calculation Based on Winter Water Average; Engineering Intern Responsibilities for the Collection Section Monthly Report; Setup and Installation of pH Module with ISCO Sampler; Use of Portable Generators at Sanitary Lift Stations and Vacuum Stations.

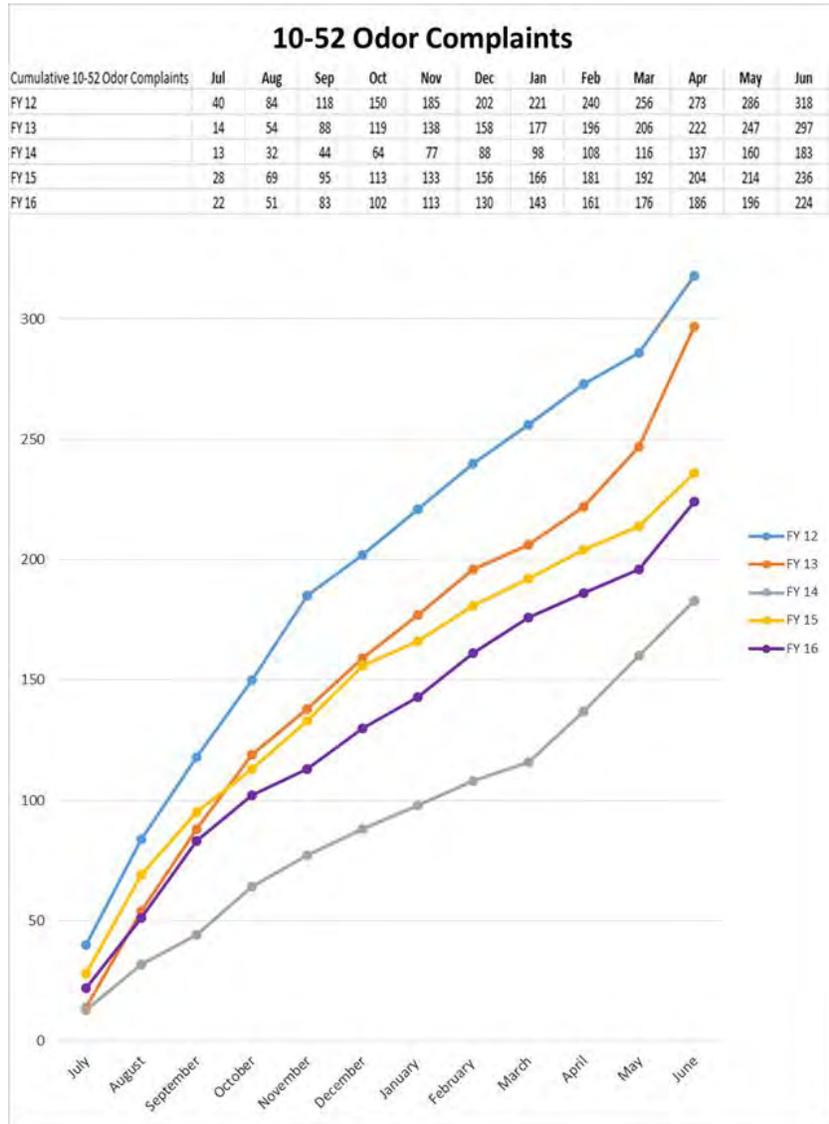
SOPs will continue to be created and updated and posted to SharePoint. This completes this recommendation.

## **Odor Complaints**

The Water Authority has committed to tabulate odor complaints by month. The EPA considers odor and corrosion control an issue in collection system O&M, as indicated by the Hydrogen Sulfide Monitoring and Control (HSMC) section in the CMOM Program Self-Assessment standard template from the EPA website.

Odor control is a major issue in warm-weather systems such as Albuquerque’s. A high correlation has been demonstrated between odor complaints and the sewage temperature (analysis of FY11 & FY12 temperature vs. odor complaint data,  $r = 0.89$ ,  $p < 0.02$ ). Odor complaints are also known as a 10-52. The following graphic shows the odor complaints received by the Water Authority in FY2012 through FY2016. All odor complaints received are

included in this graphic; however, study has indicated that approximately 3/4 of the complaints received originate in the private and not the public system.



**Figure 3 Odor Complaints**

The following flow chart describes the process followed by the Water Authority in response to an odor complaint. This specific process in the immediate response and the follow-up to odor complaints is due to the importance placed on customer service. Also, the Water Authority has found that some odor complaints are due to a blockage prior to an overflow; therefore, a quick response can prevent an SSO.

