

Annual MOM Progress Report

2006

Submitted to EPA on February 27, 2007

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

D. Wayne Loveday

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2.27.07

Date



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Section 1: Introduction

For the second year in a row, KUB sanitary sewer overflows (SSOs) continued to be significantly lower than the pre-PACE 10 highs reported in 2003 and 2004. The chart below shows the significant decrease in total overflows achieved during each of the past two years compared to the two years before KUB implemented PACE 10.

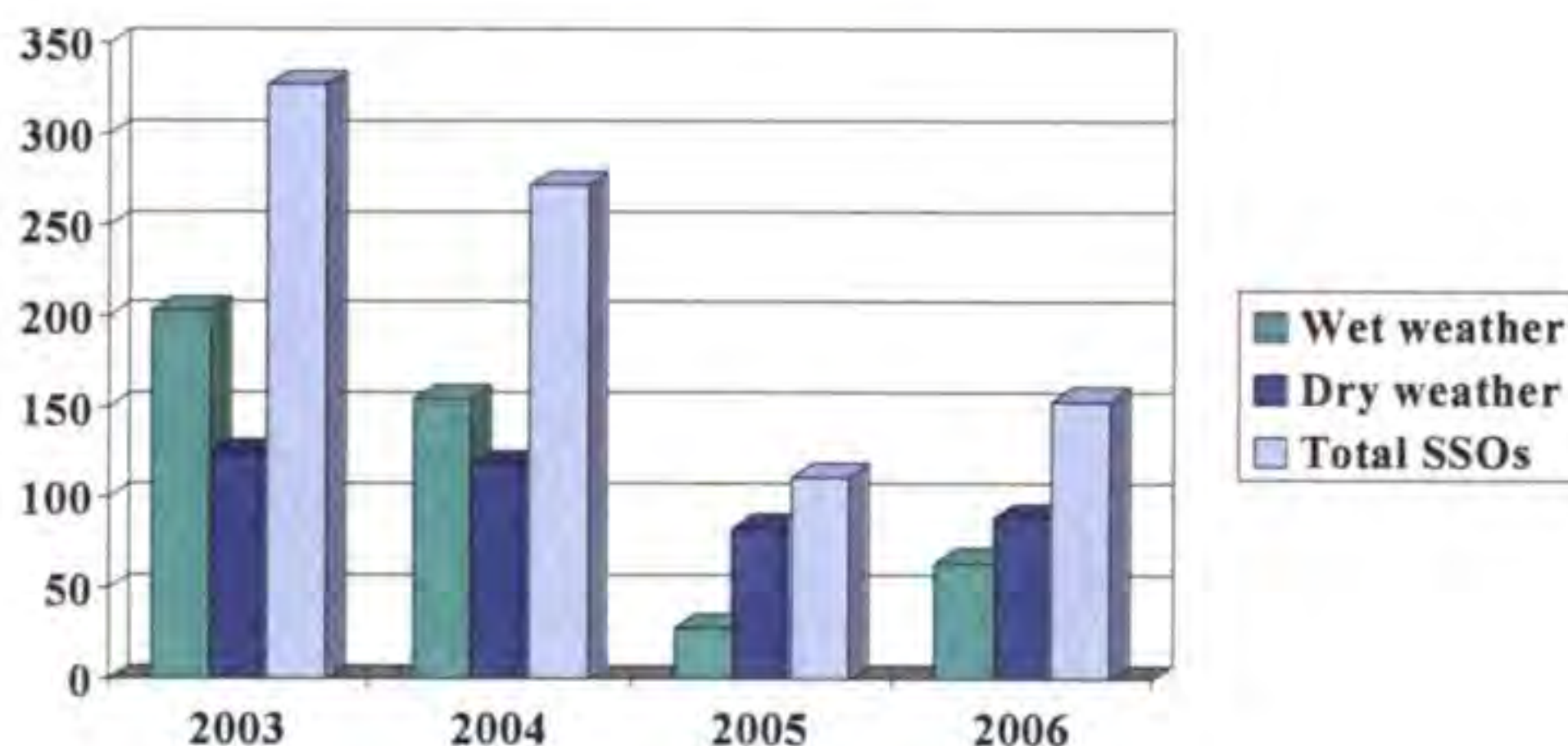
Although the number of overflows in 2006 is higher than in 2005, there are at least two key factors to consider when comparing the two years. The most significant factor is a single wet weather event in September of 2006. That event resulted in rainfall volumes and intensities approximating a 25-year storm and caused 33 of the year's 64 wet weather SSOs. That one event resulted in more wet weather SSOs than occurred in all of 2005 and more than half of those occurring in 2006. Overall, 2006 experienced almost 12 inches more rainfall than the previous year.

Dry weather overflows were also up slightly (six SSOs) over 2005, driven in part by 14 overflows resulting from construction-related work (ten) or vandalism (four). The increased number of contractor-related overflows ties directly to bypass pumping during PACE 10 construction activities.

In 2006, KUB had \$59 million in rehabilitation and replacement projects under contract, including three storage tanks and 23 miles of pipe in the collection system. Although KUB construction standards require careful planning and close management of by-passing, failures have still occurred. In 2007, KUB will place additional emphasis and oversight on avoiding contractor-related overflows and minimizing the potential for vandalism at construction sites or elsewhere.

KUB continues to implement numerous improvement projects and ongoing Management, Operations, and Maintenance (MOM) Programs. Overall, those programs are having a positive impact on dry weather overflows. For example, although the number of dry weather overflows was up, the total volume of those overflows decreased by 16 percent compared to last year (4.24 MG in 2005, 3.56 MG in 2006). The average volume per dry weather overflow [excluding major events caused by mechanical failure] was down 69 percent (from 8519 to 2649 gallons/overflow) in 2006. That indicates better response and effective blockage removal.

Sanitary Sewer Overflow Trend: 2003 Through 2006



The chart shows a significant decrease in total overflow numbers from 2003 to 2006. Although 2006 had more overflows than 2005, it also had almost 12 inches more rainfall, including one event approximating a 25-year storm. All things considered, the downward trend in wet weather overflows is continuing. The number of dry weather events increased, but the total volume of overflow from those events decreased in 2006.

In September 2006, KUB put the first of its four wet weather wastewater storage tanks into service. The 3.25 million gallon (MG) Walker Springs tank saw use September 23 – 24, when heavy rain flooded roads, homes, and businesses in Knoxville. Rainfall on September 23 at KUB's Walker Springs rain gauge was 5.05 inches, which approached a 25-year storm. A small overflow of about 60,000 gallons occurred near the end of the event. The tank contained just over 3.25 MG, preventing an overflow of a much greater magnitude.

Thirty-three overflows occurred during that significant rain event. KUB experienced only 31 overflows during the entire rest of the year under more normal rain conditions. That more closely resembles the downward trend observed in 2005 for wet weather rain events. Four of our most chronic wet weather overflow locations have been or are being addressed by trunk line and/or storage projects.

KUB's 5 MG aboveground tank in Lower First Creek was completed in late 2006 and tested and put in service in early 2007. Two other tanks were under construction in 2006: the 9 MG underground tank in Upper First Creek and the 4 MG aboveground tank in Third Creek. Those tanks will be completed in 2007.

The tanks will help KUB meet requirements to address sewer overflows and protect our environment. The tanks will store excess water from heavy rain events an estimated 15 times a year.

In 2006, KUB continued working with commercial and residential customers to prevent grease-related overflows. Seven schools and 100 food service facilities (FSFs) installed new grease interceptors. And KUB mailed out 2321 Can the Grease cans and information on how to dispose of grease properly – and why that is important – to residential customers near grease-related overflows.

In October 2006, KUB completed inspections of all 837 FSFs in its service area. KUB used those inspections to determine the potential grease risk each FSF poses for the collection system. Each FSF received a packet of information in December 2006 that explained its inspection results and that KUB used those results to determine its inspection frequency and permit fee for a new permit phase that starts in 2007.

We expect trends in both wet and dry weather overflow categories to continue downward over the next two years (assuming normal wet-weather conditions of less than a two-year rain event) as we continue to complete improvement projects and focus on MOM efforts.

KUB outsourced Blockage Abatement (BA) efforts in 2004, allowing KUB crews to focus on systematic sub-basin-by-sub-basin cleaning. The BA Program uses increased frequency of cleaning to prevent overflows in areas with previous problems until KUB schedules projects for more permanent fixes. BA crews cleaned 1,134,109 linear feet (lf) and televised 107,189 lf of gravity sewers in 2006.

In addition to the BA footage, KUB crews and PACE 10 contractors cleaned and televised 789,595 lf of sewers in 2006. (PACE 10 is KUB's accelerated 10-year, \$530 million wastewater improvement program to aggressively attack the problem of sewer overflows. "PACE" stands for "Partners Acting for a Cleaner Environment.") The 789,595 lf of cleaning exceeds the 650,000 lf goal KUB has set for each year by more than 21 percent.

Under PACE 10, contractors smoke-tested 309,816 lf of sewers and conducted 3709 man-hole inspections, with 724 manholes rehabilitated or replaced. More than 124,417 lf of wastewater mains in the KUB system were rehabilitated or replaced. In addition, KUB replaced 1488 lower lateral connections and installed two-way cleanouts at the property lines.

KUB's completed replacement/rehabilitation projects have removed 21 percent of the mains that were on the BA program. Projects under construction will continue to remove footage from the program.

This second MOM Annual Progress Report, which covers the 2006 calendar year, includes an update on the Sewer Overflow Response Plan (SORP) that governs KUB's response to SSOs and how it communicates about SSOs. The main focus is on the four major programs listed below that helped KUB achieve significant reductions in SSOs:

- Grease Control Program
- Continuing Sewer System Assessment Program (CSSAP)
- Infrastructure Rehabilitation Program (IRP)
- Gravity Line Preventive Maintenance Program (GLPMP).

KUB continues to implement, manage, and refine the Other MOM Programs listed in the Consent Decree Appendix A. Where applicable, any of those programs with changes or significant accomplishments are summarized in Section 7.

In August 2005, KUB launched a new Private Lateral Program (PLP). Under the PLP, KUB inspects customer-owned private laterals, notifies customers with defective laterals or prohibited connections, and enforces repairs or replacements. KUB tracks information about the PLP in a Lotus Notes information management system (IMS) called the Private Lateral Tracker. (This report includes a summary of the PLP in Section 8.)

KUB also developed and continues to refine another IMS that is referred to in several of the MOM programs covered in this report: the Collection System Maintenance (CSM) program. The CSM is an electronic record-keeping tool used by internal and external field crews. This multi-faceted program collects information for the proactive cleaning and condition assessment of system components. It also records the activities of the reactive crews, such as the Hot Crew and First Responders. SubCam software is used in conjunction with the CSM to allow operators to enter condition assessments during the TV inspection process. To maximize efficiency, KUB began downloading TV inspection data daily in 2006 from each mobile unit to the main server.

Typical information included in the CSM includes tracking numbers, equipment numbers, the team performing the work (Standby, etc.), date and time, manhole information, pipe information, productivity numbers, and follow-up street or landscaping repairs. The manhole section of the CSM records the assessment during manhole inspections, including manhole IPID (an internal numbering system), manhole elevation, surface cover, and condition of the manhole components. It also tracks any Capacity Assurance Program (CAP) credit (based on location, such as riparian, non-riparian, or paved area). The line section tracks factors including smoke testing, CCTV, flushing, and root-cutting.

The data collected in performing the CSSAP is used to feed the IRP decision-making process. We refer to this as our basin characterization process. As all the data is collected for a sub-basin or mini-basin, a design engineer and our basin engineer evaluate it. Lines are then recommended for rehabilitation, replacement, or continued maintenance and inspection based on design criteria and engineering judgment. The output of this process can be a comprehensive rehab project, a short-line replacement, a point repair, and/or maintenance schedules. To date we have completed seven sub-basins and 24 mini-basins in this process. Of those 24 mini-basins characterized, 22 have completed construction projects.

This progress report shows how KUB will continue to use and refine MOM programs in the future to better maintain our system, serve our customers, and protect our environment.

Section 2: Grease Control Program

KUB's Grease Control Program consists of three primary elements:

- Routine inspection of food service facilities (FSFs)
 - Existing FSFs
 - New/remodeled FSFs
- Grease-related SSO Response
- Residential Grease Control Program.

This MOM Progress Report section and the summary tables included in Appendix A provide an overview of the program's activities in 2006. The summary tables provide more detailed information about the elements of KUB's Grease Control Program. For example, they give information pertaining to grease related SSOs, interceptor requirements for FSFs, the number and results of inspections, enforcement actions taken, etc. All FSFs in the KUB service area are on a scheduled rotation for inspection. The FSFs included in this report are only those that were inspected in 2006. Each year we will add the FSFs inspected to form a cumulative list.

Inspections of Food Service Facilities

KUB conducted 1831 total inspections of FSFs on its wastewater system in 2006. That included 281 initial inspections, 413 follow-up inspections, and 1137 repeat inspections. KUB required 100 of the FSFs to install new traps or interceptors to help prevent grease-related overflows in their areas. [These were routine inspections in addition to the inspections of all 837 FSFs for the permitting phase described below.]

KUB identified seven Knox County Schools food-preparation sites as major contributors to growing grease problems in their areas: East Knox County, Belle Morris, Norwood, Pleasant Ridge, and Spring Hill Elementary; Green Magnet Math and Science Academy; and Gresham Middle. KUB required them to install 1500-gallon grease interceptors (*see photos below*) to help prevent new chronic overflows.



KUB's Grease Control personnel also use a "sludge judge" (*see below*) to measure the effectiveness of grease interceptors at FSFs. The tool takes a core sample from the interceptor and measures the percent of solids. If the solids are more than 25 percent, the FSF is required to increase the frequency of its pumping schedule.



KUB Notified FSFs New Permitting Phase Starts in 2007

In December, KUB sent 837 letters reminding food service facilities that KUB works with them through the Grease Control Program to control the discharge of grease into the wastewater system. The program requires all FSFs to be inspected periodically and to obtain a Grease Control Permit annually.

The permit fee is \$100 per year for each facility. If an FSF's grease control system is rated as unacceptable or high risk to KUB's system, there is an additional \$50 fee. Each facility will be assessed annually to determine the proper fee.

In the first quarter of 2007, each facility will receive a permit packet. The packet will explain the facility's risk rating and include application materials and program guidelines. KUB completed inspections of all 837 FSFs in its service area in October 2006 to determine risk ratings for the permit evaluations.

The FSF owner must mail the permit application form and signed receipt of acknowledgement back to KUB within ten days after receipt. If it is not mailed back within the allotted time, KUB will begin enforcement action as necessary to ensure compliance under program guidelines.

Grease Control Staff Works With Customer to Solve Odor Problem

Inspection and enforcement are not the only aspects of the Grease Control Program. Staff members also work with customers to help solve odor issues and other problems. A good example in 2006 was Kitt's Café. The restaurant was experiencing odor issues from its grease trap, and KUB Grease Control Program staff worked with them to conduct OdaLog studies to measure the odor and test possible solutions.

After trying vented grease trap lids, the odor decreased somewhat, but not to the customer's satisfaction. KUB suggested, based on more OdaLog data, venting the interceptor, which turned out to be a successful resolution. [See photos below.]



Grease-Related SSO Response and Residential Grease Control Program

The majority of grease-related overflows in the KUB system occur in residential areas. When such an overflow occurs, KUB initiates a Grease Investigation that includes making field inspections and sending information to residential customers.

Based on the location of the SSO, KUB uses the electronic mapping tool LandViewer to place a graphic polygon around the geographic areas upstream of the SSO location. That helps identify all wastewater customers that may be contributing grease to the SSO location. KUB then generates a report containing customers' names and account information.

KUB inspects commercial customers to verify their compliance with KUB's Grease Control Program. Residential customers are mailed a letter, an educational brochure, a *Can the Grease* can, and a refrigerator magnet to remind them not to pour grease down drains.

In 2006, KUB mailed grease letters to customers near 24 grease-related overflows. KUB also sent 2321 cans with letters to residential customers. [Note: KUB does not send cans to commercial customers, which must have grease traps or interceptors.]



KUB continues to promote Can the Grease at community events, distributing 772 cans, and sending speakers to nine meetings and programs. Schools also participate in raising awareness about protecting the environment. In 2006 students at Karns High School competed to design a grease brochure [see photo], which KUB helped judge. And students in the Green Team Club at Gresham Middle started designing their own cans for a contest that will be judged in early 2007.

Section 3: Continuing Sewer System Assessment Program (CSSAP)

The CSSAP is a systematic evaluation of the entire wastewater collection and transmission system (WCTS) that also assesses capacity to support prioritization of the Corrective Action Plan/Engineering Report (CAP/ER) and the Infrastructure Rehabilitation Program (IRP). It consists of five key programs, each of which includes a method for setting priorities for determining where assessments are to be performed, a list of the tools and methods to be used to conduct assessments, and a performance measure to track progress.

The following table shows the elements of the CSSAP, priority criteria, assessment tools, and performance goal periods:

Program Elements	Assessment Tools	Completed in 2006	Total Completed*	One Complete Cycle Period
Manhole Condition Assessment	Manhole Inspections Smoke Testing	24 percent	38 percent	12 Years
Gravity Sewer Condition Assessment	Flow Monitoring Smoke Testing Dye Testing CCTV	13 percent	32 percent	12 Years
Private Lateral Condition Assessment	Flow Monitoring Smoke Testing Dye Testing CCTV	20 percent	39 percent	12 Years
Force Main Performance Assessment	Corrosion Defect Identification	9 percent	77 percent [completion set for June 07]	2 Years
Pump Station Performance Assessment	Pump Station Performance and Adequacy	62 percent	100 percent	2 Years

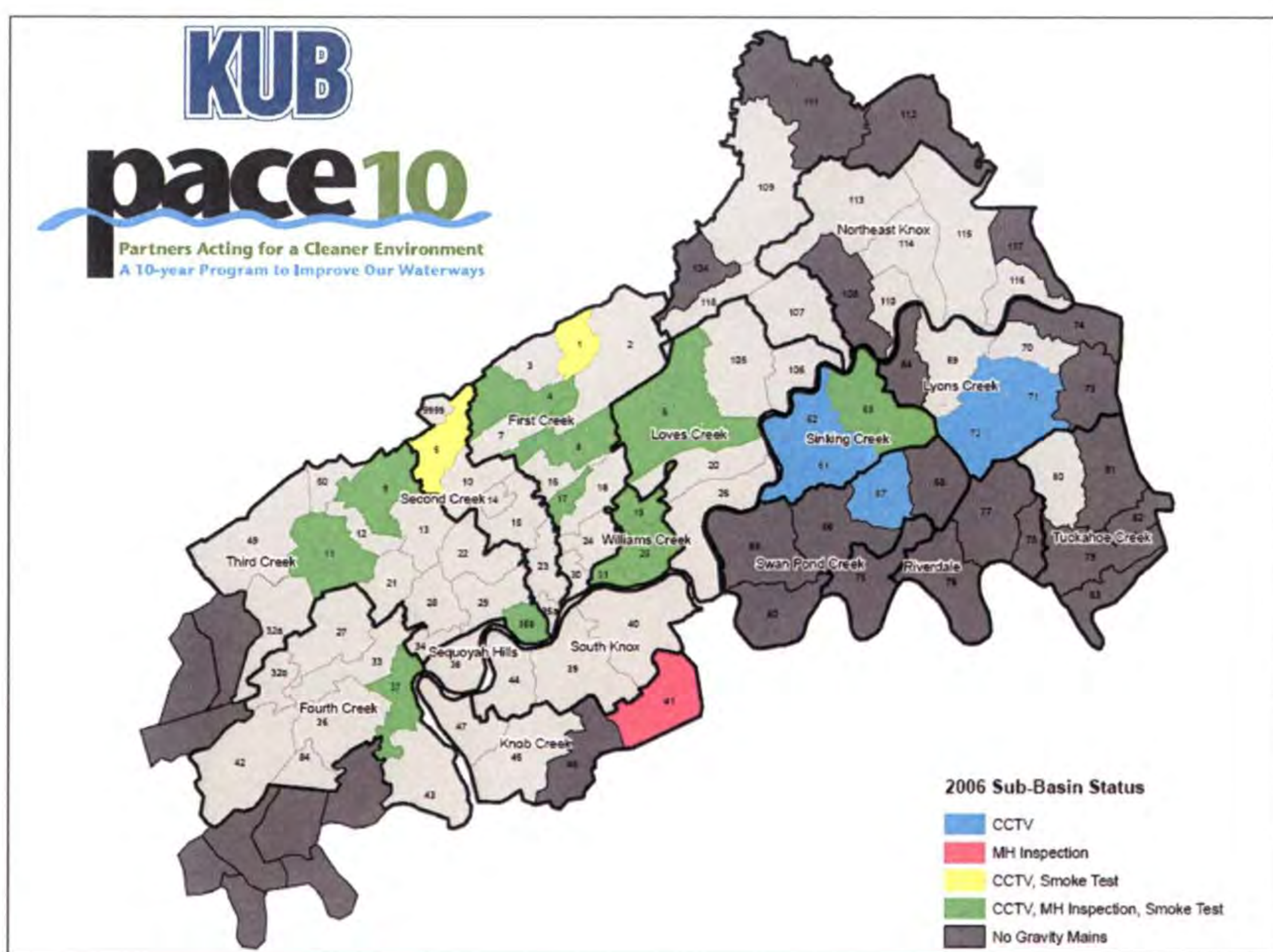
*Since CSSAP approval 7-28-05

Manhole and Gravity Sewer Condition Assessment

We are dedicated to completing one full cycle of collection system assessment and cleaning in 12 years. Although the pace may vary in the future, KUB was able to clean and CCTV at higher rates than anticipated in 2006. On the 12-year schedule, KUB's daily clean-only goal is 2500 lf per day, and the daily clean and CCTV goal is 2000 lf per day.

