CMOM ANNUAL REPORT
FY2017

Albuquerque Bernalillo County
Water Utility Authority

Contents

Capacity, Management, Operations and Maintenance (CMOM) Plan Overview 2

Report Purpose 2

Permit Requirements 2

CMOM Program Self-Assessment 3

FOG Policy 3

FOG Enforcement 4

SSO Analyses 4

Permit Requirements 4

SSO Study Team 4

Causes & Mitigations 6

SSO Tabulation & Analysis 7

Volume Spilled and Recovered 9

Actions Implemented and On-Going Programs 10

General 10

FOG Policy Implementation: 10

Overflow Emergency Response Plan (OERP) 11

Force Main Inspection Program 12

Closed Circuit Television (CCTV) 12

Cleaning Program Goal 13

Root Foaming 15

Generator Plan 15

Odor Complaints 15

Identified Gaps in the Water Authority Processes with Recommendation to Close 18

Prohibited Discharges, i.e., SSOs 18

Formalize SSO Follow-Up Involving Administrative Assessments or Equivalent 18

Appendices 19

Appendix 1 Sanitary Sewer Overflow Analysis Table 20

Appendix 2 Sanitary Sewer Overflow Volume Captured Analysis Table 21

Appendix 3 Overflow Emergency Response Plan (OERP) 22

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 FY2017 CMOM Annual Report follows previous FY2013-16 reports. The four previous reports, as well as the most recent, can be accessed at 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, 2016 to June 30, 2017. 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.

In order to match calendar year reporting typically utilized in communications with the US EPA, the Water Authority will provide future reports for the January 1 through December 31 timeframe. The next report will for CY2017.

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 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) that cause SSOs and routine grease trap inspection programs at FSE with increased frequencies for 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 CY2018 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 FY2017, the Water Authority Pretreatment Program had 1,812 compliant FSEs out 2,036 FSE sites for a compliance rate of 89%. 1,350 FSE inspections were conducted with 1,110 passing and 240 failing. Of the 240 failed inspections, 75 FSEs corrected the deficiencies and called for a re-inspection within seven (7) days. The remaining 165 FSEs did not take corrective action and thus were issued Notices of Violation (NOVs) of which 1 was for no GRS, 36 were for non-functioning GRS, 65 were for GRS needs pumping, and 123 were for missing manifests.

In response to SSOs, 23 FSE inspections were conducted with 6 failing. Within the seven day grace period, 1 FSE corrected the deficiency. After the seven day grace period, 5 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 – Research Analyst (team lead), Gravity Superintendent, Assistant Superintendent and Closed Circuit Television (CCTV) Supervisor;
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

Sewer Trouble Definitions		
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 and Figure 2, 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

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

Causes & Mitigations

The Cause(s) were selected from Table 2 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 FY2017. (Note: Percentages may not add up to 100%, as they are rounded to the nearest percent.)

Table 3 Summary of Causes from SSO Study

FY2017 10-42, 10-48 Causes	Total	% of Total
Burp	3	6%
Construction	4	8%
Cause Unknown	8	16%
Debris	8	16%
Equipment Failure	3	6%
Grease	7	14%
Line Failure	6	12%
Manhole	1	2%
Manhole/Roots	1	2%
Roots	5	10%
Sand, Grit or Gravel	1	2%
Sag in Line	3	6%
Grand Total	**50**	**100%**

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

FY2017 10-42, 10-48 Mitigations	Total	% of Total
No Follow Up Needed	15	30%
Pretreatment Notified	5	10%
Rehab/Replace	15	30%
Short Interval	7	14%
Short Interval/Special Instructions	1	2%
Special Instructions	4	8%
Special Instructions/Short Interval	1	2%
Short Interval/Special Instructions/Pretreatment Notified	1	2%
Pretreatment Notified/Short Interval	1	2%
Grand Total	**50**	100%

SSO Tabulation & Analysis

Appendix 1 contains a list of every 10-42 and 10-48 event in FY2017. 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 FY2012-17.

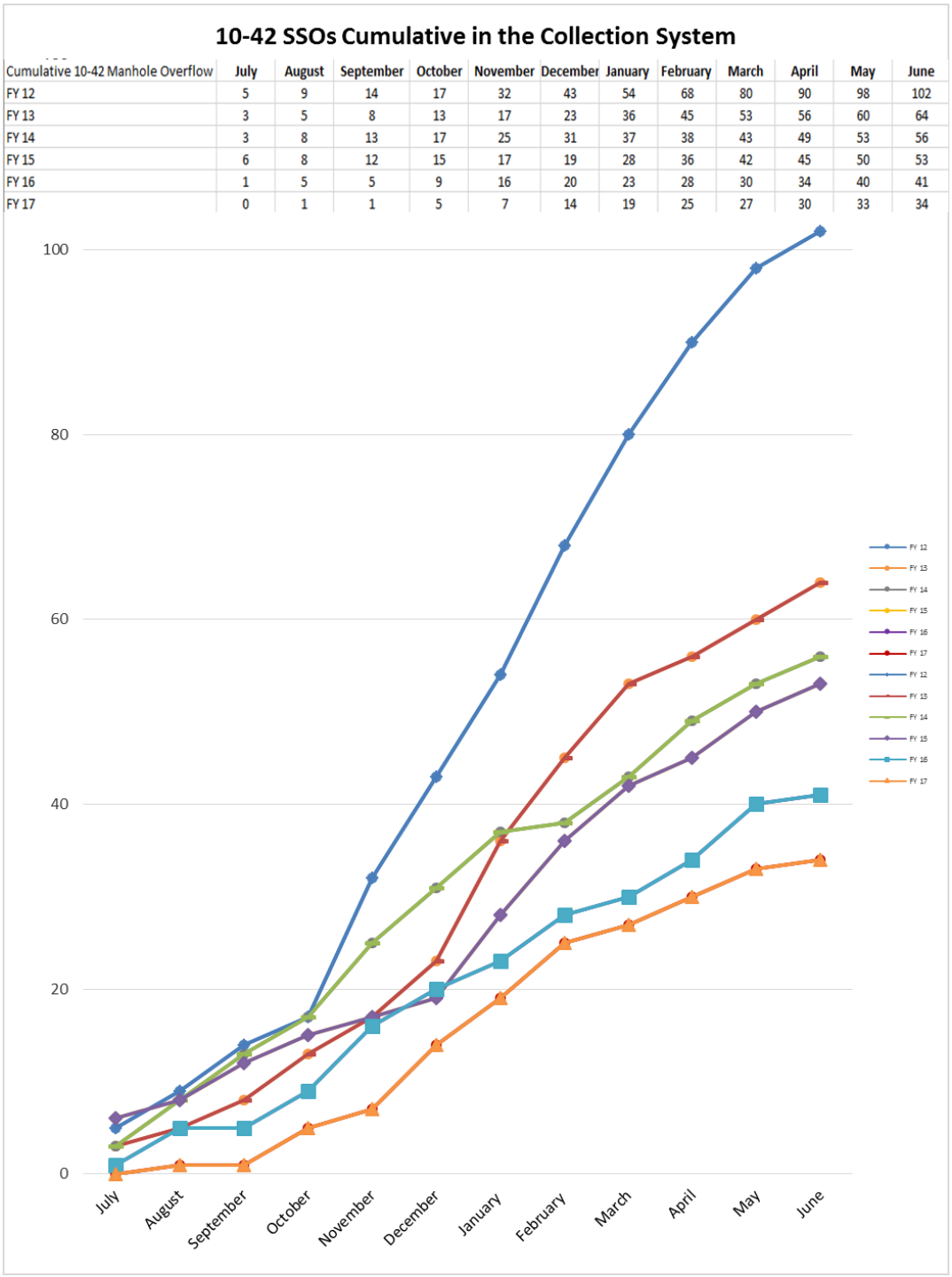


Figure 1 Reportable SSOs

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, 1.7, and 1.4 for FY2012-17 respectively.

Figure 2 shows the total sewer troubles, i.e. 10-40s, -42s, and -48s by year for FY2012-17. 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 FY2012-17 have been 1, 0, 5, 5, 9, and 3 respectively. The burps are identified in Appendix 1.

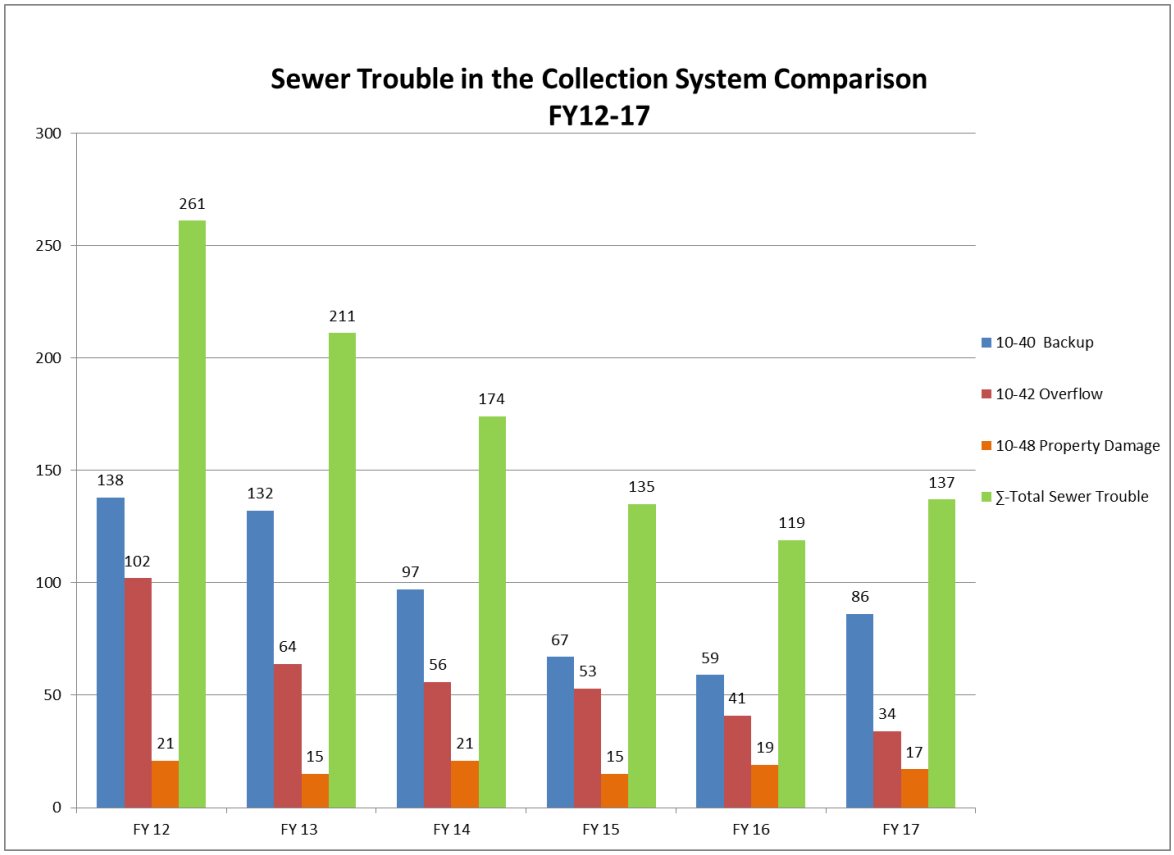


Figure 2 Sewer Trouble Comparison

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 34 reported SSOs for FY2017. Of the spill volume estimated not to be recovered, none was identified as directly reaching the Rio Grande. Two spills (12/6/2016 and 2/10/2017) did reach the Los Padillas Drain which is operated by the MRGCD. The Los Padillas Drain eventually discharges to the Rio Grande. The response to these spills, which includes inter-agency coordination and procedural changes, is further discussed below as a part of "Actions Implemented and On-Going Programs". As discussed below, spill recovery for the 12/6/2016 and 2/10/2017 SSOs involved containment and pumped removal of the spill mixed with base flow in the drain. As a result, per Appendix more volume was removed than spilled although not all was spilled sewage.