## 10-52 Odor Complaint Flow Chart

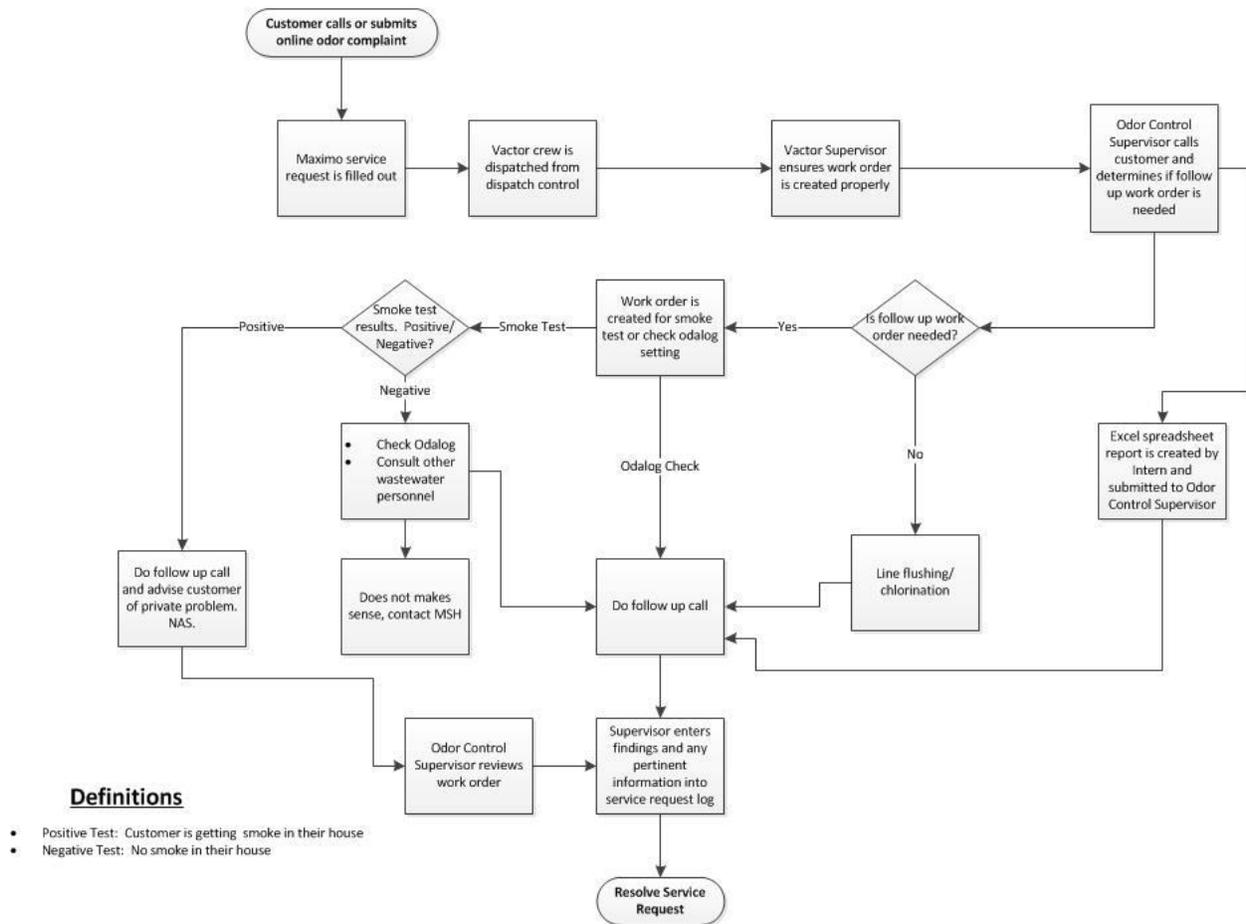


Figure 4 Odor Complaint Flow Chart

## **Identified Gaps in the Water Authority Processes with Recommendation to Close**

In the process of continuous improvement, the Water Authority is committed to identifying and closing gaps. As discussed above, most of these recommendations are now considered On-Going programs.

### **Prohibited Discharges, i.e., SSOs**

The Water Authority acknowledges that prohibited discharges have occurred and that all discharges from the sanitary sewer system are prohibited.

Recommendation: The Water Authority will annually examine sewer system performance, set specific steps for decreasing SSOs and mitigating their impacts, and has a program of continuous improvement.

# Appendices

**Appendix 1      Sanitary Sewer Overflow Analysis Table**

FY2016 Overflow Analysis Table

Type			DMR														SSO Team Study		Enforcement			
10-42	10-48	10-42 & 10-48	Maximo WO #	Diameter	Maximo Reported Date	Repeat	Repeat within 1 year	Date of SSO	Time of SSO	Duration (HH:MM)	Location	Estimated Volume (gallons)	Reported Cause of Overflow	Observed Environmental Impacts	Action Taken	Ultimate Discharge Location	Volume Recovered (gallons)	Cause	Mitigation	Pretreatment Follow Up Requested	FSEs Visited	Notice of Violation
	X		11896021	8	7/23/2015	N	N	7/23/2015	5:40 PM	NA	925 ORTIZ DR SE	NA	BP	NA	NA	PP	NA	BP	SP			
X			11897696	8	7/27/2015	Y	N	7/27/2015	10:40 AM	0.05556	5301 WYOMING BLVD NE	240	GR	NEAH	CC/WD/RP/HTH	PST	100	DB	SC			
	X		11904053	8	8/6/2015	Y	N	8/6/2015	7:12 AM	NA	9440 TASCO DR NE	NA	RGS/RT	NA	CC	PP	NA	DB	SC			
X			11904757	8	8/8/2015	N	N	8/8/2015	3:00 PM	0.125	AMERICAS PARKWAY & LOUISIANNA	2,500	GR	NEAH	CC/HTH/RS/WD/RP	SD	-	GR/SC	PT/RH	Y		
X			11904887	12	8/9/2015	N	N	8/9/2015	12:00 PM	0.11806	608 MEADOW GREEN CT SE	45	CU	NEAH	CC/WD	PST	35	CU	NF			
X			11907783	12	8/13/2015	N	N	8/13/2015	9:23 PM	:22	8404 BRIAN AVE SW	440	GR	NEAH	CWW/CC/WD/HTH	PST	400	GR	SP			
X			11924097	8	8/31/2015	N	N	8/31/2015	12:15 PM	:45	500 Eubank Blvd Ne	225	RGS	NEAH	CC/RP/HTH	PST	50	CU	NF			
	X		11931295	8	9/14/2015	Y	N	9/14/2015	4:55 PM	NA	3003 GENERAL STILWELL ST NE	NA	BP	NA	NA	PP	NA	BP	SP			
	X		11938540	8	9/23/2015	Y	N	9/23/2015	4:10 PM	NA	508 WELLESLEY DR SE	NA	GG	NA	CC	PP	NA	RT/IT	SP/CT			
	X		11938497	8	9/30/2015	N	N	9/29/2015	10:00 AM	NA	485 COORS BLVD NW	NA	BP	NA	NA	PP	NA	BP	SP			
X			11941031	8	10/4/2015	Y	N	10/4/2015	11:30 AM	0.05208	6323 Bluewater RD. NW	750	GR	NEAH	CC/WD/RP/RS/HTH	PST	50	GR	RH			
	X		11943647	8	10/8/2015	N	N	10/7/2015	11:46 AM	NA	444 60TH ST NW	NA	BP	NA	NA	PP	NA	BP	SP			
X			11944284	8	10/9/2015	Y	N	10/9/2015	3:05 PM	0.04306	4710 SAN MATEO BLVD NE	1,240	RGS/GR	NEAH	CWW/CC/WD/HTH	SD	800	GR	PT/SP	Y	3	
X			11951601	8	10/26/2015	N	N	10/26/2015	9:30 AM	0.04167	3700 HAWKINS ST NE	600	RGS/RK/S GG	NEAH	CC/RP/HTH	PST	150	GR	PT/SP	Y	1	
X			11953562	8	10/29/2015	N	N	10/29/2015	8:05 AM	:55	9100 SONYA AVE SW	2,750	GR	NEAH	CC/CWW/WD/RP/RS/HTH	PST	1,375	CU	NF			
	X		11955432	8	11/3/2015	N	N	11/3/2015	8:15 AM	NA	4517 OAHU DR NE	NA	GR	NA	CC	PP	NA	RT	SP			
X			11957197	8	11/7/2015	Y	N	11/7/2015	7:51 PM	0.07222	3811 EDITH BLVD NE	312	GR	NEAH	CC/CWW/WD/RP/HTH	PST	50	OJ	PT/RH	Y	2	
	X		11957981	8	11/10/2015	N	N	11/6/2015	12:25 PM	NA	201 ALCAZAR ST NE	NA	GR	NA	CC	PP	NA	GR/RT	SP			
X			11959992	8	11/12/2015	Y	N	11/12/2015	12:04 PM	0.05278	10301 GOLF COURSE RD NW	12,600	GR	NEAH	BR/CWW/CC/HTH	AD	100	GR	SI			
X			11959995	8	11/12/2015	N	N	11/12/2015	11:32 AM	0.075	2301 BUENA VISTA DR SE	5,400	GR/RT	NEAH	CC/CWW/RP/WD	AC	2,443	RT	SI			
X			11960017	8	11/12/2015	N	N	11/12/2015	4:41 PM	0.06875	2720 ARNO ST SE	495	DB	NEAH	CC/RP/WD/HTH	PST	300	DB	PT	Y	1	1
X			11963784	8	11/23/2015	N	N	11/23/2015	11:00 AM	:45	313 JEFFERSON ST NE	45	GR/RGS	NEAH	CC/RP/RS/WD/HTH	PST	30	GR	SP			
X			11965878	8	11/27/2015	N	N	11/27/2015	8:10 AM	0.04167	EDITH & NIAGARA NE	300	CO/DB/RGS	NEAH	CC/RP/WD/HTH	PST	150	DB	NF			
X			11966576	8	11/29/2015	Y	N	11/29/2015	1:02 PM	0.07847	6012 RIVERWALK DR NW	565	GR	NEAH	CC/CWW/BR/RP/WD	PST	300	GR	SI			
	X		11966889	8	11/30/2015	Y	N	11/29/2015	9:45 PM	NA	324 65TH ST SW	NA	GR/RGS	NA	CC	PP	NA	GR	PT/SP	Y	4	
X			11968835	8	12/2/2015	N	N	12/2/2015	9:42 AM	:48	EASTERN AVE SE / ASH ST SE	250	GR	NEAH	CC/CWW/WD/RP/HTH	PST	50	CU	NF			
X			11970430	8	12/5/2015	N	N	12/5/2015	9:15 AM	:45	4300 EUBANK BLVD NE	135	GR/RGS	NEAH	CC/WD/RP/HTH	PST	50	CU	NF			
X			11974641	8	12/16/2015	Y	N	12/16/2015	8:51 AM	:29	4101 MORRIS ST NE	145	GR	NEAH	CC/WD/CWW/HTH	PST	100	CU	PT	Y	3	1
X			11975987	8	12/19/2015	N	N	12/19/2015	10:30 AM	0.08333	MONROE & HEADINGLY ST NE	3,000	DB	NEAH	CC/WD/RP/HTH	AC	100	GR	PT	Y	1	
X			11981234	6	1/2/2016	N	N	1/2/2016	8:30 PM	0.13542	10009 GUADALUPE TRL NW	50	EQ	NEAH	BR	DST	-	EQ	RH			
	X		11986387	8	1/12/2016	N	N	1/12/2016	11:30 AM	NA	3400 GABALDON PL NW	NA	BP	NA	NA	PP	NA	BP	SP			
X			11990116	8	1/19/2016	N	N	1/19/2016	11:35 AM	:25	Chama & Lomas Blvd NE	125	GR/RGS	NEAH	CWW/CC/RP/RS	PST	50	CU	NF			
X			11992497	8	1/25/2016	N	N	1/25/2016	8:00 AM	0.05208	1956 REDONDO PEAK DR NW	150	CO/SGG	NEAH	CWW/CC/WD/RP/RS/HTH	PST	100	CO	PT	Y		

