



**Capacity, Management, Operations &
Maintenance Program
(CMOM)**

**Annual Program Audit
2011-2012**

CAPACITY, MANAGEMENT, OPERATION AND MAINTENANCE (CMOM)

Introduction

- (i) The City of Yukon manages, operates & maintains the wastewater collection system. The City has a contract with Veolia Water to manage, maintain & operate the wastewater treatment plant as well as the wastewater lift stations.
- (ii) The City of Yukon is proactive with the planning and development of new housing and commercial developments to ensure the capacity of the collection system is not overloaded. Veolia Water is responsible for monitoring the base and peak flows as well as the capacity of the current wastewater treatment plant, lift stations & collection system.
- (iii) The City of Yukon has taken a proactive approach with detailed preventative and reactive maintenance programs to eliminate and respond to all Sanitary Sewer Overflows (SSO's). The City has implemented several steps to mitigate the impact of the environment due to SSO's from the collection system. The City is always evaluating and upgrading the reactive and preventive programs to ensure the safety of the citizens & to protect the environment.
- (iv) The City of Yukon notifies all affected parties if an overflow occurs with verbal and/or written notification immediately after the incident. The affected parties are provided with any information concerning the incident including a MSDS sheet of the chemicals used to disinfect the area, if requested, and any additional information concerning safety.

(v) **SUMMARY:**

The CMOM program is a multi phased, multi year program that is a work in progress and will change over the years. Many phases will be implemented over time to meet the ODEQ guidelines & the needs of the City. The City of Yukon's initial phase of the CMOM program consists of the following: controlling the inflow & infiltration, the continuation & improvement of the preventative maintenance program, improving the vertical & horizontal communications, and enhancing the training program for all personnel in the line maintenance department.

The control of inflow & infiltration (I&I) into the collection system is a component of the CMOM program that the City of Yukon has been addressing for approximately 2 years. The deterioration of manholes has been identified has a major contributor of I&I. The City has a goal of locating, numbering, inspecting, and identifying all manholes including the problem manholes throughout the City over the next two years. Also, over the next several years, the City has a goal of replacing or rehabilitating all the, wet & dry event, problem manholes. I&I is an issue that is currently being addressed and will continue to be addressed by the City of Yukon.

The City of Yukon's preventative maintenance program was initiated approximately 2

years ago. The City plans to continue and improve the current maintenance program over the next several years. Smoke testing, flow monitoring, and video inspection will be incorporated with the current jetting and cleaning of each collection system main line. The maintenance crew is also responsible for identifying & numbering problem areas such as structure failure, root infiltration, and grease build ups. When problem areas are reported they are addressed promptly.

The City of Yukon recognizes the importance of vertical and horizontal communication for any program to be successful. Vertical communication is vital inside each department as well as between the departments that are affected by SSO's and the issues associated with SSO's. Horizontal communication is important because any information that can be made available to the citizens of Yukon will help the City reach the goal of eliminating SSO's. Whether the information is of the reactionary or preventative nature it is imperative that the information be made available to the residents. Over the next several years the City plans to increase the number of information outlets available to the citizens.

The City of Yukon plans to upgrade training for the personnel in the line maintenance department. The goal is to educate and train all the personnel that are directly involved in SSO's. Immediate goals will include training for the Vac-on flushing truck, rehabilitating manholes, filling out the proper paperwork, and innovations in preventative ideas and techniques to eliminate all SSO's for the personnel. Another goal is to educate the office personnel that handle the paperwork and phone calls. Adequate training is the key to keeping up with new trends in the industry & adds the consistency that the City is looking for when dealing with sanitary overflows.

The CMOM program is a multi-phased program that will evolve over the coming years. The City of Yukon will continue to update, change & improve the program to meet its needs and to meet the requirements of the ODEQ & the EPA. The City through the control of I&I, the preventative maintenance program, communication, and training will strive to eliminate all SSO's, educate the citizens & to cooperate with the ODEQ.

1) Program Goals:

The City of Yukon operates and maintains approximately 160.5 miles of sanitary sewer and nine wastewater lift stations. Continuing growth, urbanization, changing hydrologic conditions, and age contribute to strain on this infrastructure. In addition, new regulations will impose additional issues and constraints. The purpose of this document is to detail a formal Capacity, Management, Operations and Maintenance (CMOM) Program. The Program's approach is environmentally conscientious and cost-effective. The Program elements outline and provide specific activities and reporting procedures to document the conduct of the Program. Current and anticipated federal and state requirements will be satisfied.

The Program's goals are:

- Properly manage, operate and maintain, at all times, all parts of the collection system.
- Provide adequate capacity to convey base flows and peak flows for all parts of the collection system.
- Take all feasible steps to stop, and mitigate the impact of, sanitary sewer overflows for all parts of the collection system.
- Provide notification to parties with a reasonable potential for exposure to pollutants associated with an overflow event.
- Identify and number all manholes, collection lines and lift stations
 - Lift Stations completion in 2008
 - Manhole completion schedule
 - 2008 – 35% of city completed, concentration on the old part of town
 - 2009 - 60% of city completed, concentration components older than 20 years
 - 2010 - 75% of city completed, concentration components older than 10 years
 - 2011 – 100% of city completed, concentration the new additions
 - 2012 – Working on the unidentified manholes
 - Collection lines completion in 2014
- Increase our employee's knowledge of the collection system and the options available to for maintaining the system.
 - Increase employee state license level
 - Conduct Bypass Reporting Training base on CMOM Program

2) Organization

The City of Yukon Wastewater System includes four major operating groups: Collection & Distribution Operations, Engineering, Stormwater Management, and Veolia Water (Appendix 2-1). The operations and maintenance activities related to the sanitary sewer system are directly the responsibility of the Collection & Distribution Operations Group, supported by the Stormwater Management Group in the areas of system mapping and GIS, The Engineering group assist infiltration/inflow reduction studies, and contractor procurement and inspection. The wastewater plant and liftstations are operated and maintained by Veolia Water.

2.1 Chain of Communication: Reporting SSO's:

Operating hours: 7:00am – 4:00pm: Monday – Friday

2.1.1 Complaints are received through:

1. Utility Billing:

- a. Upon receipt, the call is transferred to the Public works Department.
- b. The supervisor is notified and the proper personnel are dispatched.

2. Public Works Department

- a. The supervisor is notified and the proper personnel are dispatched.

2.1.2 Chain of command for reporting SSO's:

1. The lead operator responding to the call is responsible for reporting the SSO. They are responsible for:

- a. Telephoning ODEQ within 24 hours of the incident.
- b. Fill out the proper paperwork which includes:
 1. Bypass report for ODEQ
 2. Collection line report
 3. Hand written report of events associated with the SSO
 4. Take pictures if possible
 - i. Completed paperwork is turned into the supervisor.
 - The supervisor is responsible for mailing the completed forms to ODEQ.
 - All report will be filed in Public Works office

Non-operating hours:

2.1.3 Complaints are received through:

1. Police Department:

- i. The dispatchers contact the on-call person by pager, home phone, or cell phone.
- ii. The on-call person is responsible for:
 - Being available
 - Respond to call within 30 minutes
 - Call back-up if needed
 - Eliminate the problem
 - Follow proper procedure for reporting a SSO if needed.
 - Fill out the proper paperwork
 - Contact the supervisor

3) Legal Authority

- 3.1 The elimination of Inflow and Infiltration (I&I) is a target area the City of Yukon identified as an priority. The City is in the process of identifying all the manholes that need to be rehabilitated, raised, or replaced. Several manholes have been rehabilitated over the past 2 years with a cement based product. This product stops I&I as well as restores the structural integrity of the manhole. The City has also identified problem areas in the collection system and continues to work diligently repairing, replacing, or bursting sewer main where needed. The City's preventative maintenance program is a major factor in controlling I&I by identifying issues before they become problems.
- 3.2 The Public Works Department in cooperation with the Community Development Department and the State Licensed City Engineer is working meticulously to insure all new construction methods and designs meet the City of Yukon's ordinances and specifications. The City inspects every new service going on line and every repair made to a sewer main by any outside contractor. The Public Works Department & Community Development Department provide inspectors ensuring each new system is pressure tested, mandrel tested, and physically inspected before they go online.
- 3.3 Currently there are two municipal satellite collection systems utilizing the City of Yukon's wastewater treatment facility:

*The City of Yukon holds all satellite systems to the same standards as any new customer inside the City limits. The ordinances set forth for all residents and businesses are standard for all satellite systems. (Appendix 3-1)

Southwest Covenant Church
2250 N. Mustang Rd.
Yukon, Ok. 73099

- 3.4 Veolia Water operates the wastewater treatment facility and follows all the prohibitions of the national pretreatment program under 40 CFR 403.5.

4) Measures & Activities

- 4.1 The system maintenance crews use a wide and extensive variety of equipment including backhoes, extenda-hoes, track hoes, front end loaders, dump trucks, utility crew trucks with trailers, pickup trucks, utility vehicles, hydraulic jet cleaners/vacuum trucks, hydraulic pumps, video inspection vans, gas detectors, and safety equipment.

In addition to the equipment assigned directly to the system maintenance, the Community Development Division also utilizes specialized equipment in their mission to eliminate sources of infiltration and inflow from the sanitary sewer system.

1 - GPS Unit

- 4.1.1 Maintenance of the collection system is the responsibility of the City of Yukon
 - 4.1.2 See appendix 4-1 for a total inventory of the collection system.
 - 4.1.3 Maintenance of the wastewater treatment facility is the responsibility of Veolia Water.
 - 4.1.4 The City Engineer inspects the treatment facility monthly.
 - 4.1.5 Maintenance of the lift stations is the responsibility of Veolia Water.
 - a. The Public Works Department and City Engineer inspect monthly.
 - b. See appendix 6-1 for inspection forms.
- 4.2 Recognizing that significant error will likely be associated with the transfer of available graphic data (e.g. hand-drawn maps) into the GIS, the City of Yukon has also undertaken a program to obtain accurate positions for manholes within the system through the use of Global Positioning System (GPS) technology. All infiltration/inflow source detection projects now require generation of manhole coordinates as a part of the manhole inspection process. It is anticipated that maintenance crews will ultimately carry GIS maps in their trucks and utilize GPS navigation technology to quickly and accurately locate manholes.
- 4.2.1 The operator of the Camera Van personnel is responsible for updating the current map of the collection system, this responsibility includes:
 - a. Noting which collection line sections have been cleaned, videoed, repaired, replaced or pipe bursted.
 - b. Noting which manholes are lost, need rehabilitated or replaced.
 - 4.2.2 The City of Yukon's Engineer in cooperation with the Storm Water Manager and the Public Works Department update the maps whenever needed.
- 4.3 Information Management - Computerized Maintenance Management System
- To manage a maintenance program, the Public Works Department utilizes a proprietary software utility management program or computerized maintenance management system (CMMS). This information management program is used for asset management, work order management, scheduled/preventive maintenance system, customer service, and parts inventory warehousing control. Asset systems being used include wastewater and water infrastructure. The program uses relational multiple databases to number and track all assets. It also can report on various queries (lookups) and perform costing reports.
- 4.3.1 The Public Works Department keeps records of all SSO's.