Actions Implemented and On-Going Programs

General

Below are gaps that were identified in the FY2016 CMOM Report and were closed in FY2017, or are on-going programs, or both. In addition to the commitments made in the FY2016 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 FY2018.
2. Updated and posted to the public web site the following brochures: "Grease Removal System Requirements for Food Service Establishments" (http://www.abcwua.org/uploads/files/Sewer/FSE.pdf); "Septage Hauler Best Management Practices"(http://www.abcwua.org/uploads/files/Sewer/Best_Management_Practices_063017.pdf);

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. Continue working on 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 NOVs for not complying with the record keeping requirements of the SUO and FOG policy.
5. The Pretreatment Program continued issuing NOVs for not complying with the direct access provisions of the SUO and FOG policy.
6. The pretreatment Program continued issuing NOVs for non-functioning Grease Removal Systems.
7. The pretreatment Program continued issuing NOVs for failure to maintain proper maintenance frequency.
8. The pretreatment Program has been inspecting FSEs at a higher frequency than required by Fog Policy.

Overflow Emergency Response Plan (OERP)

This is an on-going program to update the OERP as required. In FY2017, the following modifications were made to the OERP:

1. Page 1: Added note to call Dispatch when a sewer problem is encountered. This will help everyone to know who to call to get quickest service.
2. Page 4:
    a. Added additional contact information for COA and AMAFCA.
3. Page 7: Added information on who to call regarding spills that occur at:
    a. KAFB.
    b. UNM.
4. Page 11:
    a. Updated contact information for MRGCD.
    b. In the event that a spill reaches the Rio Grande or an MRGCD facility, added calls to the POI.
    c. Requires E. coli testing in the event of an SSO that reaches an MRGCD facility.

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 FY2017.

In accordance with the OERP, the Water Authority coordinated with the MRGCD on two spills that occurred on 12/6/2016 and 2/10/2017. Both spills impacted the Los Padillas Drain which is operated by the MRGCD. In each case, staff from the Water Authority and MRGCD met on-site and discussed means of spill containment and removal. In the event of the 12/6/2016 spill, a beaver dam had blocked flow at the first culvert downstream. The MRGCD removes these beaver dams as a typical maintenance but did not do so until the Water Authority completed its cleanup. In the event of the 2/10/2017 spill, two temporary berms were installed by the MRGCD downstream to contain any remaining spill. In each case, contained spill mixed with base flow in the drain was pumped and removed by the Water Authority. In each case, the containment location and means, i.e. beaver dam and berms, were determined by the MRGCD based on visual monitoring of the drain flow characteristics in conjunction with the spill.

As a result of these spills, issues were identified with the OERP and addressed as noted above. It is noted that both spills were caused by the Vacuum Station 63 force main. As a part of a larger project, this force main has been replaced and realigned and therefore we don't anticipate that there will be additional SSOs from this line.

On 3/29/2017, the COA and Water Authority performed a simulated SSO that impacted a COA storm drain. The process on page 4 of the Overflow Emergency Response Plan (OERP) was followed. This process worked well and did not need revision. Additional contact names were provided and added, as noted above.

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 FY17, two additional items were addressed relative to force main operation and maintenance.

1. In previous inspections, some valves were not found in the field. These not-found valves were noted in Maximo. Based on these previous inspection, in FY17 five critical valves were identified, turned over to the construction group which then found these valves and brought them to grade.
2. In FY17, a pumping test was performed on the parallel 18" and 24" force mains serving LS24. One at a time, each of the two lines were closed, all flow pumped through the other line, and flow conditions observed. This verified the force mains could be operated separately.

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. FY18: Large diameter unlined concrete pipe.
2. FY19: 5% of the small diameter. (Any small diameter inspections accomplished in FY18 will be allocated to meeting the FY17 or FY19 goals.)
3. FY20: 5% of the small diameter.
4. FY21: 5% of the small diameter.

The FY2017 portion of this recommendation is complete. It is currently estimated that that the system includes 1996 miles of small diameter gravity pipe. Figure 3 provides the CCTV goal for a ten-year basis and the actual CCTV inspection for the first four years.

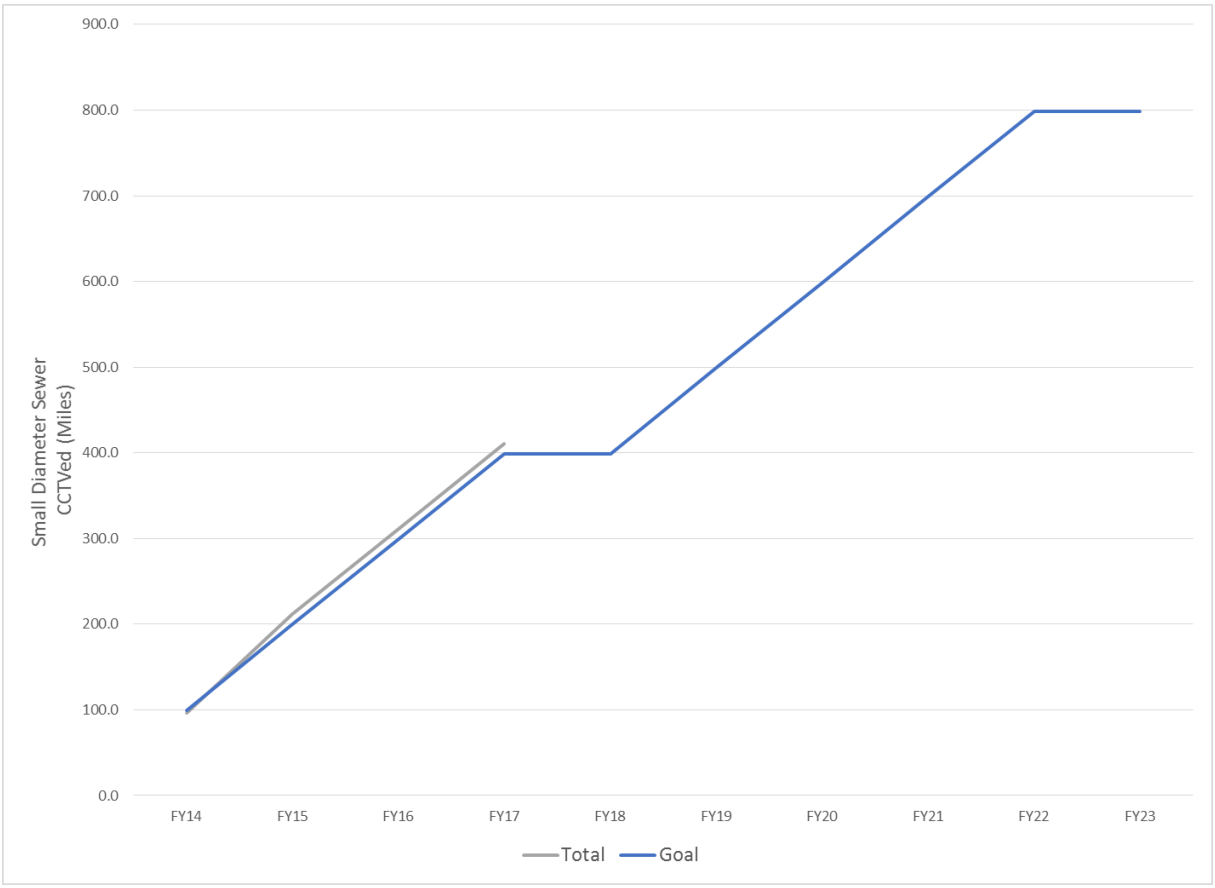


Figure 3 Small Diameter Sewer CCTVed vs. Ten-Year Goal

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 FY2017 portion of this recommendation is complete. In FY2017, the Water Authority cleaned approximately 286.9 miles under the Sub-Basin program. This is equal to approximately 14.4% 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 266.6 miles cleaned.

As shown Figure 4 below, the Water Authority is ahead of its goal to clean then entire system once in ten years through the Sub-Basin program.

The cleaning program continues with the same goals but the focus will shift to lines identified as previously experiencing sewer trouble. An in-house study performed in FY2017 identified that lines previously impacted by a 10-40, 10-42, or 10-48 are much more likely to experience a future 10-42 or 10-48 than the system as a whole. In FY2017 and FY2018, the lines with previous trouble not caused by burps, contractor negligence, etc. were added to the Short Interval program. Because the Short Interval program focuses on the lines more likely to cause future spills, the Water Authority in FY2018 will increase the cleaning of Short Interval lines. The Sub-Basin program and associated ten-year goal remain in place.