FY2016 Overflow Analysis Table

Type			DMR															SSO Team Study		Enforcement		
10-42	10-48	10-42 & 10-48	Maximo WO #	Diameter	Maximo Reported Date	Repeat	Repeat within 1 year	Date of SSO	Time of SSO	Duration (HH:MM)	Location	Estimated Volume (gallons)	Reported Cause of Overflow	Observed Environmental Impacts	Action Taken	Ultimate Discharge Location	Volume Recovered (gallons)	Cause	Mitigation	Pretreatment Follow Up Requested	FSEs Visited	Notice of Violation
	X		11991807	8	2/1/2016	Y	Y	2/1/2016	3:00 PM	NA	3011 COMMERCIAL ST NE	NA	BP	NA	NA	PP	NA	BP	NF			
	X		11997528	8	2/2/2016	N	N	2/2/2016	11:15 AM	NA	1327 AMADO RD NW	NA	BP	NA	NA	PP	NA	BP	SP			
X			12001161	8	2/9/2016	Y	N	2/9/2016	8:58 PM	:42	Juan Tabo Blvd. NE & Candelaria Rd.	210	GR/RGS	NEAH	CC/WD/RS/HTH	PST	50	RT	SP			
	X		12001436	8	2/10/2016	N	N	2/9/2016	1:30 PM	NA	1122 MARIANO TRL SW	NA	BP	NA	NA	PP	NA	BP	NF			
X			12004088	2	2/12/2016	N	N	2/12/2016	5:15 PM	:50	5550 SAN ANTONIO DR NE	50	LF	NEAH	CWW/HTH/RS/WD	PST	20	CO	RH			
X			12004143	8	2/13/2016	N	N	2/13/2016	10:50 AM	0.06944	6558 ANCIENTS RD NW	500	GR	NEAH	CC/HTH	PST	-	CU	NF			
X			12004524	8	2/15/2016	N	N	2/15/2016	3:47 PM	0.06458	San Mateo Blvd / Marquette Ave NE	9,300	GR/RGS	NEAH	CWW/CC/WD/RP/HTH	SD	200	CU	NF			
X			12007615	8	2/19/2016	N	N	2/19/2016	6:58 AM	0.04236	PARADISE & ASBURY LN NW	3,050	RGS	NEAH	CWW/CC/WD/RS/HTH	AC	3,050	GR	SP			
	X		12011212	8	2/26/2016	N	N	2/25/2016	11:40 AM	NA	10301 CORNELIA CT SW San Pedro and Topke Dr.	NA	BP	NA	NA	PP	NA	BP	SP			
X			12016178	8	3/6/2016	N	N	3/6/2016	1:35 PM	0.07292	NE	525	GR	NEAH	CC/CWW/WD/RS/HTH	PST	525	GR	SP/SI			
X			12020935	8	3/15/2016	N	N	3/15/2016	6:50 AM	0.07986	8400 OSUNA RD NE	575	CO/SGG	NEAH	CC/CWW/RS/HTH	PST	275	CO	NF			
	X		12020980	8	3/15/2016	N	N	3/15/2016	12:41 PM	NA	8401 OSUNA RD NE	NA	CO/SGG	NEAH	CC	PP	NA	CO	NF			
		X	12029021	8	4/2/2016	N	N	4/2/2016	9:10 AM	0.10764	1213 MICHAEL HUGHES DR NE	850	RGS/SGG	NEAH	CC/CWW/WD/RS/HTH	PST	400	MH	RH			
	X		12030625	8	4/6/2016	N	N	4/6/2016	4:15 PM	NA	9800 GREENBRIER RD NE	NA	RT	NEAH	CC	PP	NA	RT	SI			
		X	12030912	30	4/7/2016	N	N	4/7/2016	9:10 AM	:30	3600 CUTLER AV NE	750	GR/RGS	NEAH	CC/CWW/RS/HTH	DST	400	DB	SI			
	X		12032483	8	4/8/2016	N	N	4/8/2016	7:00 PM	NA	10412 DELICADO PL NE	NA	GR/RGS	NA	CC	PP	NA	RT	SI			
X			12032655	8	4/10/2016	N	N	4/10/2016	1:14 PM	0.07361	12700 Granite Ave. NE	530	LF	NEAH	CC/HTH	SD	75	CO	RH			
	X		12037415	8	4/15/2016	N	N	4/15/2016	10:30 AM	NA	429 RHODE ISLAND ST NE	NA	GR	NEAH	CC	PP	NA	GR	SI	Y		
X			12039132	10	4/21/2016	N	N	4/21/2016	8:35 AM	:45	Sunningdale Ave & Coe Dr NE	225	RGS/RT	NEAH	CWW/CC/RS/HTH	PST	100	SL/RT	SP/RH			
	X		12043345	8	4/29/2016	N	N	4/29/2016	7:14 AM	NA	301 ROMA AVE NE	NA	GR	NA	CC	PP	NA	DB	RH			
X			12050092	8	5/10/2016	N	N	5/10/2016	10:58 AM	:47	1329 CUATRO CERROS TRL SE	5	RGS/RT	NEAH	CWW/CC/WD	PST	-	RT	SI/SP			
X			12050422		5/11/2016	Y	Y	5/10/2016	11:41 AM	0.06528	LYONS & BLUE FEATHER NW	2,350	EQ	NEAH	CWW/WD/RS/HTH	O	2,250	EQ	NF			
X			12052998	8	5/14/2016	Y	N	5/14/2016	11:35 AM	0.06944	7408 DELLWOOD RD NE	200	RGS/RT	NEAH	CC/WD/RS/HTH	PST	75	RT	SI			
X			12053300	8	5/15/2016	N	N	5/15/2016	9:10 AM	0.07639	10801 ACADEMY RD NE	200	RGS	NEAH	CC/CWW/WD/RS/HTH	YD	70	CU	NF			
X			12057820	8	5/21/2016	Y	N	5/21/2016	12:27 PM	0.04375	1715 2ND ST SW	315	GR	NEAH	CC/WD/RS/HTH	PST	50	GR	PT/RH	Y	1	1
X			12058503	8	5/23/2016	Y	Y	5/22/2016	9:07 PM	0.07847	13329 ORIENTE AVE NE	2,825	RGS/GR	NEAH	CC/CWW/WD/HTH	SD	500	RT	RH			
X			12073253	15	6/10/2016	N	N	6/8/2016	12:45 PM	:45	Alexander & Carmony NE	500	CO	NEAH	CWW/WD/HTH	SD	50	CO	NF			