In addition to the BA footage, KUB and PACE 10 contractors cleaned and televised 789,595 lf of gravity sewers in 2006. Under PACE 10, contractors smoke-tested 309,816 lf of sewers and conducted 3709 manhole inspections, with 724 manholes rehabilitated or replaced. A sample daily program schedule is included in Appendix B. More than 124,417 lf of wastewater mains in the KUB system were rehabilitated or replaced. In

addition, KUB replaced 1488 lower lateral connections and installed two-way cleanouts at the property lines.



During 2007, we will reconcile the data from our 2006 efforts. This will ensure thorough cleaning and inspections were conducted on all assets in the sub-basin. Any assets not assessed will be re-visited in 2007.

Flow Monitoring and Modeling

Flow monitoring and modeling continue to be important tools to help KUB assess its system and prioritize basins for cleaning and rehabilitation. KUB added five permanent flow meters in 2006, bringing the total number of permanent flow meters strategically placed in the wastewater system to 35.

KUB plans to continue to add permanent meters and to use temporary meters to collect data for the system model to help determine what areas to investigate and prioritize for future projects. Flow monitoring data supports planning for Gravity Line Preventive Maintenance, Pump Station and Force Main Preventive Maintenance, and Infrastructure Rehabilitation.

In 2005, KUB performed base-line flow monitoring in several basins, including Second Creek, Lower Third Creek, Williams Creek, Loves Creek, and Eastbridge. Second Creek

had the most sub-basins with RD I/I per linear foot values above 40, and Loves Creek had the highest values with two basins above 100. KUB scheduled further evaluation, such as smoke testing and CCTV, for Second Creek and Loves Creek.

In 2006, KUB completed projects in 15D2 and 23E1 in Second Creek, which are scheduled for post-rehab monitoring in 2007. KUB also designed and started construction on projects for 6A4 and 6A5 in Loves Creek in 2006. Those projects in the Knoxville Center/Washington Pike area will be completed in 2007. *[See Appendix C for sample maps from Second Creek and Loves Creek basins.]*

After completing improvement projects in 2006, KUB conducted post-rehabilitation flow monitoring in five mini-basins in First Creek and four in South Knoxville. KUB's contractor installed nine temporary flow meters and five rain gauges for the study; data used for the study was collected from January 23 through April 11, 2006. Basin engineers assessed the data to determine the need for any additional improvements in the sub-basin.

Private Lateral Condition Assessment

Private laterals may also be a major source of RD I/I. Private lateral inspections currently follow PACE 10 wastewater system improvement projects. As part of the projects, KUB replaces the lower lateral and installs a two-way cleanout. KUB replaced 1488 lower laterals in 2006.

A contractor televises customers' upper laterals through the new cleanout and scores them using standard Pipeline Assessment and Certification Program (PACP) criteria. PACE 10 Program Manager CH2M Hill reviews the data and makes recommendations on repairs to the KUB Collection System Improvement Department (CSI). KUB staff reviews the recommendations for consistency with PACP standards and enforcement action is taken where appropriate.

In 2006, KUB notified 714 customers that they needed to repair or replace their private laterals and remove any prohibited connections. One customer filed an appeal, which was resolved when he presented more information, and 585 customers completed repairs or replacements. KUB terminated 12 water services for noncompliance; five services were reinstated after repairs were made, and seven remained disconnected and unoccupied through December.

This project was undertaken in conjunction with the settlement of a civil enforcement action taken by the United States for violations of the Clean Water Act.

For more information on the PLP, see Section 8.

Force Main and Pump Station Performance Assessment

As shown in the CSSAP table at the beginning of this section, KUB is committed to assessing all force mains and pump stations on a two-year cycle.

In 2006, KUB performed 2238 inspections at pump stations. That included 1622 routinely scheduled preventive maintenance inspections and 616 additional inspections initiated by field crews. *[See Appendix D for maintenance activities and schedule.]* Pump station

maintenance crews also gather information for KUB consultant Camp, Dresser & McKee (CDM) for modeling purposes. Examples include the following:

- Performing 38 pump efficiency tests at various facilities
- Maintaining 12 flow meters to collect data from various facilities
- Pulling data from the Treatment Plant SCADA run-time database.

KUB's Force Main Condition Assessment Program identifies areas needing corrosion control and uses that information to schedule appropriate maintenance activities. Because steel, cast iron, and ductile iron pipe are susceptible to corrosion damage in areas where air is introduced, KUB is initially focusing assessment efforts around air-relief valves.

Problems that arose when a developer buried the valves at one subdivision led KUB to establish a valve service box procedure. The box protects the valve and makes it easy to find and to access. It also helps avoid having to disturb homeowners' yards for maintenance work.

Manholes and lines downstream of low-pressure force mains are areas that may experience odor complaints. KUB concentrates hydrogen sulfide monitors and control efforts in areas like those.

KUB will develop a comprehensive improvement plan for pump stations and force mains using performance-related data collected in 2005 and 2006.

Summary of Changes to the CSSAP

KUB performs an annual review of programs approved by the EPA to ensure they are up to date and being fully implemented. The most current version of the CSSAP can be found on KUB's web site in the Public Document Repository. Following is a brief description of changes made as a result of that review and the locations where they may be found in the actual CSSAP document:

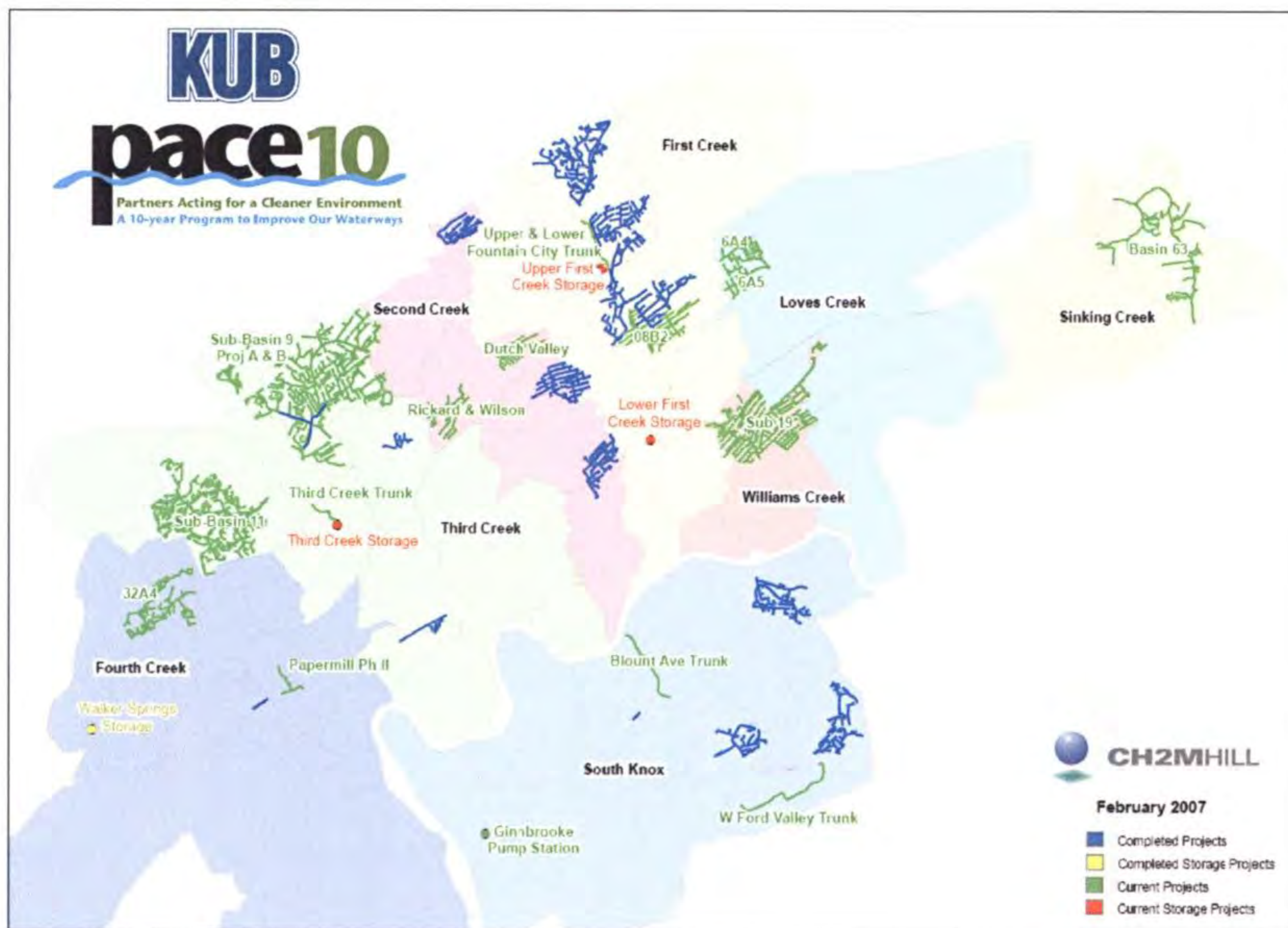
1. Number of combination cleaner/vacuum trucks changed from three to two (CSSAP, page 10).
2. Figure 1-3 updated to reflect new allocation of resources (CSSAP, page 11).
3. Descriptions for resources in Figure 1-3 updated to reflect new allocation of resources (CSSAP, pages 11-12).
4. Number of permanent flow monitors increased from 25 to 30 in 2006 (CSSAP, page 26).
5. Number of rain gauges increased from six to seven in 2006 (CSSAP, page 26).
6. Figure 3-1 updated to include pump stations that went on line in 2006 (CSSAP, page 36).
7. Number of pump stations increased from 56 to 61 in 2006 (CSSAP, pages 37 and 45).
8. Latitude and longitude are not collected as part of the routine manhole inspection process (CSSAP, page 39).
9. New CCTV equipment and software was implemented in June 2006 (CSSAP, page 44).

Section 4: Infrastructure Rehabilitation Program (IRP)

The main objectives of the Infrastructure Rehabilitation Program (IRP) are to address in-flow and infiltration (I/I) and other causes of sanitary sewer overflows (SSOs) by maintaining or restoring capacity and structural integrity. It addresses both the gravity portion of the WCTS (gravity lines, manholes, etc.) and the transmission components (pump stations and force mains).

Gravity Lines and Manholes

KUB's IRP rehabilitated or replaced 124,417 linear feet (lf) of sewer mains in 2006. [That is about 2 percent of the KUB system, as shown by the map below.] Out of 3709 manholes inspected, 724 were rehabilitated or replaced. The mains were rehabilitated or replaced using a mix of cured-in-place pipe, pipe bursting, or open-cut pipe replacement.



As part of PACE 10 wastewater system improvement projects, KUB also replaced 1488 lower laterals and installed lateral cleanouts.

Post-rehabilitation/replacement flow monitoring started in January 2006 to evaluate the effectiveness of completed projects in removing I/I from the KUB system. Preliminary indications show those projects had an immediate impact on chronic overflow sites, several of which are experiencing fewer overflows.

Completed projects continued to show results in decreasing overflows in 2006. Examples include projects in the South Haven, Stone Road, and East Ford Valley areas, as well as continued work in Fountain City. The most dramatic example, however, may be the first KUB wastewater storage tank.

The Walker Springs tank saw use September 23 through 24, 2006, when heavy rain flooded roads, homes, and businesses in Knoxville. Rainfall September 23 at KUB's Walker Springs rain gauge was 5.05 inches, which approached a 25-year storm. The tank contained just over 3.25 MG, preventing an overflow of much larger magnitude than the small overflow of 60,000 gallons that occurred near the end of the event.

Two storage and trunkline projects started in 2006 and to be completed in 2007 also will have a large impact on chronic overflows. The Upper First Creek Trunkline and Storage Tank will help resolve overflows in Fountain City, an older, problematic area. The Lower First Creek Trunk Line and Storage Tank will address a chronic overflow at Fourth and Hoitt.

KUB initially focused heavily on flow monitoring and modeling to direct rehabilitation. As the IRP matures, KUB increasingly uses other components of the CSSAP, such as televising lines and inspecting pump stations, to direct improvements. Basin Characterization is becoming a larger part of the evaluation as a more comprehensive set of data becomes available from CSSAP.

Basin Characterization Key New Component of IRP

In 2005, KUB started working with PACE 10 Program Manager CH2M Hill on basin characterizations for approximately 600,000 linear feet of sanitary sewer in 25 sub-basins. In 2006, approximately 500,000 lf of that was characterized and 100,000 lf was designed and is scheduled for construction in 2007. The new approach represents a change from hot-spot driven reaction to more holistic planning.

The CH2M Hill engineer puts information gathered in the CSSAP into a basin characterization spreadsheet. [*See example in Appendix G.*] The results include physical inspections, such as smoke testing, manhole inspections, and CCTV, as well as flow monitoring. PACP results from CCTV are broken down to focus on structural defects per line.

The engineer looks at the basin as a whole and at individual lines and manholes that have problems and makes recommendations. The characterization becomes the preliminary

design report for work in that basin. CH2M Hill and KUB Basin Owners discuss the recommendations, and KUB prioritizes and schedules projects to rehabilitate assets.

Pump Stations and Force Mains

Key performance criteria for pump stations and force mains are hydraulic capacity and structural integrity. Key criteria for pump stations are also mechanical and electrical reliability. KUB's ultimate goal is to upgrade pump stations as necessary to maintain design life of equipment and to certify capacity for new connections in accordance with the requirements of the Capacity Assurance Plan (CAP).

In 2006, KUB added three new pump stations [Gazebo, Casa Bella, and Washington Pike] and two new storage facilities [Walker Springs and Lower First Creek]. KUB started design and/or construction on eight new pump stations [Holston Towne, River-view Park, Roberts Road, Whisper Ridge, Ellistown, Hammer Road, and Ridge at Westmoreland] and two new storage facilities [Upper First Creek and Third Creek] that will be operational in 2007 or early 2008.

KUB upgraded the Smithland, Millertown, and Harrison Keepe pump stations and is continuing to upgrade the Ginnbrooke pump station. The Shipetown pump station upgrade is also ongoing and scheduled to be complete in 2007.

In 2006 KUB installed a new low-pressure sewer system and removed the Emily pump station from service. KUB has also begun the design/construction of a new gravity sewer to potentially remove the Brookvale and Bud Hawkins pump stations.

Other 2006 facility and equipment work included a new generator and pump installation at Holston Hills pump station, on-site odor control installations at Walker Springs and Harrison Keepe pump stations, upgrades on the odor/corrosion control chemical feed systems at various facilities, and SCADA upgrades and improvements at various facilities.

In 2006, KUB also began to transition all wastewater facility SCADA monitoring capabilities from the Plants application to the Systems Operations Center located at Middlebrook Pike. This will be the future location for the primary notification and monitoring of all pump station, storage facility, and metering facility conditions. There have been a total of nine facilities transferred to the new system, with more to come each month. This project is scheduled to be completed in 2008.

In 2007, KUB will complete a comprehensive improvement plan using data collected in the performance assessment portion of CSSAP.

Information Management Systems Support the IRP

KUB continues to refine its wastewater system hydraulic model, which was developed using physical attributes of the system (sewer size, slope, roughness, elevations relative to grade, pump station capacities) and dry and wet weather flow conditions determined

by analyzing flow monitoring. KUB uses new flow data to update and calibrate the model to ensure an accurate reflection of the system.

KUB captures information from investigation crews in the Collection System Maintenance (CSM) Program, an electronic record-keeping tool. The CSM collects information for the proactive cleaning and assessment of the collections system and records trouble crew activities. All the information is tracked by the IPID number [unique KUB identifier], shown circled in red on the screenshots. CSM screen shots used for recording information during an SSO response are included in Appendix H.

KUB uses CCTV information management software to record condition assessments. The software provides structured data input and ensures a uniform standard that facilitates office review. All videos are linked to and can be launched through GIS. Each individual CCTV inspection consists of tabular inspection data, linked still photos, and digital videos. The PACP-certified software fully supports and conforms to PACP Standard Data Format export and/or import guidelines.

SubCam 2006 RevIT!

File Tools

Project

- Veh_ID: 5023
- Status: 2 - Complete
- Owner: Kub
- Customer: New Service
- Date: 11/9/2005
- PO Number: 1511420584
- Surveyor Name: Roger Lewelling
- Certificate Number: U-1202-290
- Media Label: Subcam

Location

- Location Code: C - Light Highway
- Street: 1206 Proctor St
- Drain Area: Third Creek
- Sub Basin: 22
- Up MH: 6-4
- Down MH: 6-3
- Pipe Seg Ref: **1153717**

Pipe

- Mat: Cp - Concrete Pipe (non-reinforced)
- Shape: C - Circular
- Height (Diam): 8
- Width: 8
- Pipe Jt Lgth: 4
- Dir of Survey: U - Upstream
- Flow Control: M - Not Controlled

Video Feed: AMH - Manhole 0.0 Ft.