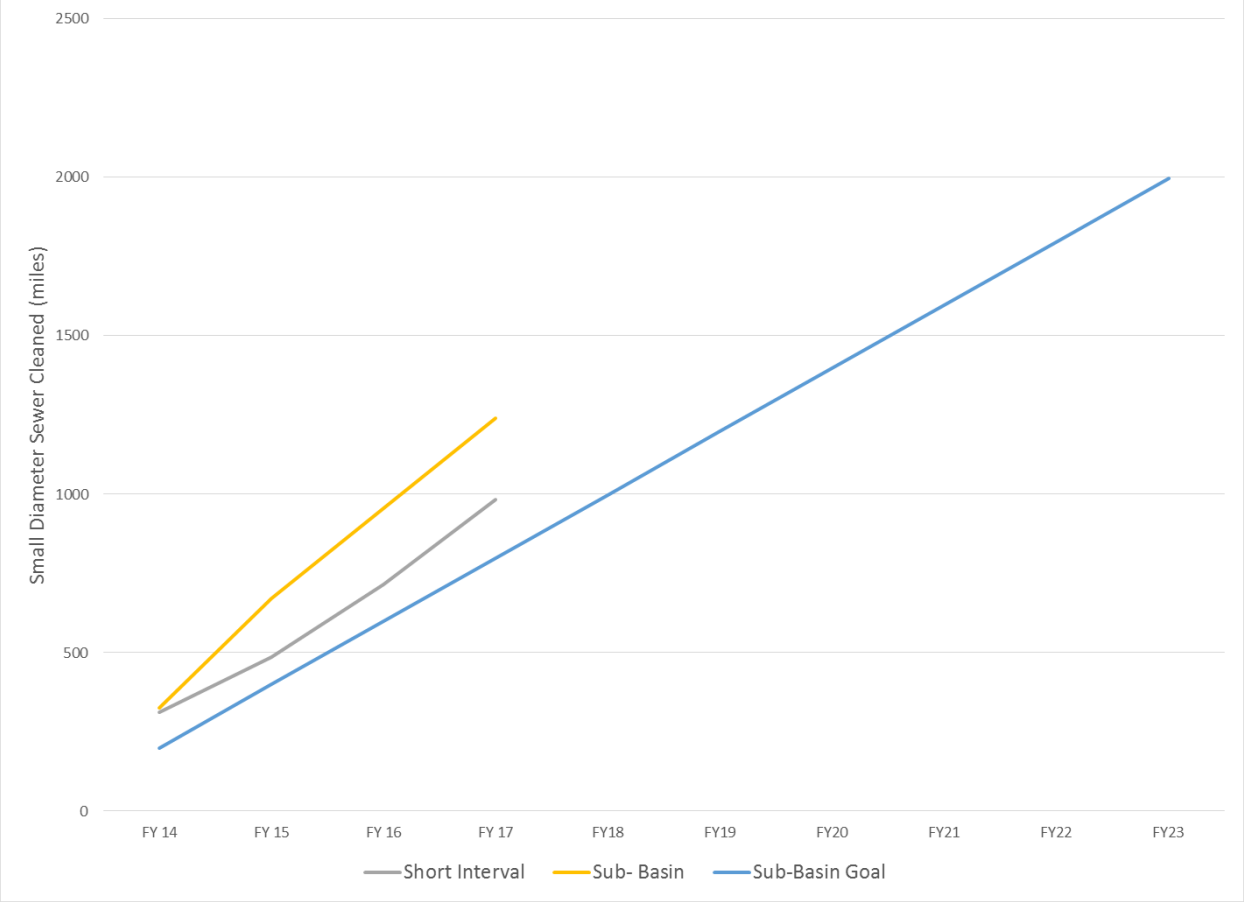


Figure 4 Small Diameter Sewer Cleaned vs. Ten-Year Goal

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 was retreated in June 2017. This completes the foaming application of the Pilot Project. An interim inspection of the FY15 treated and control group was performed in FY2016 and was inconclusive. During FY2017, the FY15 and FY16 lines, both treated and control, were scheduled for CCTV inspection. During FY2018, this CCTV data will be examined to compare treated and control pipes.

Generator Plan

The following recommendation is made in the FY2016 CMOM Report: "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." This recommendation follows the development of an SOP for portable generators (recommended in the FY2014 CMOM and reported in the FY2015 CMOM) and a simulation of the simultaneous failure of power at Vacuum Stations 67 and 69 (FY2016 CMOM).

On 4/12/2017, the power was shut down at Vacuum Stations 57 and 68 and portable generators were utilized simultaneously run both stations. This completes the FY2017 recommendation.

In FY2018, it is recommended that a simultaneous power failure be tested at three vacuum stations. Again, power will be shut down and portable generators will be hooked up and attempt to run the three stations simultaneously.

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 FY2017. All odor complaints received are included in this graphic; however, study has indicated that approximately ¾ of the complaints received originate in the private and not the public system.

10-52 Odor Complaints

Cumulative 10-52 Odor Complaints	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 12	40	84	118	150	185	202	221	240	256	273	286	318
FY 13	14	54	88	119	138	158	177	196	206	222	247	297
FY 14	13	32	44	64	77	88	98	108	116	137	160	183
FY 15	28	69	95	113	133	156	166	181	192	204	214	236
FY 16	22	51	83	102	113	130	143	161	176	186	196	224
FY 17	29	51	83	115	130	150	175	187	203	208	216	233

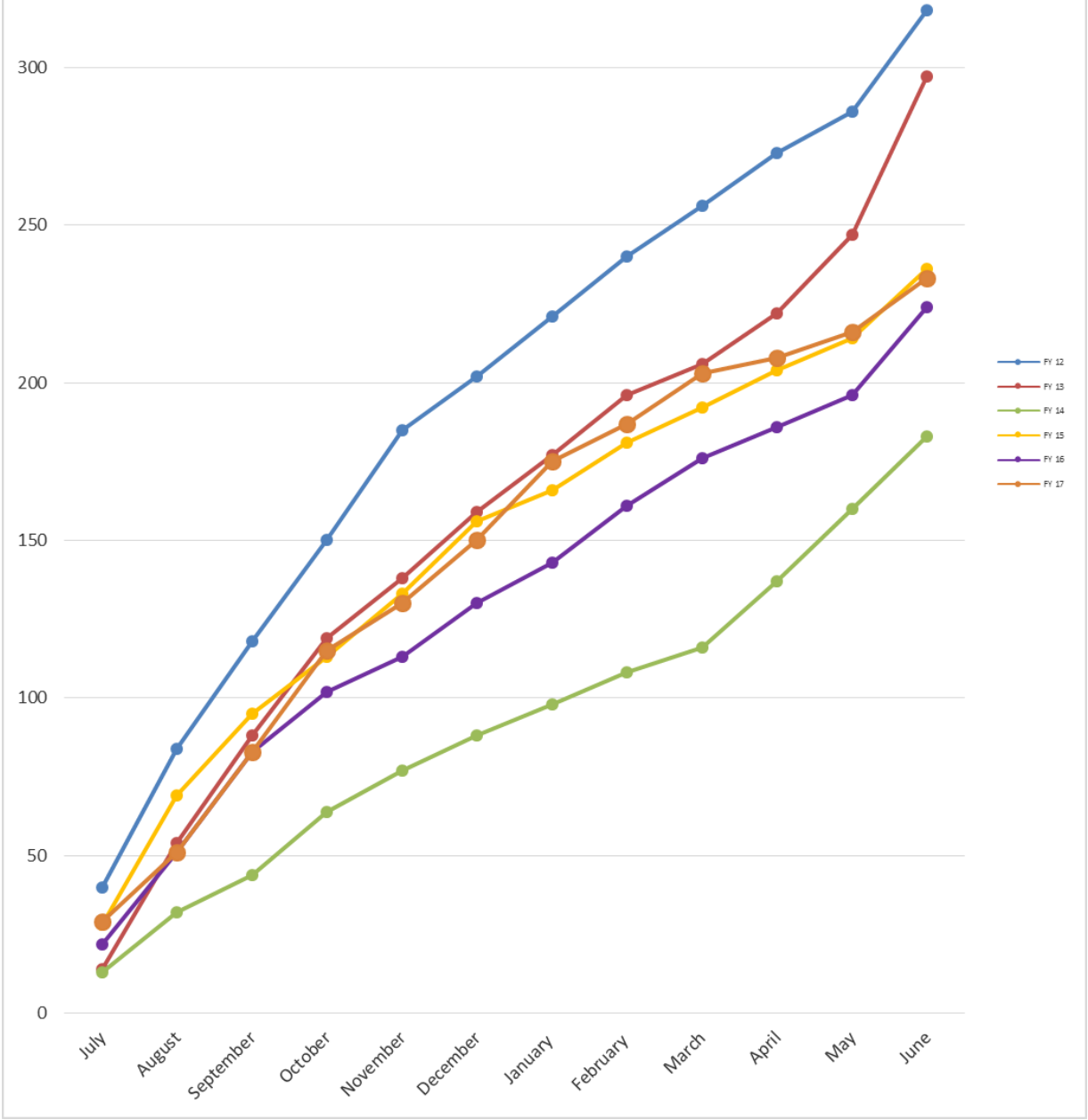


Figure 5 Odor Complaints

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.

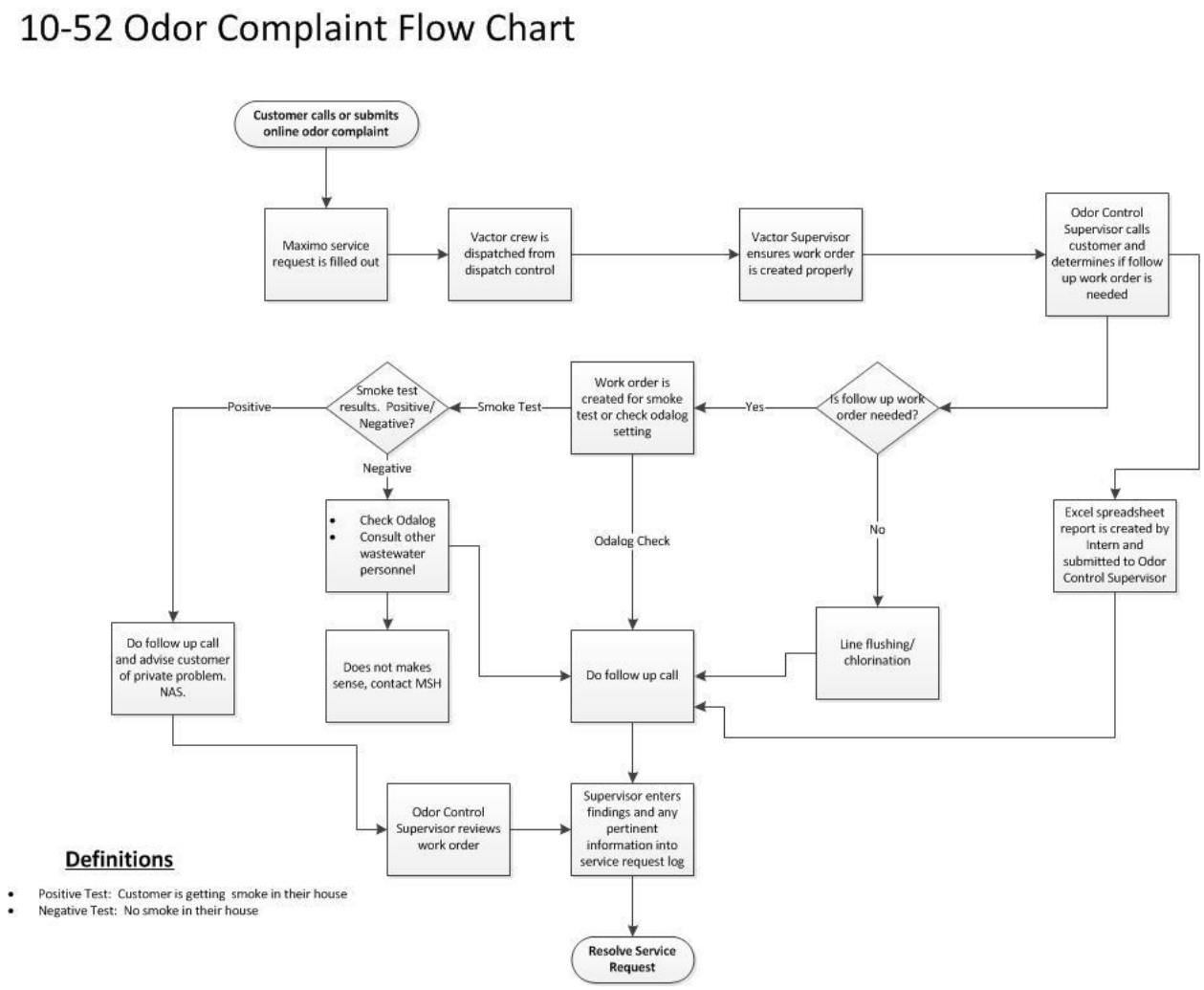


Figure 6 Odor Complaint Flow Chart

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.