- 4.3.2 Any trends identified are checked once a week or more if needed until the problem can be addressed.
- 4.3.3 The overflow response plan can be found in Section 8.

5) Routine Preventative Operation & Maintenance Activities

5.1 Routine maintenance and inspection of the sewer system in the City of Yukon is generally the responsibility of the Collection & Distribution Group . Emphasis is placed on areas where roots, debris deposition, grease, or other discontinuities within the pipeline restrict design flow conditions with the potential for causing wastewater overflows and spills. In addition, the Stormwater Management Group performs frequent inspections of areas where extraneous flows are thought to be entering the system, primarily along creeks or in other low-lying areas. This effort, combined with camera inspections, results in a visuals of manholes in suspect areas not less frequently than once every three years. Manholes in critical areas are inspected more frequently.

5.1.1 Preventative maintenance operation consists of:

1. Identifying and prioritizing problems such as:

a. Structure failure

Replace section of line if needed

b. Eliminate Root Infiltration

The intrusion of roots into sewer lines, particularly collector sewers in established subdivisions, is an ongoing concern of the City of Yukon.

Extensive root intrusion, if allowed to continue without attention, can result in reduced system capacity and, ultimately, blockage of the pipe. Problems associated with root intrusion are sometimes exacerbated by the presence of grease in the flow stream, which tends to attach to any roots present and cause more rapid impact on flow conditions.

i. Run a root saw if needed

ii. Apply a chemical root eliminator

iii. Assess & clean easement where needed

c. Eliminate Grease Build-up

i. The Public Works Department in cooperation with the inspection department will work to eliminate the build up of grease in the collection lines.

ii. Treat lines with chemicals where needed

d. Points of I&I

i. Raising of manholes along selected creeks where flood levels

e. Easement Clearing

i. The City of Yukon generally holds a twenty-foot wide permanent easement along its sewer lines. While some other individual or entity normally owns the underlying property, the City of Yukon has the right to access and maintain the line. This is not an issue in areas where sewers cross undeveloped property; however, substantial opposition from homeowners and, occasionally, environmentalists has arisen when easement clearing is needed in developed or environmentally sensitive areas.

5.1.2 Pipeline hydraulic cleaning inspection is performed as a part of routine maintenance in areas where deposition issues are chronic or in response to immediate flow problems. The hydraulic cleaning is effective in reducing material that becomes

deposited in lines with minimal slopes and in areas of high commercial activity. Cleaning will be based on the following factors:

- a. Cleaning includes jetting & rooting &/or degreasing if needed
- b. SSO will have priority over preventive maintenance
- c. Problem areas will be cleaned quarterly, unless specified for monthly
- d. Crew should complete an additional 3000 feet of cleaning each month on lines not described above.

- 5.1.3 Television inspection is an aide in identifying lines with obstructions, with corrosion problems, and with potential failure possibilities.
- a. Video will be used in conjunction with cleaning, smoke testing & visual inspection to eliminate all SSO's.
 - b. The Public Works Department will maintain a video library of each section.
 - c. Each problem area line section will be videoed once every 2 years.
 - d. If camera inspection does not reveal I&I issues than the area will be smoke tested to identify possible infiltration.
 - e. A written report of video findings will sent to the Public Works Director for review and to determine the proper action plan for the city. The actions could include, but are not limited to the following:
 - i. Assignment of area as a Problem Area defined in this program
 - ii. Action plan to repair issue in-house based on findings
 - iii. Hiring of outside contractors for major repairs and replacement
 - iv. Turning recommendation over to engineering for studies and updated engineer to correct issue.
 - g. A copy of the action plan will be attached to the video report. (Appendix 8-6)
 - i. If repair or cleaning is choose as the action plan, than follow-up is required in 90 days to determine if action is correcting the issue.
- 5.1.4 Smoke testing of lines will be based on assessments conducted during cleaning and camera inspections.
- a. Smoke testing will be used in areas that have infiltration that cannot be determined by inspection or use of the camera.
 - b. After assessing the results each problem area will be videoed.
 - c. As part of the I&I Prevention Program the city will smoke 2 miles of line each year.
- 5.1.5 Visual inspections on all manholes
- a. Each manhole will be identified and evaluated once every three a years.
 - b. The preventive maintenance crew will inspect each manhole once every three Years unless identified in a problem area (Appendix 5-1).
- 5.1.6 Inspections of lift stations
- a. Each lift station is inspected once a month (See Section 6).

5.1.7 Assessment of Easements

- a. Inspect easements for structures and large plantings.
 - a. Identify and correct any problems.
- b. The Public Works Department in cooperation with the Inspection Department will work diligently to eliminate future plantings in the easements.

5.1.8 Keeping accurate records

1. The records are kept by the Public Works secretary.
2. The records are kept at the Public Works facility.
 - a. 904 Industrial Blvd.
3. All records are kept as hard copies.
 - a. Communicating issues with supervisor
 1. See Section 5.1.3 e

5.2 Prioritization of Issues

- 5.2.1 The City of Yukon uses the following numbering system to prioritize problems in the sewer systems. The numbers are logged onto the preventive maintenance sheets to identify the status of all sewer mains.
(Appendix 5-2)

a. #1: Poor Condition

- Manhole has heavy I & I
- Has a large hole or crack

b. #2 Poor Condition with no Present I & I

c. #3: Fair Condition

- Manhole has small amount of I & I
- Has midsize hole or crack
- Brinks dropped out
- Loose cover

d.#4: Fair Condition with no Present I & I

c. #5:

- No cracks or holes that are causing issues
- Concrete in good condition
- Lid is 2" above ground grade
- No I & I issues

6) Assessment of Capacity

6.1 Current Capacity

6.1.1 Veolia Water assesses the capacity of the wastewater treatment facility according to the City of Yukon's wastewater discharge permit.

6.1.2 Veolia Water assesses the capacity of the lift stations by visual inspection and calculations based on the capacity of the pumps.

6.1.3 The City of Yukon assesses the capacity of the collection system by:

- a. Physically inspecting sections of the system
- b. Inspecting all new systems going on line
- c. Reviewing and correcting all plans of new systems
- d. Visual Inspection

6.1.4 All new plans are assessed, viewed, & recommended by the City Engineer.

6.2 Identification of Structure Deficiencies:

6.2.1 Collection system main lines:

a. Deficiencies are identified by numerous means:

- ii. Physical inspections- preventative maintenance crew
- ii. Local plumbers
- iii. Residents having problems
- iv. Video line
- v. Reactionary response to backups

b. Problem lines are identified & repaired, replaced, lined, or busted yearly.

c. See Appendix 5-1 List of problem areas by year

6.2.2 Lift Stations:

a. The City of Yukon has 10 current lift stations.

b. Veolia Water is responsible for monitoring & repairing.

c. The Public Works Department in cooperation with the City Engineer inspects the lift stations once a month. (Appendix 6-1)

- i. If any deficiencies are found they are addressed immediately.
- ii. The information on the lift stations can be found in Appendix 9-2.

d. Currently the City of Yukon has two lift stations < 2 years old on line.

1. The City plans to eliminate one more station when a new housing development goes on line this year.
2. Ensuring proper hydraulic loading see section 4.

6.3 Training:

The City of Yukon uses the formal technical training program offered by Secondary Educational Facilities well as specialized technical training offered by vendors and safety training programs. Courses are offered in computer skills, employee development, specialty and technical, and safety and loss prevention, among others. Specialized training for supervisors is included in the classes offered.

Specialized technical training offered by the City of Yukon includes training for all levels of wastewater and water certification as required by the State of Oklahoma. This includes wastewater collection system operator, water distribution system operator, wastewater treatment operator, and laboratory certifications. Operator certification training is made available both through the Secondary Educational Facilities as well as specialized in-house training classes. In addition, operator certification renewal points are obtained by employees through local programs presented in house.

Additional specialized technical training classes for certification in Confined Space Entry, Trenching & Shoring, and Flagging are offered to employees. Also offered are classes in Commercial Drivers License, Defensive Driving, Back Injury Prevention, Work Zone Safety, and Competent Person. On the job training is provided and required for emergency sanitary sewer spill response procedures.

6.3.1 Appropriate training is provided on a continuing basis for:

- a. Preventing SSO's is ongoing.
- b. Vac-on flushing truck - monthly.
- c. Rehabilitating manholes – yearly.
- d. Paperwork - ongoing
- e. Innovative techniques – yearly.

6.4 Equipment & Replacement Parts:

6.4.1 Equipment parts:

- a. The Equipment Maintenance Facility (EMF) stocks a few critical parts but has access, through cooperating cities and local vendors, to any parts that are needed.

6.4.2 Replacement parts for repairs or replacement:

- a. The Water & Sewer Line Maintenance Department stocks several parts for repairs.
 1. The City of Oklahoma City has provided parts in normal & emergency situations and agrees to any time we need them.
- b. Replacement of most sewer lines is completed by a private contractor.
 1. There is a contractor available 24/7 for repairs or replacement.
 2. The City has a contract with a private contractor on a yearly basis for major repairs and replacements.

7) Design & Performance Provisions

7.1 Design:

- a. The design of new sewer lines, pumps and other appurtenances are reviewed and corrected by The City of Yukon's City Engineer, Community Development Department, Public Works Department & Veolia Water.
- b. The standards and regulations on each new appurtenance are set by the City Engineer and are job specific.

7.2 Installation:

- a. The installation of new sewer lines, pumps and other appurtenances are inspected by the Community Development inspectors, Public Works inspectors, the City Engineer and Veolia Water personnel.

7.3 Performance:

- a. The Community Development Department through the City ordinances provides specifications & guidelines to the developers and builders set forth by the City Council.
- b. The Public Works Department, City Engineer, and Veolia Water inspects and tests all appurtenances going on line.