001-6-4-6-3_2005.09.11.842.wmv [Play]

Dist	Code	Cont. Def.	1st Dim.	2nd Dim.	Perc.	Jt	At/Fro	To	Rmbs.	Grd.
0.0	AMH - Manhole					☐			brick	0.0
6.0	MWL - Water Level				5	☐				0.0
149.6	TFA - Tap Factory Active		6.0			☐	09			0.0
243.3	TFC - Tap Factory Capped		6.0			☐	09			0.0
348.0	TFC - Tap Factory Capped		6.0			☐	10			0.0
367.8	MGP - General Photo					☐				0.0
367.8	MWL - Water Level				0	☐				0.0
367.8	AMH - Manhole					☐			brick	0.0

Structural Rating

Defects: Index Quick Rating: 0 0.0 0000

O&M Rating

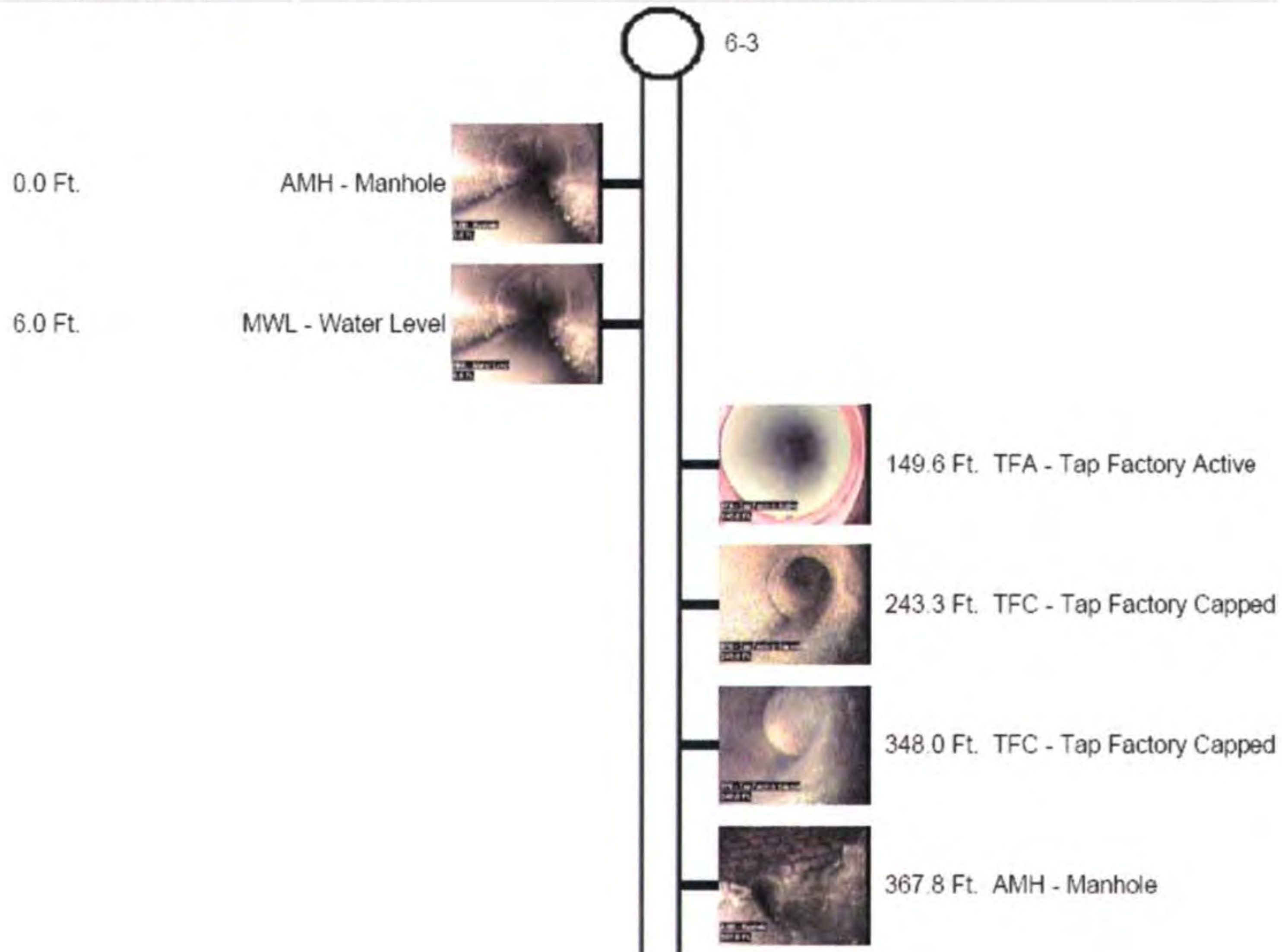
Defects: Index Quick Rating: 0 0.0 0000

Combined Rating

Defects: Index Quick Rating: 0 0.0 0000

Defect Listing Plot with Images

Surveyor Name Roger Lewelling	Certificate # U-1202-290	Owner Kub	Customer New Service	PO Number 1511420584	Sht # 1
Drain Area Third Creek	Sub Basin 22	N/A	Pipe Seg Ref 1153717	Date 2005/09/11	Time 08:42
Media Label Subcam					
Street Knoxville		Location Details 1206 Proctor St			
Up MH 6-4	Rim to Inv. 10	Grd to Inv.	Rim to Grd.	Down MH 6-3	Rim to Inv. 9
Sewer Use Sanitary	Direction Upstream	Flow Control Not Controlled	Height 8	Width 8	Shape Circular
Mat Concrete Pipe (non-reinforced)	Lining Method Other	Pipe Jt. Lgth. 4	Total Lgth. 368	Lgth. Surveyed 367.8	Year Ld. 1900
Purpose Routine Assessment	Sewer Category	Pre-Cleaning Not Known	Date Cleaned 1900/01/01	Weather Dry	
Location Code Light Highway	Addnl_Info Locate Lateral				



Defect Listing Plot with Images

Knoxville		Surveyor Name	Roger Lewelling	Certificate #	U-1202-290	Date	2005/09/11	Sht. No.	2
Location Code		Street		Location Details					
Light Highway		1206 Proctor St							
Drain Area		Sub Basin		N/A		Up MH		Down MH	
Third Creek		22				6-4		6-3	
Pipe Seg Ref	Mtl	Shape		Height	Width	Jt. Lgth.	Total Lgth.	Lgth. Surv.	
1153717	Concrete Pipe (non-reinforced)	Circular		8	8	4	368	367.8	



Pipe Inspection Add/Edit

Pipe IPID: 1153717 Manhole 1: 6-4 Address: 1206 PROCTOR ST Work Order ID: 26982789
 Subbasin: 22 Manhole 2: 6-3 Address: 1323 PROCTOR ST
 CAPCredit: * Follow Up: System Disruption:
 Comments: Flushed and tved main for mike hillard

Pipe Job Details

	Unit of Measure	Amount of Feet/Cubic Yards	Equipment No	Amount of Water Used	Number Passes
Job Code: 46 - FLUSH * Work Code: 08M - Main - 8" *	Feet	368	5102	1500	3.0
Job Code: 175 - TV * Work Code: 08M - Main - 8" *	Feet	368	5023	0	1.0
* Job Code: * Work Code: *		0		0	0.0

Save Cancel

Record: 1 of 1 (Filtered)

In 2006, KUB had 437 internal licenses for Landviewer GIS viewing software as part of its participation in the Knoxville-Knox County-Knoxville Utilities Board Geographic Information System (KGIS). KGIS is working on an upgrade to the GIS base data, which includes streets, parcels, aerial photos, etc.

The GIS is a valuable centralized database for system attribute data and collected information. For example, information from the IRP is stored in GIS tables to provide easy access to information by Basin Owners, UGC field crews, consultants, etc.

The GIS displays map data in layers: streets on one layer, parcels on another, houses on another, etc. That allows an almost unlimited flexibility for viewing only the desired features and area. Non-graphic information is also associated with many map features and is stored in databases for immediate retrieval.

Each line in GIS is linked to an as-built [when it is available]. GIS can launch the designated as-built automatically, without an individual searching the directory database.

CCTV can also be accessed through the Landviewer application, making retrieval of recent video inspection more readily available to KUB engineering staff.

Section 5: Gravity Line Preventive Maintenance Program

The Gravity Line Preventive Maintenance Program (GLPMP) describes KUB's process for preventive cleaning of the wastewater system to improve operation, efficiency, and effectiveness. KUB is committed to cleaning the entire wastewater collection system in 12 years.

The GLPMP is divided into the Comprehensive Hydraulic Cleaning Program (CHCP) and Blockage Abatement (BA). Root Control and Manhole Preventive Maintenance are components of both the BA and the CHCP. KUB determines chemical and mechanical root abatement frequency by the condition assessment program.

The Comprehensive Hydraulic Cleaning Program (CHCP)

The CHCP is a systematic, planned cleaning of the system to reduce debris and grease buildup and root intrusion. It is based on preventing and reducing the initial occurrence of system disruptions and maintaining the original hydraulic capacity of the collection system. It also provides support to the CSSAP by removing any obstruction in the system that would prevent a comprehensive inspection.

KUB and PACE 10 contractors cleaned and televised 789,595 linear feet (lf) of sewers in 2006. That is 10 percent of the KUB gravity collection system cleaned and televised.

The Blockage Abatement Program

BA is a preventive maintenance approach for addressing operational issues. It uses previous event history and condition assessment information to implement activities that prevent or reduce system disruptions.

KUB has outsourced BA efforts since 2004, allowing KUB crews to focus on systematic basin-by-basin cleaning. BA contract crews cleaned 1,134,109 linear feet (lf) and televised 107,189 lf of sewers in 2006.

KUB adds a line segment to the BA Program when its cleaning frequency under the maintenance cycle proves insufficient to prevent overflows based on actual performance (i.e. overflow) or inspection data. Each line segment included in the BA Program is assigned a cleaning frequency more aggressive than it had under the maintenance cycle. The frequency of the maintenance activity ranges from one month to 42 months.

Root Control

Root intrusion into gravity sewer lines can significantly reduce transport capacity and lead to overflows. Roots alone can block sewer lines, and they can contribute to blockages by trapping debris and grease. To address this issue, KUB developed the Chemical Root Abatement Program to limit root intrusion and prevent significant capacity reductions and overflows.

Root intrusion occurs primarily along sewer lines within sewer easements. Line segments beneath roadways and other concrete or asphalt surfaces are typically far enough removed from nearby trees to limit root intrusion.

In the spring of 2006, KUB issued a contract for chemical root treatment of 164,000 feet of 6- to 42-inch pipe in six basins [1, 19, 25, 31, 39 and 40]. Contract cost was approximately \$260,000. KUB used doorhangers in the basins [where PACE 10 work was already under way] to let customers know the contractor would use EPA-approved chemicals that are odorless, non-toxic, non-flammable, and that will not harm trees or surface plants.

KUB also uses mechanical root abatement. Both KUB crews and the Blockage Abatement Program contractor have the capability to root cut lines as needed.

The Blockage Abatement Frequency Decision Tool helps the Collection System Improvement Department (CSI) determine the initial frequencies for BA line segments and review and modify existing frequencies. It includes influencing factors to help the decision-maker apply sound engineering judgment while considering the historical performance and the current condition of the wastewater system.

Basin managers use the Decision Tool to set the initial frequency for a line segment. That original frequency may be modified later [increased or decreased] based on several factors. KUB Hot Crews may make recommendations based on what they see in the field. The BA contractor who does the cleaning may also advise KUB on any needed changes in the schedule. For efficient and effective scheduling, KUB also considers the frequency schedule of other nearby pipes on BA.

KUB uses the factors in the following Decision Tool to assign and review maintenance frequencies:

Blockage Abatement Frequency Decision Tool	
Frequency (Months)	Frequency Determining Factors
1	• Extreme rate of blockage accumulation • Pending grease control enforcement action upstream • Upstream flow considerations – High Risk • Time between two SSO events less than three months
3	• High rate of blockage accumulation • Pending grease control enforcement action upstream • Time between two SSO events less than six months • Upstream flow considerations – Moderate to High Risk

6	• Medium rate of blockage accumulation • Pending grease control compliance action upstream • Upstream flow considerations • Require CCTV Follow-up before cleaning • Initial frequency following a blockage-related SSO • Time between two SSO events less than nine months
9	• Light rate of blockage accumulation • Pending grease control compliance action upstream • Upstream flow considerations • Time between two SSO events less than 12 months
12	• Slow rate of blockage accumulation • Pending grease control compliance action upstream • Upstream flow considerations • Time between two SSO events less than 18 months
18	• Slow rate of blockage accumulation • Pending grease control compliance action upstream • Upstream flow considerations • Time between two SSO events less than 24 months
24	• Slow rate of blockage accumulation • Pending grease control compliance action upstream • Upstream flow considerations • Time between two SSO events less than 36 months • Time span for initial chemical root abatement application
36	• Slow rate of blockage accumulation • Pending grease control compliance action upstream • Upstream flow considerations • Time between two SSO events less than 42 months • Large diameter pipe
42	• Slow rate of blockage accumulation • Pending grease control compliance action upstream • Upstream flow considerations • Time between two SSO events less than 144 months • Line segments upstream of siphons

Summary of Changes to the GLPMP

KUB performs an annual review of programs approved by the EPA to ensure they are up to date and being fully implemented. The most current version of the GLPMP can be found on KUB's web site in the Public Document Repository. Following is a brief description of changes that were made as a result of that review and the locations where they may be found in the actual GLPMP document:

1. Number of miles of collection system in the BA Program increased from 130 to 225 miles in 2006 (GLPMP, page 3).
2. Figure 2-1 updated to reflect changes to linear footage per BA frequency (GLPMP, page 3).
3. Number of standard First Responder trucks increased from three to four (GLPMP, page 5).
4. One pick-up truck removed from resources dedicated to corrective component (GLPMP, page 5).
5. In Figure 2-7, amount of debris removed (wk/crew), amount of debris removed (basin), amount of debris removed (sub-basin), and amount of debris removed per 1000 feet cleaned removed from list of automatically generated reports in the BA Program (GLPMP, pages 12-13 and 18).
6. Number of CCTV inspection trucks increased from one to two (GLPMP, page 14).
7. Figure 3-2; notation added to clarify that metrics using man-hours reflect KUB crews only (GLPMP, page 18).
8. Figure 3-2, metric added for type of follow-up activities required (GLPMP, page 18).

Section 6: Sewer Overflow Response Plan (SORP)

As reported in the most recent SORP [revised and re-submitted to the U.S. EPA June 27, 2005, and approved July 28, 2005], KUB continues to place a high priority on maintaining and executing a Sewer Overflow Response Plan to help protect our community and our environment. KUB's Emergency Response Plan (ERP), which was approved by EPA on December 12, 2005, dovetails with the SORP. The ERP helps define the level of response that we take for everything from a single, isolated event to system-wide overflows.

KUB reviews the SORP annually. This progress report includes an update on implementation of recent revisions, training, and other areas of interest.

KUB makes all reasonable efforts [without endangering the safety of the responder or the public] to respond to an SSO within 45 minutes. In 2006, our average response time was 60 minutes. Although that falls slightly below our target response, we feel our response time is sufficient. We continue to work to improve our response, using technology such as remote overflow sensors that alert our system operators to an overflow condition, prompting immediate dispatch of a first responder. We are also using mobile mapping technology, which helps our responder quickly identify the geographic location of the overflow and plan the best route. Other factors that influence response time include safety considerations, location of the problem, severity of events, and work loads at the time of the call. We will assess each of these factors to determine if changes need to be made to improve response time.

KUB relies on several measures to help maintain an appropriate quality of SSO response:

- Members of the CSI team, who are knowledgeable in SORP requirements, perform periodic quality assurance audits to evaluate how effectively the crew implemented the SORP. They look at a variety of factors, including containment measures, control zone and signs, and cleaning, and they check that crews followed the disinfection procedure. CSI works closely with crews and supervisors to maintain appropriate standards.
- Underground Construction supervisors monitor crews' work on a day-to-day basis. They also use tailgate meetings in the field, coaching opportunities, and regular meetings to emphasize safety and maintaining proper standards. Compliance with established procedures is part of KUB's Performance Management Program measures and has an impact on employee ratings and raises.
- Feedback from customers, concerned citizens, neighborhood associations, City personnel, and organizations (such as the Izaak Walton League or Tennessee Clean Water Network) also helps identify any instances when the quality of response falters. Such feedback is directed to CSI, who works with UGC to correct the issue in that instance and prevent it from recurring in future responses.

Included in Appendix I are sample files detailing KUB's response to both an SSO and a Building Backup.

Safety of responders and of the public is a primary concern for KUB. During 2006, KUB crews responded to 1860 wastewater trouble calls [all calls, not just SSOs] with two re-

cordable injuries, according to KUB's Safety Department. Both injuries were investigated and preventive measures were implemented. Appropriate safety training is provided through the Safety Department, and UGC conducts regular safety meetings and discusses safety frequently at tailgate meetings.

Public Information Program: KUB's SORP includes criteria for posting signs on "non-listed" streams during blockage-related overflows. "Non-listed" refers to streams that are not on the Clean Water Act Section 303d list. KUB periodically reviews the current 303d list and provides updated information to First Responders as it is available.

The first overflow that met the agreed criteria occurred December 16, 2005, at 1204 Woodcrest Drive, on an un-named tributary of First Creek. KUB posted overflow signs every 200 yards [for up to 1,000 yards] or at points of public access to help ensure appropriate public notice. The signs are posted by KUB Water Quality personnel and removed after the fecal coliform count returns to background conditions. KUB uses its standard sign for SSO postings in these instances.



KUB continues to post warning signs, along with yellow warning tape to establish a control zone, at overflow locations. The KUB Web site also includes a log of SSOs events and safety tips on dealing with overflows.

SORP Training: In addition to working closely with all departments involved in the SORP on a day-to-day, event-by-event basis, CSI updates appropriate personnel as needed on revisions. After the revisions in June 2005, CSI provided updates on the new posting requirements for streams not on the 303d list, for example, and on building backups reporting.

Additional Manhole Surcharge Sensors: As previously reported, KUB added a tool in 2005 to help alert responders when wet weather overflows are imminent: Manhole surcharge level sensors. When the level in manholes with a sensor reaches a set point, the sensor sends a page over a cellular system. The page notifies the KUB Operations Center, which dispatches a First Responder and sends an e-mail alert to CSI. The sensor also sends a second page when the manhole level is back below the set point. In 2006, the number of sensors was increased to 30. That enabled KUB to automate coverage of the hot spots formerly on the list for wet weather surveys, freeing up crews for other duties.

KUB Web Site: As reported in 2005, KUB added a volume category to the SSO log and added a link to a permanent archive of SSOs by month. [After a web redesign in 2006, the SSO log and archive link can be reached by following the Wastewater link from the KUB homepage.] The archive includes the same information as the current SSO log: date, time, location, volume in gallons, and completed date.

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Address http://www1.kub.org/newsite/index.shtml

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KUB.org Highlights

Balanced Pay Plan Home Energy Audit Energy Savers Guide

Power Tools

Outage Map Water Calculator Home Energy Audit Small Business Energy Audit KUB News RSS KUB TV Vegetation Management Map

Community Events

Fountain City Art August-January, Fountain City Art Center. Interested in taking an art class? The Fountain City Art Center offers a wide variety of classes ranging from watercolor to beading. Class times and dates vary. Call 357-2787.

Design Lab: October 26, 2006-January 28, 2007: Knoxville Museum of Art. Enjoy the art of everyday objects. Stephen Burks' exhibition features innovative work from a variety of projects, including furniture, home accessories, lighting, packaging, photographs, prototypes, and sketches. Visit www.knoxart.org.

First Friday Arts First Friday of every month, 5-9 p.m.; Downtown Knoxville. Celebrate the arts with the Art Market Celebration. Gallery and other venues downtown. Featured artist reception every first Friday. Free parking available.

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http://www1.kub.org/newsite/balancedpay.shtml

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Wastewater

- > Consent Decree Public Document Repository
- > Wastewater Rate Increase
- > KUB Wastewater System Consent Decree Statement
- > PACE 10 Program
- > Private Lateral Program
- > Grease Control Program
- > Sewer Laterals
- > Prohibited Sewer Connections
- > Systemwide Sewer Cleaning
- > Smoke Testing Information
- > Treatment Plants
- > Collection System

Capacity Reservation Program

- > Capacity Reservation Program Brochure (pdf)
- > Capacity Reservation Application Form (pdf)

Sanitary Sewer Overflows

- > SSO Abatement
- > SSO Facts
- > SSO Remedies
- > Sanitary Sewer Overflows Log
- > Sanitary Sewer Overflows Log Archive

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Sanitary Sewer Overflow Log

KUB is part of the community we serve, and we care about our customers, our community, and our environment. That is why we are working hard to reduce sanitary sewer overflows on our wastewater system. KUB's maintenance and capital programs are addressing the issues through major capital improvements and day-to-day work to keep the system running smoothly.

In the meantime, KUB responds quickly to overflows, posts signs to alert the public to avoid contact, and cleans and sanitizes the area as soon as possible to alleviate any potential health risks. If you, your family, or pets do come in contact with a sewer overflow, wash thoroughly with soap and water.

If you need to report an overflow, please call KUB at 524-2911. To allow us to respond as quickly as possible, please do not report overflows through this Web site.

The chart below shows the date and location of overflows, which are added within 24 hours of when they are reported, and the status of cleanup efforts. The information is posted for seven days past the end of the month when the overflow occurred or until cleanup is complete, whichever is later. After that posting ends, the information is moved to the SSO Log Archive [see link below].

If you have questions about this information, please contact us at wastewater@kub.org.

[Sanitary Sewer Overflow Log Archive](#)

Sanitary Sewer Overflow Log

Date	Time	Location	Status	Volume (gallons)
01/03/2007	05:44 PM	3021 Rennoc Rd	Cleanup Completed on 01/03/2007	31
01/08/2007	01:30 AM	302 Seventh Av	Cleanup Completed on 01/08/2007	720
01/25/2007	01:00 PM	2868 London Cir	Cleanup Completed on 01/25/2007	240

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Wastewater

Sanitary Sewer Overflow Log Archive

See month from 2005 -

Click below to see the 2006 SSO events for that month.

- [January 2006](#)
- [February 2006](#)
- [March 2006](#)
- [April 2006](#)
- [May 2006](#)
- [June 2006](#)
- [July 2006](#)
- [August 2006](#)
- [September 2006](#)
- [October 2006](#)
- [November 2006](#)
- [December 2006](#)

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Summary of Changes to the SORP

KUB performs an annual review of programs approved by the EPA to ensure they are up to date and being fully implemented. The most current version of the SORP can be found on KUB's web site in the Public Document Repository. Following is a brief description of changes that were made as a result of that review and the locations where they may be found in the actual SORP document:

1. KUB service area corrected; 108-square miles (SORP, page 8).
2. Miles of main lines in system increased to 1300 in 2006 (SORP, page 8).
3. Number of pump stations increased from 56 to 61 in 2006 (SORP, pages 8, 10, and 17).
4. CSI reporting duties updated to reflect changes in organization (SORP, page 8).
5. Figure 1 updated to reflect changes in organization (SORP, page 9).
6. Number of CIC representatives updated to reflect staffing changes (SORP, pages 9 and 16).
7. Figure 2 updated to reflect new allocation of resources (SORP, page 11).
8. Descriptions for resources updated to reflect new allocation (SORP, pages 11-13).
9. Number of standard pickup trucks primarily responding to SSOs increased from six to eleven (SORP, page 13).
10. Added one 240-volt single-phase portable generator to primary SSO response equipment (SORP, page 13).
11. Number of 120-volt single-phase portable generators primarily responding to SSOs increased from one to two (SORP, page 13).
12. Added two 6-inch Godwin portable bypass pumps primarily responding to SSOs (SORP, page 13).
13. Number of full-time employees (FTEs) primarily responding to SSOs increased from six to eleven (SORP, page 13).
14. Number of secondary response standard pick-up trucks changed from five to three (SORP, page 13).
15. Number of secondary FTEs responding to SSOs changed from nine to three (SORP, page 13).
16. Number of FTEs in next level of SSO response increased from nine to ten (SORP, page 15).
17. Number of hot spots increased from 28 to 30 (SORP, page 21).
18. Employee titles changed to reflect reorganization (SORP, page 21 and 35).
19. Distribution and availability of SORP revised to note that all employees directly responsible for responding to SSOs will be given a copy of the SORP and that it is available on the KUB web site to all others, as necessary (SORP, page 37).
20. Appendix B – Grease Control Program letters updated (SORP, pages 44-49).
21. Appendix D updated to reflect equipment and employees available for SSO response during a normal working day (SORP, page 58).
22. Appendix E: Spill notification contact list updated (SORP, pages 59-60).