Formalize SSO Follow-Up Involving Administrative Assessments or Equivalent

Some SSOs are directly caused by construction contractors or commercial/industrial users. In many such cases, the Water Authority has taken steps to hold the offending party responsible and required financial compensation. Cost assessments have been based on direct costs of a particular blockage, both to immediately respond and for follow-up cleaning and inspection. Costs have been developed by the Collection Section, or in the case of contractor repairs, by Centralized Engineering. Dependent of the particulars of the blockage and the offending party, costs may be assessed and collected by different groups, e.g. Compliance Division or Risk Management.

The intent is to alert the offending party that their company caused identifiable problems in the sewer system and to do so in a way that causes them to control their operations and staff. In past instances in which an offending party was explained how their actions resulted in problems in the sewer system, they have typically been apologetic and have taken steps to prevent a recurrence.

In FY2018, it is recommended that the Compliance Division develop a Sewer Trouble Invoice Statement to be utilized, where appropriate, to assess costs for sewer blockages, including those for which an SSO did not occur.

Appendices

Appendix 1 Sanitary Sewer Overflow Analysis Table

FY2017 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		12106013	12	7/28/2016	N	N	7/28/2016	7:25 AM	NA	11813 SAN JACINTO AVE NE	NA	RGS	NA	CC	PP	NA	CU	RH			
X			12125495	8	8/22/2016	N	N	8/22/2016	12:00 PM	:45	835 RIO ARRIBA AVE SE	5	RT	NEAH	CC/WD/CWW	PST	2	RT	SI			
	X		12145297	NA	9/15/2016	Y	N	9/14/2016	11:00 PM	NA	7100 ISLETA BLVD SW	NA	EQ	NA	NA	PP	NA	EQ	RH			
	X		12150354	8	9/23/2016	N	N	9/20/2016	12:05 PM	NA	610 AZTEC RD NW	NA	BP	NA	NA	PP	NA	BP	NF			
X			12163570	12	10/9/2016	N	N	10/9/2016	11:00 AM	0.06597	8207 CENTRAL AVE NW	200	RGS	NEAH	CC/RP/HTH	DST	150	DB	PT	Y		Y
X			12164404	2	10/12/2016	N	N	10/10/2016	10:00 AM	:10	LIFT STATION 382 - Chamisa Ridge Lift Station - 9500 Calle Chamisa NW	10	LF	NEAH	WD	PST	-	LF	RH			
X			12165893	12	10/12/2016	N	N	10/11/2016	11:22 AM	0.06111	806 MARTIN LUTHER KING AVE NE	120	RK/SGG/DB	NEAH	CC/WD/HTH	PST	-	DB	NF			
X			12177692	8	10/28/2016	N	N	10/28/2016	8:28 AM	:32	Alameda Blvd Ne / Barstow St Ne	15	RK	NEAH	CC/WD	PST	-	CU	NF			
	X		12181202	8	10/28/2016	N	N	10/28/2016	1:01 PM	NA	1201 STOVER AVE SW	NA	BP	NA	NA	PP	NA	BP	SP			
	X		12178714	8	10/31/2016	N	N	10/29/2016	2:00 PM	NA	1001 CENTRAL AVE NE	NA	GR/RGS	NA	NA	PP	NA	DB	RH			
X			12183867	8	11/3/2016	N	N	11/3/2016	9:20 AM	:50	1944 BUFFALO DANCER TRL NE	5	RGR	NEAH	CC/WD/HTH	PST	-	RT	SP			
	X		12199289	8	11/29/2016	N	N	11/25/2016	9:00 AM	NA	1728 FOOTHILL DR SW	NA	RT	NA	CC	PP	NA	CU	NF			
X			12200207	8	11/30/2016	Y	N	11/30/2016	7:50 AM	:25	Juan Tabo Blvd/ Lomas Blvd NE	50	GR/RGS	NEAH	CC/RP/RS/WD/HTH	PST	25	GR	PT	X	12+	
X			12203061	8	12/5/2016	N	N	12/4/2016	11:26 PM	:49	1608 BROADWAY BLVD NE	245	GR	NEAH	CC/HTH	SD	250	GR	SP/SI			
X			12203681	6	12/6/2016	Y	N	12/6/2016	2:00 PM	0.83333	2301 Luchetti Rd SW & Los Padillas Drain SW	8,700	LF	NEAH	CW/RP	MRGCD	5,482	LF	RH			
X			12207619	8	12/11/2016	Y	N	12/11/2016	7:00 PM	0.04861	2304 DON LUIS RD SW	200	GR/RGS	NEAH	CC/CWW/RP/HTH	PST	35	DB	SI			
	X		12209828	8	12/14/2016	Y	N	12/14/2016	8:20 AM	NA	106 BROADWAY BLVD SE	NA	GR	NA	CC	PP	NA	GR	SI/SP/PT			
X			12213249	8	12/19/2016	N	N	12/17/2016	9:35 AM	0.08681	1912 SUMMER BREEZE DR NW	17,250	GR	NEAH	CC/WD/RP/HTH	O	1,000	CU	NF			
X			12214692	8	12/21/2016	N	N	12/21/2016	6:30 PM	:50	Enactado and Tramway NE	250	SGG	NEAH	CC/WD/RS/HTH	PST	80	MH/RT	RH			
X			12218642	8	12/28/2016	N	N	12/29/2016	12:02 PM	:22	3500 COORS BLVD SW	3,635	GR/RGS	NEAH	CC/CWW/WD/RP	O	3,635	CU	NF			
X			12219157	8	12/29/2016	Y	N	12/29/2016	10:15 AM	:50	709 RIO ARRIBA AVE SE	10	GR	NEAH	CC/WD/HTH	PST	-	CO	RH			
X			12221347	8	1/2/2017	N	N	1/2/2017	11:30 AM	:30	13114 CONSTITUTION AVE NE	500	GR/RGS	NEAH	CC/WD/RP/HTH	PST	350	RT	SP			
X			12230244	8	1/17/2017	N	N	1/17/2017	11:58 AM	:39	3901 GEORGIA ST NE	200	RGS	NEAH	CC/RP/CWW/HTH	PST	40	CU	NF			
X			12232978	8	1/21/2017	N	N	1/21/2017	1:10 PM	:30	11441 MALAGUENA LN NE	30	CO/GR/RGS	NEAH	CC/RS/HTH	PST	-	CU	NF			
X			12233234	8	1/22/2017	Y	Y	1/22/2017	1:15 PM	0.08333	6008 RIVERWALK DR NW	240	GR/RGS	NEAH	CC/CWW/RP/RS/WD/HTH	PST	80	GR	SI			
X		X	12245245	8	1/30/2017	Y	Y	1/29/2017	11:48 AM	0.05694	1122 MARIANO TRL SW	2,050	GR/RGS	NEAH	CC/CWW/WD/RP/HTH	PST	200	RT	SI/SP			
	X		12248084	8	2/1/2017	N	N	2/1/2017	10:30 AM	NA	10704 WOODLAND AVE NE	NA	BP	NA	CC	PP	NA	BP	SP			
	X		12250373	15	2/3/2017	Y	N	2/2/2017	2:45 PM	NA	109 HEADINGLY AVE NW	NA	GR/RGS	NA	CC	PP	NA	SL	SI			

FY2017 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		X	12253531	10	2/7/2017	N	N	2/7/2017	7:04 AM	:46	541 ATRISCO DR NW	1,150	CU	NEAH	CC/CWW/WD/RS/HTH	SD	900	LF	RH			
X			12254350	8	2/8/2017	Y	N	2/8/2017	7:15 PM	0.04167	2336 DON LUIS RD SW	300	GR	NEAH	CC/WD/HTH	YD	-	SL	SI			
X			12256131	6	2/10/2017	N	N	2/10/2017	12:00 AM	0.6875	2300 BECK RD SW	50,000	LF	NEAH	BR/CWW/CC/WD/RP	MRGCD	156,000	LF	RH			
X			12260488	12	2/19/2017	N	N	2/18/2017	2:33 PM	0.05694	1400 MONTANO RD NE	8,800	GR/RGS	NEAH	CC/WD/RS/HTH	O	-	LF	RH			
X			12266390	6	2/28/2017	N	N	2/24/2017	11:02 AM	:58	311 CROMWELL AVE SE	2,000	CO	NEAH	CWW/WD/HTH	SD	2,000	CO	RH			
X			12266513	8	2/28/2017	N	N	2/28/2017	9:05 AM	:20	11004 WOODLAND AVE NE	15	GR/RGS	NEAH	CC/WD/RP	PST	5	RT	SI			
X			12272263	8	3/8/2017	Y	N	3/8/2017	2:25 PM	0.04167	2924 San Mateo Blvd Ne	5	GR	NEAH	CC/WD/HTH	PST	1	GR	PT	Y	2	
	X		12272766	NA	2/19/2017	N	N	2/19/2017	6:10 PM	NA	2201 CELESTE RD SW	NA	DB	NA	CC	PP	NA	DB	NF			
	X		12271501	NA	2/19/2017	N	N	2/19/2017	6:12 PM	NA	2205 CELESTE RD SW	NA	DB	NA	CC	PP	NA	DB	NF			
	X		12271513	NA	2/21/2017	N	N	2/21/2017	10:00 AM	NA	2424 MALPAIS RD SW	NA	DB	NA	CC	PP	NA	DB	NF			
	X		12272780	NA	2/21/2017	Y	N	2/21/2017	5:15 PM	NA	1810 MARCELINO RD SW	NA	DB	NA	CC	PP	NA	DB	NF			
	X		12279387	NA	3/20/2017	Y	Y	3/18/2017	12:42 PM	NA	2201 MALPAIS RD SW	NA	EQ	NA	CC	PP	NA	EQ	NF			
X			12283494	8	3/27/2017	N	N	3/27/2017	11:30 AM	0.04167	251 LEONIDAS LN NW	120	CO/RK/SGG	NEAH	CC/CWW/RP/HTH	PST	30	SGG	PT	Y		
X			12289576	4	4/3/2017	N	N	4/3/2017	3:50 PM	:55	Prince & Dauphin Rd. SW	15	EQ	NEAH	WD/RP/RS/HTH	PST	15	EQ	NF			
	X		12290837	8	4/5/2017	Y	N	4/5/2017	8:26 PM	NA	9700 GOLF COURSE RD NW	NA	GR	NA	CC	PP	NA	GR	PT/SI			
X			12299860	8	4/18/2017	N	N	4/18/2017	5:00 PM	:35	1400 MONTANO RD NE	175	CO/EQ	NEAH	RP/WD/RS/HTH	PL	150	CO	RH			
X			12306212	8	4/30/2017	N	N	4/30/2017	12:00 PM	0.10417	3311 COORS BLVD SW	100	GR	NEAH	CC/WD/RP/RS/HTH	PST	80	GR	PT		4	
	X		12307763	8	5/2/2017	N	N	5/1/2017	2:00 PM	NA	10805 MENAUL BLVD NE	NA	CO	NEAH	CC	PP	NA	CO	RH			
X			12315488	12	5/10/2017	N	N	5/10/2017	7:24 AM	0.08333	6800 PASEO DEL NORTE NE	3,000	GR	NEAH	CC/CWW/RS/WD/HTH	SD	2,000	CU	NF			
X			12321103	8	5/18/2017	N	N	5/17/2017	11:15 AM	:25	1220 1ST ST NW	25	DB/RGS	NEAH	CC/WD/RP	PST	10	SL	SI			
X			12324488	8	5/22/2017	N	N	5/22/2017	6:34 PM	:26	COULSON RD & LOUISIANA BLVD NE	650	GR	NEAH	CC/CWW/WD/RP/RS/HTH	SD	600	MH	RH			
X			12345136	NA	6/16/2017	N	N	6/16/2017	8:30 AM	:30	2315 MARKHAM RD SW	20	LF	NEAH	CC	DST	-	LF	RH			