8) OVERFLOW RESPONSE PLAN

8.1 Awareness of all Overflows:

- 8.1.1 Responding personnel will report all overflows to the supervisor immediately after visual contact has been made.
- 8.1.2 See section 5.2.1 for prioritizing of problem sewers.

8.2 Responding to Overflows:

- 8.2.1 Response to any overflow is handled with promptness.
- 8.2.2 Response during working hours: Mon – Fri : 7am – 4pm
 - 8.2.2.1 Response time: Immediate
 - 8.2.2.2 Assess situation
 - 8.2.2.3 Call for back-up if needed
- 8.2.3 Sewer truck dispatched
 - 8.2.3.1 Blockage is eliminated if needed
 - 8.2.3.2 Maintenance run performed if no blockage is found
- 8.2.4 Paperwork is filled out and turned in to supervisor.
- 8.2.5 Response during non-working hours:
 - 8.2.5.1 Response Time: 30 minutes
 - 8.2.5.2 There is a person on call 24/7 for 365 days.
 - 8.2.5.2.1 Police Department dispatches the on-call person.
 - 8.2.5.2.2 On-call person can be reached by pager or phone.
 - 8.2.5.3 Same steps taken as during working hours.

8.3 Reporting overflows:

- 8.3.1 Report to ODEQ by responding operator within 24 hrs.
- 8.3.2 Fill out proper paperwork:
 - Bypass report (Appendix 8-1)
 - Collection line report (Appendix 8-2)
 - Daily job & written report (Appendix 8-3)
 - Written report of Vedioed line (Appendix 8-4)
 - Overtime sheet (if needed) (Appendix 8-5)
- 8.3.3 Overflow Procedures:
 - 8.3.3.1 Take immediate steps to contain the bypass.
 - 8.3.3.2 If the bypass is in a street, parking lot, drive or other area that contains storm drains:
 - a. The drains are to be blocked with sand bags or other available

- barriers so the SSO cannot enter a receiving stream.
- b. The SSO is to be cleaned up immediately after the blockage is removed.
- c. Veolia Water has the capability of testing the downstream waters for the PH, dissolved oxygen (DO), & chlorides.

8.3 Reporting overflows con't:

8.3.4 If a bypass has already reached a receiving stream:

- a. An emergency dam will be constructed down stream to contain the bypass until clean up can be done.
- b. Depending on the size of the dam, you may need the following:
 - i. Shovels, backhoe, loader, or dump truck.
- c. If the bypass cannot be stopped for sometime, pumps may be brought in to pump to any nearby unaffected collection line.
- d. If a line or manhole is not available a pumper truck (Vac-On) will be utilized to collect the bypass while response crews are working on the cause of the bypass.
 - i. If the volume of the bypass is to large for the Vac-On a larger truck is available through Veolia Water.
- e. Once the SSO is contained the downstream water will be tested for PH, dissolved oxygen, and chlorides.
 - i. A primary target site will be established approximately 100 feet below the bypass zone for testing.
 - ii. If needed secondary zones will be established at 100 yard intervals and tested until no evidence of wastewater is present.
- f. A sample of the SSO will be tested for BOD, TSS, and/or fecal contamination.

8.3.5. Take any steps possible to lesson or contain the bypass until cleanup can begin.

8.3.6 Clean up affected area:

- a. The contained bypass liquid should be pumped back into a manhole or into a tanker truck.
- b. All solids should be collected and disposed of properly.
- c. Sanitize the affected area using CL2 or stabilized with lime.

8.3.7 Follow up:

- a. After response and cleanup has been completed the collection system will be monitored weekly to insure additional bypasses do not occur.
- b. A review of the response and clean up will be covered with all employees involved to ensure that the proper procedures were followed.
- c. A work order will be issued for the areas to be videoed to determine the cause of the issue and if the any other issues exist in the line.
- d. A written report of video findings will be attached to the bypass report
- e. A copy of all report will be sent to the Public Works Director for review and to determine the proper action plan for the city. The actions could include, but are not limited to the following:

- v. Assignment of area as a Problem Area defined in this program
 - vi. Action plan to repair issue in-house based on findings
 - vii. Hiring of outside contractors for major repairs and replacement
 - viii. Turning recommendation over to engineering for studies and updated engineer to correct issue.
- f. A copy of the action will be attached to the bypass report. (Appendix 8-6)
- g. If repair or cleaning is choose as the action plan, than follow-up is required in 90 days to determine if action is correcting the issue.

9) SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

9.1 Evaluation:

- A. When a SSO occurs due to peak flow the existing sanitary sewer line will be evaluated for estimates of peak flows (including flow from SSO's that escape the system) associated with conditions similar to those causing the overflow event.**
- B. Provide estimates of the key components, identify hydraulic deficiencies including components of the system with limiting capacity and identify the major sources that contribute to the peak flow associated with overflow events.**
- C. Proper hydraulic analysis is performed by the City Engineer in all the areas of new growth throughout the City of Yukon. This ensures the loading on the collection system is sufficient for now and the future.**

9.2 Capacity Enhancement Measures:

- A. Establish short and long term actions to address each hydraulic deficiency including prioritization, alternative analysis and a schedule.**
 - 1. There is an annual list of approximately 5 problem sewers that need to be Replaced or major capital repaired. See Appendix 9-1**
- B. Analysis of annual projects will be performed to prevent hydraulic deficiencies.**

9.3 Plan Updates:

- A. The City of Yukon will update the plan to describe any significant change in proposed actions and/or implementation on the performance of measures that have been implemented.**

10) CMOM PROGRAM AUDITS

10.1 The foregoing Capacity, Management, Operation and Maintenance Program for the sanitary sewer system owned by the City of Yukon reflects the city's commitment to the protection of the environment and continued provision of exemplary customer service. As indicated throughout this document, the city has committed and is prepared to further commit the resources necessary to provide vigilance over the wastewater system. This document will be updated annually through revised or new text plus appendices, as may be required, and will be revised per schedule to reflect the city's commitment to its mission and to satisfy federal and state regulatory requirements. An annual audit will be conducted of the City of Yukon's CMOM program.

10.2 The audit will include:

1. The size of the collection system
2. The number of SSO's and action taken for each
3. Amount of money spent during the fiscal year
4. List of improvements: repairs, replacements, and rehabilitation etc...
5. Review of the years activities
6. Update on system identification process
7. Goals for the following year
8. Any program component amendments

See Appendix 10-1 for example of annual audit

10.3 The City of Yukon will evaluate all areas of the CMOM program for strengths and deficiencies and make any necessary adjustments needed.

1. Any adjustments to the CMOM program will be submitted to ODEQ for review or comment.

10.4 The annual audit of the City of Yukon's CMOM will be submitted no later than November 1st of each year. The audit will contain information for work that was completed during the previous fiscal year. (July 1st – June 30th)

11) COMMUNICATION

11.1. The City of Yukon uses several media outlets to communicate any needs, updates or information to the citizens of Yukon.

11.1.1 The City will post a copy of the CMOM program on the city web site.

11.1.2 The City also uses a reverse 911 system called City Watch to contact the citizens of Yukon in case of emergencies.

11.1.3 Printed material is used to inform the citizens of Yukon how to prevent SSO's, how to maintain their house lines, & report any SSO's to the proper authorities.

11.2 Communication is the key element to the success of any program. The City of Yukon is dedicated to improving the lines of communications within the water and sewer department & within the community.

11.3 Communication Archive will be file at the Public Works Office.

See Appendix 11-1 for copy of Public Communication Notices

CITY OF YUKON CMOM PROGRAM AUDIT FISCAL YEAR 2011-2012

The 2011-2012 program audit (July 2011-June 2012) will consist of the following information:

- Administrative Changes
- The total number of Sanitary Sewer Overflows (SSO)
- The amount of money spent on replacement, repairs, rehabilitation, chemicals, camera work and smoke testing, etc.
- A list of improvements made
- Review of the year's activities
- Design & Performance Provisions
- Goals for the following year 2012-2013

ADMINISTRATIVE CHANGES:

In **Attachment 1** the city has submitted the updated appendixes to be inserted in the CMOM program.

- Appendix 2-1 Sewer Line Maintenance Organizational Chart
- Appendix 9-2 Added to include 2011-2012 Improvements

SANITARY SEWER OVERFLOWS: The overflows have continued reduce as we complete more repairs and preventive maintenance, they have gone from 21 last year to 23 for this reporting year. We have worked to change and repair to the system to reduce I & I issues during rain events and collection system problem areas, this has decreased the number of overflows for the year. We have been making progressive improvements over the years and plan to continue improvements till we have no overflows.

2006-2007	51	
2007-2008	39	
2008-2009	25	
2009-2010	22	
2010-2011	21	
2011-2012	23	(Current Reporting Year)

EXPENDITURES: Total spent was \$1,548,901.42. All other expenditures were from general operating fund.

Operational, Maintenance & Repairs	\$1,316,544.27
Capital Improvements:	\$225,493.15
Lift Station and I & I Telemetry Upgrade	\$1,550.00
FOG Program	\$5,314.00

IMPROVEMENTS / REPAIRS MADE TO COLLECTION SYSTEM:

The improvements were done by either the City or a Private Contractor. This is listed in **Attachment 1 Appendix 9-2**, Amendment to the CMOM Program. We have addressed many manholes and lines in need of repair within the I & I Identification Program.

- Replace 50ft of 8" sewer line on Greenway
- Replace 324ft of 8" sewer line on Royal
- Replace 200ft of 10" sewer line on Walnut
- YCC Park – replaced manhole lid
- 932 Hampton – Riser repair
- Landmark & Monument – manhole repair
- 418 S 6th – 6" sewer main line repair
- 821 Willow Run - manhole repair
- 1021 Elm – 8" sewer main line repair
- 1519 Dianna – 8" sewer main line repair
- 800 Vick Cir – 8" sewer main line repair
- 10th & Elm – 8" sewer main line repair
- Behind Main St Bowling Alley – manhole repair

PREVENTIVE AND CORRECTIVE ACTIVITIES: This year the city was able to evaluate and conduct preventive maintenance procedures on approximately 92,048 feet (10%) of the complete sewer system. We utilized our sewer camera, smoke testing, visual inspections, root cutting and treatment, and line flushing to complete these tasks. We also added root control chemicals to our Preventive Maintenance Program for problem areas.