**Appendix 2      Sanitary Sewer Overflow Volume Captured Analysis Table**

**FY2016 10-42 SPILL VOLUME AND VOLUME RECOVERED**

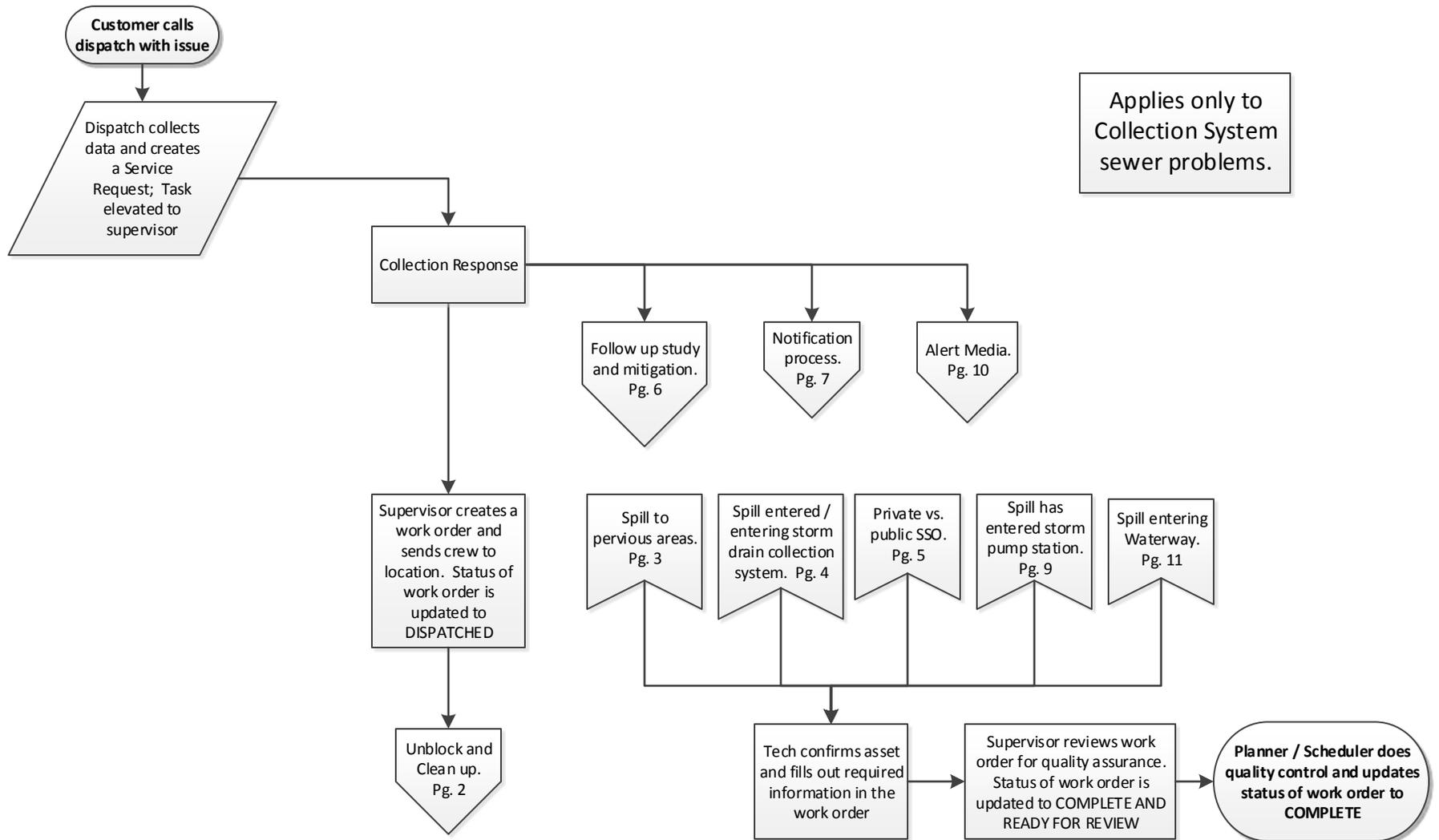
Maximo WO #	Date of SSO	Location	Estimated			
			Volume (gallons)	Volume Recovered (gallons)	Volume Not Recovered	% Recovered
11897696	7/27/2015	5301 WYOMING BLVD NE	240	100	140	42%
11904757	8/8/2015	AMERICAS PARKWAY & LOUISIANA	2,500	0	2,500	0%
11904887	8/9/2015	608 MEADOW GREEN CT SE	45	35	10	78%
11907783	8/13/2015	8404 BRIAN AVE SW	440	400	40	91%
11924097	8/31/2015	500 Eubank Blvd Ne	225	50	175	22%
11941031	10/4/2015	6323 Bluewater RD. NW	750	50	700	7%
11944284	10/9/2015	4710 SAN MATEO BLVD NE	1,240	800	440	65%
11951601	10/26/2015	3700 HAWKINS ST NE	600	150	450	25%
11953562	10/29/2015	9100 SONYA AVE SW	2,750	1,375	1,375	50%
11957197	11/7/2015	3811 EDITH BLVD NE	312	50	262	16%
11959992	11/12/2015	10301 GOLF COURSE RD NW	12,600	100	12,500	1%
11959995	11/12/2015	2301 BUENA VISTA DR SE	5,400	2,443	2,957	45%
11960017	11/12/2015	2720 ARNO ST SE	495	300	195	61%
11963784	11/23/2015	313 JEFFERSON ST NE	45	30	15	67%
11965878	11/27/2015	EDITH & NIAGARA NE	300	150	150	50%
11966576	11/29/2015	6012 RIVERWALK DR NW	565	300	265	53%
11968835	12/2/2015	EASTERN AVE SE / ASH ST SE	250	50	200	20%
11970430	12/5/2015	4300 EUBANK BLVD NE	135	50	85	37%
11974641	12/16/2015	4101 MORRIS ST NE	145	100	45	69%
11975987	12/19/2015	MONROE & HEADINGLY ST NE	3,000	100	2,900	3%
11981234	1/2/2016	10009 GUADALUPE TRL NW	50	0	50	0%
11990116	1/19/2016	Chama & Lomas Blvd NE	125	50	75	40%
11992497	1/25/2016	1956 REDONDO PEAK DR NW	150	100	50	67%
12001161	2/9/2016	Juan Tabo Blvd. NE & Candelaria Rd.	210	50	160	24%
12004088	2/12/2016	5550 SAN ANTONIO DR NE	50	20	30	40%
12004143	2/13/2016	6558 ANCIENTS RD NW	500	0	500	0%
12004524	2/15/2016	San Mateo Blvd / Marquette Ave NE	9,300	200	9,100	2%
12007615	2/19/2016	PARADISE & ASBURY LN NW	3,050	3,050	0	100%
12016178	3/6/2016	San Pedro and Topke Dr. NE	525	525	0	100%
12020935	3/15/2016	8400 OSUNA RD NE	575	275	300	48%
12029021	4/2/2016	1213 MICHAEL HUGHES DR NE	850	400	450	47%
12030912	4/7/2016	3600 CUTLER AV NE	750	400	350	53%
12032655	4/10/2016	12700 Granite Ave. NE	530	75	455	14%
12039132	4/21/2016	Sunningdale Ave & Coe Dr NE	225	100	125	44%
12050092	5/10/2016	1329 CUATRO CERROS TRL SE	5	0	5	0%
12050422	5/10/2016	LYONS & BLUE FEATHER NW	2,350	2,250	100	96%
12052998	5/14/2016	7408 DELLWOOD RD NE	200	75	125	38%
12053300	5/15/2016	10801 ACADEMY RD NE	200	70	130	35%
12057820	5/21/2016	1715 2ND ST SW	315	50	265	16%
12058503	5/22/2016	13329 ORIENTE AVE NE	2,825	500	2,325	18%
12073253	6/8/2016	Alexander & Carmony NE	500	50	450	10%
<b>Grand Total</b>			<b>55,322</b>	<b>14,873</b>	<b>40,449</b>	<b>27%</b>