Appendix 2 Sanitary Sewer Overflow Volume Captured Analysis Table

FY2017 10-42 SPILL VOLUME AND VOLUME RECOVERED

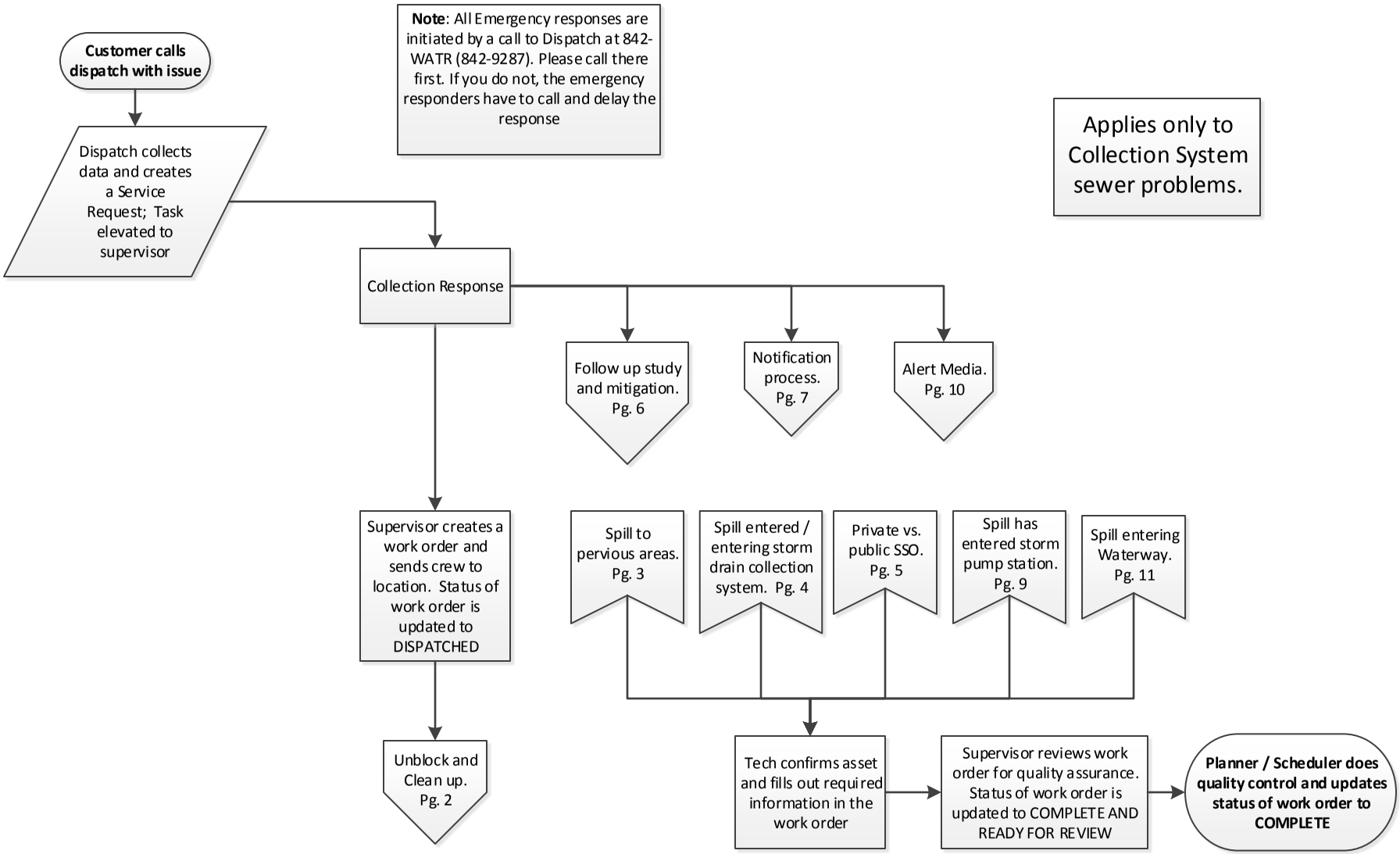
			Estimated			
Maximo WO #	Date of SSO	Location	Volume (gallons)	Volume Recovered (gallons)	Volume Not Recovered	% Recovered
12125495	8/22/2016	835 RIO ARRIBA AVE SE	5	2	3	
12163570	10/9/2016	8207 CENTRAL AVE NW	200	150	50	
12164404	10/10/2016	LIFT STATION 382 - Chamisa Ridge Lift Station - 9500 Calle Chamisa NW	10	0	10	
12165893	10/11/2016	806 MARTIN LUTHER KING AVE NE	120	0	120	
12177692	10/28/2016	Alameda Blvd Ne / Barstow St Ne	15	0	15	
12183867	11/3/2016	1944 BUFFALO DANCER TRL NE	5	0	5	
12200207	11/30/2016	Juan Tabo Blvd/ Lomas Blvd NE	50	25	25	
12203061	12/4/2016	1608 BROADWAY BLVD NE	245	250	-5	
12203681	12/6/2016	2301 Luchetti Rd SW & Los Padillas Drain SW	8,700	5,482	3,218	
12207619	12/11/2016	2304 DON LUIS RD SW	200	35	165	
12213249	12/17/2016	1912 SUMMER BREEZE DR NW	17,250	1,000	16,250	
12214692	12/21/2016	Enactado and Tramway NE	250	80	170	
12218642	12/29/2016	3500 COORS BLVD SW	3,635	3,635	0	
12219157	12/29/2016	709 RIO ARRIBA AVE SE	10	0	10	
12221347	1/2/2017	13114 CONSTITUTION AVE NE	500	350	150	
12230244	1/17/2017	3901 GEORGIA ST NE	200	40	160	
12232978	1/21/2017	11441 MALAGUENA LN NE	30	0	30	
12233234	1/22/2017	6008 RIVERWALK DR NW	240	80	160	
12245245	1/29/2017	1122 MARIANO TRL SW	2,050	200	1,850	
12253531	2/7/2017	541 ATRISCO DR NW	1,150	900	250	
12254350	2/8/2017	2336 DON LUIS RD SW	300	0	300	
12256131	2/10/2017	2300 BECK RD SW	50,000	156,000	-106,000	
12260488	2/18/2017	1400 MONTANO RD NE	8,800	0	8,800	
12266390	2/24/2017	311 CROMWELL AVE SE	2,000	2,000	0	
12266513	2/28/2017	11004 WOODLAND AVE NE	15	5	10	
12272263	3/8/2017	2924 San Mateo Blvd Ne	5	1	4	
12283494	3/27/2017	251 LEONIDAS LN NW	120	30	90	
12289576	4/3/2017	Prince & Dauphin Rd. SW	15	15	0	
12299860	4/18/2017	1400 MONTANO RD NE	175	150	25	
12306212	4/30/2017	3311 COORS BLVD SW	100	80	20	
12315488	5/10/2017	6800 PASEO DEL NORTE NE	3,000	2,000	1,000	
12321103	5/17/2017	1220 1ST ST NW	25	10	15	
12324488	5/22/2017	COULSON RD & LOUISIANA BLVD NE	650	600	50	
12345136	6/16/2017	2315 MARKHAM RD SW	20	0	20	
Grand Total			**100,090**	**173,120**	**-73,030**	**173%**

Appendix 3 Overflow Emergency Response Plan (OERP)

Overflow Emergency Response Plan

4-14-17

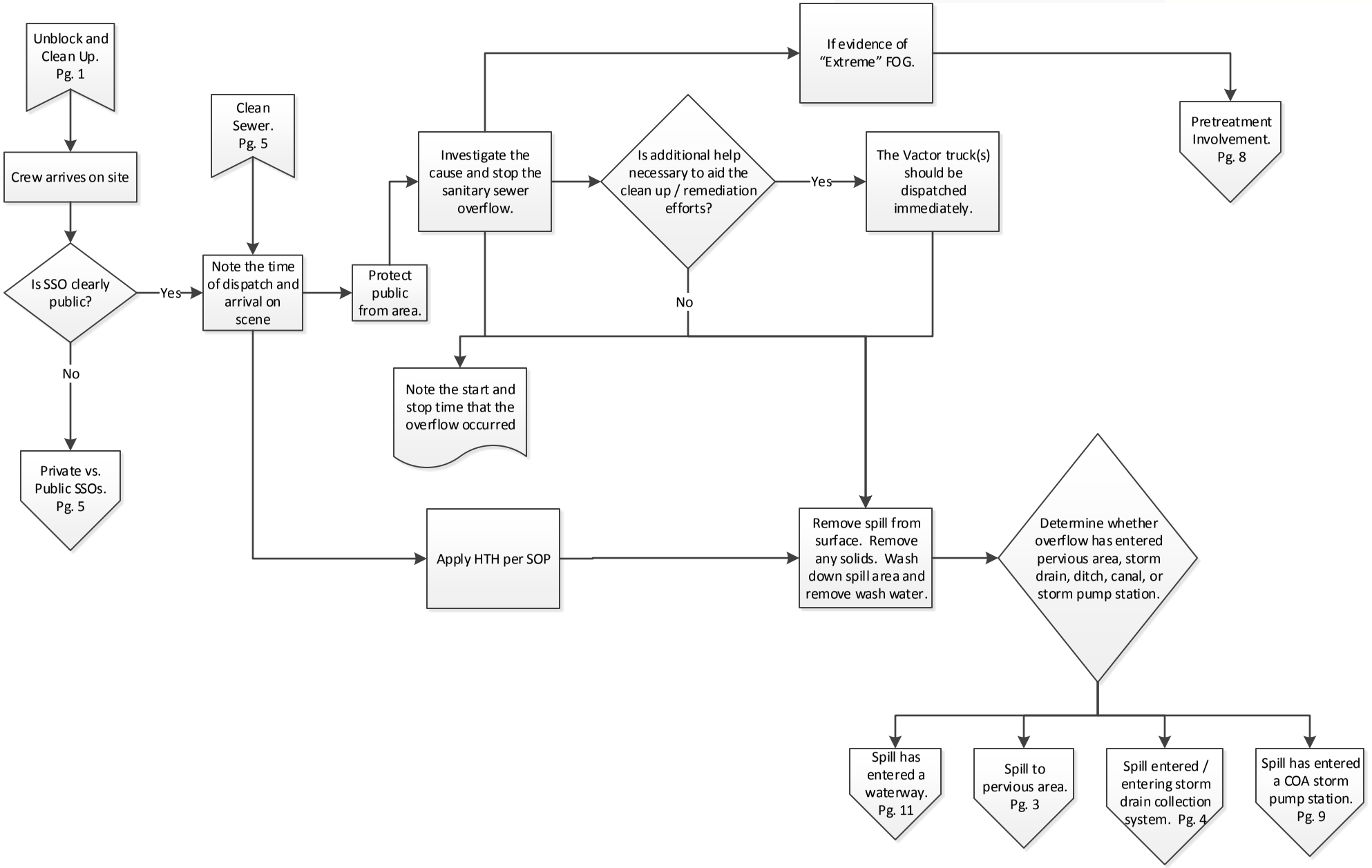
Albuquerque Bernalillo County Water Utility Authority