- ***Jetting and Vacuum Truck Operations***
We cleaned and jetted a total of 75,394' of collection line for the fiscal year with our Vac-Con sewer truck. **Attachment 2** identifies each maintenance run completed.
- ***Preventive and Corrective Actions Regarding Discharges***
We had 23 discharges from July 2011 to June 2012. **Attachment 3** explains the actions taken for each discharge. Repeated discharges in an area are identified as a problem area and will be further evaluated.

- **Identification and Mapping of Sewer System**

As of this year staff has completed 100 percent of the assessments on manholes. This assessment includes GPS mapping information, Type of Manhole, Pipe Sizes in Manhole, Direction of Lines, and Condition Report. We have completed two quality control phases and are now mapping the line for publishing.

- **Asset Management Preventive Maintenance Mitigation**

As issues are identified by staff conducting our Asset Assessment they are sent to the Water & Wastewater Group to be resolved. The issues are categorized in three areas.

- Preventive Actions – Debris and cleaning
- Minor Corrective – Seals, lids, cracks, and pipe seals
- Major Corrective – Rehab and construction

Below is a list of Preventive Actions completed over the last year. The Minor Corrective and Major Corrective are listed in a previous area Improvements / Repairs in the Collection System.

- 3rd & Maple – raised manhole
- 9th & Cedar raised manhole
- 6th & Kali - repaired manhole

- **Camera Work**

With the purchase of a camera van the city has been able to utilize it to determine the extent of issues in our system and better direct our resources to repair the issues. This year we did camera work on 11,974.8' (2.26 miles) of sewer lines.

- **Smoke Testing Operations**

Again this year we were hit with extreme heat and drought, the City did not utilize smoke testing. Water and Sewer crews were tasked with many water main breaks during the period we schedule for smoke testing. We will continue with our smoke testing schedule in 2012-2013.

- **Inspection of Lift Stations**

The city has ten lift stations that are contracted to be operated and maintained by Veolia Water Operating Services. Veolia Water is responsible for service inspection twice a week. The Veolia Water, and City Staff conduct a monthly inspection of each location. The City Engineer, Veolia Water and the City Staff conduct quarterly inspection. Inspections reports are available with Veolia Water, Triad Engineering and the City of Yukon.

- **Recordkeeping**
The city purchased preventive and corrective maintenance software to properly track maintenance activities. This will allow the Public Works Department to track and monitor all activities in the collection system.
- **Problem Areas**
As part of CMOM the city has re-evaluated our problem areas that will be assigned to a management group and engineering for further evaluation and corrective action planning. We also make routine inspections and preventive maintenance tasks in these locations.
 - In the case of 1700 Ridgeview, we have replaced 100' of sewer downstream of the area that we found a lowering and roots in the pipe. Truss pipe was replaced with 8" poly pipe.
 - As to 1817 Greenway, this was a citizen's lateral line intruding into the City's main. This caused materials to be blocked, backing up the flow. Working with the Community Development Department, we were successful in getting the issue resolved by the citizen..
 - Sewer line issues under creek at Turtle Creek and Walnut, replace 200ft of pipe and installed new

Design & Performance Provisions

- **Lift Station and Wastewater Performance**
 - The city and Veolia Water has continued upgrading the Plant Telemetry System.
 - We are presently drafting plans to complete major equipment repair and replacement at the wastewater plant. The plans include rehabilitation of the two clarifiers, replace one of the screw pumps, replacing RAS pumps, and installation of a new bar screen. City has approved to get bonding money for these improvements.

GOALS FOR 2012-2013:

- **Continued Progress Easement Protection Program**
 - The community development department is currently researching and documenting all easements owned by the city.
 - Developing a legal statement for use with citizens about rights of all parties within the easement.
 - Requiring revocable permits for any temporary fixtures in the easement.
 - The City has budgeted to replace 1400' of sewer line within the 2012-2013 fiscal year.
- **Wastewater treatment system improvements by rehabbing the chlorine building at plant.**
- **Replacement of 6" pump for Lift stations & wastewater operations.**
- **\$30,000 for Lift station pumps and equipment replacement.**
- **Community Development researching all the unidentified manholes.**



Water & Wastewater Line Maintenance Organizational Chart

Grayson Bottom	City Manager	354-1895
Arnold Adams	Public Works Director	350-8940
Robbie Williams	City Engineer	752-1122

CMOM Coordinator : Arnold Adams

	B Water / Wastewater License
Office	405-350-8940
Mobile	405-316-0564
Email	aadams@cityofyukonok.gov
Address	P.O. Box 850500, Yukon OK 73085

Wastewater Plant and Liftstations

Veolia Water

Project Manager: **Gary Giddings**

A Water / Wastewater

Phone: 405-354-6245

Email: gary.giddings@veoliawaterna.com

Operate & maintain the wastewater treatment plant

Operate & maintain all sewer lift-stations

Monitor base & peak flow of collection system

City Support Staffing

Mitch Hort, Community Development Director

Community Development

Inspections

Anna Waggoner, Stormwater Manager

Stormwater Compliance

GIS and Mapping

Deny Meyers

GPS Mapping

Asset Inventory

Collections System

Brent Griffin, Supervisor

Oversee Daily Operations

Operator III: "B" water/wastewater license

Helps with technical support and hands on repairs

Inspects all new sewers and water lines

James Jones

Laborer II D Water / Wastewater

Locates water and wastewater lines for city

Helps with technical support and hands on repairs

Lead operator for the department

Steve Green

Laborer I – "D" Water/Wastewater

Kyle Alberts

Laborer I

Operates Camera Truck

William Hood

Laborer I

Ryan Colley

Laborer I

Marcus Vann

Laborer I

Rick Ford

Laborer I

Nick Ramsey

Equipment Operator II

Date	Time	Address of call	Entry MH Address	Dir	Size	Wet/ Dry	Feet	Bypass	Notes
7/11/2011	9:40am	616 Woodlawn	620 Woodlawn	East	6	Dry	150	No	Run line with flusher, line running slow
7/13/2011	8:00am	205 W. Grand Teton	205 W Grand Teton	East	8	Dry	150	No	Ran line 150', removed blockage, grease and rags
7/14/2011	1:00pm	7 Vine	6 Utah	East	6	Dry	50	No	Ran 50ft got stuck on root ball
7/18/2011	7:00am	6 Utah	6 Utah	East	8	Dry	130	No	Ran line, no blockage and no problems. Line had good flow.
7/18/2011	12:00pm	1502 Glenda	1405 Diana	South	8	Dry	300	No	Ran line, no blockage and no problems. Line had good flow.
7/18/2011	3:30pm	1004 1st	1004 1st	South	6	Dry	100	No	Ran line, no blockage and no problems. Line had good flow.
7/24/2011	5:45pm	153 E Parkland	2100 Everglade Ct	South	8	Dry	300	Yes	Grease/toilet paper - removed blockage, 5 MH st, camr
7/25/2011	9:30am	2124 Everglade	2124 Everglade Ct	West	8	Dry	300	No	Ran line, no blockage and no problems. Line had good flow.
7/25/2011	3:00pm	506 Palais	502 Palais	North	8	Dry	250	No	Ran line, no blockage and no problems. Line had good flow.
8/1/2011	8:30am	206 Del Mar	403 Owen	East	8	Dry	300	No	PM Run
8/7/2011	2:00pm	1015 Arlington	1023 Arlington	West	8	Dry	300	No	PM run to see if help resident - our line clear
8/9/2011	9:30am	819 John F Kroutil	904 Montreal	South	6	Dry	300	No	PM Run - cleaned line
8/11/2011	11:00am	110 S 4th	110 S 4th	West	6	Dry	230	No	PM Run
8/11/2011	11:00am	300 Kings Canyon	341 Carlsbad	West	8	Dry	400	No	PM Run - recurring problem wtr -very low flow/camera
8/11/2011	8:00pm	819 John F Kroutil	904 Montreal	South	8	Dry	300	No	Got stuck in MH @ 317/no access to MH
8/12/2011	7:30am	819 John F Kroutil	904 Summerton	South	8	Dry	350	No	PM Run - recurring problem wtr - very low flow/camera
8/14/2011	9:45am	1015 Cambridge	1020 Arlington	West	8	Dry	200	No	Ran line, no blockage and no problems. Line had good flow.
8/15/2011	8:45am	1700 Ridgeway	1705 greenway	East	8	Dry	150	No	Ran line, removed roots. Used wart hog. Pulled back large clumps of roots.
8/16/2011	8:00am	216 E Grand Teton	216 E Grand Teton	West	8	Dry	250	No	Ran line, no blockage and no problems. Line had good flow.
8/16/2011	1:00pm	216 E Grand Teton	232 E Grand Teton	West	8	Dry	200	No	Ran line, no blockage and no problems. Line had good flow.
8/24/2011	8:30am	209 S 2nd	2nd & Oak	North	6	Dry	200	No	Ran line, no blockage and no problems. Line had good flow.
8/24/2011	12:00pm	202 Vine	206 Vine	West	8	Dry	400	No	Ran line, removed blockage at 150 feet. Line had good flow.
8/25/2011	9:00am	414 Owen	408 Owen	East	8	Dry	300	No	Grease and Rags
8/28/2011	12:00pm	209 S 2nd	2nd & Oak	North	6	Dry	200	No	Ran line, no blockage and no problems. Line had good flow.
8/29/2011	3:00pm	103 Yukon	Alley behind property	West	6	Dry	250	No	Ran line, no blockage and no problems. Line had good flow.
9/1/2011	8:00am	340 Choctaw Pl	333 Cherokee	East	8	Dry	450	No	Ran line, no blockage and no problems. Line had good flow.
9/1/2011	10:45am	11 Palm Spanish Cove	108 Cypress	West	8	Dry	400	Yes	Ran line, removed blockage at 200 feet. Line had good flow.
9/5/2011	6:30pm	209 S 2nd	2nd & Oak	North	6	Dry	450	No	PM run-Line cleaned
9/9/2011	9:30am	505 Crown	505 Crown	West	8	Dry	550	No	Ran line, no blockage and no problems. Line had good flow.
9/12/2011	8:30am	1414 Allen	1313 Allen	South	6	Dry	325	No	Ran line, no blockage and no problems. Line had good flow.
9/12/2011	11:00am	4500 Osborn	4512 Osborn	South	12	Dry	200	Yes	Ran line, removed partial blockage at 75 feet. Line had good flow.
9/13/2011	2:00pm	4500 Osborn	4512 Osborn	South	12	Dry	250	No	Ran line, no blockage and no problems. Line had good flow.
9/14/2011	10:00am	313 Ashbill	319 Ashbill	East	8	Dry	200	No	Ran line, removed partial blockage at 200 feet. Line had good flow.
9/15/2011	8:00am	4512 Osborn Ln	4512 Osborn Ln	South	12	Dry	100	No	Ran line with chain cutter, removed roots
9/16/2011	8:30am	4500 Osborn Ln	4512 Osborn Ln	South	12	Dry	200	No	Ran line with chain cutter, removed roots
9/16/2011	10:30am	307 Fairbanks Way	307 Fairbanks Way	East	15	Dry	150	No	Ran line, no blockage and no problems. Line had good flow.
9/16/2011	2:00pm	1038 Cambridge Dr	1032 Cambridge Dr	East	15	Dry	200	No	Ran line, removed partial blockage at 100 feet. Line had good flow.
9/20/2011	10:30am	705 Okie Ridge	705 Okie Ridge	East	8	Dry	100	No	Ran line, no blockage and no problems. Line had good flow.
9/20/2011	1:00pm	705 Okie Ridge	701 Okie Ridge	South	8	Dry	500	No	Ran line, no blockage and no problems. Line had good flow.
9/21/2011	09:30am	809 Miller	809 Miller	East	8	Dry	200	No	Ran line, no blockage and no problems. Line had good flow.
9/21/2011	11:00am	809 Miller	809 Miller	East	8	Dry	200	No	Ran line, no blockage and no problems. Line had good flow.
9/21/2011	1:00pm	313 Ashbill	319 Ashbill	East	8	Dry	150	No	Ran line, no blockage and no problems. Line had good flow.
9/22/2011	10:30am	313 Ashbill	319 Ashbill	East	8	Dry	200	No	Ran line with chain cutter, removed roots
9/25/2011	9:30pm	1008 Oakwood	909 Cherrywood	South	8	Dry	400	No	Ran line with chain cutter, removed roots
9/29/2011	10:30am	120 Spruce	bet Spruce & Walnut	West	8	Dry	400	No	Ran line, no blockage and no problems. Line had good flow.
9/29/2011	1:00pm	120 Spruce	bet walnut & spruce	West	6	Dry	425	No	Ran line, removed partial blockage at 400 feet. Line had good flow.