Section 7: Other MOM Programs

KUB continues to implement and manage the Other MOM Programs in substantially the same manner as previously reported. The following is a brief update on some areas of particular interest or those where there have been changes:

- Waste Haulers Program

In September 2006, KUB held its annual permit renewal meeting with waste haulers who bring restaurant and other domestic or special waste to Kuwahee. The meeting reviewed current program elements and procedures and upcoming changes. KUB also covered the fact that nationwide, the trend is for private industry, not utilities, to provide facilities for hauled wastes.

For a copy of Waste Hauler Program Requirements, see Appendix F. Here is a brief summary of other changes covered at the meeting:

- October 1, 2006: New permitting requirements took effect, involving more documentation of loads, more inspections, random sampling, etc.
- January 1, 2007: KUB started billing on “full loads” or 90 percent of tank capacity for each badged site entry and at the new rate of \$55 per 1000 gallons [up from \$36.75 per 1000 gallons].
- April 1, 2007: KUB will no longer accept waste from outside Knox County to ensure we can continue to provide appropriate treatment, meet regulatory requirements, and protect our environment.
- Within three years: KUB will no longer accept any grease at Kuwahee (even from Knox County). This is necessary because of the adverse impact on the treatment plant and potential compliance issues.

- Pump Station Preventive Maintenance Program

KUB’s Pump Station Preventive Maintenance Program includes both routinely scheduled maintenance and work orders field crews create. [*Orders created by crews are designated RSCIN in the spreadsheet in Appendix K.*] A crew at a pump station for a scheduled pump inspection, for example, may also decide to inspect another piece of equipment or perform a routine facility inspection.

In 2006, crews conducted 2238 total inspections of stations or equipment; 1622 of those were regularly scheduled inspections; 616 were orders created in the field. Crews performed 736 routine facility inspections, 145 motor control/electrical inspections, and 136 pump inspections.

KUB also uses the frequency of trouble occurrences to adjust inspection frequencies. If a pump at one station generates a number of trouble calls, crews may inspect it more frequently.

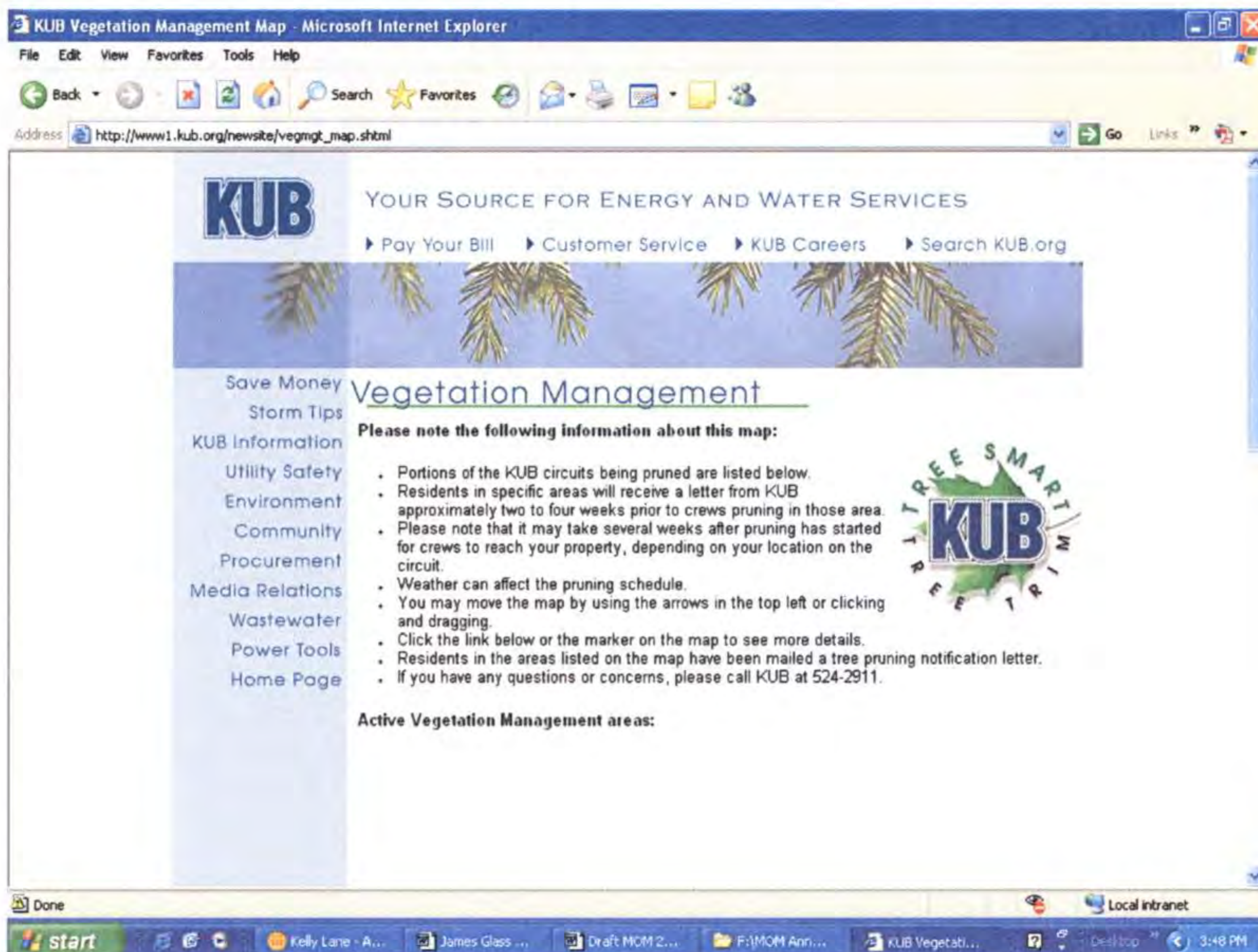
For more detail on the numbers and types of inspections see Appendix K. The appendix also includes sample checklists for some of the inspection categories.

- Maintenance of Way Programs

KUB formed a Vegetation Management Department in mid-2006. In addition, KUB assembled a nine-member Vegetation Management Action Team from across the company. The team includes members from System Operations, Engineering, Technical Services, Customer Support, Planning and Communications, and Overhead Construction, as well as Vegetation Management.

The team will develop immediate and long-term improvement efforts associated with a comprehensive vegetation management approach that will allow KUB to maintain clear right-of-ways for each of the utility services it provides.

The new department will help ensure KUB maintains a year-round, integrated vegetation management program. Its primary goals are to control growth throughout the system, provide safe, reliable service, and maintain and protect KUB facilities. KUB also wants the vegetation management program to be sensitive to affected communities and maintain the natural beauty of our region.



Section 8: Private Lateral Program

As required by the Consent Decree, KUB must operate a mandatory Private Lateral Program (PLP). The program helps protect our environment by ensuring that property owners repair their laterals and/or remove prohibited connections. [Prohibited connections include roof downspouts and other sources of stormwater.] Defective laterals or prohibited connections can overload KUB's sewer system with rainwater and contribute to sewer overflows. Leaking laterals can also add to pollution in area waterways.

KUB takes these steps as part of the PLP:

- Inspect customers' private laterals and identify defects or prohibited connections.
- Inform property owners of any defects, the process to follow to make repairs, and potential availability of financial aid.
- Ensure owners make lateral repairs or remove prohibited stormwater connections.
- Enforce the PLP by terminating the water service of customers who do not make repairs within the 120-day timeframe.

Lateral inspections currently follow PACE 10 wastewater system improvement projects. As part of the projects, KUB replaces the lower portion of the customer's lateral and installs a two-way cleanout. A contractor televises customers' upper laterals through the new cleanout and scores them using standard PACP criteria, a national standard assessment program. PACE 10 Program Manager CH2M Hill reviews the data and makes repair recommendations to KUB's CSI Department.

When defects or prohibited connections are identified, KUB sends letters notifying homeowners that they have 120 days to make repairs to avoid water service termination. The letters also include information about the defective lateral, the inspection and approval process, and funding available through the PACE 10 Residential Assistance Program.

KUB follows up with the customer several times (other mailings, phone calls, and visits, as needed) during the 120 days until the completed work is inspected and approved by the City or County inspectors. KUB developed a Lotus Notes IMS, called the Private Lateral Tracker for the PLP. KUB shares the Tracker with the City of Knoxville, which must inspect and approve lateral repairs, and the Knoxville-Knox County Community Action Committee (CAC), which administers the financial aid portions of the PLP. Each agency has updating ability only for its own section on the Tracker, but each can view the others' pages. Screen shots from the Private Lateral Tracker are in Appendix J.

KUB tracks information on property ownership, enforcement notifications sent and scheduled, the appeal process, and other customer contacts. The City uses the IMS to record when an owner or plumber applies for a permit for a property in the PLP, the date of its inspection of the work, and whether the repair is approved. The CAC records information about grant and loan applications, cost estimates, plumbers doing the work, and disbursements for successfully completed work.

Low-income KUB wastewater customers who own their homes may be eligible for aid under the KUB Grant Program* or Loan Program. { **This project [Grant Program] was*

undertaken [by KUB] in connection with the settlement of a civil enforcement action taken by the United States for violations of the Clean Water Act. } To help those customers who can least afford the repairs, KUB also voluntarily funded a \$2 million no-interest loan program for low-income customers.

The CAC administers both programs. CAC processes grant and loan applications, qualifies applicants, schedules plumbers, updates KUB, and pays repair/replacement costs from program funds.

If a customer does not make the necessary repairs, KUB will stop water service and pull the water meter. KUB will also place a PLP alert on the account in the Customer Information System (CIS), so the water cannot be turned back on until repairs are approved. When notified by a city or county inspector that the work has been approved, KUB will remove the CIS alert, replace the meter, and reinstate service.

The following PLP statistics illustrate actions from when KUB launched the program in August 2005 through the end of this reporting period [December 2006]:

Total Private Laterals in Program	794
Repair	260
Replace	609
Notifications to Date	
NONC	824 [Some multiples; new owners, etc.]
NOV	626
NOT	201
Repair/Replace Complete	617
Terminations	12
Total with Tenants	341
CAC Activity	
Applications provided to customers	120
Grants approved	97
Loans approved	12
CAC Funds Disbursed	
Grants	\$145,224.00
Loans	\$19,855.70
Estimated not Disbursed	
Grants	\$176,233.00
Loans	\$21,359.00

In 2005, KUB also worked with a customer and the City Plumbing Inspector's office to pilot using pipe bursting for a lateral repair. Given that customer's circumstances, pipe bursting was cheaper than open cut replacement. The City Plumbing Board subsequently approved allowing other customers to use the pipe bursting technique.

In December 2006, KUB hosted a meeting for licensed plumbers who perform lateral repairs, City plumbing inspectors, and CAC and KUB staff who work on the PLP program. The meeting emphasized good communication between all parties as vital to ensuring customer satisfaction.

Points covered included changes to forms and procedures in continuing efforts to improve the program and reminders to use Tennessee One-Call and provide the locator company with all available information. The presentation also stressed that prohibited connections must be removed and repairs would not be approved if such connections were present.

After the presentation, interested parties attended a demonstration of lateral lining equipment by LMK, a company nationally known for its T-Liner and Chimney Liner products. KUB currently uses a local contractor to line mains and some lower laterals, but there are currently no companies customers can turn to for private lateral lining. Several companies expressed interest in the technology, which could provide another repair option for KUB customers. This option – like the pipe bursting technique– would also have to be approved by the City Plumbing Board.

KUB continues to use a variety of inspection methods to identify defective private sewer laterals that potentially contribute I/I into the sewer system. In September 2006, for example, KUB implemented a pilot inspection project using main line and lateral launch cameras.

Using customer calls categorized as Problem on Property (POP) as inputs to the process, KUB provided CH2M Hill property addresses. Each address identified was scheduled for inspection along with the associated mainline section (upstream manhole to downstream manhole) and all laterals located on the mainline section. Necessary repairs to the main line will be completed, after which property owners with defective laterals will be notified of the need to repair or replace their private sewer lateral.

Preliminary data suggests using the launch camera will yield an additional 600 lateral inspections per year to the current push camera inspection process. KUB is buying a launch camera in 2007 to use to inspect POPs and help identify additional problem areas for lateral work.

Appendices

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Appendix A

Grease Control Program Summary Tables

FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
1	11TH Street Espresso House	30	30			3		2	1				
2	3 Sister's Court House Cafe	0		150	1	2	1	1					
3	A J's Restaurant (closed)	40	40			1			1				
4	A Taste of Havana (new)	40		40		1	1						
5	A&K Barbeque (closed)	20	20			1			1				
6	Agave Azul Mexican Grill	1000		1000		1			1				
7	AJ's Sports Bar	20	20			1			1				
8	Alex's Havana Cafe	30	30		1	4		2	2	1		1	
9	Ali Baba's Time Out Delicatessen	30	30			1			1				
10	Amber Restaurant #2	30	30			2		1	1				
11	Amber Restaurant #2	30	30			2		1	1				
12	American Fresh	30	30			1			1				
13	Amsterdam Bar & Grill	40	40			1	1						
14	Ann's Deli	40	40			1			1				
15	Apostolic Kiddie Academy	500		500		1			1				
16	Applebee's Restaurant #1	1000		1000		2		1	1				
17	Applebee's Restaurant	1000		1000		1			1				
18	Applebee's Restaurant (Knoxville Center)	1000		1000		1			1				
19	Arby's Roast Beef	30	30			1			1				
20	Arby's Roast Beef (Schaad Road)	1000		1000		1			1				
21	Arby's Roast Beef	40	40			2			2				
22	Arby's Roast Beef #1497	30	30		1	2		1	1				
23	Arby's Roast Beef #567	40	40			1			1				
24	Arby's Roast Beef #618	40	40			1			1				
25	Arby's Roast Beef #719	40	40			2			2				
26	Arby's Roast Beef#153	30	30			1			1				
27	Arnstein Jewish Community Center	40	40		1	4	1	3		1		1	
28	Asian Chao/ West Town	50	50			1			1				
29	Atria Weston Place	1500		1500		1			1				
30	Aubrey's Restaurant	2000		2000		1	1					1	
31	Auntie Anne's (West Town)	40	40			1			1				
32	Auntie's Anne's (Knoxville Center)	30	30		1	3			3			1	
33	Austin-East High School	1000		1000		1			1				
34	Austin's Steakhouse	1000		1000		1			1				
35	Azteca Market (no food)	0		40	1	2	1	1					
36	Backroom BBQ	40	40			1	1						
37	Backyard Burgers #1145	1000		1000		1			1				
38	Baptist Hospital	500		500		2		1	1				
39	Bar Knoxville	30	30			1			1				
40	Barley's Taproom & Pizzeria	1000		1000	1	3			3				
41	Barney's Coffee & Tea Cup	50	50		1	3	1	2		1		1	
42	Barnie's Coffee & Tea Co. Commissary	20	20		1	3		1	2				
43	Barns & Noble Cafe	1000		1000		1			1				
44	Baskin Robbins/Blimpie's	30	30		1	6		5	1	1	1	1	
45	Bearden Elementary School	0		1500		1			1				
46	Bearden High School	*3000		3000		1			1				
47	Bearden Middle School	**200		1000		1			1				
48	Bearden United Methodist DCC (no food)	0	0			1			1				No food production in facility.
49	Beaumont Elementary School	1500		1500		1			1				
50	Bellacino's Pizza and Grinders	50	50			2			2				
51	Belle Morris Elementary	1000		1000		5		4	1			1	
52	Big Fatty's	1000		1000		2			2				
53	Big Orange Chevron Greek Deli	30	30		1	6		5	1	1	1	1	
54	Bill's Market	40	40			1			1				
55	Bistro at The Bijou				1	1	1						

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FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
56	Blimpie	1000		1000		2			1				
57	Blue Cats Music Hall & Tonic	40	40		1	2		1	1				
58	Blue Chips Sports Pub & Grill	30	30			2	1		1				
59	Bogie's at Bearden Hill (closed)	1500		1500	1	4	1	2	1				
60	Bonefish Grill	2000		2000		3			3				
61	Borders Books Music & Cafe	40	40			1			1				
62	Bo's Produce Market & Deli	30	30		1	5	1	4		1		1	
63	Brakebill Nursing Home	*3000		3000	1	5	1	4		1		1	* FSF exceeded trap size requirement.
64	Bravo's	1500		1500	1	2			2				
65	Breadbox	40	40		1	2		1	1			1	
66	Breadbox	20	20			1			1				
67	Breaker's Sports Bar	1000		1000		2		1	1				
68	Broadway Baptist Child Develop	40	40			1			1				
69	Brownie's 2	40	40		1	2		1	1			1	
70	Buddy's Banquet Hall	1500		1500		1			1				
71	Buddy's Bar BQ	40	40			1			1				
72	Buddy's Bar BQ	1000		1000		1			1				
73	Buddy's Bar BQ	1000		1000		1			1				
74	Buddy's Bar BQ Bearden	1000		1000		1			1				
75	Buddy's Bar BQ East	**100		1000		1			1				
76	Buffalo Wild Wings Grill and Bar	1500		1500	1	3		2	1	1			
77	Burger King	1500		1500		1			1				
78	Burger King #321	1000		1000		1			1				
79	Burger King #4986	1000		1000		2			2				
80	Burger King #11722	1500		1500		1			1				
81	Burger King #12141	1500		1500		1			1				
82	Burger King #13146	1500		1500		1			1				
83	Burger King #4677	1000		1000		1			1				
84	Burger King #5346	1000		1000		1			1				
85	Burger King #9679	1500		1500		1			1				
86	Burlington Fish Market	40	40		1	2	1	1				1	
87	Burrito Diablo	40	40			1			1				
88	Bush Brothers	100		100		1			1				
89	Bush Brothers	1500		1500		1			1				
90	Butcher Shop	1500		1500		2		1	1				
91	BW's Tavern	**40	40		1	2	1	1					** FSF is in enforcement process.
92	By The Tracks Bistro	500		500		1			1				
93	Cafe Gourmet	40	40		1	3	1	1	1				
94	Cagle Terrace (no food)	0	0			1			1				No food production in facility.
95	Cajun Café (West Town)	20	20		1	2		1	1				
96	Cajun Café (West Town)	40	40		1	2		1	1				
97	Calhoun's Banquet and Catering Kitchen	1500		1500		1			1				
98	Calhoun's Commissary	**50		1500	1	2			2				** FSF is in enforcement process.
99	Calhoun's On Bearden Hill	1500		1500		1			1				
100	Cancun	50	50		1	1			1				
101	Cancun	200		200	1	1			1				
102	Cancun Mexican Restaurant & Cantina	1000		1000		1			1				
103	Canteen Food Services	30	30		1	2		1	1				
104	Capone's Windy City Eatery	0	0			1	1						No need for grease control equipment currently.
105	Captain D's # 3204	1000		1000		1			1				
106	Captain D's #3205	1000		1000		2			2				
107	Captain D's #3406	1000		1000		1			1				
108	Cardins Drive-thru	**0	40			1			1				** FSF is in enforcement process.
109	Carmike Cinemas 10	30	30			2			2				
110	Carousel (remove)	40	40			1	1						

FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
111	Carringer & Son's Market	20	20			1	1						
112	Carter Elementary	1000		1000		1			1				
113	Carter High School	**500		1500		1			1				Schools are in the enforcement process.
114	Carter Middle School	1500		1500		1			1				
115	Center Plate (Coliseum)	40	40		1	1	1						
116	Central Baptist Church Early Child Ctr.	40	40			1			1				
117	Central Baptist Church Weekday	40	40			1			1				
118	Central High School	*3000		3000		1			1				* FSF exceeded trap size requirement.
119	Central Park	1000		1000		1			1				
120	Cesar Bakery	30	30			1			1				
121	Cha Cha's	1500		1500		1			1				
122	Chandler's Deli	40	40		1	2			2				
123	Charley's Grilled Subs	40	40			1			1			1	
124	Charlie Pepper's	40	40			1			1				
125	Charlie Pepper's Restaurant	1500		1500		1			1				
126	Checker Flag Deli	40	40			1			1				
127	Cherokee Country Club	1000		1000		1			1				
128	Chesapeake's	1000		1000		1			1				
129	Chic-Fil-A	20		200	1	3	1	2					FSF is moving into new location.
130	Chic-Fil-A (West Town)	50	50		1	2		1	1			1	
131	Chick-Fil A	1000		1000		1			1				
132	Chick-Fil-A	40	40		1	3	1	2					
133	Chik-Fil-a (Clinton Hwy)	1500		1500		1			1				
134	Children's Center of Knoxville	40	40			1			1				
135	Chilhowee Elementary	0		1000		1			1				Schools are in the enforcement process.
136	Chilhowee Hills Early Childhood Center	1000		1000	1	3	1	2					
137	Chili's Restaurant #34	1500		1500		1			1				
138	Chili's (Clinton Hwy.)	1500		1500	1	2		1	1				
139	Chili's (Cumberland Ave.)	1000		1000	1	2		1	1				
140	China City Restaurant	40	40			1			1				
141	China Express	40	40			1	1						
142	China Garden	1000		1000		2			2				
143	China King Buffet	40	40			1			1				
144	China Pearl (remove)	1000		1000		4			4				
145	Chop House	2000		2000		2		1	1				
146	Christenberry Elementary	1000		1000		1			1				
147	Chrome Pony Saloon	40	40		1	2	1	1					
148	Chuck E Cheese	1500		1500	1	2		1	1				
149	Church Street UMC (Kitchen)	60	60			1			1				
150	Church Street UMC (Kitchen)	40	40			1			1				
151	Ci Ci's Pizza	1000		1000		1			1				
152	CiCi's Pizza	1000		1000	1	2		1	1				
153	Cine Bean	20	20			1	1						
154	Cinnabon (West Town)	20	20		1	2		1	1				
155	Club Leconte	100	100			2		1	1				
156	Club Leconte	100	100			2		1	1				
157	Club XYZ	0	0			1			1				No food production in facility.
158	Cold Stone Creamery	40	40			2	1		1			1	
159	Colonel's Delicatessen	40	40		1	1		1	1			1	
160	Columbus Home (remove)	0	0			1			1				No food production in facility.
161	Convenience Cafe' (remove)	0	0			1			1				No food production in facility.
162	Cool Beans Restaurant	1000		1000		1			1				
163	Copper Cellar (Downstairs)	**20		2000	1	1			1				** FSF is in enforcement process.
164	Copper Cellar (Upstairs)	**0		2000	1	1			1				** FSF is in enforcement process.
165	Copper Cellar Lounge	1500		1500		1			1				

FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
166	Corky's Ribs and BBQ	1500		1500		1			1				
167	Country Kitchen	40	40			1	1						
168	Country Skillet	40	40		1	1	1						
169	Country Table Restaurant	40	40		1	1			1				
170	Court South Beach Pool	40	40		1	2	1		1			1	
171	Couva Calypsa Cafe	1500		1500		2	1		1			1	
172	Coyote Joes	40	40		1	2		1	1				
173	Cozemel's Restaurant	1000		1000		1			1				
174	Cracker Barrel # 546	*1500		1500		1			1				* FSF exceeded trap size requirement.
175	Cracker Barrel # 546	*1500		1500		1			1				* FSF exceeded trap size requirement.
176	Cracker Barrel #12	*1500		1500		3		2	1			2	* FSF exceeded trap size requirement.
177	Cracker Barrel #12	*1500		1500		3		2	1				* FSF exceeded trap size requirement.
178	Cracker Barrel #170	1500		1500		1			1				
179	Crawfords Group Day Care Home (remove)	0	0			1			1				Family residence. No need for grease equipment.
180	Cross Ministries	*1000		1000		1			1				* FSF exceeded trap size requirement.
181	Cumberland Tap Room	40	40			1			1				
182	Dairy Queen	1000		1000	1	2		1	1				
183	D'Anna's Market & Deli	40	40		1	2	1	1				1	
184	DaVinci's Pizza	40	40			1	1						
185	Denton's Orange Drink	1000		1000		1			1				
186	Deuces Bar & Grill	30	30			1			1				
187	Digenovas Pizza (remove)	1000		1000		1			1				
188	Dine-A-Mite Diner (remove)	0	0			1	1						
189	Dippin Donuts	1000		1000		1			1				
190	Dippin Dots (Knoxville Center)	40	40			1	1					1	
191	Dippin Dots (West Town)	10	10			1	1					1	
192	Dixson's Bar B Que/ REMOVE	0	0			1			1				
193	Doan's Mkt. & Deli	30	30			1			1				
194	Dogwood Elementary School	1000		1000		1			1				
195	Domino's Pizza	30	30			1			1				
196	Domino's Pizza	40	40		1	3	1	2					
197	Domino's Pizza #5466	40	40			1			1				
198	Don Pablo's	1000		1000		1			1				
199	Double D. Saloon & Grill	30	30			1			1				
200	Downtown Brewery and Grill	150	150		1	3	1	1	1			1	
201	Downtown Grind	30	30		1	3	1	1	1				
202	Dynasty Express #2	30	30			1	1						
203	Dynasty Express (Fountain City)	40	40			1			1				
204	East Head Start	40	40			1			1				
205	East Knox Elementary School	1500		1500		2		1	1			1	
206	East Tennessee Children's Hospital	2000		2000		1			1				
207	East Tn. Regional Juvenile Service Ctr.	2000		2000		1			1				
208	Echo Ridge Retirement Facility	1500		1500		1			1				
209	El Charro	1500		1500		1			1				
210	El Charro Express	20	20			1			1				
211	El Chico Restaurant #1	1000		1000	1	2		1	1				
212	Electric Ballroom Kitchen	40	40			1			1				
213	Elmcroft of Knoxville	1500		1500		1			1				
214	Entertainer Catering	150	150			2	1	1				1	
215	Etcetera @ Rocky Hill	1500		1500		1			1				
216	Evangical Bookstore	30	30			1	1						
217	Eva's To Go	1000		1000		1			1				
218	Expression To Go	30	30			1			1				
219	Fair Garden Elementary School	1000		1000		1			1				
220	Fairfield Inn By Marriott Food Service	0	0			1			1				No food production in facility.

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FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
221	Falafel Hut	40	40		1	2		1	1			1	
222	Fatboy's Restaurant	40	40			1			1				
223	Fats BBQ	0	40			1			1				** FSF is in enforcement process.
224	Fazoli's #5046	1000		1000		1			1				
225	Fifth Ave. Baptist Church	100	100	100		1	1						
226	Fifth Avenue Deli & Mkt.	40	40			1	1						
227	Firehouse Subs	40	40			1	1						
228	Firehouse Subs	1500		1500		1	1						
229	First Christian Church	0	0			1	1						No food production in facility.
230	First Step II Inc. (Young Adventurers)	40	40			1	1						
231	Flames Lounge	0	0			1			1				No food production in facility.
232	Florence Crittenton Agency Inc.	1000		1000		1			1				
233	Food City (Chapman Hwy)	40	40			1			1				
234	Food City (Chapman Hwy)	1000		1000		1			1				
235	Food City	1000		1000		1	1						
236	Food City	1000		1000		1			1				
237	Food City	1000		1000		1			1				
238	Food City # 673 (New)	1500		1500	1	4	1	2	1	1			
239	Food City # 677	1500		1500		1			1				
240	Food City # 678	1000		1000		1			1				
241	Food City # 684	1000		1000	1	1	1						
242	Food City #655	1000		1000		1			1				
243	Food City #689	1000		1000		1			1				
244	Food City (Loves Creek)	1000		1000		1	1						
245	Food Lion #1545	1000		1000		1			1				
246	Food Lion (Centerline Drive)	1000		1000		2	1		1				
247	Fort Sanders Educational	0		1000		1			1				Schools are in the enforcement process.
248	Fort Sanders Hospital	2000		2000		2			2				
249	Fountain City Creamery	30	30		1	2		1	1				
250	Fountain City Elementary	0		1000		1			1				Schools are in the enforcement process.
251	Four Way Bait & Tackle (closed)	0	40			1			1				FSF is closed.
252	France's Restaurant	30	30		1	2		1	1			1	
253	Frank N Stein (West Town)	20	20		1	2		1	1				
254	Fresh Market & Deli (closed)	0	0			1	1						FSF is closed.
255	Froots Smoothies (West Town)	40	40		1	2	1	1				1	
256	Frullati Café (West Town)	30	30			2		1	1				
257	Frussies Deli	20	20			1			1				
258	Fulton High School	30	30			1			1				
259	Garelli's	40	40		1	2	1	1					
260	Garelli's #2	40	40			1			1				
261	Gino's Pizza & Subs	30	30			4		1	3	1	1	1	
262	Ginza Japan Steakhouse & Grill	1000		1000		1			1				
263	Godfather's Pizza	50	50		1	2		1	1				
264	Godfrey's Restaurant (Holiday Inn)	150	150		1	1	1						
265	Golden Garden Chinese Restaurant	30	30		1	1			1				
266	Golden Roast	0	0			1	1						No food production in facility.
267	Golden Wok	1000		1000		3			3				
268	Goodfella's Sports Bar (closed)	30	30			1			1				
269	Grand Forest Town Homes (remove)	0	0			1			1				Buiding has been demolished.
270	Granny's Restaurant	40	40		1	6	1	5		1	1	1	
271	Great American Cookies (West Town)	30	30			3	1		2			1	
272	Great American Steak & Buffet Co.	1500		1500		2			2				
273	Great Wraps, # 1312 (West Town)	40	40		1	1			1				
274	Green Hills Grill	*2000		2000		1			1				* FSF exceeded trap size requirement.
275	Green Magnet Math and Science Academy	1500		1500		3	2		1			1	

FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
276	Gresham Middle School	1000		1000	1	4		1	3			1	
277	Gridiron Burger's	50	50			1	1					1	
278	Gridiron Burger's	150	150			1	1					1	
279	Grill Express	20	20			1			1				
280	Grizzle's Restaurant (closed)	1000		1000		2			2				
281	Gus's Good Time Deli	20	20			1	1						
282	Gus's Restaurant	40	40			1			1				
283	Half-Time Sports Bar & Grill (remove)	0	0			1	1						FSF is closed.
284	Ham 'N' Goodys, Inc.	40	40		1	9		8	1	1	1	1	
285	Handy Dandy Mkt. #5	40	40			1	1						
286	Hanna's Café (Cumberland Ave)	40	40			1	1						FSF is closed.
287	Hanna's Cafe #2	30	30		1	1	1						
288	Happy Garden Chinese	1000		1000	1	4			4	1			
289	Harby's Pizza & Deli	30	30			1			1				
290	Hardee's #1501786	1000		1000		1			1				
291	Hardee's #1501798	1000		1000		1			1				
292	Hardee's #1501829	1000		1000		1			1				
293	Hardee's #1501837	1000		1000		2			2				
294	Hardee's #1501874	1000		1000		1			1				
295	Hardee's #1501785	1000		1000		1			1				
296	Hardee's	1500		1500		2		1	1				
297	Hemphill's Mkt. & Deli	20	20			1			1				
298	Heritage Assisted Living	1000		1000		1	1						
299	Hibachi Factory (Downtown West)	60	60			2		1	1				
300	Hibachi Factory (Cumberland)	20	20		1	1			1				
301	Hillcrest Health Care	500		500		2			2				
302	Hillcrest South	500		500		1			1				
303	Hillcrest West	1500		1500		2			2				
304	Ho Ho Chinese Restaurant	20	20			2	1		1				
305	Hogan's Bakery	30	30		1	2	1	1					
306	Hogan's Bakery & Cafe	1500		1500		1			1				
307	Holiday Inn Central	1000		1000		1			1				
308	Holiday Inn Express (World's Fair)	100	100			1			1				
309	Holston Grill	40	40			1	1						
310	Holston Healthcare	1000		1000		1			1				
311	Holston Hills CC	50	50			1			1				
312	Holston Middle School	0		1500		1			1				Schools are in the enforcement process.
313	Holy Land Market	50	50		1	1	1						
314	Honey Baked Ham #2	1500		1500		1			1				
315	Honey Baked Ham Company	1000		1000		1			1				
316	Hong Kong House	1000		1000		1			1				
317	Hooter's #2	1500		1500		2		1	1				
318	Hooter's #1	1000		1000		2			2				
319	House Of Dragon	20	20			1			1				
320	House of Thaller	1000		1000	1	2			2				
321	Howard Johnson's Restaurant	40	40			1			1				
322	I Love New York Pizza	40	40			1			1				
323	I-75 Expo Snack Bar	40	40			1			1				
324	I-75 Expo Snack Bar	1500		1500		1			1				
325	IGA (Five Points)	1500		1500		1	1						
326	Ingles	1000		1000		1			1				
327	Inskip Elementary	0		1500		1			1				Schools are in the enforcement process.
328	Inskip Food Mart	50	50			1			1				
329	International House of Pancakes	*2000		2000		1			1				
330	International House of Pancakes #1	1000		1000	2	3		2	1				

0002470

FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
331	Isabella Towers (remove)	0	0			1			1				No food production in facility.
332	Jack's Breeze thru Market	40	40		1	2	1	1		1			
333	Jacob's Time-Out Deli	20	20			1			1				
334	Jason's Grill & Deli (closed)	40	40			1			1				
335	Jazz Club (closed)	30	30		1	3	1	2					
336	Jersey Mike's Subs	30	30		1	1			1				
337	Jimmy John Gourmet Sandwich	40	40			1			1				
338	Jimmy's Original Southern Pub	20	20		1	2		1	1				
339	John Sevier Mkt. & Deli	40	40			1	1						
340	John T. O'Connor Senior Citizens Center	40	40			1			1				
341	John Tarelton Home (remove)	30	30			1			1				
342	Judy's II Lounge & Restaurant	1000		1000		1			1				
343	Kaleidoscoops (closed)	40	40			1			1				FSF is closed.
344	Kanpai of Tokyo	1500		1500	1	2		1	1				
345	Kashmir Indian Restaurant	40	40			1			1				
346	Kaya Korean Restaurant	40	40		1	3		1	2				
347	Kay's Ice Cream	30	30			2			2				
348	Kenjo Market #11	40	40			1			1				
349	Kenjo Market #187	40	40			1			1				
350	Kenjo Market #30	30	30			1			1				
351	Kenjo Market #31	30	30			1			1				
352	KFC (Broadway)	1000		1000		1			1				
353	KFC (Magnolia)	1000		1000		1			1				
354	KFC (Millertown)	1500		1500		1			1				
355	KFC (Shurmard)	1500		1500		1			1				
356	KFC (Western)	1000		1000		1			1				
357	KFC (Chapman)	*2000		2000		1			1				* FSF exceeded trap size requirement.
358	Kimo's Pizza Shack	40	40			1			1				
359	King Tut's Grill	40	40		1	4		3	1	1		1	
360	King's Market Number 2	30	30		1	2	1	1				1	
361	Kingston Alley L.L.C.	1000		1000	1	2		1	1				
362	Kitts Market Cafe	1500		1500		10		7	3				
363	Knox Area Rescue Ministries	3000		3000	1	2			2				
364	Knox County Detention Facility	1500		1500		1			1				
365	Knox St. Area Voc.I Tech. (remove)	50	50			1			1				
366	Knoxville Adaptive Education Center-Cafeteria	0		1500		1	1						** FSF is in enforcement process.
367	Knoxville Billiards	20	20			1			1				
368	Knoxville Catering & Special Events	40	40			1	1						
369	Knoxville Center Mall	1500		1500	1	1			1				
370	Knoxville Chinese Christian Church	1000		1000		4	1	2	1			1	
371	Knoxville College Cafeteria	40	40			1			1				
372	Knoxville Convention Center (Concession Kitchen)	50	50			1			1				
373	Knoxville Convention Center (Main Kitchen)	1500		1500		1			1				
374	Knoxville Convention Center (Main Kitchen)	1500		1500		1			1				
375	Knoxville Elks Lodge #160	40	40			1			1				
376	Knoxville Golf Course	40	40		1	3	1	2	1			1	
377	Knoxville Hilton (Market Cafe & Marty's Bistro)	150	200		1	3	1	2					** FSF is in enforcement process.
378	Knoxville Racquet Club	40	40		1	2	1	1		1		1	
379	Knoxville Zoo	40	40			1	1						
380	Korea House Restaurant	40	40		1	2		1	1				
381	Krispy Kreme	1500		1500		1			1				
382	Krispy Kreme #55	1000		1000		1			1				
383	Kroger's	1500		1500		1			1				
384	Kroger's # 506	50	50			1			1				
385	Kroger's # 516	40	40			1			1				

0002471

FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
386	Kroger's # 848	1000		1000	1	2	1	1					
387	Kroger's # 870	40	40			1			1				
388	Kroger's	40	40			1			1				
389	Kroger's	1000		1000		1			1				
390	Krystal # 13	1000		1000		1			1				
391	Krystal # 5 (closed)	1000		1000		2			2				
392	Krystal # 6	1500		1500		1			1				
393	Krystal # 7	1000		1000		1			1				
394	Krystal #4	1000		1000	1	2		1	1				
395	Krystal #14	1000		1000	1	2		1	1				
396	Krystal #15	1000		1000	1	2		1	1				
397	Krystal #2	1000		1000	1	2		1	1				
398	Kurt's	60	60			1			1				
399	Kwik Pantry Food Stores	20	20			1			1				
400	La Costa	40	40		1	2		1	1			1	
401	La Ilusion Market	50	50			2	1	1				1	
402	La Playa Mexican Restaurant	40	40			1			1				
403	La Tapatia	40	40		1	2	1		1				
404	LaFiesta Mexican Grill	1000		1000		1	1						
405	Lakeshore Mtl. Hlth. Institute	50	50			1			1				
406	Lakeside Pizza & Pub	30	30			1			1				
407	Lariat Lounge	**0	40		1	1			1				** FSF is in enforcement process.
408	Le Parigo Restaurant	1000		1000	1	2		1	1	1			
409	Lema's	40	40			2			2				
410	Lenny's Sub Shop	40	40		1	3		1	2				
411	Lenny's Sub Shop	40	40			1			1				
412	Lenny's Sub Shop	40	40			1			1				
413	Leo's Cafe	20	20			2			2			1	
414	Leo's Cafe	*2000		2000		2			2			1	* FSF exceeded trap size requirement.
415	Little Caesar's Pizza #052006	30	30			1			1				
416	Little Caesar's Pizza #2803	20	20		1	2	1		1				
417	Little Caesar's Pizza #2808	20	20		1	2		1	1				
418	Little Italian Subs & Pizza (remove)	30	30			1			1				
419	Little Ricky's Sports Bar	0	0			1	1						No food production in facility.
420	Litton's Market & Restaurant	40	40			1			1				
421	Litton's Market & Restaurant	40	40			1			1				
422	Logan's Roadhouse (closed)	1500		1500		1			1				
423	Long John Silver's Seafood	1000		1000		1			1				
424	Long John Silver's Seafood	40		1000		1			1				Undersized trap. Working with FSF to install larger GI.
425	Long John Silver's Seafood	1000		1000		1			1				
426	Long John Silver's (Western Ave)	1000		1000		1			1				
427	Longbranch Saloon	40	40			2	1		1				
428	Long's Drug Store	40	40			4		1	3	1		1	
429	Lonsdale Elementary	0		1000		1			1				Schools are in the enforcement process.
430	Lord Lindsey	40	40			1	1						FSF is closed.
431	Los Arcos Mexican Restaurant (remove)	50	50			1			1				
432	Los Molcajetes Mexican Restaurant (remove)	0	0			1			1				Business is closed.
433	Los Paisano's Mexican Restaurant	1000		1000		1			1				
434	Louis' Restaurant	1000		1000		1			1				
435	Love Kitchen	70	70		1	5	1	4					
436	Lunch Box	50	50		1	4		1	3				
437	Lunch Box Market and Grill	30	30			1			1				
438	Lunch House	30	30			1			1				
439	Lunchbox Market & Cafe at the Atrium	40	40			1			1				
440	M & M Catering	40	40		1	3	1	1	1			1	