**Appendix 3      Overflow Emergency Response Plan (OERP)**

# Overflow Emergency Response Plan

05-03-2016

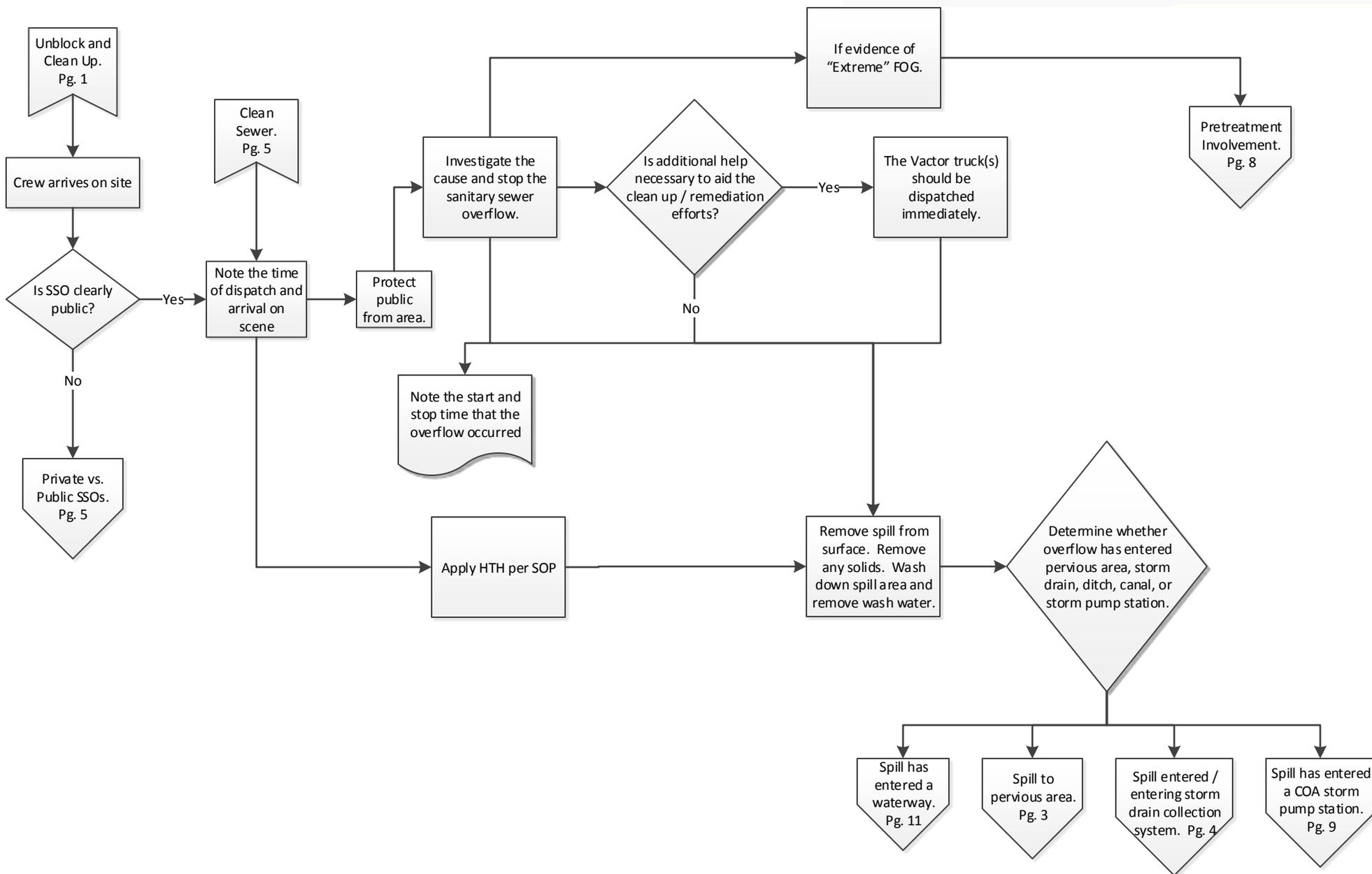
Albuquerque Bernalillo County Water Utility Authority