9/29/2011	10:00am	120 Spruce	bet walnut & spruce	West	6	Dry	400	No	Ran line, no blockage and no problems. Line had good flow.
10/7/2011	10:00am	916 Clear Creek	908 Clear Creek	East	8	Dry	400	No	Ran line, removed partial blockage at 250 feet. Line had good flow.
10/10/2011	8:30am	1015 Cambridge	1028 Arlington	West	8	Dry	400	No	Ran line, no blockage and no problems. Line had good flow.
10/11/2011	2:00pm	1300 W Vandalment	1300 W Vandalment	West	8	Dry	400	No	Ran line, no blockage and no problems. Line had good flow.
10/11/2011	3:30pm	1015 Cambridge	1020 Arlington	West	8	Dry	200	No	Ran line, no blockage and no problems. Line had good flow.
10/14/2011	3:00pm	1328 Chimney Hills	1312 Chimney Hills	East	8	Dry	500	No	Ran line, no blockage and no problems. Line had good flow.
10/15/2011	2:15pm	321 Kings Canyon	341 Kings Canyon	West	8	Dry	200	Yes	Grease and Rags
10/16/2011	3:45pm	105 Pine	102 Poplar	West	6	Dry	100	No	Grease and Rags
10/20/2011	12:20pm	1804 Ridgeway	1716 Ridgeway	South	8	Dry	500	Yes	Ran line, removed blockage at 450 feet. Line had good flow.
10/21/2011	7:45pm	1809 Ronald	1705 Ronald	South	8	Dry	250	No	Ran line, removed partial blockage at 200 feet. Line had good flow.
10/24/2011	10:00am	120 Spruce	bet Spruce & Walnut	West	8	Dry	425	No	Ran line, no blockage and no problems. Line had good flow.
10/24/2011	2:00pm	210 Vine	212 Vine	West	8	Dry	150	No	Ran line, removed partial blockage at 150 feet. Line had good flow.
10/24/2011	3:00pm	210 Vine	613 Spruce	North	8	Dry	350	No	Ran line, removed partial blockage. Line had good flow.
10/26/2011	8:00am	1013 Cambridge	1013 Cambridge	East	8	Dry	200	No	Ran line, no blockage and no problems. Line had good flow.
10/26/2011	10:00am	1020 Arlington	1020 Arlington	West	8	Dry	500	No	Ran line, removed grease and roots.
10/26/2011	1:00pm	1028 Arlington	1028 Arlington	West	8	Dry	500	No	Ran line, no blockage, no problems.
10/28/2011	9:00am	120 Spruce	113 Walnut	West	8	Dry	200	No	PM run, no blockage, no problems.
10/29/2011	6:30pm	708 Mabel Fry	709 Crown	East	8	Dry	250	Yes	Ran line, removed partial blockage at 200 feet. Line had good flow.
10/31/2011	3:00pm	1013 Cambridge	1013 Cambridge	East	8	Dry	40	No	Ran line, used root saw.
11/1/2011	8:00am	1015 Cedar	1013 Kall	South	8	Dry	250	No	Ran line, no blockage and no problems. Line had good flow.
11/1/2011	9:00am	1015 Cedar	114 N 10th	South	8	Dry	500	No	Ran line, no blockage and no problems. Line had good flow.
11/1/2011	10:00am	1013 Cambridge	1013 Cambridge	East	8	Dry	80	No	Ran line, used root saw, got to 80 ft. Going back with camera.
11/1/2011	12:00PM	1301 Diana	1305 Diana	North	8	Dry	3	No	Ran line, no blockage and no problems. Line had good flow.
11/2/2011	4:00pm	334 Elm	300 Elm	West	6	Dry	500	No	Ran line, no blockage and no problems. Line had good flow.
11/2/2011	3:00pm	1301 Diana	1305 Diana	North	8	Dry	75	No	Ran line, no blockage and no problems. Line had good flow.
11/2/2011	6:47pm	1056 Mabel Fry	1040 Mabel Fry	East	8	Dry	300	No	Ran line, no blockage and no problems. Line had good flow.
11/2/2011	8:30am	1013 Cambridge	1013 Cambridge	East	8	Dry	80	No	Ran line, no blockage and no problems. Line had good flow.
11/3/2011	8:00am	1020 Arlington	1020 Arlington	West	8	Dry	250	No	Ran line 80 ft and nozzle got stuck.
11/4/2011	4:00pm	1020 Arlington	1020 Arlington	West	8	Dry	400	No	Ran line. Follow up with camera.
11/7/2011	10:39pm	612 Queensboro Pl	616 Queensboro Pl	East	6	Dry	200	No	Ran 400 ft line, follow up with camera.
11/10/2011	11:00am	906 Williams Pl	216 E Beech	South	8	Dry	300	No	Ran line, removed partial blockage. Line had good flow.
11/10/2011	12:00pm	1101 Garth Brooks	1101 Garth Brooks	West	8	Dry	300	No	Ran line, no blockage and no problems. Line had good flow.
11/10/2011	1:00pm	1101 Garth Brooks	1000 Summerton	West	8	Dry	300	No	Ran line, no blockage and no problems. Line had good flow.
11/18/2011	8:00am	819 JFK	914 Montreal	South	8	Dry	300	No	Ran line, no blockage and no problems. Line had good flow.
11/18/2011	12:30pm	1100 Oakwood	900 Oakwood	South	8	Dry	400	No	Ran line, no blockage and no problems. Line had good flow.
11/19/2011	9:31am	802 S 1st St	206 Yukon Ave	South	8	Dry	500	No	Ran line, no blockage and no problems. Line had good flow.
11/19/2011	8:00am	802 S 1st St	206 Yukon Ave	South	8	Dry	500	No	Ran line, no blockage and no problems. Line had good flow.
11/21/2011	10:00am	802 S 1st St	710 S 1st	South	8	Dry	400	No	Ran line, no blockage and no problems. Line had good flow.
11/22/2011	8:00am	1519 Diana	1511 Diana	South	6	Dry	150	No	Ran line, no blockage and no problems. Line had good flow.
11/23/2011	2:00pm	709 Mabel Fry	709 Mabel Fry	East	8	Dry	450	Yes	Ran line, no blockage and no problems. Line had good flow.
11/23/2011	3:00pm	709 Mabel Fry	621 Crown	East	8	Dry	450	No	Ran line, no blockage and no problems. Line had good flow.
11/28/2011	8:00am	2 Vine	6 Vine	West	8	Dry	250	No	Ran line, no blockage and no problems. Line had good flow.
11/28/2011	11:00pm	119 N Ranchwood	402 Owen	East	6	Dry	350	Yes	Ran line, removed partial blockage at 10 feet. Line had good flow.
11/28/2011	11:00pm	700 W Main	7th Bet Main & Elm	West	8	Dry	500	No	Ran line, no blockage and no problems. Line had good flow.
11/29/2011	2:30pm	353 Chickasaw	308 Red Blvd	East	8	Dry	500	No	Ran line, no blockage and no problems. Line had good flow.
11/29/2011	3:30pm	601 W Beam	605 Kingstons Pl	South	8	Dry	500	No	Ran line, no blockage and no problems. Line had good flow.
11/29/2011	4:30pm	4200 Abigail	808 Erinvoa	West	8	Dry	450	No	Ran line, no blockage and no problems. Line had good flow.
11/29/2011	4:30pm	4200 Abigail	808 Erinvoa	West	8	Dry	450	No	Ran line, no blockage and no problems. Line had good flow.
11/30/2011	11:00am	601 W Beam	601 W Beam	South	8	Dry	450	No	Ran line, no blockage and no problems. Line had good flow.