0002472

FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
441	Macleod's Restaurant & Pub	40	40		1	2		1	1				
442	Magnolia Cafe	40	40			1	1						
443	Magnolia Provisions	1000		1000		1	1						
444	Magnolia Provisions	1000		1000		1	1						
445	Magpies	20	20			1	1						
446	Mahogany's (Crown Plaza)	40	40			1	1						
447	Malibu 7 Rest. & Dance	40	40			1	1						
448	Mandarin House Restaurant	1000		1000	1	1			1				
449	Mandarin House Restaurant	1000		1000		1			1				
450	Manhattan's Antiques Bistro & Bar	50	50		1	2		1	1			1	
451	Marble Slab Creamery	40	40			2	1	1				1	
452	Marble Slab Creamery	40	40			1			1				
453	Marble Slab Creamery #2 (West Town)	30	30			1			1			1	
454	Marcella's	40	40			1			1				
455	Margarita's	1000		1000		2	1		1				
456	Market & Deli Station	30	30		1	3	1	2				1	
457	Market Square Kitchen	40	40			1			1				
458	Mark's Time Out Deli	40	40		1	2		1	1				
459	Marriot Hotel (Hill Street Café)	50	50			1			1				
460	Marriott Hotel (Basement Kitchen)	100	100			1			1				
461	Mart 1 Market (closed)	0	0			1	1						FSF is closed.
462	Mary's Deli (closed)	0	0			1	1						FSF is closed.
463	Max Deli (remove)	0	0			1	1						FSF is closed.
464	Maynard Elementary School	0		1500		1			1				Schools are in the enforcement process.
465	McAlister's #1126	1000		1000		1			1				
466	McAlister's #2	1000		1000	1	2	1		1				
467	McAlister's Restaurant	1000		1000	1	2	1		1				
468	McDonalds # 3925	1000		1000		1			1				
469	McDonald's #10662	1000		1000		1			1				
470	McDonald's #11484	1000		1000		1			1				
471	McDonald's #11600	1000		1000	1	1			1				
472	McDonald's #1243	*2000		2000		1			1			1	* FSF exceeded trap size requirement.
473	McDonald's #2495	30		1500		1			1				Undersized trap. Working with FSF to install larger GI.
474	McDonald's #264	1000		1000		1			1				
475	McDonald's #27127	1000		1000	1	1			1				
476	McDonald's #288	1000		1000		1			1				
477	McDonald's #392	1000		1000		1			1				
478	McDonald's #5650	1000		1000		1			1				
479	McDonald's (Millertown Pk)	1000		1000		1			1				
480	McDonalds-Wal-Mart (remove)	1000		1000		1	1						
481	McDonald's (Walker Springs)	2000		2000	1	4		1	3				
482	Mellow Mushroom	1000		1000		1			1				
483	Melting Pot	30	30		1	3	1	1	1				
484	Melting Pot	40	40		1	3	1	1	1				
485	Mer-Mer's Bakery	0	40		1	1	1						** FSF is in enforcement process.
486	Messiah Lutheran Church	1500		1500	1	2		1	1				
487	Metro Village Market	2000		2000		1			1				
488	Michael's Restaurant	1500		1500		1			1				
489	Micko's	0	0			1			1				No food production in facility.
490	Middlebrook Mkt. & Deli	30	30			2			2				
491	Middle Eastern Market	50	50			1	1					1	
492	Millertown Boys Group Home (remove)	0	0			1			1				Family residence. No need for grease equipment.
493	Miyabi Japanese Steak House Lounge	30		1500		1			1				Undersized trap. Working with FSF to install larger GI.
494	Mocha Cabana	40	40			1			1				
495	Moe's Southwest Grill	30	30		1	2	1	1					

FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
496	Monterrey Rest.	1000		1000		2		1	1				
497	Mooreland Heights Elementary	40		1500		1			1				Schools are in the enforcement process.
498	Moto Japanese Restaurant	40	40			1			1				
499	Mount Olive Elementary	200		1500		1			1				Schools are in the enforcement process.
500	Mr. Gattis #610	40	40			1			1				
501	Mrs. Fields Cookies	30	30		1	2		1	1			1	
502	Ms. D's Restaurant	30	30			1			1				
503	Mt. Olive Baptist Church DCC	1000		1000		1			1				
504	Nagoya Express Japanese Grill	30	30			1	1						
505	Naples Italian Restaurant	1000		1000		1			1				
506	Napoli Pizza & Grill	30	30		1	1			1				
507	National Guard Armory (Kitchen Closed)	50	50			1			1				
508	New China Restaurant	30	30			1			1				
509	New City Cafe	30	30			1	1						
510	NHC Healthcare of Ft. Sanders	1000		1000		1	1						
511	Nixon's Deli (Kingston Pk)	40	40			1			1				
512	Nixon's Deli (Merchants Dr)	30	30			1			1				
513	Nixon's Deli (Broadway)	40	40			1			1				
514	Northhaven Healthcare	2000		2000	1	6		5	1	1		1	
515	Northwest Middle	1000		1000		2			2				
516	Norwood Elementary	1500		1500		7		5	2			1	
517	Oak Grove Lounge	40	40			1			1				
518	Oasis Buffet	40	40			1			1				
519	O'Charley's #208	1000		1000		2			2				
520	O'Charley's #5	1500		1500	1	2		1	1				
521	O'Charley's (Store # 217)	1000		1000		2			2				
522	O'Charley's (Cumberland Ave)	1000		1000		2			2				
523	Old City Java	40	40			1			1				
524	Old College Inn	20	20			1			1				
525	Old College Inn	1000		1000		1			1				
526	Olive Garden Restaurant #92	1000		1000		2			2				
527	Oodles Restaurant & Bar	40	40		1	2		1	1				
528	Opal's Lounge	0	0			1	1						No food production in facility.
529	Orange Sports Grill	1000		1000	1	3		2	1	1			
530	Orangery	**40		1000		1			1				
531	Orient Express (Knoxville Center)	40	40		1	3	1	2				1	
532	The Original Freeze	20	20			2		1	1			1	
533	Oscar's Restaurant Fine Italian Cuisin	30	30			1			1				
534	Oscar's Restaurant Fine Italian Cuisin	30	30			1			1				
535	Oscar's Restaurant	30	30			1			1				
536	Our Market & Deli	0	40			1	1						** FSF is in enforcement process.
537	Our Place	20	20			1	1						
538	Outback Steakhouse #2	1000		1000		1			1				
539	Outback Steakhouse #2	1000		1000		1			1				
540	Outback Steakhouse #43	1000		1000	1	4			4	1			
541	Panda's Chinese Restaurant	40	40			1			1				
542	Panda's Chinese Restaurant	40	40			1			1				
543	Panera Bread	1000		1000		2			2				
544	Panera Bread	*2000		2000		2			2				* FSF exceeded trap size requirement.
545	Panera Bread (Cumberland Ave)	1000		1000	1	2		1	1				
546	Papa D's	40	40			1	1						
547	Papa John's Pizza	40	40			4		3	1	1		1	
548	Papa John's Pizza	40	40			1			1				
549	Papa John's Pizza (Kingston Pk)	40	40		1	2			2				
550	Papa Murphy's Pizza	40	40			1	1						

0002474

FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
551	Papa John (Tazewell Pike)	40	40			2			2	1			
552	Patrick Sullivan's Rocky Hill	1000		1000		1			1				
553	Patrick Sullivans Steakhouse	40	40			2			2				
554	Pauline's	1000		1000		1	1						
555	Paul's Oasis	40	40			1			1				
556	Pelancho's Mexican Grill	1000		1000		2			2				
557	Pete's Coffee Shop	1500		1500		1			1				
558	Petro's Chili & Chips	50	50		2	3		2	1				
559	Petros Chili & Chips # 502	40	40			1			1				
560	Petros Chili & Chips #1	30	30		1	2		1	1				
561	Petros Chili & Chips #2	40	40		1	3		1	2				
562	PF Changs China Bistro Inc.	1000		1000		1			1				
563	Phatz Sports Bar & Grill	1000		1000	1	3	1	1	1				
564	Philippine Connection Carry Out	**0	40		1	1			1				** FSF is in enforcement process.
565	Pilot Food Mart	40	40			1			1				
566	Pilot Food Mart #187	40	40			1			1				
567	Pilot Food Mart # 244 (remove)	0	0			1			1				No food production in facility.
568	Pilot Food Mart	40	40		1	1			1				
569	Pisano's Pizza	40	40			1			1				
570	Pita Pit	1500		1500		1			1				
571	Pizza Hut	40	40		2	3		1	2				
572	Pizza Hut (Broadway)	40	40		1	2		1	1				
573	Pizza Hut / Tazewell (closed)	40	40			1	1						FSF is closed.
574	Pizza Hut (Chapman Hwy)	30	30			1			1				
575	Pizza Hut (Chapman Hwy)	40	40			1			1				
576	Pizza Hut (Millertown Pk)	40	40			1			1				
577	Pizza Hut (Western Ave)	40	40		1	2	1	1					
578	Pizza Hut (Asheville Hwy)	40	40			1			1				
579	Pizza Hut (Cedar Ln)	1000		1000		1			1				
580	Pizza Palace, Inc.	50	50		1	2		1	1				
581	Pizza Plus	30	30			1			1				
582	Pleasant Ridge Elementary	1500		1500	1	5		2	3	1		1	
583	Plum Tree Restaurant	40	40			2			2				
584	Plum Tree Restaurant					2			2				
585	PM's Lounge	40	40			1			1				
586	Pond Gap Elementary	**0		1500		1			1				** FSF is in enforcement process.
587	Preservation Pub	40	40			1			1				
588	Process Foods Corporation	1000		1000		12		11	1				
589	Process Foods Corporation	3000		3000		12		11	1				
590	Puleo's Grill (Strawplains)	1000		1000		1			1				
591	Puleo's Grill (Merchants Dr)	1500		1500		1	1						
592	Quaker Steak & Lube	1000		1000		2			2				
593	Quality Bakers	200	200			2			2				
594	Quizno's # 3 (remove)	40	40			1			1				
595	Quizno's #2	1000		1000		1			1				
596	R House Café (not open)	50	50			1	1						
597	Rafferty's (closed)	1500		1500		1			1				
598	Rainbow West	20	20		1	2		1	1				
599	Rallys Hamburger	1000		1000		1			1				
600	Ramsey's Cafeteria	1500		1500		1			1				
601	Rankin Restaurant	1000		1000		1			1				
602	Red Fez Deli Express	20	20		1	2		1	1			1	
603	Red Lobster # 47	*1500		1500		3		1	2				* FSF exceeded trap size requirement.
604	Red Lobster # 47	*1500		1500		3		1	2				* FSF exceeded trap size requirement.
605	Red Lobster #253	1500		1500		1			1				

0002475

FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
606	Red Onion Pizza & Sub	30	30			1			1				
607	Regal Cinemas	20	20			1	1						
608	Regal Theatre's	40	40		1	4	1	2	1	1		1	
609	Regas Brothers Cafe' (closed)	1500		1500		2			2				
610	Regas Restaurant	**200		1500		1			1				** FSF is in enforcement process.
611	Richard Yoakley Elementary School	500		500		1			1				
612	Rick's Place	1000		1000		1			1				
613	Ridgedale Alternative School	40	40			1			1				
614	Rita's Bakery	30	30		1	2		1	1				
615	Rite Stop Food Mart	40	40			1			1				
616	Ritta Elementary School	1000		1000		1			1				
617	River Dog Bakery	40	40			1			1				
618	Riverside Market				1	1			1				
619	Riverside Tavern By Regas	1000		1000		1			1				
620	Rocky Hill Elementary	1000		1000		1			1				
621	Rocky Top Market (Cumberland Ave)	20	20			1	1						
622	Rogers & Sons Market and Deli	1000		1000		1			1				
623	Romano's Macroni Grill	1000		1000	1	2		1	1				
624	Ronnie's Grill	40	40			1			1				
625	Rooster's	50	50			1			1			1	
626	Roundup Restaurant	40	40			1			1				
627	Ruby Tuesday's (Broadway)	1500		1500		1			1				
628	Ruby Tuesday's (Chapman Hwy)	1500		1500		1			1				
629	Ruby Tuesday's (Knoxville Center)	1500		1500		2	1		1				
630	Ruby Tuesday's (Brakebill)	1500		1500		1			1				
631	Ruby Tuesday's (Kingston)	1500		1500		1			1				
632	Ruby Tuesday's (West Town)	1500		1500		1			1				
633	Ruby Tuesday's (Western Ave)	1000		1000		1			1				
634	Ruby Tuesday's (Clinton Hwy)	1500		1500		1			1				
635	Rutledge Pike Diner #26 (closed)	0	0			1	1						FSF is closed.
636	Ryan's #154	1000		1000		1			1				
637	S & S Cafeteria	200	200		1	1			1				
638	Sacred Heart Cathedral	50	50			1	1						
639	Saint Joseph School Cafeteria	1500		1500	1	5		3	2			1	
640	Sakkio Japan (West Town)	40	40		1	3		2	1				
641	Salsarita's Fresh Cantina	*2000		2000	1	2		1	1				* FSF exceeded trap size requirement.
642	Salvation Army Kitchen	1000		1000		1			1				
643	Sam & Andy's	30	30			1			1				
644	Sam E. Hill Elementary School	**0		1500		1			1				** FSF is in enforcement process.
645	Sam's Club #2	1500		1500		1			1				
646	Sam's Club #8256	1500		1500		2			2				
647	Sam's Restaurant and Deli	60	60			2			2				
648	Sapphire Restaurant	40	40		1	2	1	1					
649	Sarah Moore Green Elementary	0		1500		2		1	1				** FSF is in enforcement process.
650	Sarku	60	60			3		2	1				
651	Sassy Anne's	40	40			1			1				
652	Save-A-Lot	50	50			1	1						
653	Save-A-Lot	40	40		1	1	1						
654	Save-A-Lot	40	40		1	1	1						
655	Savelli's Deli	40	40		1	3		2	1	1		1	
656	Sawyer's	1000		1000		1			1				
657	Sawyer's At Campus	1000		1000		1			1				
658	Sbarro (Knoxville Center)	40	40		1	3	1	1	1			1	
659	Sbarro's (West Town)	30	30		1	3		2	1			1	
660	Scott & Company	20	20			1	1						

0002476

FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
661	Scott's Place	20	20			1			1				
662	Scrugg's Real Pit Bar B Q	40	40		1	3		2	1			1	
663	Senor Taco	50	50		1	2		1	1				
664	Sequoyah Elemntary	1000		1000		1			1				
665	Serene Manor Hospital	**40	40			1			1				** FSF is in enforcement process.
666	Seventeenth Street Market & Deli	30	30		1	2		1	1			1	
667	Sevier Heights Baptist Church	1000		1000		1			1				
668	Sevier Heights Baptist Church	40	40			1			1			1	
669	Shannondale Elementary School	0		1500		1			1				** FSF is in enforcement process.
670	Shannondale Health Care	1000		1000		1			1				
671	Shannondale Health Care	1000		1000		1			1				
672	Shell Station (closed)	0	0		1	6		4	2	1	1		
673	Shoney's #1 (Broadway)	1500		1500		1			1				
674	Shoney's #12 (Western)	1500		1500	1	2		1	1			1	
675	Shoney's #4	1000		1000		1			1				
676	Shoney's #6	1000		1000		1			1				
677	Shoney's #8	1000		1000		1			1				
678	Shonos in the City	40	40			1			1				
679	Side Street Tavern	30	30		1	2	1	1					
680	Silver Spoon The American Cafe	1000		1000		1			1				
681	Sitar Fine Indian Cuisine	1000		1000		1			1				
682	Skate Town USA	30	30		3	5		3	2			1	
683	Smokey's Sports Pub And Grill Lounge	30	30			1			1				
684	Smoky Mountain VFW	40	40			1			1				
685	Smoothie King	0	0			1			1				No food production in facility.
686	Snappy Tomato Pizza	60	60			2	1		1			1	
687	Soccer Taco	1000		1000		1			1				
688	Soho Cafe	1000		1000	1	3		1	2				
689	Son Kids (closed)	0	40			1			1				FSF is closed.
690	Sonic Drive-in #4147 (Western Ave)	1000		1000		1			1				
691	Sonic Drive-in # 4789 (Schaad Rd)	1500		1500		1			1				
692	Sonic Drive-in (Cedar Ln.)	1000		1000		1			1				
693	Sonic Drive-In	1000		1000		1			1				
694	Sonic Drive-in (Broadway)	1000		1000		1			1				
695	Sonic Drive-in (Chapman Hwy)	1000		1000		1			1				
696	Sonic Drive-in (Kingston Pk)	1500		1500		1			1				
697	South Knoxville Elementary	50	50			1			1				
698	South Knoxville Elementary	50	50			1			1				
699	South-Doyle Middle School	1000		1000		1			1				
700	Southern Graces (closed)	40	40		1	3	1	2		1			
701	Southern Graces (Catering Kitchen)	1000		1000		1			1				
702	South's Finest Chocolate	20	20			2		1	1				
703	Southside Sports Bar	0	0			1			1				No food production in facility.
704	Speedie Pie (closed)	40	40		1	3	1	1	1				
705	Speedy Market & Deli	20	20			1			1				
706	Spring Hill Elementary	1500		1500		2		1	1			1	
707	St. Mark Early Enrichment Program (remove)	0	0			1	1						No food production in facility.
708	St. Marys Medical	3000		3000		2			2				
709	Starbucks Coffee (Cumberland)	*1500		1500		1			1				* FSF exceeded trap size requirement.
710	Starbucks Coffee (Merchants Drive)	*1500		1500		1	1					1	* FSF exceeded trap size requirement.
711	Starbucks Coffee (Kingston Pike)	*1500		1500		1	1					1	* FSF exceeded trap size requirement.
712	Starbucks Coffee #1	40	40			1	1						
713	Starbuck's Coffee #3 (remove)	0	0			1	1						FSF is closed.
714	Steak Escape	20	20		1	3		2	1	1			
715	Steak Out	20	20			1			1				

FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
716	Steak Out # 2	20	20			1			1				
717	Steamboat Sandwiches	40	40		1	6		5	1	1	1	1	
718	Stefano's Chicago Style Pizza	40	40		1	1			1				
719	Sterchi Elementary	40	40			1			1				
720	Stir Fry Cafe	30	30			1			1				
721	Stir Fry Cafe	60	60			1			1				
722	Strike & Spare Bowling Center	40	40		1	4		3	1	1		1	
723	Strike & Spare Family Fun Center	40	40		1	2		1	1			1	
724	Subway	40	40			1	1					1	
725	Subway	40	40		1	1			1				
726	Subway # 12	40	40			1			1				
727	Subway # 15024	40	40		1	2		1	1				
728	Subway # 21	30	30			1			1				
729	Subway # 23	40	40			1			1				
730	Subway # 4	40	40		1	2	1	1					
731	Subway #1559	30	30		1	2		1	1				
732	Subway #16	40	40		1	2		1	1				
733	Subway #1711	20	20			1			1				
734	Subway Of Knoxville Inc.	30	30			1			1				
735	Subway Sandwiches and Salads	30	30		1	2	1	1				1	
736	Subway Sandwiches of Knoxville	40	40		1	3		2	1			1	
737	Subway Shop of Knoxville VI, INC.	40	40			1			1				
738	Subway (Knox Center)	30	30		1	3	1	1	1				
739	Subway (West Town)	40	40		1	2		1	1				
740	Subway (Middlebrook Pk)	40	40		1	2		1	1				
741	Sun Spot	40	40			1			1				
742	Sunnyview School	500		500		1			1				
743	Super Mario	40	40			1	1						
744	Sutherland Deli	20	20			1			1				
745	Sut's Market	1000		1000		1	1						
746	Szechuan Garden	1000		1000	1	6		5	1	1	1		
747	T Ho Restaurant	30	30			1			1				
748	T.G.I. Friday's	1000		1000		2	1		1				
749	Tackle Box (closed)	0	0			1	1						FSF is closed.
750	Taco Bell	1000		1000		1			1				
751	Taco Bell #16310	1000		1000	1	2		1	1				
752	Taco Bell #16498	1000		1000		1			1				
753	Taco Bell #20467	1500		1500		1			1				
754	Taco Bell #20909	1000		1000		1			1				
755	Taco Bell #2302	40	40		1	1			1				
756	Taco Bell #2379	1000		1000		1			1				
757	Taco Bell #4756	1000		1000		1			1				
758	Taco Bell #9566	1000		1000		1			1				
759	Taco Bell #9575	1000		1000	1	3		2	1	1			
760	Taco Bell (Knoxville Center)	40	40		1	3		2	1	1		1	
761	Taco Bell (West Town)	40	40			2		1	1			1	
762	TAO Restaurant	1000		1000		1	1						
763	Taqueria Mexican Food	0	40		1	3	1	1	1	1			** FSF is in enforcement process.
764	Target	1000		1000		3	1		2			1	
765	Tekila Mexican Restaurant	1000		1000	1	2		1	1	1			
766	Tekoa Lounge	0	0			1			1				No food production in facility.
767	Tennessee Tavern	0	0			1	1						No food production in facility.
768	Tennessee Grill Restaurant (closed)	1500		1500		3			3				
769	Tennessee Riverboat Company	40	40		1	2		1	1			1	
770	Tennessee School For The Deaf	100	100			1			1				