Overflow Emergency Response Plan

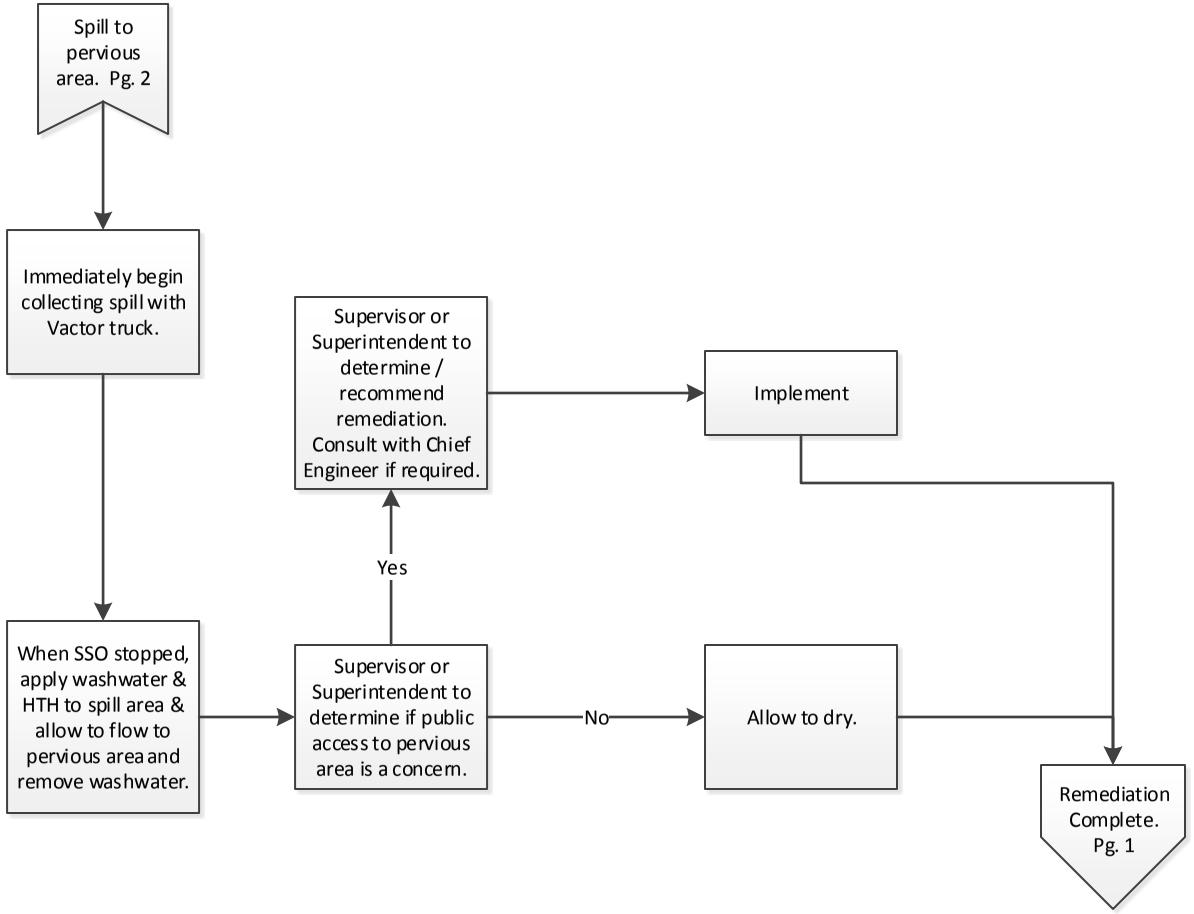
4-14-17

Albuquerque Bernalillo County Water Utility Authority



Overflow Emergency Response Plan

Albuquerque Bernalillo County Water Utility Authority

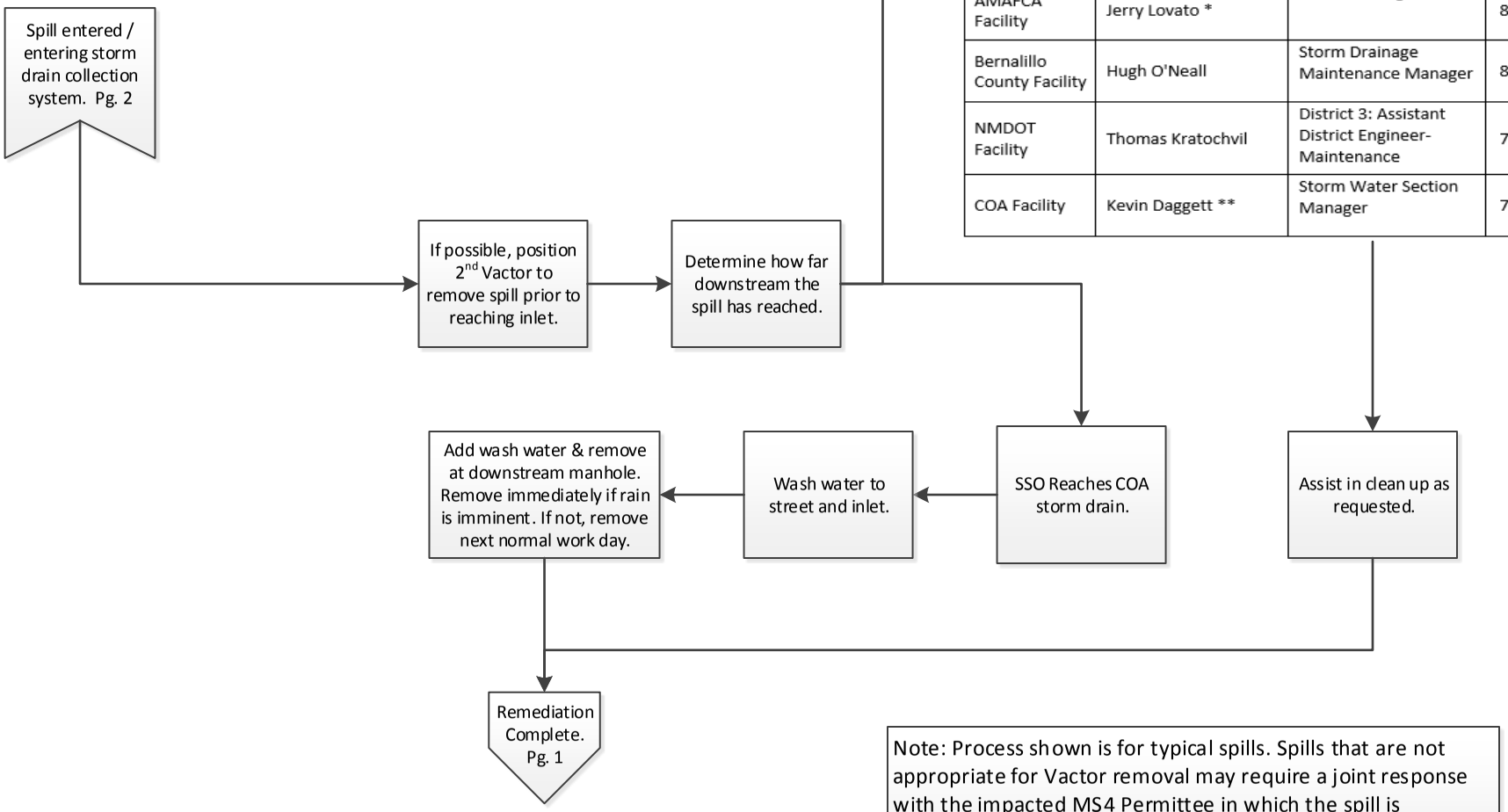


Overflow Emergency Response Plan

4-14-17

Albuquerque Bernalillo County Water Utility Authority

SSO Reaches	Contact			
	Name	Position	Office	Cell
AMAFCA Facility	Jerry Lovato *	Executive Engineer	884-2215	362-0020
Bernalillo County Facility	Hugh O'Neall	Storm Drainage Maintenance Manager	848-1505	934-2704
NMDOT Facility	Thomas Kratochvil	District 3: Assistant District Engineer-Maintenance	798-6637	228-8169
COA Facility	Kevin Daggett **	Storm Water Section Manager	768-2778	803-8058



Note: Process shown is for typical spills. Spills that are not appropriate for Vactor removal may require a joint response with the impacted MS4 Permittee in which the spill is captured, treated, and determined appropriate for release.

*If Jerry Lovato is not immediately available, call:

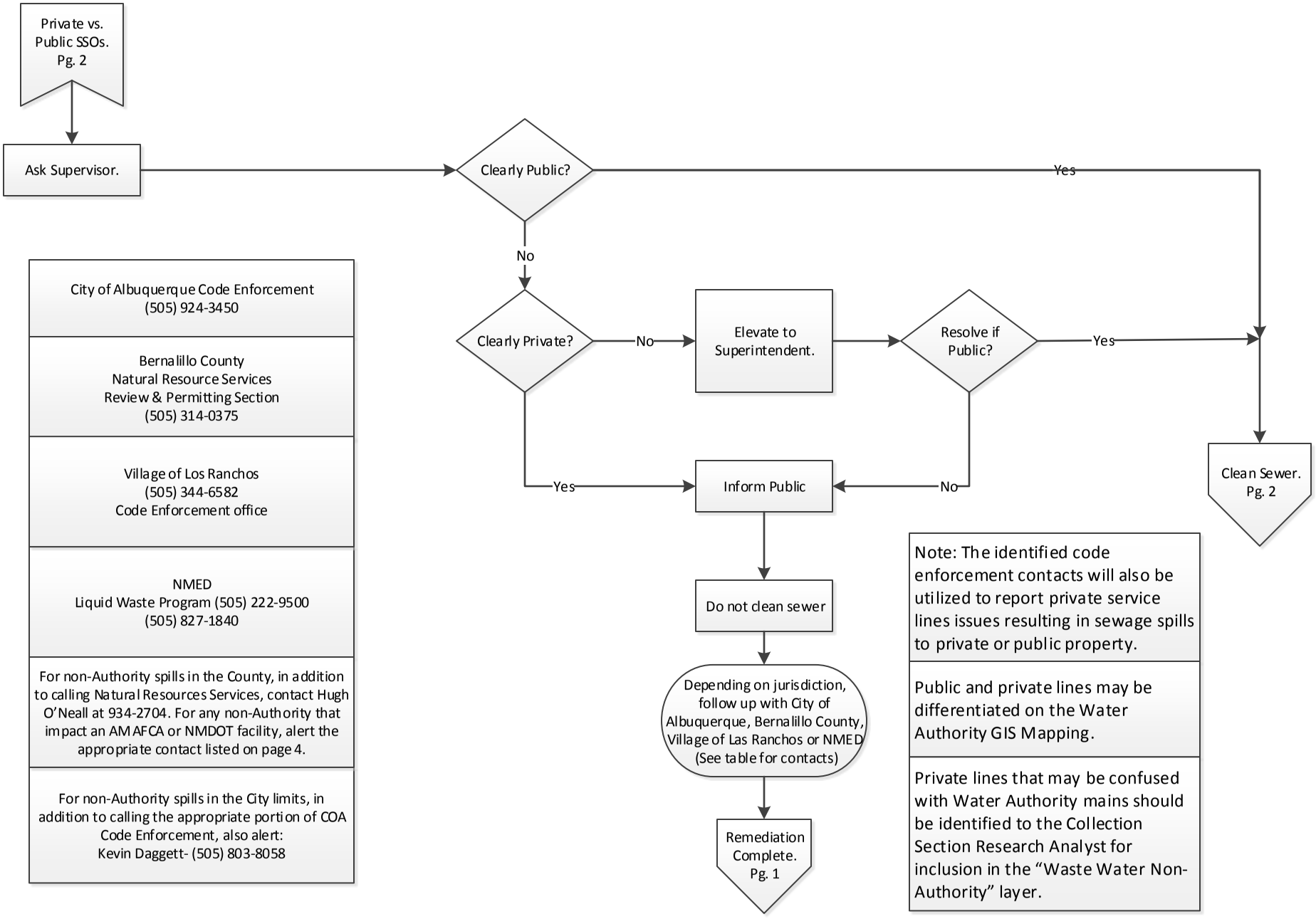
Nolan Bennett: Field Engineer (505) 301-6941
Herman Gabaldon: Superintendent (505) 366-8209