12/1/2011	8:30am	713 Woodlawn Dr	700 Park Dr	West	8	Dry	450	No	Ran 450' of line, no blockage, no problems
12/1/2011	10:00am	119 N. Ranchwood Blvd	119 N. Ranchwood	East	8	Dry	150	No	Ran line 150 foot, no blockage, no problem
12/1/2011	7:30pm	136 W. Vail Dr.	204 W Vail Dr.	East	8	Dry	450	No	Ran line 450'. Removed grease blockage. Manhole standing a 132 W Vail Dr.
12/2/2011	3:30pm	136 W Vail Dr.	204 W Vail Dr.	South	8	Dry	200	No	Ran 200' of line. No blockage, no problems
12/4/2011	9:46pm	732 Kingston Dr.	713 Queensboro Pl	South	8	Dry	350	No	Ran line, no blockage and no problems. Line had good flow.
12/4/2011	10:10pm	140 Chickasaw Ln.	1230 Red Bud	South	10	Dry	450	Yes	Grease and Rags
12/5/2011	8:00am	732 Kingston Dr.	713 Queensboro Pl.	South	8	Dry	450	No	Ran line 450'. No blockage, no problems
12/6/2011	1:00pm	713 Woodlawn Dr.	700 Park Dr.	West	8	Dry	450	No	Ran 450 line, no blockage no problems
12/8/2011	9:53pm	604 Mark	604 Mark	South	6	Dry	450	No	Will need to do a PM run in the morning.
12/9/2011	10:30am	604 Mark	307 Kimberly Ln	North	8	Dry	350	No	Ran line 350'. Removed lots of Grease
12/9/2011	11:30am	604 Mark	204 Briarwood	North	8	Dry	400	No	Ran line 400'. Pulled back lots of grease and rags.
12/12/2011	2:00pm	613 Crown	621 Crown	North	8	Dry	450	No	Ran line 450'. No blockage, no problems
12/17/2011	12:45am	721 Willow Run	805 Clear Creek	South	8	Dry	150	Yes	Ran line 150', removed blockage, grease and rags, manhole standing at 721 Willow Run
12/17/2011	5:30pm	18 Janice	1 Janice	South	8	Dry	400	Yes	Ran line, no blockage and no problems. Line had good flow.
12/19/2011	10:40am	817 Poplar	Oak & Poplar on 7th	West	6	Dry	400	No	Clean out overflow, cleaned backyard of toilet paper and sanitized area with HTH
12/20/2011	12:30 PM	705 Woodlawn	629 Woodlawn	West	10	Dry	200	No	Call also received from 632 Park Drive - same line section [BG]
12/20/2011	7:45 AM	1425 Viola	1401 Viola	East	8	Dry	400	No	Ran line with jeter nozzle, no blockage - city line cleaned- issue on resident side.
12/28/2011	9:30am	105 Garth Brooks Blvd	105 Garth Brooks Blvd	South	10	Dry	500	No	Ran line, no blockage and no problems. Line had good flow.
12/28/2011	9:30am	105 Garth Brooks Blvd	105 Garth Brooks Blvd	East	6	Dry	500	No	Ran line, no blockage and no problems. Line had good flow.
12/29/2011	12:40 AM	803 Glenwood Dr.	407 Teakwood Ave.	South	6	Dry	400	Yes	Manhole ID SS 3345-3089
12/31/2011	9:30AM	1414 Allen	1314 Allen	South	6	Dry	400	No	Ran line, no blockage and no problems. Line had good flow.
12/31/2011	4:30 PM	21 Glenda Dr	1 Glenda Dr	West	6	Dry	300	Yes	Ran line 300'. Removed lots of Grease
1/4/2012	12:15pm	1501 Diana	1405 Diana	South	8	Dry	340	No	Ran line, no blockage and no problems. Line had good flow.
1/4/2012	11:15 PM	1700 Greenway Dr	1700 Greenway Dr	South	8	Dry	250	No	Ran line, no blockage and no problems. Line had good flow.
1/9/2012	10:00AM	803 Glenwood	409 Teakwood	South	8	Dry	177	No	Hit root ball w/ 59'. Removed small amount of roots. Will come back.
1/9/2012	1:00PM	803 Glenwood	409 Teakwood	South	8	Dry	177	No	Ran 177' line, pulled back some roots, still has roots in line.
1/9/2012	3:00AM	803 Glenwood	409 Teakwood	South	8	Dry	177	No	Ran 177' line, removed some roots, many roots still remain.
1/10/2012	12:30PM	854 Garth Brooks Blvd	1105 1st Place Blvd	North	8	Dry	375	No	Ran line, no blockage.
1/10/2012	12:30PM	854 Garth Brooks	1105 1st Place Blvd	North	8	Dry	375	No	Business is no longer having issue.
1/10/2012	12:30PM	854 Garth Brooks	1105 First Place Blvd	North	8	Dry	375	No	Cleaning did help businesses. Dr. Dukas said Roto Rooter found a issue in their service line.
1/13/2012	10:00AM	1519 Diana	1511 Diana	South	6	Dry	85	No	Ran 85FT line for camera prep.
1/13/2012	6:00pm	100 Spruce Drive	1 Trenton Terrace	East	8	Dry	375	No	Ran line, removed no blockage. Line flow is good.
1/18/2012	9:00AM	604 AnnaWood	505 Mark	East	8	Dry	475	No	Home owner line was standing. We ran our line They still have a problem
1/20/2012	11:00AM	810 Garden Grove	813 Ranchoak Dr	North	8	Dry	485	No	No blockage, no problem, line has very good flow
1/20/2012	3:30pm	1817 Greenway Court	1808 Greenway Court	South	8	Dry	375	No	Ran line, no blockage and no problems. Line had good flow.
1/20/2012	4:30PM	117 Chestnut	117 Chestnut	West	8	Dry	300	Yes	Grease and Rags
1/22/2012	11:50 AM	216 Tanglewood Dr	217 Del Mar Dr	SE	8	Dry	150	No	Ran line, no blockage and no problems. Line flow is good. Resident had standing clean-out.
1/22/2012	3:00PM	216 Tanglewood Dr	307 N. Ranchwood Dr	South	8	Dry	50	Yes	Root Saw, camera, removed roots, cleaned line. Good flow.
1/22/2012	3:30PM	216 Tanglewood Dr	217 Del Mar Dr	SE	8	Dry	175	No	Ran line, removed blockage. MH @ 217 Del Mar Drive was standing.
1/22/2012	4:00PM	216 Tanglewood Dr	300 Ellison Dr	East	8	Dry	100	No	Ran line, removed roots. Used wart hog. Pulled back large clumps of roots.
1/22/2012	4:45PM	216 Tanglewood Dr	402 Mark Dr	East	8	Dry	425	No	Ran line, removed no blockage. Line flow is good.
1/23/2012	3:00 PM	217 Del Mar Dr	217 Del Mar Dr	SE	8	Dry	400	No	Ran line, removed no blockage. Line flow is good.
1/25/2012	4:00pm	307 N Ranchwood Blvd.	402 Mark Dr	SE	8	Dry	420	No	No blockage, no problem, line has very good flow
1/26/2012	10:30AM	216 Tanglewood	307 N. Ranchwood	South	8	Dry	450	No	No blockage, no problem, line has very good flow
1/26/2012	2:30PM	218 Tanglewood	307 N. Ranchwood	South	8	Dry	160	No	No blockage, no problem, line has very good flow
1/27/2012	2:45PM	608 Oak Creek Dr	608 Oak Creek Dr	South	8	Dry	160	No	Ran line to 160FT. Unable to get any further. Used chain-cutter. Pulled back a few roots.
1/27/2012	2:00PM	501 Palms Dr	502 Palms Dr	East	8	Dry	30	No	Tree roots need cut out of entrance of line about a ft and half in line
1/29/2012	2:00 PM	314 Vol Elm Ave	2010 Ronald St	East	6	Dry	150	No	Ran line, no blockage and no problems. Line had good flow.
1/29/2012	2:00 PM	314 Vol Elm Ave	2010 Ronald St	South	8	Dry	175	Yes	Ran line, removed grease and rags. Line has good flow now.