0002478

FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
771	Tennessee School For The Deaf	100	100			1			1				
772	Tennessee Theatre	30	30		1	3		2	1			1	
773	Teppan Yaki Grill and Bar (closed)	1500		1500	1	2		1	1	1			
774	Texas Roadhouse	1500		1500	1	2		1	1				
775	Texas Roadhouse #5	1500		1500		1			1				
776	The Clubhouse (remove)	1000		1000		1			1				
777	The Broker	1000		1000		1	1						
778	The Campus Deli	30	30			1	1						
779	The General Store Sub Express	30	30		1	2	1	1				1	
780	The Half Barrel	1000		1000		2	1	1					
781	The Sugar Shack	1500		1500		3		2	1				
782	The Wing Shack	40	40			2			2				
783	Three Ridges Golf Course	500		500		1			1				
784	Time Out Deli Market	30	30			1			1				
785	Time Warp Tea Room	0	0			1	1						No food production in facility.
786	Time-Out Deli #2	40	40			1			1				
787	T.J.'s Sports Bar (closed)	0	0			2	1		1				FSF is closed.
788	TJ's (Knoxville Center)	20	20			2	1	1				1	
789	Tom & Debbie's Family Deli	40	40		1	3	1	2				1	
790	Tomato Head Restaurant	40	40		1	3		1	2				
791	Tomo Japanese Restaurant	40	40			1			1				
792	Tomo Japanese Restaurant	40	40			1			1				
793	Toot's Little Honky Tonk	30	30			1			1				
794	Tracy's Restaurant	60	60		1	2		1	1			1	
795	Tracy's Restaurant	80	80		1	2		1	1			1	
796	Trick Shot Sports Bar	50	50			1			1				
797	Tropical Smoothie Cafe	1000		1000		2	1		1				
798	Union Jacks	0	0			1			1				No food production in facility.
799	Upper Crust	30	30		1	4	1	3		1		1	
800	Urban Bar & Corner Cafe	40	40		1	2	1	2					
801	UT Hospital	1000		1000	2	6		5	1				
802	UT Hospital	1000		1000	2	6		5	1				
803	Vic & Bill's Deli	40	40		1	3		2	1	1		1	
804	Vic & Bill's Deli	40	40		1	6	1	5		1		1	
805	Vicki's Cafe	60	60			1			1				
806	Village Bakery	**40	0			1			1				** FSF is in enforcement process.
807	Vine Middle Magnet	500		500		1			1				
808	Vol Market #3	100	100			2		1	1				
809	Waffle House # 447	1000		1000		1			1				
810	Waffle House #1105	1000		1000		1			1				
811	Waffle House #293	1000		1000		1			1				
812	Waffle House #766	1000		1000		1			1				
813	Wal-Mart # 2065	1500		1500		1			1				
814	Wallace Memorial Baptist	150	150			3	1	2				1	
815	Wallace Memorial Baptist	150	150			3	1	2				1	
816	Wal-Mart # 2310	1000		1000		1			1				
817	Walter P. Market & Deli	20	20			1			1				
818	Wasabi Japanese Steak House	1500		1500		3		2	1	1			
819	Weigel's	1000		1000		1			1				
820	Weigel's	40	40		1	2		1	1				
821	Weigles # 43	30	30			1	1						
822	Wendy's	1500		1500		1			1				
823	Wendy's # 12	1000		1000		1			1				
824	Wendy's # 13	1000		1000	1	2		1	1				
825	Wendy's # 24	1000		1000		2			2				

FSF Inspections

No.	Facility Name	Trap/Interceptor Size	Trap Size Required	Interceptor Size Required	Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	Comments
826	Wendy's # 31	1000		1000		1			1				
827	Wendy's # 34	1000		1000		1			1				
828	Wendy's # 41	1000		1000		1			1				
829	Wendy's #28	1000		1000		1			1				
830	West End Church Of Christ	60	60			1			1				
831	West Haven Elementary	0		1500		1			1				** FSF is in enforcement process.
832	West Haven Restaurant	1000		1000		3			3				
833	West High School	*3000		3000		1			1				* FSF exceeded trap size requirement.
834	West Hills Baptist Church	40	50			1			1				
835	West Hills Elementary	1000		1000		1			1				
836	West Lons Dale Baptist Church	1000		1000		1	1						
837	West Town Mall (Main Trap)	1000		1000		2			2				
838	West View Elementary	0		1500		1			1				** FSF is in enforcement process.
839	Westbrook Senior Center (remove)	0	0			1			1				FSF is closed.
840	Western Plaza Bowling (closed)	0	0			2			2				FSF is closed.
841	Westview Center (remove)	0	0			1			1				No food production in facility.
842	Whittle Springs Golf Snack Bar (closed)	20	20			1			1				
843	Whittle Springs Middle School	0		1500		1			1				** FSF is in enforcement process.
844	Williams Place	30	30		1	1	1						
845	Wing Zone	1500		1500	1	2	1	1					
846	Wing Shack	20	20			1	1						
847	Wishbones	1000		1000		1			1				
848	Wishbones	1000		1000		1	1						
849	Wishbones # 2	1000		1000		1			1				
850	Wok Hay	*2000		2000		1			1				* FSF exceeded trap size requirement.
851	Wok-N-Roll	1000		1000	1	1			1				
852	Wong's Palace	1000		1000		2		1	1				
853	Wright's Cafeteria	40	40			2			2				
854	Wright's Cafeteria	40	40			2			2				
855	Yesterday's Cafe	50	50		1	1							
856	Young Star	30	30		1	2	1	1				1	
	153 FSFs that have been removed from database					486	96	62	328				
	Totals				219	1831	281	413	1137	41	8	100	
					Inspection Letter	Total Inspections	Initial Inspections	Follow-Up Inspections	Repeat Inspections	Enforcement NONC Letter	Enforcement NOV Letter	Trap Installed	

Grease Related SSOs in Residential Areas

Date	Address	SSO	Building Backup	Grease	Grease & Roots	Grease & Debris	Customers in Area	Letters Mailed	* Cans Mailed	# of Feet Cleaned	BA Frequency	Comments
1/17/2006	5811 Pleasant Ridge Road	No	BBU				362	362	362	259	1	
1/17/2006	4132 W. Martin Mill Pike	Yes	BBU	Yes			126	123	123	0	0	Both SSO and BBU per D. Frye
1/18/2006	2601 Dayton Street	Yes			Yes		212	212	212	350	9	
1/30/2006	4701 Chapman Hwy	Yes		Yes			31	31	31	335	6	
2/6/2006	1421 N. Broadway	Yes				Yes	126	121	121	259	6	
2/28/2006	3300 Division Street	Yes				Yes	22	19	19	450	6	
2/28/2006	810 W. Fourth Avenue	Yes				Yes	32	30	30	140	3	
3/6/2006	6504 Kingston Pike & 6441 Deane Hill Drive	Yes		Yes			5	0	0	971	6	
3/7/2006	6504 Kingston Pike	No	BBU				-	-	-	447	6	
3/20/2006	1817 Rocky View Way	Yes		Yes			91	86	86	221	6	
3/26/2006	317 E Quincy Avenue	No	BBU				29	28	28	254	6	
4/7/2006	3310 Lexann Lane	Yes		Yes			114	114	114	172	6	
4/8/2006	4331 Mansion Avenue	No	BBU				24	24	24	120	12	
5/11/2006	4605 Central Avenue Pike	Yes		Yes			113	110	110	137	0	Sticks in manhole
6/27/2006	2429 Selma Avenue	Yes		Yes			38	36	36	400	12	
7/1/2006	5020 Tenwood Drive	No	BBU				120	120	120	198	3	
7/12/2006	5029 Tenwood Drive	Yes				Yes	-	-	-	198	3	Mailed cans for 5020 Tenwood Drive
7/12/2006	7001 Middlebrook Pike	Yes		Yes			240	240	240	69	3	
7/14/2006	4620 Kingston Pike	No	BBU				3	0	0	317	12	
7/14/2006	4626 Kingston Pike	No	BBU				-	-	-	317	12	Inspected FSFs in area
9/7/2006	3317 Bishop Street	No	BBU				18	18	18	354	3	
9/10/2006	800 Graves Street	Yes		Yes			111	109	109	339	1	
9/24/2006	2059 Saxton Street	Yes		Yes			28	28	28	340	3	
9/25/2006	5608 Jacksboro Pike	Yes		Yes			25	25	25	175	3	
10/17/2006	131 Ingersoll Avenue	Yes			Yes		32	32	32	1350	6	
10/26/2006	923 Biddle Street	Yes		Yes			121	121	121	339	1	See 800 Graves St
11/9/2006	8025 Hayden Street	Yes		Yes			-	-	-	272	0	Fiber optic cable in main.
11/20/2006	8040 Kingston Pike	Yes				Yes	76	73	73	300	0	Collapsed pipe, no blockage abatement work required
12/2/2006	8040 Kingston Pike	Yes				Yes	-	-	-	300	0	Previous SSO (see above)
12/2/2006	1731 Pinebrook Drive	Yes				Yes	113	113	113	333	6	
12/2/2006	1608 Helmbolt Road	Yes			Yes		141	141	141	115	3	Roots in downstream manhole
12/14/2006	923 Biddle Street	Yes		Yes			-	-	-	339	1	Previous SSO See 800 Graves St
12/15/2006	203 W. Depot Avenue	No	BBU				9	6	6	350	3	
	Totals	23	10	14	3	7	2362	2322	2322	10520		

* Cans are mailed only to residential home owners.

0002481

Appendix B

Sample CSSAP Daily Program Schedule

CONTINUING SEWER SYSTEM ASSESSMENT PROGRAM SCHEDULES

Contractor	STREETS	BASIN	CCTV	SMOKE	MANHOLE INSPECTION	MANHOLE REHAB
UIS	No Work Scheduled	418A		X		
Tim Gandway - RPR	Manhole Inspections - on Riverside Drive, Delrose Drive, Brooks Drive Boyd's Bridge Pike, Biddle Road and Martin Luther King Avenue.	25		X		
Scott Smith	CCTV - on Chapman Highway (near intersection of Lake Forest and Chapman Highway)	41				
419/304-2140						
W.L. Hailey Co.	No Work Scheduled	3 & 4				
Sam Beck - RPR	No Work Scheduled	08A1				
865-388-0228						
Blalock & Sons	Laying 8inch Pipe from Manhole# A6 East - on N. Weisgarber Road.	Papermill Road				
David Davis - RPR	Hurst Excavating will be Manhole Testing - on Papermill Road.					
865/388-8080						
Utility Technology	Smoke Testing - at Chilhowee Road leading to Asheville Highway intersection, and on W. Ford Valley Road, Brown Mountain Loop, Mount David Drive, Chalmers Road, Adelia Drive and Moore Road.	06A1		X		
Tim Jett-RPR				X		
Bill Miller or Brad				X		
615/631-7411/684-9054						
Reynolds Inliner, Dwayne Knall- RPR	Pouring (2)two Concrete Drives - on Tallent Drive.	9A1 & 9A2				
615/478-0097						
UIS	Lateral Inspections - on Oak Park Drive , Oakview Road, Rennoc Road, Robin Road, Sanders Drive, Tazewell Pike (3200, 3300, & 3900 Block), Tillery Road, Woodrow Drive and Woodrush Drive.	3B2				
J. Barringer 771-3658						
Chris H - 228-8866						
865/389-3542						
Barge - Waggoner	Installing Sewer Lines - in the 5700 Block of Clinton Highway.	9B				
David Haynes - RPR	Installing Sewer Services - on Victor Drive. (near 5700 Block of Clinton Highway).					
865/256-9357						

CONTINUING SEWER SYSTEM ASSESSMENT PROGRAM SCHEDULES

Contractor	STREETS	BASIN	CCTV	SMOKE	MANHOLE INSPECTION	MANHOLE REHAB
Hydromax	No Work Scheduled					
Rich Rabold, RPR						
502/500-6657						
Reynolds Inliner	Cold Patching - on Cross Valley Drive, Luwana Lane and Alice Bell Road.	6A5				
Sam Beck - RPR						
865/388-0228						
G2 Engineering	Manhole Inspections - Millertown Pike, Buffat Mill Road, and Loves Creek (at the intersection of Loves Creek and Buffat Mill Road and also intersection of Mill Road).	06C1		X		
Jermaine - 963-7542						
Linda Roberts 617-4867						
Tim Jett-RPR						
865/389-1114						
W.L. Hailey	(Night Job from around 8:00p.m. - 8:00a.m.)..Will begin 42inch Trunk Line Replacement from Manhole# 8 toward Manhole# 9 in Parking Lot of Food City off of Broadway.	Fountain City				
RPR - Jake Jacobs	S.E. Horizontal - will continue to Bore at Highland Drive and Broadway.					
205/369-1119						
W.L. Hailey	Moving Equipment, Clearing Brush and Installing Silk Fence - on KUB Property on Middlebrook Pike and Third Creek Road.	Third Creek				
RPR - Sam Beck	Brush Clearing - in Easement off of Third Creek Road.	Tunnel Line				
865/388-0228						

Appendix C

Second Creek and Loves Creek Basin Maps

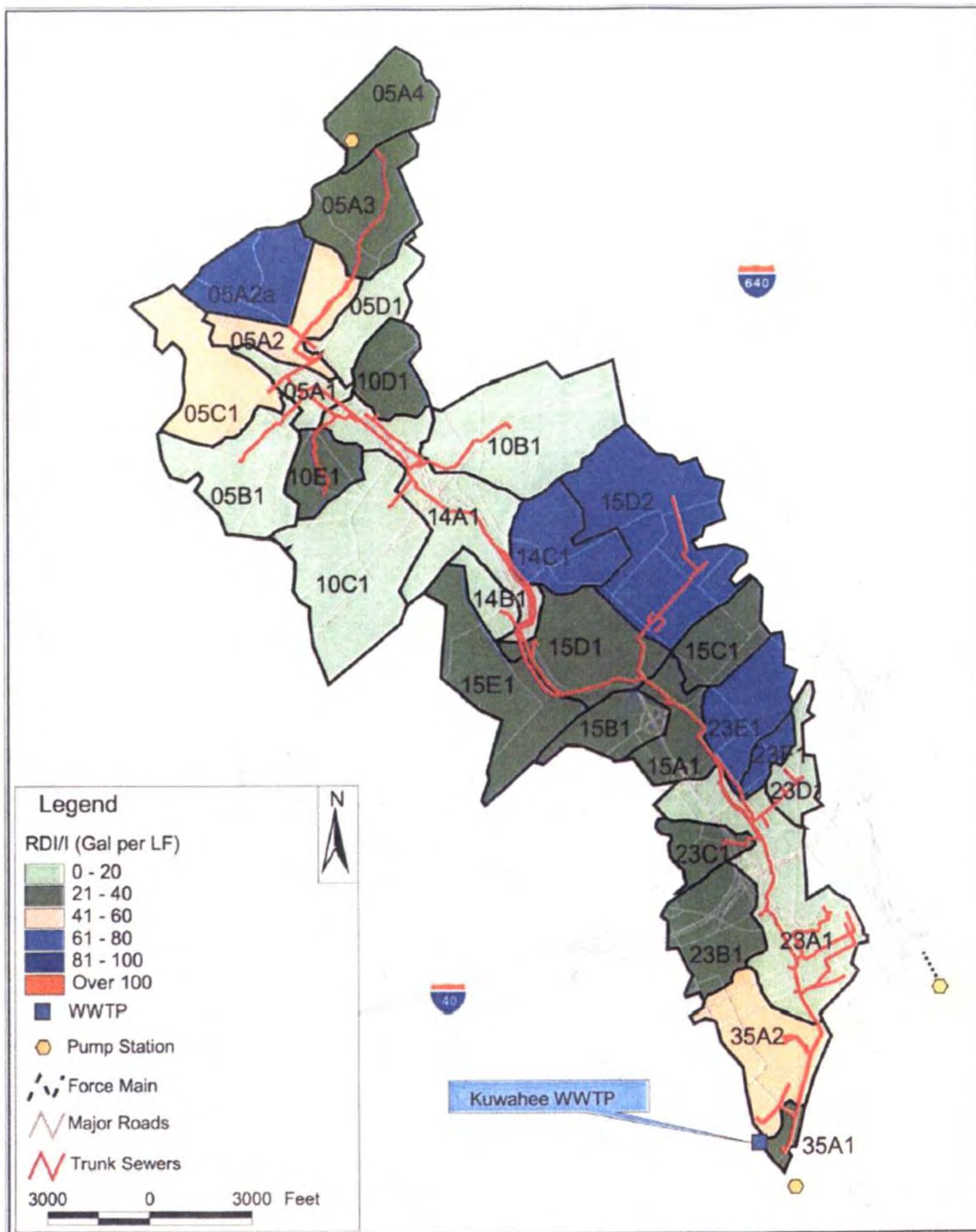


Figure 4-1
Second Creek Basin
RDII by Sewershed

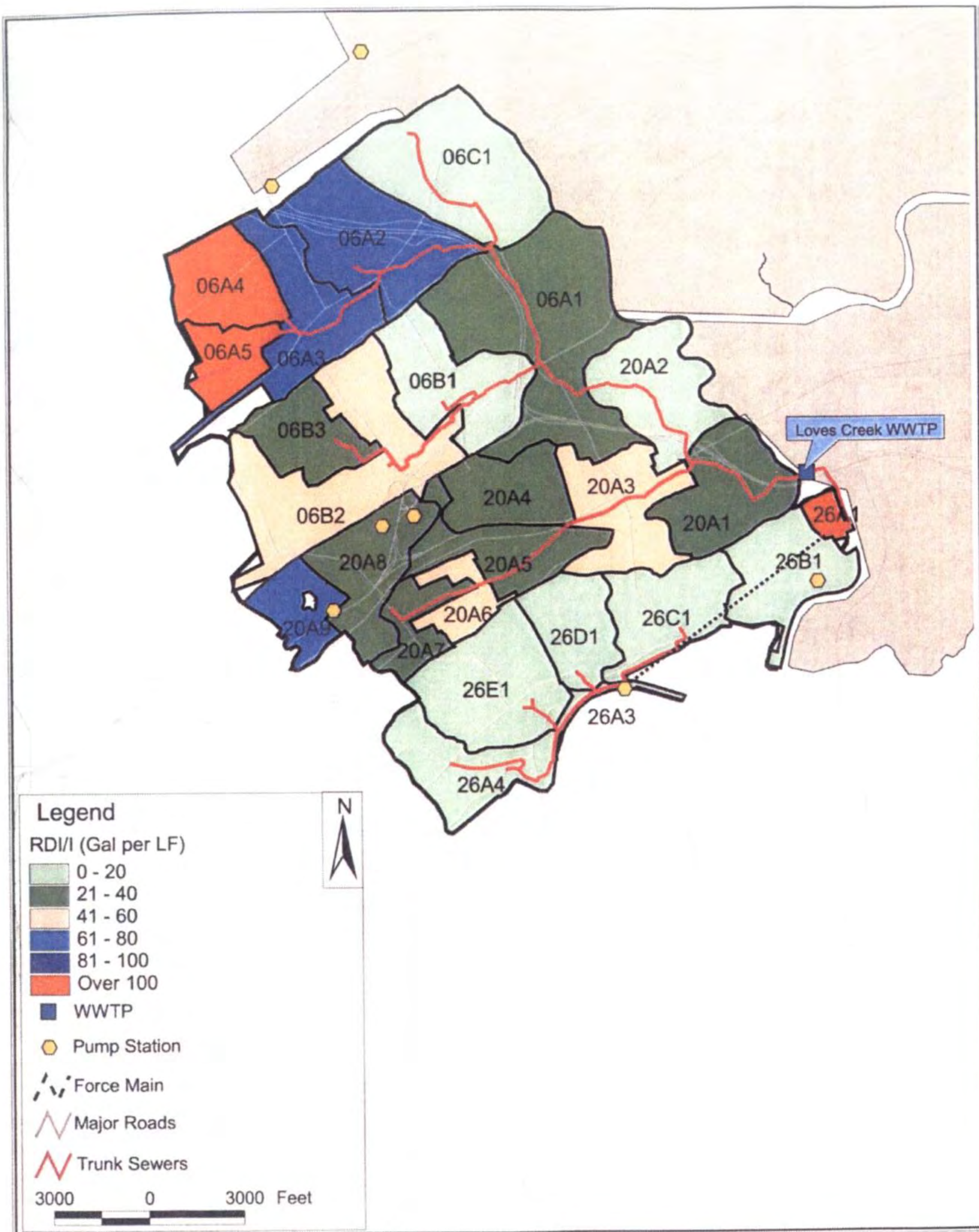


Figure 4-4
Loves Creek Basin
RDI/I by Sewershed

Appendix D

Pump Station
Maintenance Activities and Schedule

SMSP 2006

FACILITY & EQUIPMENT UPGRADES

1. Brookvale Lift Station removal – To be complete 2008
2. Bud Hawkins Lift Station removal – To be complete 2008
3. Emily Avenue Lift Station removal – Completed 2006
4. Ginnbrooke Lift Station upgrades – New development – To be complete 2007
5. Harrison Keepe Lift Station wetwell and piping upgrades Completed 2006
6. Holston Hills Lift Station generator installation – Completed 2006
7. Holston Hills Lift Station pump upgrades – To be complete 2007
8. Millertown Lift Station upgrades – Completed 2006
9. SCADA upgrades and improvements at various facilities
10. Shipetown Lift Station upgrades – To be complete 2008
11. Smithland Lift Station upgrades – To be complete 2007
12. Woodson Drive Lift Station generator installation – Completed 2006

NEW FACILITY INSTALLATIONS

1. Casa Bella Lift Station – To be completed in 2007
2. Ellistown Lift Station – To be complete in 2007
3. Gazebo Lift Station – Completed 2006
4. Holston Towne – To be complete in 2007
5. Ridge @ Westmoreland Lift Station – To be complete in 2007
6. Roberts Road Lift Station – To be complete in 2007
7. Washington Pike Lift Station – Completed in 2006
8. Whisper Ridge Lift Station – To be complete in 2007
9. Woodlands Lift Station – To be complete in 2007

SYSTEM STUDIES

1. KUB – Odor / Corrosion control study analysis
2. KUB – Chemical trial analysis at Forks of the River

FACILITY INSPECTIONS

1. 616 Routine facility inspections performed in 2006
2. 1622 Preventive Maintenance scheduled facility inspections performed in 2006

OUTSIDE SUPPORT

1. SMSP has performed 37 pump efficiency tests at various facilities for capacity assurance and flow monitoring purposes. SMSP has provided CDM with efficiency test data from various facilities for modeling purposes.
2. SMSP maintains 12 flow meters and uses these meter for various purposes. SMSP has provided CDM with flow meter data from various facilities for modeling purposes.
3. Plant and Operations SCADA maintain a run-time archive for Wastewater Lift Stations. This information is pulled from the SMSP maintained SCADA system as it pertains to lift stations. Various facility run-time data continues to be provided to CDM for modeling purposes.