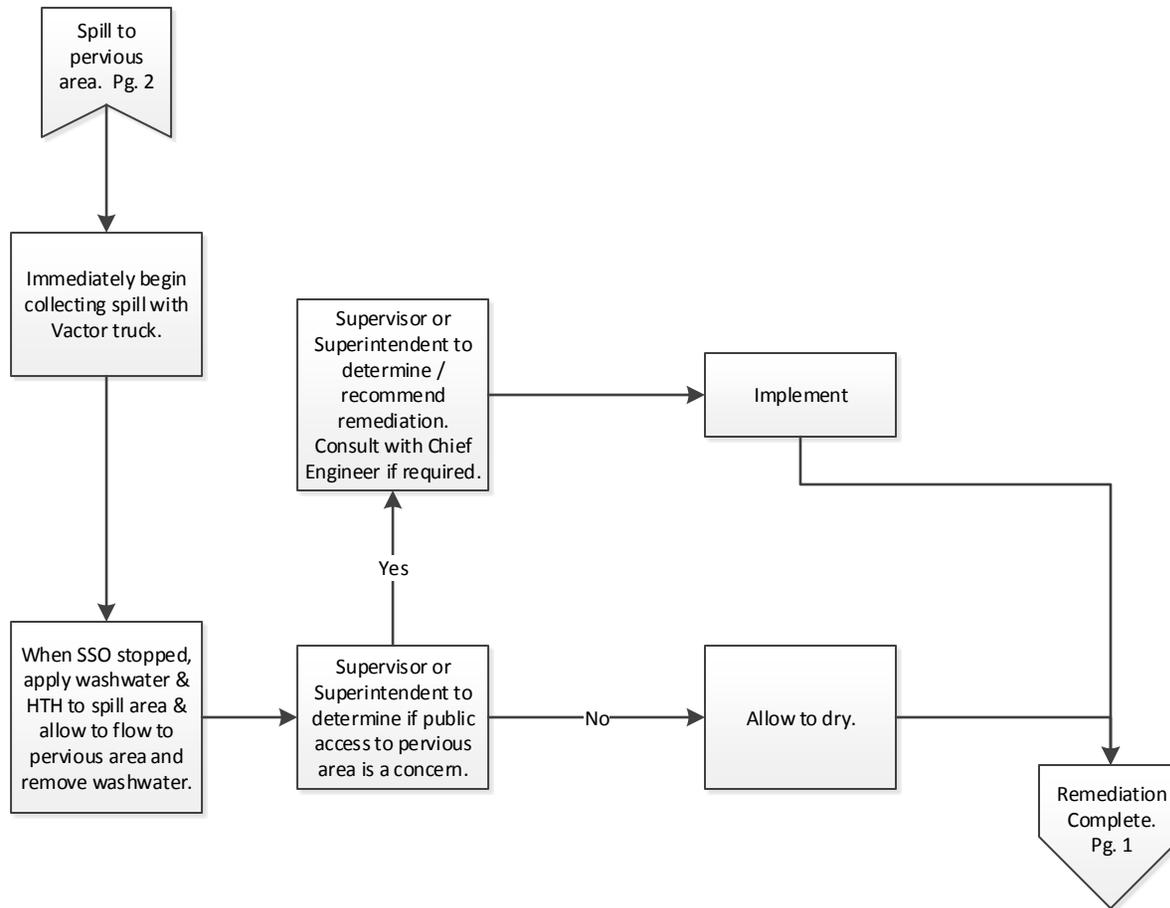


# Overflow Emergency Response Plan

05-03-2016

Albuquerque Bernalillo County Water Utility Authority

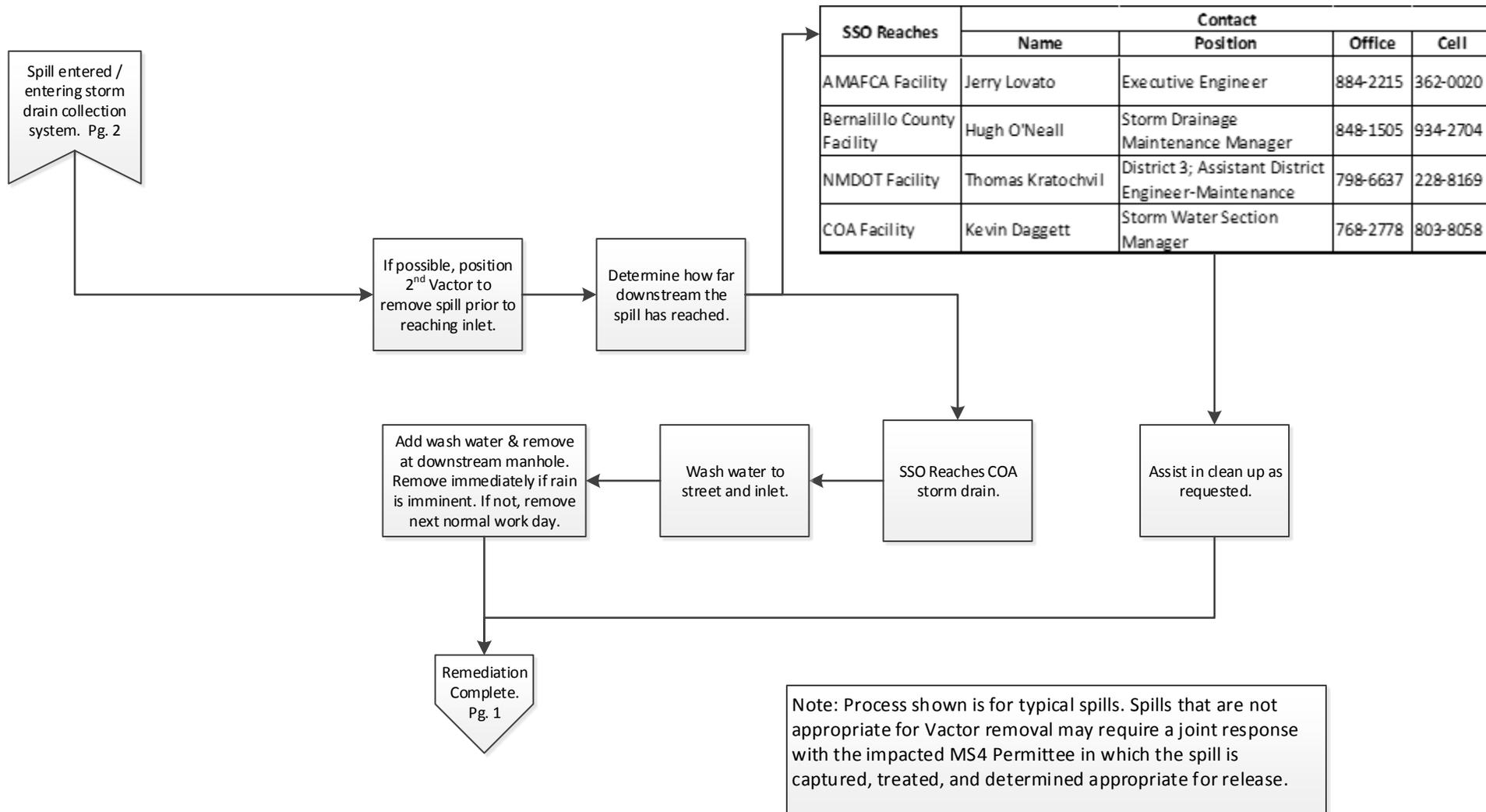


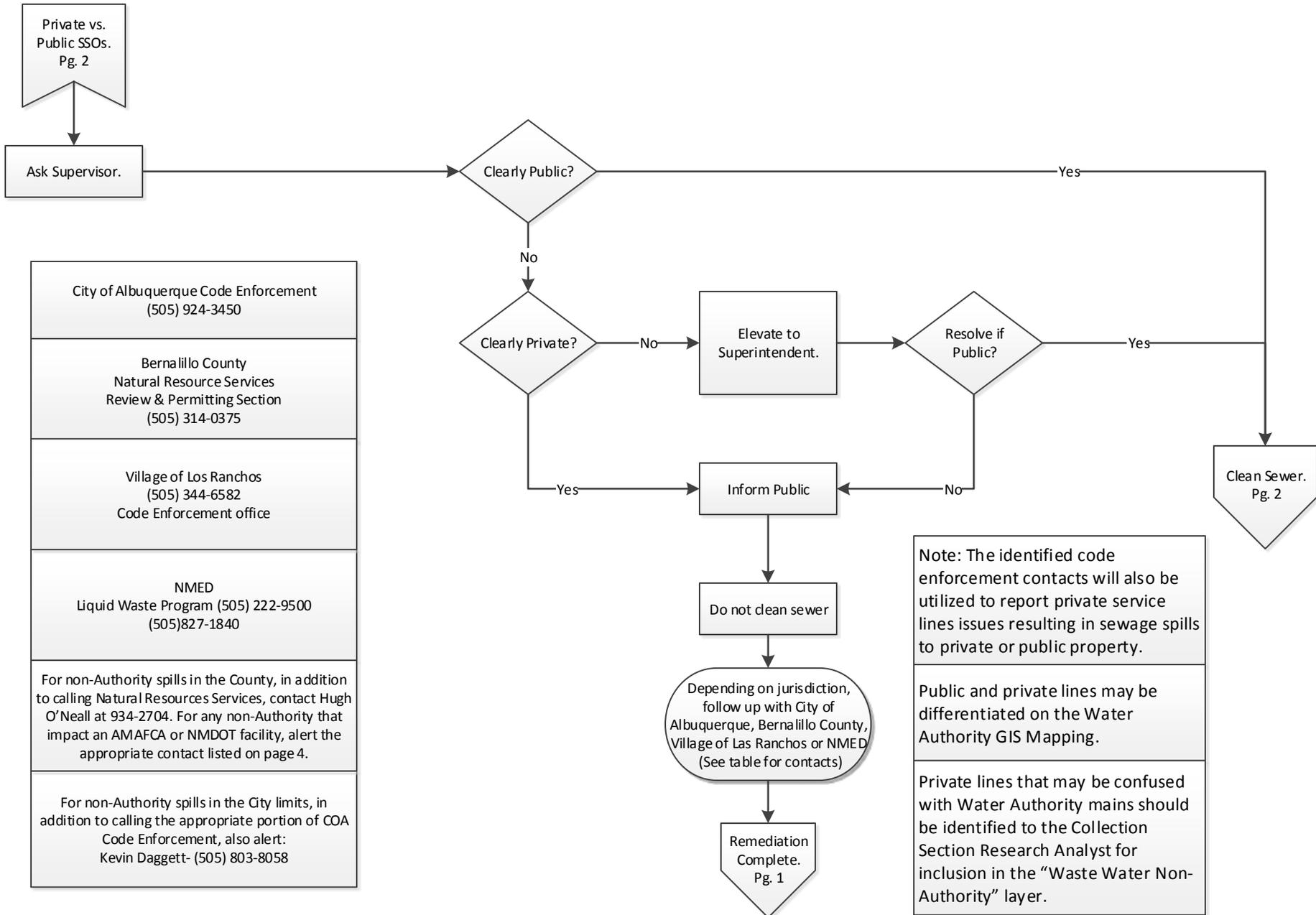


# Overflow Emergency Response Plan

05-03-2016