1/30/2012	3:30PM	217 Del Mar Dr	307 N. Ranchwood Blvd	South	8	Dry	190	No	Ran line, removed blockage (roots). MH @ 217 Del Mar Dr was standing.
2/1/2012	1:15PM	309 N. Ranchwood Blvd	307 N. Ranchwood Blvd	North	8	Dry	30	Yes	Grease and Rags
2/3/2012	11:15 AM	504 Greenwood Dr	505 N Ranchwood Blvd	East	8	Dry	325	No	Ran line, removed blockage (roots, rags). MH @ 502 Palais was standing.
2/3/2012	10:00AM	307 N. Ranchwood Blvd	307 N. Ranchwood Blvd	South	8	Wet	20	No	No blockage, no problem, line has very good flow
2/5/2012	11:45 AM	325 Kings Canyon Dr.	341 Kings Canyon Dr.	West	8	Dry	400	Yes	Grease, possible root problem
2/6/2012	8:00AM	325 Kings Canyon Rd	341 Kings Canyon Rd	West	8	Dry	225	No	No blockage, no problem, line has very good flow
2/8/2012	1:00PM	325 Kings Canyon Rd	341 Kings Canyon Rd	West	8	Dry	225	No	Ran line using chain-cutter. No blockage, no problems. Line had good flow.
2/8/2012	2:30PM	325 Kings Canyon Rd	325 Kings Canyon Rd	East	8	Dry	50	No	Ran line using chain-cutter. Cut on root clump, removed some roots. Line has good flow.
2/8/2012	3:30PM	325 Kings Canyon Rd	325 Kings Canyon Rd	East	8	Dry	50	No	No blockage, no problem, line has very good flow
2/9/2012	8:00AM	325 Kings Canyon Rd	325 Kings Canyon Rd	East	8	Dry	50	No	No blockage, no problem, line has very good flow
2/9/2012	9:30AM	1523 Diana Dr	1524 Glenda Dr	West	8	Dry	225	No	Ran line using small nozzle and skids. No blockage and no problems. Line has good flow.
2/9/2012	10:30AM	1519 Diana Dr	1511 Diana Dr	South	8	Dry	85	No	Ran line using small nozzle and skids. No blockage and no problems. Line has good flow.
2/10/2012	8:30AM	1016 Kingston Dr	1105 Queensboro Pl	North	8	Dry	200	No	No blockage, no problem, line has very good flow
2/15/2012	2:30 PM	805 Clear Creek Rd	805 Clear Creek Rd	East	8	Dry	175	No	Clean line for camera run.
2/15/2012	1:00PM	1029 E. Vandament Ave	21-4124	South	8	Dry	325	No	Ran line using small nozzle and skids. no blockage/no problems. Line has good flow.
2/16/2012	8:00AM	748 Royal Ln	805 Clear Creek Rd	East	8	Dry	40	No	Ran line using small nozzle and skids. no blockage/no problems. Line has good flow
2/17/2012	8:00AM	306 W. Bass Ave	303 W. Bass Ave	South	8	Dry	325	No	Ran 325 FT line using small nozzle and skids. No blockage, no problems. Line has good flow.
2/17/2012	1:00PM	325 Kings Canyon Rd	325 Kings Canyon Rd	East	8	Wet	20	No	Ran line using chain-cutter.
2/20/2012	1:30 PM	604 Mark Ave	307 Kimberly Ln	North	8	Dry	300	No	Cleaned line. Line section has slow flow with sediment accumulation. Line is now clear.
2/20/2012	11:15AM	604 Mark Ave	204 Briarwood St	North	8	Dry	400	No	Line flowing, made contact with resident. Also did PM run on next line section.
2/21/2012	8:00AM	325 Kings Canyon Dr	341 Kings Canyon Dr	West	8	Dry	325	No	Ran 325 FT line, no blockage/no problems. Used small nozzle and skids. Line has good flow.
2/21/2012	1:30PM	748 Royal Ln	805 Clear Creek	East	8	Dry	485	No	Ran 485 FT line, no blockage/no problems.
2/22/2012	10:00AM	106 Birch Ave	3rd St bet Ash & Birch	East	8	Dry	285	No	Ran 285 FT, removed blockage. Used small nozzle and skids. Line has good flow.
2/22/2012	11:30AM	1164 Plaza Dr	1160 Plaza Dr	East	8	Dry	300	No	Ran 300 FT line. Used small nozzle and skids. No blockage, no problems.
2/24/2012	2:30PM	913 Brookhurst Blvd	727 Arlington Dr	NE	8	Dry	150	No	No blockage, no problem, line has very good flow
2/27/2012	1:30pm	302 Kimberly Ln	516 Mark Ave	South	8	Dry	300	No	No blockage, no problem, line has very good flow
2/28/2012	10:30AM	325 Kings Canyon Rd	341 Kings Canyon Rd	West	8	Dry	325	No	Ran line using chain-cutter and small cage (6 in.), no blockage/no problems.
3/1/2012	8:45 PM	138 Chickasaw Ln	1305 Creek Dr	South	8	Dry	200	Yes	Treated 140 Chickasaw Ln with HTH, cleaned solids off back yard.
3/4/2012	12:30AM	620 Woodlawn Dr	600 Woodlawn Dr	South	8	Dry	275	No	No blockage, no problem, line has very good flow
3/4/2012	3:00 AM	620 Woodlawn Dr	604 Woodlawn Dr	SW	8	Dry	325	No	No blockage, no problem, line has very good flow
3/4/2012	3:30AM	620 Woodlawn Dr	620 Woodlawn Dr	East	8	Dry	250	No	No blockage, no problem, line has very good flow
3/5/2012	9:00AM	768 Kingsgate Rd	Westport /Comm St	NW	8	Dry	450	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
3/6/2012	3:00PM	604 Victoria Dr	600 Victoria Dr	West	8	Dry	225	No	No blockage, no problem, line has very good flow
3/7/2012	8:00AM	1032 Cambridge Dr	1203 Garden Grove Rd	North	15	Dry	175	No	Ran line, no blockage and no problems. Line had good flow.
3/7/2012	9:00 AM	1016 Kingston Dr	1201 Queensboro Pl	North	8	Dry	200	No	Lots of grease and rags. Cleared blockage - line has good flow.
3/7/2012	8:50 PM	307 N Ranchwood Blvd.	402 Mark Ave.	East	8	Dry	250	No	Pulled back alot of roots and grease.
3/16/2012	10:30AM	1000 Summerton Pl	1000 Summerton Pl	West	8	Dry	200	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
3/16/2012	11:15AM	1st St & Cedar	1st St & Cedar	East	6	Dry	300	No	Ran line using small nozzle and skids. No blockage, problems. Line has good flow.
3/17/2012	11:30	404 Linda Ln	1st St & Cedar	South	12	Dry	375	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
3/18/2012	4:00 PM	Yukon City Park MH 4028	311 Vickie Dr	East	8	Dry	350	No	Ran line using wart hog and small skids. No blockage, no problems. Line has good flow.
3/18/2012	4:55PM	1105 Garth Brooks Blvd.	224 Meade	South	8	Dry	50	Yes	Removed blockage, ran line with small nozzle line has good flow
3/18/2012	2:30 PM	1105 Garth Brooks Blvd.	1000 Summerton Pl.	West	8	Dry	150	Yes	Grease, Rags, and forks, sanitized area of bypass w/ HTH, Line flowing good
3/19/2012	10:30AM	1016 Kingston Dr	1105 Queensboro Pl	North	8	Wet	250	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
3/20/2012	11:30AM	1105 Garth Brooks Blvd	1105 Garth Brooks Blvd	North	8	Dry	250	No	Ran line using small nozzle and small skids. No blockage, no problems. Line has good flow.
3/20/2012	1:00PM	1105 Garth Brooks Blvd	1105 Garth Brooks Blvd	SE	8	Dry	350	No	Ran line using wart hog and small skids. No blockage, no problems. Line has good flow.
3/20/2012	3:00PM	1105 Garth Brooks Blvd	1000 Summerton Pl	West	8	Dry	485	No	Ran line using small nozzle and small skids. No blockage, no problems. Line has good flow.
3/22/2012	1:00PM	1st St & Cedar Ave	1st St & Cedar Ave	West	8	Dry	485	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
3/23/2012	10:00AM	YCC 4015	YCC 4015	East	6	Dry	350	No	Ran line using wart hog and small skids. No blockage, no problems. Line has good flow.
3/23/2012	10:00AM	YCC 4015	YCC 4015	East	6	Dry	200	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.

3/26/2012	11:00AM	800 Vick Cir	800 Vick Cir	East	8	Dry	175	No	Ran line using chain-cutter & wart hog. Pulled back a few root clumps. Line has good flow.
3/26/2012	3:00PM	800 Vick Cir	706 Vick Cir	South	10	Dry	200	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
3/27/2012	8:00AM	1031 Royal Ln	1023 Royal Ln	East	8	Dry	375	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
3/27/2012	11:00AM	1031 Royal Ln	1023 Royal Ln	East	8	Dry	375	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
3/28/2012	9:00AM	420 S. Holly Ave	420 S. Holly Ave	West	6	Dry	300	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
3/28/2012	11:00AM	1005 Winnipeg Dr	1005 Winnipeg Dr	South	8	Dry	175	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
3/30/2012	8:00AM	500 W Vandament Ave	500 W Vandament Ave	East	8	Dry	175	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
3/30/2012	10:00AM	718 Poplar Ave	7th & Poplar	West	8	Dry	450	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
3/30/2012	12:30PM	1017 Queensboro Pl	1105 Queensboro Pl	North	8	Dry	400	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
3/31/2012	6:30PM	4700 Sky Trail Ct	4808 Sky Trail Ct	South	8	Dry	275	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
4/2/2012	6:30AM	848 E. Main St	848 E. Main St	South	10	Dry	175	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
4/2/2012	9:00AM	1017 Queensboro Pl	1201 Queensboro Pl	North	8	Dry	200	No	Ran line using wart-hog and 6 inch cage. No blockage, no problems. Line has good flow.
4/2/2012	10:00AM	1017 Queensboro Pl	1105 Queensboro Pl	North	8	Dry	250	No	Ran line using wart hog and 6 inch cage. No blockage, no problems. Line has good flow.
4/2/2012	11:00AM	1123 Ranchwood Blvd	1123 Ranchwood Blvd	North	8	Dry	300	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
4/3/2012	6:45PM	613 W. Beam Ave	601 W. Beam Ave	West	8	Dry	225	No	Ran line, no blockage and no problems. Line had good flow.
4/4/2012	9:30AM	1204 Winnipeg Dr	1109 Kingston Dr	South	6	Dry	300	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
4/5/2012	2:00PM	1201 Ridgeway Dr	1002 Cherrywood Ln	South	8	Dry	300	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
4/7/2012	12:02 PM	4808 Greenway Ave	4800 Greenway Ave	South	8	Dry	100	No	Ran line, no blockage and no problems. Line had good flow.
4/16/2012	11:00AM	218 E Cherry Ave	227 E Bass Ave	West	6	Dry	100	No	Ran the sewer line with the small nozzle and skid.
4/17/2012	7:15 AM	718 Poplar Ave	410 S. 7th St	West	6	Dry	300	No	Ran sewer line with small nozzle. Our line is flowing good, resident's clean out is still standing.
4/17/2012	1:00AM	718 Poplar	410 S. 7th St	West	6	Dry	300	No	Ran sewer line with small nozzle. Our line is flowing good, resident's clean out is still standing.
4/18/2012	10:30 AM	829 Cedar Ave	8th St and Cedar Ave	West	8	Dry	600	No	Did a pm run, did not help
4/18/2012	10:00AM	829 Cedar Ave	10th St & Cedar Ave	West	8	Dry	300	No	Did PM run on city line, line flowing
4/20/2012	1:30PM	506 Palais Dr	502 Palais Dr	East	8	Dry	600	No	Did PM run on city line, line flowing
4/23/2012	7:30AM	1016 Kingston Dr	1105 Queensboro Pl	North	8	Dry	122	No	Did PM run on city line, line flowing
4/23/2012	1:00PM	215 E. Willow Pl	1200 Fairbanks St	West	8	Dry	300	No	Did a pm run using small nozzle and skids. No blockage, no problems. Line has good flow.
4/23/2012	2:30PM	215 E. Willow Pl	1200 Fairbanks St	West	8	Dry	150	No	Did a pm run using small nozzle and skids. No blockage, no problems. Line has good flow.
4/24/2012	1:00PM	161 E. Vail Dr	165 E. Vail Dr	West	8	Dry	175	No	Did a pm run had good flow
4/25/2012	10:00AM	206 Choctaw Pl	210 Choctaw Pl	West	8	Dry	250	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
4/27/2012	9:30AM	705 Woodlawn Dr	629 Woodlawn Dr	NW	8	Dry	168	No	Ran line using chain-cutter and 6-inch cage. Unable to break up massive root clump.
4/30/2012	7:30AM	308 East Mead	2204 Glacier	East	8	Dry	200	No	Grease Foreign Object
5/1/2012	12:00pm	720 Victoria DR	704 Victoria	West	6	Dry	300	No	we did a pm run flow is good
5/1/2012	12:30PM	205 N 2nd St	205 N 2nd St	East	6	Dry	300	No	Did a pm run had good flow
5/3/2012	9:30AM	507 S. Holly Ave	511 Turtle Creek Dr	West	10	Dry	600	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
5/8/2012	9:00AM	1016 Kingston Dr	1105 Queensboro Pl	North	8	Dry	245	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
5/9/2012	10:00AM	101 Spruce Dr	9 Spruce Dr	East	8	Dry	300	No	Did a pm run had good flow
5/11/2012	10:00AM	1109 Winnipeg Dr	1101 Winnipeg Dr	South	8	Wet	150	No	Ran line, no blockage and no problems. Line had good flow.
5/11/2012	4:00PM	1009 Winnipeg Dr	1005 Winnipeg Dr	South	8	Wet	200	No	Did a pm run had good flow
5/14/2012	7:00AM	511 Turtle Creek Dr	511 Turtle Creek Dr	West	10	Dry	600	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
5/16/2012	9:30AM	900 Westport Blvd	900 Westport Blvd	South	8	Dry	275	No	Ran the little nozzle in the line with the flusher. Our line was flowing good.
5/17/2012	1:30PM	615 S. Holly Ave	500 Walnut Ave	West	8	Dry	250	No	Ran the little nozzle in the line with the flusher. Our line was flowing good.
5/17/2012	2:30PM	Kimbell Park	Kimbell Park	East	10	Dry	450	No	Ran line using small nozzle and skids. No blockage, no problems. Line has good flow.
5/17/2012	9:15PM	500 W Vandament Ave	500 W Vandament Ave	SE	10	Dry	300	Yes	Ran line using wart hog and small cage. Removed blockage (tree limbs, brush).
5/18/2012	2:00 PM	906 Cherrywood Ln	1000 Ranchoak Ct	North	8	Dry	300	No	Ran line with flushing truck
5/18/2012	6:07 PM	507 Kingston Pl	900 Fay	South	8	Dry	400	No	Ran our line pulled out roots need to go back and run a root cutter and camera the line.
5/20/2012	7:45 PM	906 Cherrywood Ln	502 W Bass Ave	West	8	Dry	250	No	Ran the little nozzle in the line with the flusher. Our line was flowing good.
5/21/2012	1:00PM	2 Janice Ave	906 Fay Ave	South	8	Dry	275	No	Ran line using chain-cutter and small cage. Removed several clumps of roots.
5/22/2012	2:00AM	507 Kingston Pl	1 Janice Ave	South	8	Dry	600	No	No blockage, no problem, line has very good flow
5/22/2012	4:18 PM	507 Kingston Pl	502 W Bass Ave	West	8	Dry	300	No	Ran the little nozzle in the line with the flusher. Our line was flowing good.