**If Kevin Daggett is not immediately available, call:

Bryan Wolfe: Engr. Div. Manager (505) 250-7364
Carl Rinkenberger: O&M Manager (505) 250-4334
Daniel Tapia: O&M Supt (505) 228-6874

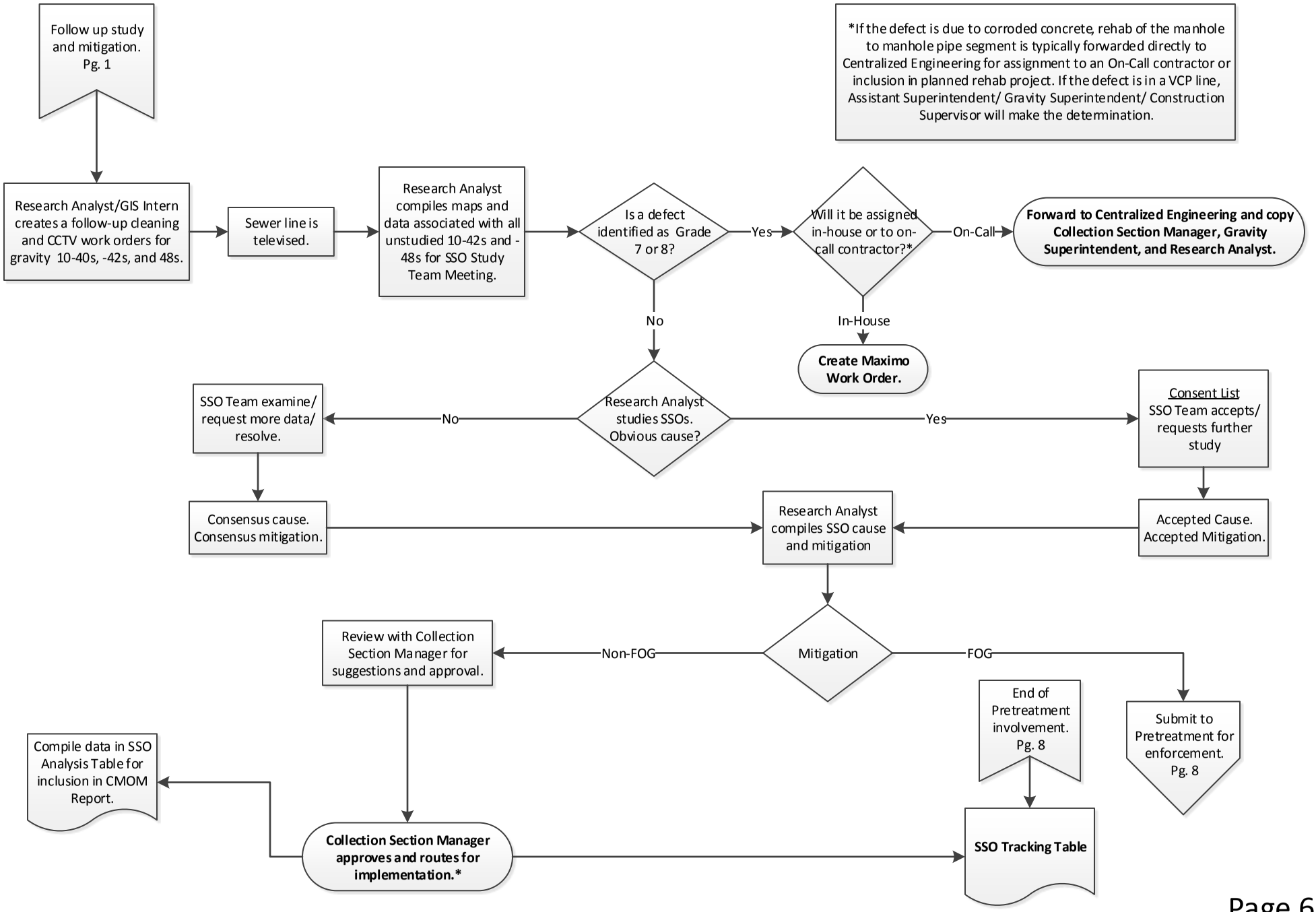
Overflow Emergency Response Plan

Albuquerque Bernalillo County Water Utility Authority



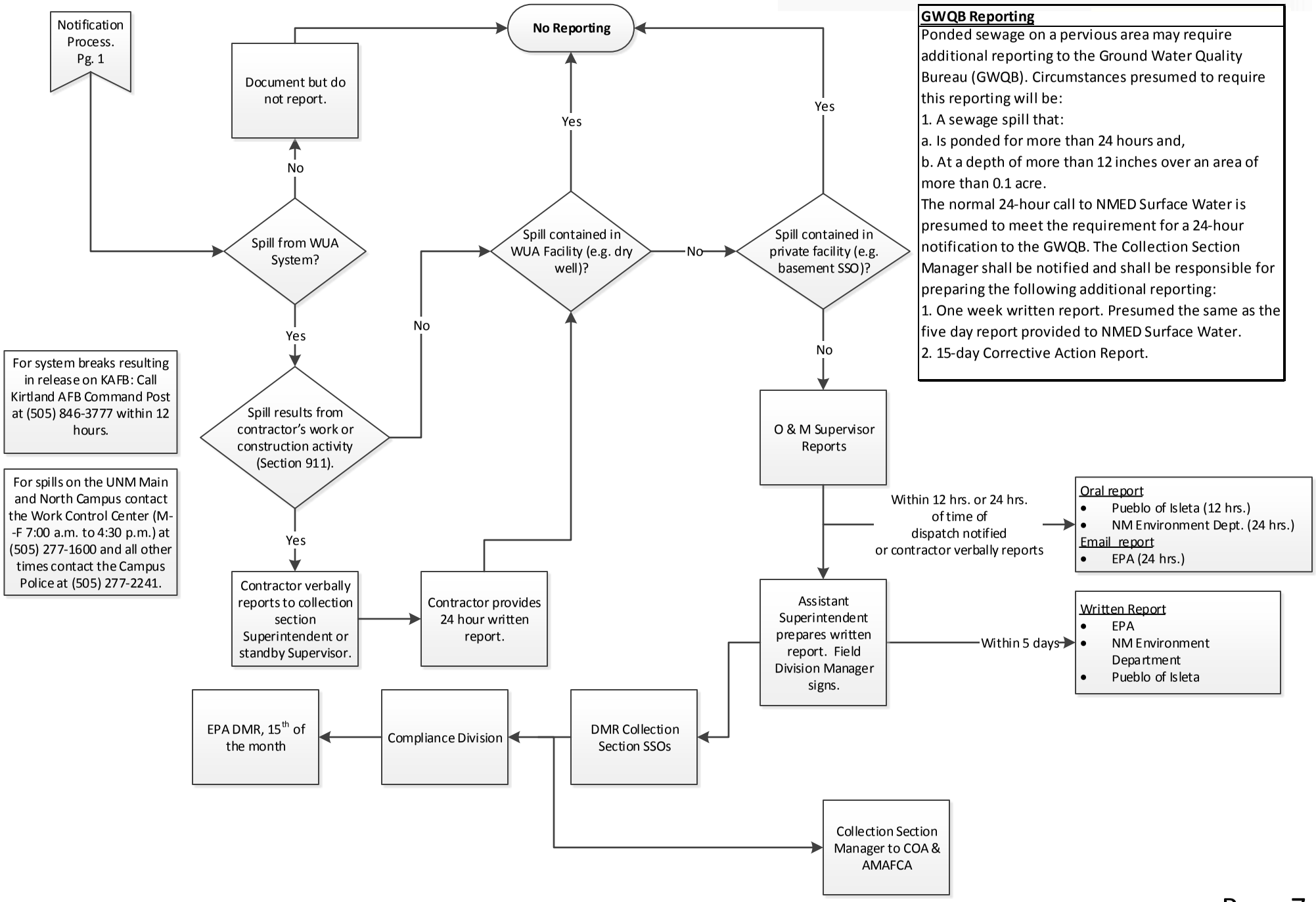
Overflow Emergency Response Plan

Albuquerque Bernalillo County Water Utility Authority



Overflow Emergency Response Plan

Albuquerque Bernalillo County Water Utility Authority



GWQB Reporting

Ponded sewage on a pervious area may require additional reporting to the Ground Water Quality Bureau (GWQB). Circumstances presumed to require this reporting will be:

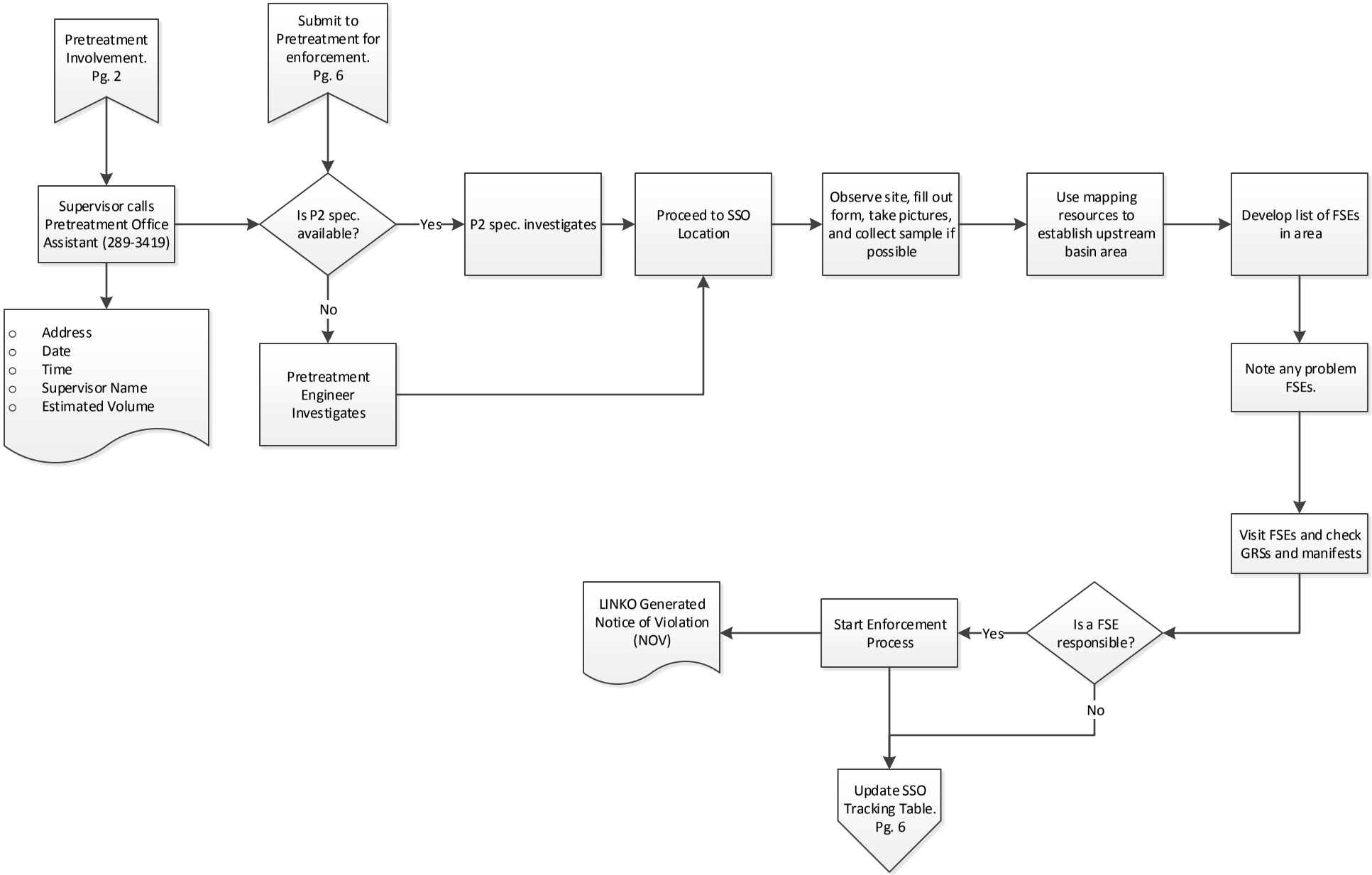
1. A sewage spill that:

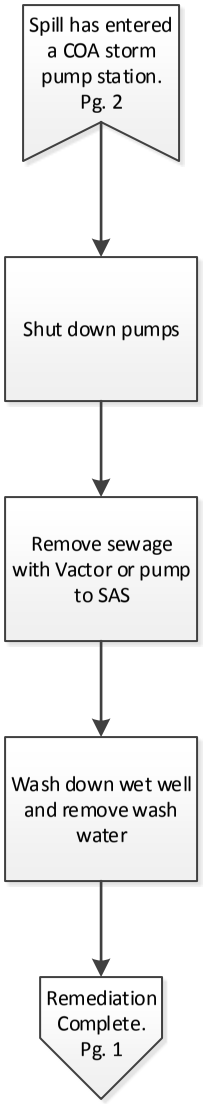
a. Is ponded for more than 24 hours and,

b. At a depth of more than 12 inches over an area of more than 0.1 acre.

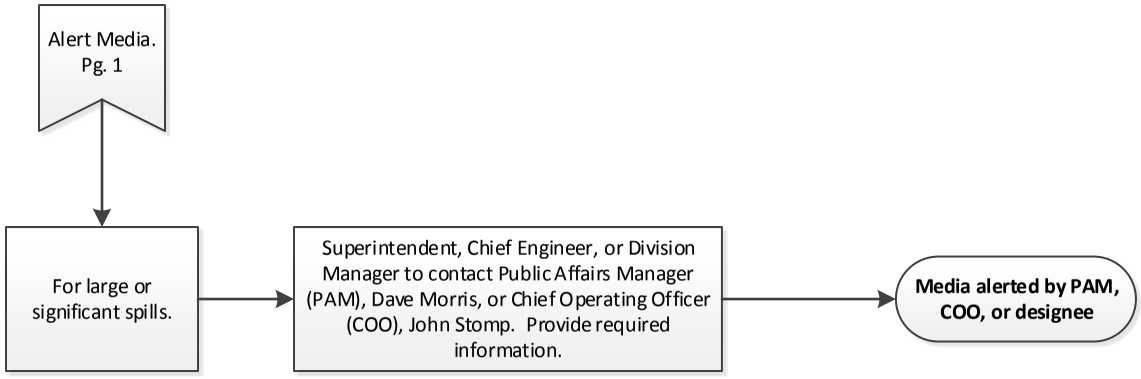
The normal 24-hour call to NMED Surface Water is presumed to meet the requirement for a 24-hour notification to the GWQB. The Collection Section Manager shall be notified and shall be responsible for preparing the following additional reporting:

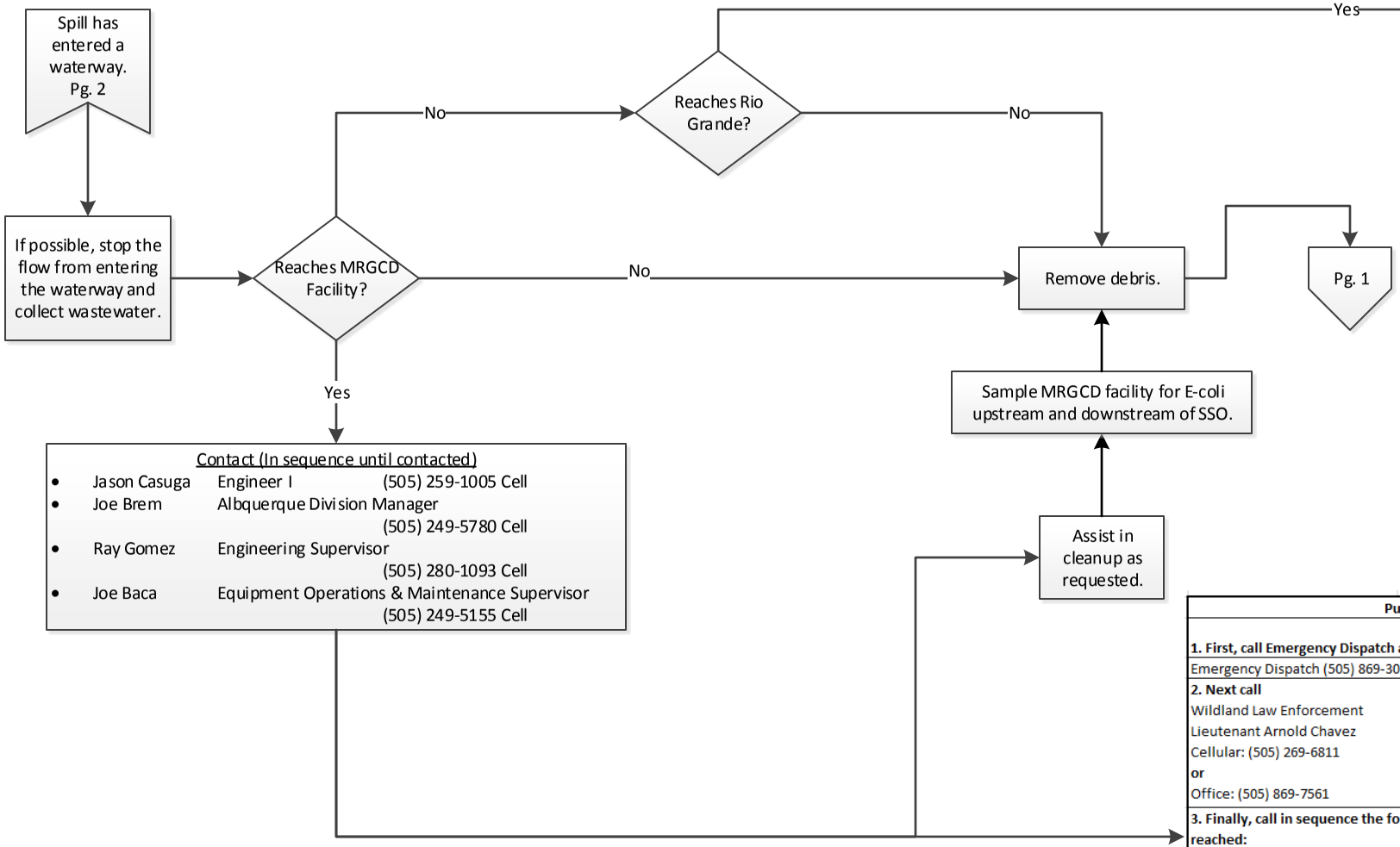
1. One week written report. Presumed the same as the five day report provided to NMED Surface Water.
2. 15-day Corrective Action Report.


Pretreatment Involvement. Pg. 2
Submit to Pretreatment for enforcement. Pg. 6
Supervisor calls Pretreatment Office Assistant (289-3419)
Is P2 spec. available?
Yes
P2 spec. investigates
Proceed to SSO Location
Observe site, fill out form, take pictures, and collect sample if possible
Use mapping resources to establish upstream basin area
Develop list of FSEs in area
Address
Date
Time
Supervisor Name
Estimated Volume
No
Pretreatment Engineer Investigates
Note any problem FSEs.
Visit FSEs and check GRSs and manifests
LINKO Generated Notice of Violation (NOV)
Start Enforcement Process
Yes
Is a FSE responsible?
No
Update SSO Tracking Table. Pg. 6



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.


Alert Media. Pg. 1
For large or significant spills.
Superintendent, Chief Engineer, or Division Manager to contact Public Affairs Manager (PAM), Dave Morris, or Chief Operating Officer (COO), John Stomp. Provide required information.
Media alerted by PAM, COO, or designee



Pueblo of Isleta			
1. First, call Emergency Dispatch and Wildland Law Enforcement			
Emergency Dispatch (505) 869-3030 (Voice message Ok)			
2. Next call Wildland Law Enforcement Lieutenant Arnold Chavez Cellular: (505) 269-6811 **or** Office: (505) 869-7561			
3. Finally, call in sequence the following numbers until a live person is reached:			
Title	**Name**	**Office**	**Cellular**
Environment Division Manager	Ramona Montoya	(505) 869-7565	(505) 263-5425
Environmental Technician	Ruben Lucero	(505) 869-9819	(505) 917-8346
Water Quality Specialist	Cody Walker	(505) 869-9623	(505) 220-4595