Albuquerque Bernalillo County Water Utility Authority

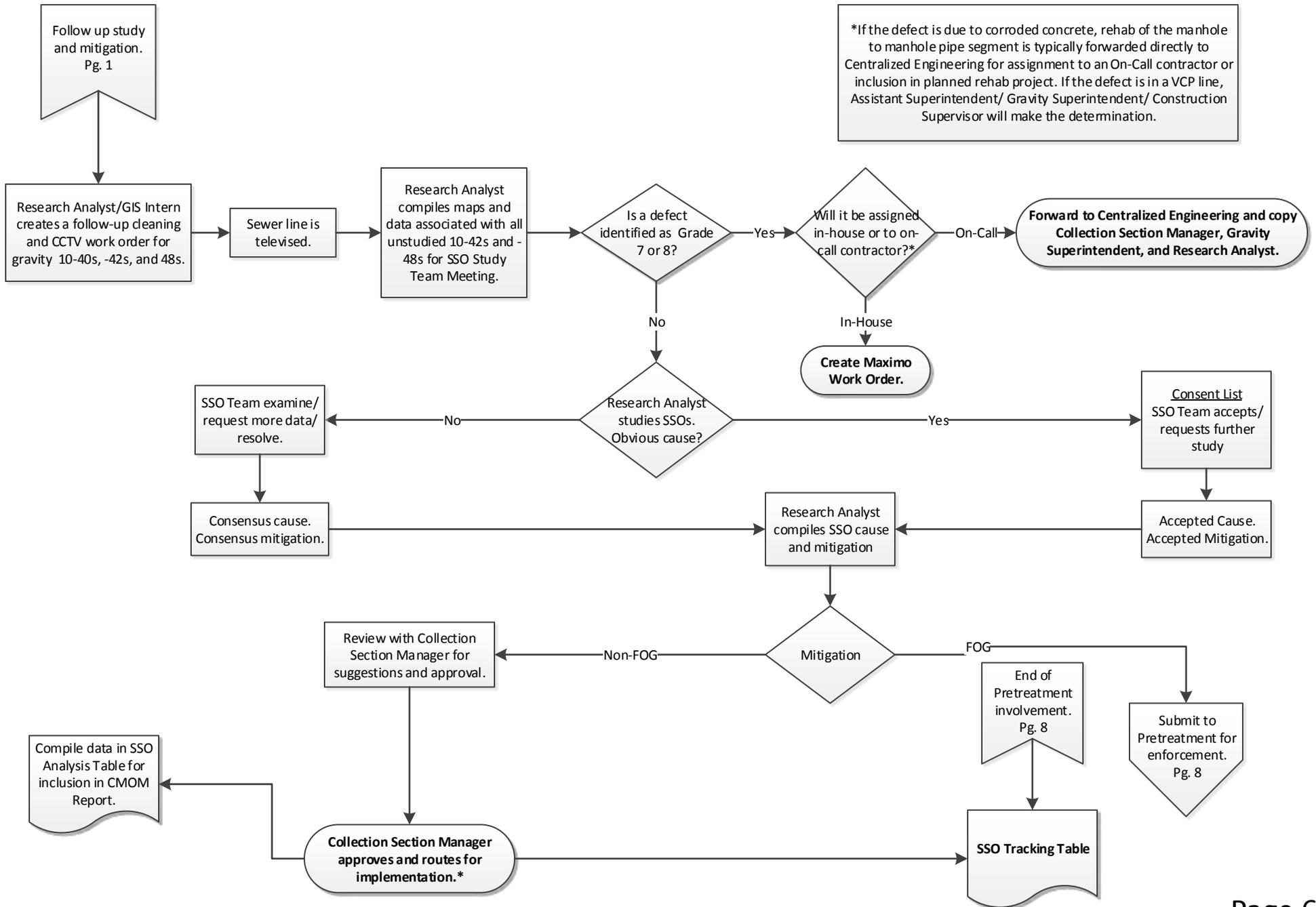




# Overflow Emergency Response Plan

05-03-2016

Albuquerque Bernalillo County Water Utility Authority

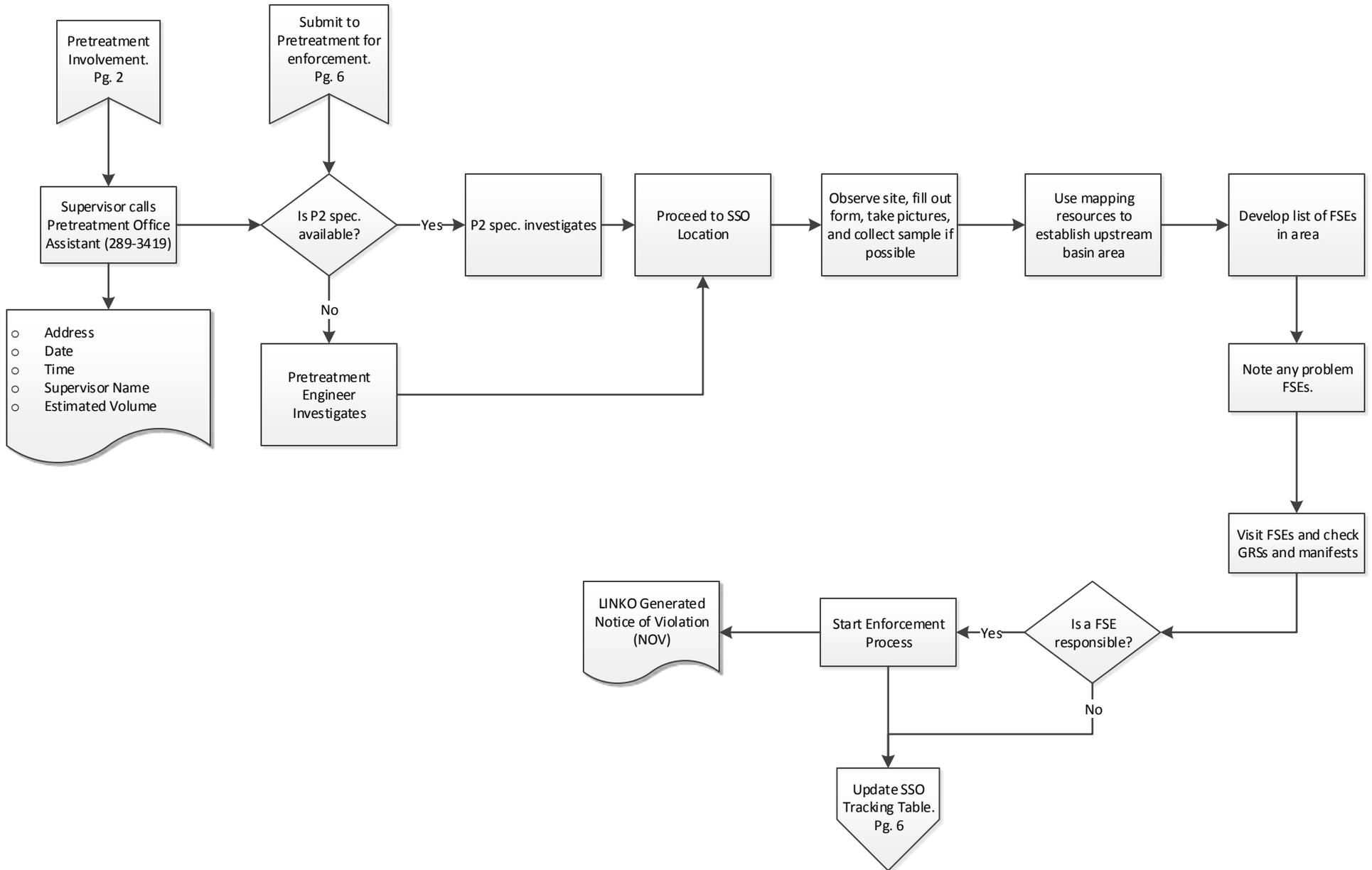


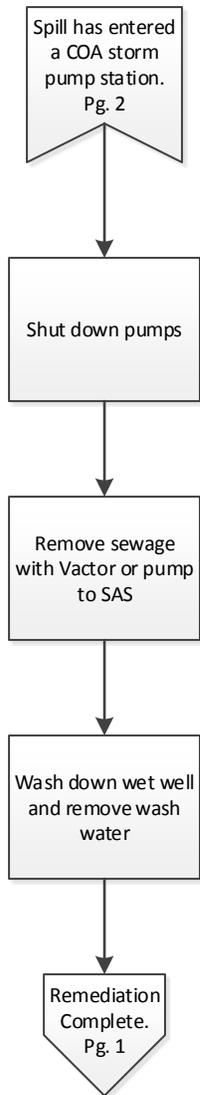


# Overflow Emergency Response Plan

05-03-2016

Albuquerque Bernalillo County Water Utility Authority





Note: Process shown is for typical spills. Some spills may require a joint response with the City of Albuquerque in which the spill is captured, treated, and determined appropriate for release.