5/22/2012	5:00PM	219 Klondike Dr	216 E. Beech Ave	South	8	Dry	200	No	Ran the little nozzle in the line with the flusher. Our line was flowing good.
5/24/2012	9:45 PM	507 Kingston Pl	502 W Bass Ave	West	8	Dry	250	No	Ran the little nozzle in the line with the flusher. Our line was flowing good.
6/1/2012	12:00	1023 E Vandamnt Ave	1023 E Vandamnt Ave	SW	8	Dry	500	No	Ran the little nozzle in the line with the flusher. Our line was flowing good.
6/7/2012	7:30am	916 Brookhurst Blvd	925 Hampton Cir	West	8	Wet	400	No	Ran line using small nozzle and skids. Line has good flow.
6/7/2012	9:00am	916 Brookhurst Blvd	933 Hampton Cir	West	8	Wet	425	No	Ran line using small nozzle and skids. Line has good flow.
6/7/2012	1:00pm	916 Brookhurst Blvd	925 Hampton Cir	West	8	Dry	300	No	Ran line using small nozzle and skids. Line has good flow.
6/7/2012	2:00pm	916 Brookhurst Blvd	933 Hampton Cir	West	8	Dry	400	No	Ran line using small nozzle and skids. Line has good flow.
6/9/2012	8:30pm	1309 Chimney Hill Rd	1321 Chimney Hill Rd	West	8	Dry	350	No	Did PM run on city line, line flowing
6/12/2012	2:30PM	2 Janice Ave	1 Janice Ave	South	8	Dry	425	No	Did PM run on city line, line flowing
6/18/2012	7:30AM	916 Brookhurst Blvd	925 Hampton Cir	West	8	Dry	235	No	Ran line using small nozzle and skids. Line has good flow.
6/19/2012	3:00PM	1328 Chimney Hill Rd	1312 Chimney Hill Rd	East	8	Dry	400	No	Ran line, no blockage and no problems. Line had good flow.
6/25/2012	7:50 PM	1013 Cambridge Dr.	1013 Cambridge Dr.	NW	8	Dry	350	No	pulled alot of roots out of manhole with bucket and claw need more root cutting
6/25/2012	10:45 PM	1013 Cambridge Dr.	1020 Arlington Dr.	West	8	Dry	400	No	Pulled alot of roots out of manhole with bucket and claw need more root cutting
6/25/2012	1:00PM	1001 Cambridge Dr	1013 Cambridge Dr	NW	8	Dry	225	No	Ran line, no blockage and no problems. Line had good flow.
6/25/2012	3:15PM	1001 Cambridge Dr	1004 Arlington Dr	NW	8	Dry	75	No	Ran line using wart-hog nozzle and small skids. Removed blockage (grease, roots).
6/26/2012	1:30 PM	911 S 2nd St	813 S 2nd St	South	8	Dry	300	No	Ran line, no blockage and no problems. Line had good flow.
6/28/2012	2:45PM	633 Yukon Ave	621 Yukon Ave	North	8	Dry	175	Yes	Roots and Grease

75394



Wastewater Lift Stations Inventory

LS #1:	1220 East Wagner Road (Wagner)		
	2 - 50 HP	1500 GPM pumps	35° 31'19.906 N
	1 - Natural Gas Backup Generator		97° 42'55.787 W
LS #2:	2506 Bighorn Canyon (Parkland)		
	2 - 5 HP	250 GPM pumps	35° 28'46.003 N
	1 - Diesel Backup Generator		97° 44'21.346 W
LS #3:	720 Stone Mill (Stone Mill)		
	1 - 15 HP	400 GPM pump	35° 29'03.558 N
	1 - 15 HP	400 GPM pump	97° 43'33.945 W
	1 - Diesel Backup Generator		
LS #4:	1140 Lakeshore Drive (Sunrise)		
	2 - 20 HP	420 GPM pump	35° 30'27.791 N
	1 - Diesel Backup Generator		97° 43'20.785 W
LS #5:	1015 Kali (Kali)		
	2 - 3.5 HP	250 GPM pumps	35° 30'36.763N
	1 - Natural Gas Backup Generator		97° 45'34.272 W
LS# 6:	1224 East Vandament Ave. (KingsWay)		
	2 - 15 HP	400 GPM pumps	35° 29'36.660N
	1 - Diesel Backup Generator		97° 43'10.916 W
LS #7:	5 th & Ash (Dog Pound)		
	2 - 5 HP	300 GPM pumps	35° 30'43.616 N
		Natural Gas Backup Generator	97° 45'01.506 W
LS #8:	Health Center Parkway (Hospital)		
	2 - 15 HP	450 GPM pumps	35° 28'51.680 N
	1 - Diesel Backup Generator		97° 45'59.256 W
LS#9:	900 Ranchwood (Legacy Lake)		
	2 - 2.5 HP	100 GPM pumps	35° 29'28.208 N
	1 - Natural Gas Backup Generator		97° 43'33.435 W
LS #10:	Wagner Way & Pearl (Wagner Lakes)		
	2 - 15 HP	340 GPM pumps	35° 31'15.640 N
	1 - Natural Gas Backup Generator		97° 44'08.180 W



Collection System Inventory

Service Area: 26 miles
Annual Precipitation: 34"
of Full Time Employees: 11

Population: 22,920
of treatment plants: 1

A. Total System Size: 177.2 miles

1. Miles of Gravity Lines: 173.7
2. Miles of Force Main Lines: 3.5

B. Total # of Lift Stations: 10

- | | |
|------------------------|---------------------------|
| 1. 1220 E. Wagner Rd. | 6. 1224 E. Vandament Ave. |
| 2. 2506 Bighorn Canyon | 7. 5 th & Ash |
| 3. Stone Mill Dr. | 8. Legacy Lake |
| 4. 1140 Lakeshore Dr. | 9. Health Center Parkway |
| 5. 1015 Kali | 10. Wagner Lakes |

C. Total # of Service Connections:

1. Residential: 7989
2. Commercial: 646
3. Industrial: 0
4. Total: 8835

D. Age of Collection System:

- | | | |
|-----------------------------------|-----------------|----------------|
| 1. Force mains: 85% 0-25 years | 15% 26-50 years | |
| 2. Lift Stations: 100% 0-25 years | | |
| 3. Gravity flow: 60% 0-25 years | 35% 26-50 years | 5% 51-75 years |

E. Size of Pipe:

- | | | |
|--------------------|-------------|-----------------|
| 1. 8 Inch or less: | 87% Gravity | 100% Force Main |
| 2. 9-18 inches: | 10% Gravity | 0% Force Main |
| 3. 19-36 inches: | 3% Gravity | 0% Force Main |
| 4. > 36 inches: | 0% Gravity | 0% Force Main |

F. Material of Pipe:

- | | | |
|------------------------------|-------------|----------------|
| 1. Polyvinyl (PVC) | 41% Gravity | 25% Force Main |
| 2. Vitrified Clay Pipe (VCP) | 59% Gravity | 0% Force Main |
| 3. Ductile Iron | 0% Gravity | 75% Force Main |

G. < .1% of collection system served by combined sewers



2011-2012 Appendix 9-2

IMPROVEMENTS / REPAIRS MADE TO COLLECTION SYSTEM:

The improvements were done by either the City or a Private Contractor. We have addressed many manholes and lines in need of repair within our I & I Identification Program.

- Replace 50ft of 8" sewer line on Greenway
- Replace 324ft of 8" sewer line on Royal
- Replace 200ft of 10" sewer line on Walnut
- YCC Park – replaced manhole lid
- 932 Hampton – Riser repair
- Landmark & Monument – manhole repair
- 418 S 6th – 6" sewer main line repair
- 821 Willow Run - manhole repair
- 1021 Elm – 8" sewer main line repair
- 1519 Dianna – 8" sewer main line repair
- 800 Vick Cir – 8" sewer main line repair
- 10th & Elm – 8" sewer main line repair
- Behind Main St Bowling Alley – manhole repair