SMSP Preventive/Predictive Maintenance Activities and Frequencies

<u>Standard Job</u>	<u>Standard Job Description</u>	<u>Frequency (In days)</u>
RSGN	General Inspection	varies
RSFAC	Facility Inspection - Wastewater	3.5 - 7
RSCRA	Crane Inspection - annual	365
RSMM	Milltronics Inspection	180
RSMMC	Motor control/electrical inspection	365
RSLASI	Alarm status (SCADA) inspection	180
RSFM	Flowmeter inspection	180
RSBSI	Facility Inspection - Water	3.5 - 7
RSBPV	Back flow preventer inspection	365
RSCRH	Crane inspection - routine	90
RSEP	Electric panel inspection	365
RSSS	Soft starter inspection	365
RSACMP	Air compressor inspection	180
RSVFD	VFD Inspection	365
RSMME	Muffin monster inspection	365
RSODOR	Mercaptan injector inspection	30
RSPM1	Pump inspection - Wastewater	180
RSPM2	Sump pump inspection	180
RSCC	Climate control inspection (Heaters/fans)	180
RSML	Motorized louver inspection	365
RSDHM	Dehumidifier inspection	365
RSLER	Emergency lights inspection - monthly	30
RSELA	Emergency lights inspection - annual	365
RSPM3	Belt drive pump inspection - 6 mos.	180
RSBDPA	Belt drive pump inspection - annual	365
RSGNPM	Generator inspection	90
RSCFI	Chemical feed inspection	30
RSLET	Pump efficiency testing - Wastewater	365
RSPMP4	Pump inspection - Water	180
RSWDPC	DP Cell inspection	180
RSWCPC	CL2 & PH Analyzer Calibration	180
RSGRIN	Annual inspection - Gas	365
RSLS	Leak survey - Gas	365
RSPTC	Transducer calibration	365
RSOS	Odorant sampling	30
RSFMM	H2S / PH monitoring	30
RSLVA / RSBVA	Vibration analysis	90
RSCTC / RSBTC	Thermography check	540 days
RSMRC	Master radio inspection	365
RSMR	Meter Readings/charts	3.5 - 7
RSGAS	Alarm status (SCADA) inspection - Gas	365
RSGGV	Grease valves - Gas	365
RSWAS	Alarm status (SCADA) inspection - Water	180
RSGFI	Site inspection - Gas	90
RSGNA	Generator inspection - annual	365
RSWWI / RSCWI	Winterize station - Water / Wastewater	365
RSGWI	Winterize station - Gas	365

SMSP PM Procedure - SMSP002 – RSFAC (Wastewater facility inspection)

- () 1. Check fence and grounds for security and clean area.
- () 2. Check doors and locks for proper operation.
- () 3. Check lighting inside and outside.
- () 4. Check electrical panel lights.
- () 5. Check operation of pumps and motors.
- () 6. Check ventilation and heating systems.
- () 7. Check dehumidifier operation.
- () 8. Check sump pump and clean pit if needed.
- () 9. Check generator:
 - a. Oil and Fuel
 - b. Coolant
 - c. Battery
 - d. Visually inspect hoses and belts
- () 10. Check air compressors:
 - a. Check oil
 - b. Check filters
 - c. Visually inspect belts
 - d. Drain water from tank
- () 11. Check screen room area:
 - a. Check grinders
 - b. Check screen and rake if needed
 - c. Check channels and flush if needed
 - d. Check wet well for grease and debris (report findings)
 - e. Check gates and controls
- () 12. Check odor control system:
 - a. Pumps
 - b. Leaks
 - c. Levels in tanks (Document)
- () 13. Safety equipment
 - Eyewash stations – check for proper operation
 - Emergency showers – check for proper operation

(Correct deficiencies as needed)

If any discrepancies are found, notify SMSP personnel.

Inspect the following stations twice each week.

Ginnebrooke	Holston Hills	Neubert Springs	Woodson Drive
Chapman Highway	Hanover	Sharps Ridge	
Cheowa	John Sevier	Shiptown	
Ford Valley	Jones Street	Smithland	
Forks of the River	Maloneyville	Walker Springs	

The frequencies to inspect these stations meet one or more of the following criteria.

- a) Age of the station.
- b) Operating history.
- c) Size of the station and the amount of flow.
- d) The potential for a negative environmental impact.

COMMENTS: _____

Appendix E

Summary Table of Pumps Stations using Chemical Injection and Odor Control

CHEMICAL INJECTION

<u>Facility</u>	<u>Address</u>	<u>Odor control type</u>	<u>Chemical</u>	<u>Comments</u>
Ball Road	4923 Ball Road	Chemical injection	Oxy Six	
Eastwood	740 Bagwell Lane	Chemical injection	Ferrous Chloride	
Forks of the River	5051 National Drive	Chemical injection	Oxy Six	
Gazebo	3516 Ginn Drive	Chemical injection	Ferrous Chloride	
Harrison Keepe	2122 Houser Road	Chemical injection	Peroxide	
Holston Hills	4800 River Place Drive	Chemical injection	Ferrous Chloride	
Neubert Springs	5941 Neubert Springs	Chemical injection	Ferrous Chloride	
Power Park	3180 Power Drive	Chemical injection	Ferrous Chloride	
Shipetown	2124 Shipetown Road	Chemical injection	Oxy Six	Chemical feed will be in operation in 2007
Ten Mile	757 Ebenezer Road	Chemical injection	Ferrous Chloride	
Walker Springs	310 Broome Road	Chemical injection	Ferrous Chloride	
Washington Pike	8515 Washington Pike	Chemical injection	Ferrous Chloride	
Wayland Road	1900 Wayland Road	Chemical injection	Ferrous Chloride	
Whisper Ridge	5433 Maloneyville Road	N/A	N/A	Removed from chemical injection list
Woodson Drive	2416 Woodson Drive	Chemical injection	Ferrous Chloride	

ON-SITE ODOR CONTROL

Ball Road	4923 Ball Road	Charcoal scrubber	Purafill Media	
Chestnut Ridge	8009 Chestnut Hill Lane	Charcoal scrubber	Purafill Media	
Clinton Highway	6564 Clinton Highway	Charcoal scrubber	Purafill Media	
Easton Meadows	7224 Rising Road	Charcoal scrubber	Purafill Media	
Gazebo	3516 Ginn Drive	Charcoal scrubber	Purafill Media	
Harrison Keepe	2122 Houser Road	Charcoal scrubber	Purafill Media	
Lower First Storage	1502 N. Sixth Avenue	Charcoal scrubber	Bay Products Media	
Rolling Ridge	6833 Barkwood Road	Charcoal scrubber	Purafill Media	
Three Points	8530 Three Points Road	Charcoal scrubber	Purafill Media	
Upper First Storage	4719 Old Broadway	Charcoal scrubber	Bay Products Media	
Walker Springs	310 Broome Road	Charcoal scrubber	Bay Products Media	
Walker Springs Storage	608 Walker Springs Road	Charcoal scrubber	Bay Products Media	
Washington Pike	8515 Washington Pike	Charcoal scrubber	Bay Products Media	
Whisper Ridge	5433 Maloneyville Road	Charcoal scrubber	Purafill Media	Removed from on-site odor control list
Woodson Drive	2416 Woodson Drive	Charcoal scrubber	Purafill Media	

0002495

Appendix F

Waste Hauler Program Requirements



Waste Hauler Program Requirements

Program: Industrial Pretreatment

Department: Lab Services and Regulatory Compliance

Owner: David Obenschain

Document Status: Approved

Approved by: D.G.Ailey

Issued Date: 9/27/06

The purpose of this document is to outline the requirements for commercial haulers that discharge hauled waste to the Kuwahee Wastewater Treatment Plant (WWTP). A permit is required to discharge any waste at this location. Discharge of wastes into the collection system at any other location is strictly prohibited, unless written permission is obtained from KUB.

To discharge hauled waste at the Kuwahee WWTP, follow these guidelines:

1. Prior to discharging hauled waste at the Kuwahee WWTP, an application for disposal must be obtained from KUB Plant Operations Administrative Services staff at (865) 594-8205. The completed application must be signed by the owner or company representative and submitted to KUB to obtain a hauled waste discharge permit for each discharge vehicle.

Important: The application must include information about each vehicle that will be using the site, and material discharged. Permits are issued for one year and can be renewed annually. The permit fee is \$100 annually per vehicle. All permits expire June 30.

In addition to the permit to discharge into the KUB's wastewater system, the applicant must also have a state Sewage Removal Permit. The state permit can be obtained from the Knox County Health Department, Division of Environmental Health. The permit number issued by KUB will be used by the Knox County Health Department as the state permit number.

2. The disposal site is located at the western end of the Kuwahee WWTP at 2015 Neyland Drive. The site is open from 6 a.m. to 8 p.m., Monday through Saturday. Arrangements can be made to open the facility at any time for emergency use by calling (865) 594-7622 in advance.
3. Only acceptable domestic waste picked up in Knox County or counties touching the boundaries of Knox County (Anderson, Blount, Grainger, Jefferson, Loudon, Sevier, Roane, Union) will be accepted for discharge. Domestic grease waste outside Knox County will not be accepted after April 1, 2007. Non-domestic or Special waste (industrial or concentrated process wastes) can not be accepted at any time without prior permission from KUB.

Prohibited discharges are listed below:

- Waste, which contains gasoline, fuel oil, mineral oil, or other flammable explosive liquids or free-floating motor oils.
 - Industrial or process waste of any kind without prior permission.
 - Ashes, sand, mud, straw, shavings, metal, glass, rags or other solid or viscous materials capable of causing an obstruction to the flow.
4. Each vehicle using the site must have in the vehicle a KUB-issued Discharge Permit, a Contractor Security Access Card, and a State Permit. All items are non-transferable and must be kept with the vehicle at all times. Security Access Cards must be used to enter

the discharge site at Neyland Drive and may not be used with other vehicles. Lost or stolen cards will be replaced for \$25 each. At the annual renewal period cards must either be renewed or returned. For renewed permits, a current Discharge Permit will be mailed, and the Security Access Card will be reactivated for the following year. If permits are not renewed by the June 30 deadline, the Security Access Card **will be deactivated**. Please return all non-renewed access cards to KUB.

5. The waste hauler must have a Discharge Manifest in order to discharge hauled waste. A complete and accurate manifest must be submitted with EVERY discharge made at the site. Multiple discharges cannot be recorded on the same manifest. All manifest information is subject to verification for accuracy. All loads are subject to random inspection and sampling at any time. The site is monitored by camera at all times.
6. The name and address of the company conducting the business and the permit number issued to the vehicle must be painted on each side of the vehicle in characters at least two inches high. The characters must be in bold print on a background of contrasting color.
7. Operators are required to use a hose for discharge. To reduce the possibility of manhole overflows, **only two trucks can discharge at one time**. Respect the other drivers, and park trucks so that two vehicles can use the enclosed area. Drivers are responsible for cleaning up any mess associated with the discharge or any manhole overflow. Large trucks are to discharge directly into the manhole. Drivers must replace the lightweight manhole cover before leaving the site. Drivers are responsible for cleaning up after themselves each time they use the disposal facilities; water is provided.
8. For security purposes, a copy of all operators' Commercial Driver's License (CDL) must be provided to KUB. Notice of new operators or employees leaving the firm must be provided to KUB Plant Operations Administrative Services at (865) 594-8205 or by faxing to (865) 594-8212 within 24 hours of changes.
9. A company representative must attend the annual permit renewal meeting held by KUB to obtain updates about program requirements and permitting.
10. Waste haulers must use the Grease Trap Interceptor Pumping Guidance provided by KUB, if grease traps are pumped. KUB will periodically inspect each hauler to verify they are cleaning traps and interceptors per this guidance.
11. Haulers will be billed for a full load for each site entry at the Kuwahee WWTP. Full load capacity will be equal to 90% of the truck tank size (gallons).
12. Permits or site access may be revoked at any time for improper use of facilities or non-compliance with the program requirements stated in this guidance. Examples include but are not limited to:
 - Failure to submit an accurate and complete manifest with each discharge.
 - Discharge of waste beyond Knox County or approved surrounding counties.
 - Failure to maintain the proper Security Access Card in the assigned discharge vehicle
 - Discharge of unacceptable wastes into the system.
 - Failure to use KUB Grease Trap Interceptor Pumping Guidance.
 - Improper use or failure to clean the disposal site after use.

Important: If you cause or observe an overflow or spill at the Hauled Waste Discharge Facility, contact the Kuwahee Control Room at (865) 594-7622.

Appendix G

Sample Basin Characterization Spreadsheet

MH	MH Depth	MH Score	MH Insp.	MH	MH Depth	MH Score	MH Insp.	MH Comments	Televised (ft)	Location	Cover	Avg Depth	Diameter	Material	Pipe Score	Rehab/Replace	Comments	Overall Rating
1	8.50	3	Leave as is	7-44	12.60	1	Replace	1. Concrete 7-44: Brick 2. Brick 1: Brick install water tight frame and lid on MH 1 & 2	257	Easement/Creek	Unpaved	11	18	DI	3	Clean	Obstacle 10, 45, 106 ft (10%). Water level sag at 175 ft. Pipe material obstacle (grease?) at 259 ft (25%)	4129
2	12	1	Replace	1	11.7	1	Replace	3. Brick 2: Brick install water tight frame and lid on MH 1 & 3	236	Easement	Unpaved	12	36	Conc	2	Rehab	Infiltration (weeper) at 100 ft. Obstacle (rocks) at 100, 197, & 235 ft. Intruding tap at 105 ft (<2")	3922
3	18.67	1	Replace	2	12	1	Replace	4. Brick & in drainage path 3: Brick, install water tight lid	144	Easement	Unpaved	15	36	Conc	2	Rehab	Infiltration (dripper) at 74 ft. Deposits at 74 ft. Infiltration (runner) at 76 ft. Intruding tap (2") at 122 ft.	4131
4	~10	1	Replace	3	18.67	1	Replace	4. Brick & in drainage path 5: Brick 6: Brick 5: Brick	80	Roadway	Paved	18.67	36	Conc	2	Rehab	Infiltration Dripper at 52 ft. Deposits (attached) at 65 ft.	3121
5	19.17	1	Replace	4	~10	1	Replace	7. Concrete/Epoxy 6: Brick	260	Parking	Paved	19.17	36	Conc	1	Replace	Infiltration runners at 12, 18, 21, 55, 59, 136, 170, 174, 177. Replace due to high infiltration.	4937
6	20.5	1	Replace	5	19.17	1	Replace	65: Concrete 7-39: Concrete	606	Roadway/Yard	Paved	20	36	Conc	1	Replace	Infiltration (runners) at nearly every joint past 210 ft. Roots at 25 ft. Encrustation at 46 ft. Replace due to high infiltration.	4A31
7	20	3	Leave as is	6	20.5	1	Replace	66: Concrete 65: Concrete	421	Creek	Unpaved	20	36	Conc	2	Rehab	Infiltration (weeper) at 22 & 48 ft. Infiltration (dripper) at 197 ft. Infiltration (runner) at 67 & 287 ft. Encrustations at 67, 197, 229, 297, & 357 ft.	4231
65	12.8	2	Rehab	7-39	14.3	3	Leave as is	67: Concrete, water mark/leak <25% & in drainage path 66: Concrete	13	Roadside	Paved	14	36	Conc	2	Rehab	Clear.	0
66	12.5	3	Leave as is	65	12.8	2	Rehab	69: Concrete 68: Concrete	89	Creek	Unpaved	13	36	Conc	2	Rehab	Slight sag. Pipe is clear.	2100
67	12.5	2	Rehab	66	12.5	3	Leave as is	101: Concrete 69: Concrete	207	Easement/Roadway	Paved	13	30	Conc	2	Rehab	Sag at 127 ft. Obstacle (rocks) at 16 & 77 ft.	3A21
69	11	3	Replace	68	14	3	Leave as is	7-32: Concrete & has been rehabed and is leaking. 7-22: Brick & is in drainage path, replace.	241	Easement	Unpaved	12	36	Conc	2	Rehab	Infiltration runner at 1 ft.	4100
101	19.60	3	Replace	69	11	3	Replace	7-33: Brick 7-32: Concrete & has been rehabed and is leaking.	264	Easement	Unpaved	15	36	Conc	1	Replace	Camera underwater b/t 162-178 ft.	4131
7-32	9.7	1	Replace	7-22	5.6	2	Replace	7-34: Brick 7-32: Concrete & has been rehabed and is leaking.	200	Roadway	Paved	8	8	Conc	2	Rehab	Infiltration (weeper) at 62 ft. Roots throughout pipe.	3124
7-33	6.20	2	Rehab	7-32	9.7	1	Replace	7-34: Brick EOL: Install new MH	223	Roadway	Paved	8	8	Conc	2	Rehab	Pipe is clear. (KUB)	-
7-34	6.80	2	Rehab	7-33	6.20	2	Rehab	7-35: Brick, Abandon & fill with flowable fill 7-21: Brick	177	Roadway	Paved	7	8	Conc	2	Rehab	Intruding tap (~30%). Trim intruding tap & rehab. (KUB)	-
7-34	6.80	2	Rehab	EOL	-	-	Install New MH	7-36: Brick w/ coating, bricks are visible 7-35: Brick, Abandon & fill with flowable fill	122	Roadway	Paved	7	8	Conc	2	Rehab	Root intrusion at 119 ft (KUB)	-
7-35	15.2	1	Abandon	7-21	15	1	Replace	7-37: Brick 7-36: Brick w/ coating, bricks are visible 7-38: Brick 7-37: Brick	14	Roadside	Paved	15	30	Conc	1	Re-route	Intruding tap (~1-2") at 4 ft. Dripper at 5 ft. Re-route to new alignment behind K-Mart Building and abandon existing sewer line.	3123
7-36	12.6	1	Replace	7-35	15.2	1	Abandon	7-39: Concrete 68: Concrete	201	Creek	Unpaved	14	30	Conc	1	Re-route	Infiltration dripper at 41, 49, 58, 61 ft. Pipe broken. Infiltration (gusher) at 91 ft. Gusher at 98 ft. Re-route to new alignment behind K-Mart Building and abandon existing sewer line.	5441
7-37	11.9	1	Replace	7-36	11.9	1	Replace	7-39: Concrete 7-39A: Brick	230	Roadside	Paved	12	30	Conc	2	Rehab	Infiltration dripper at 26, 67, & 91. Roots at 178 ft. Encrustation at 185 ft.	3322
7-38	11.8	1	Replace	7-37	11.9	1	Replace	7-41: Brick & is located in drainage path. 7-114:	240	Roadside	Paved	12	30	Conc	2	Rehab	Infiltration drpper at 47 & 78 ft. Infiltration runner at 201 & 221 ft.	5141
7-39	14.3	3	Leave as is	68	13.9	3	Leave as is	7-41: Brick & is located in drainage path. 7-42:	3	Roadside	Paved	14	36	Conc	2	Rehab	Clear.	0
7-39	14.3	3	Leave as is	7-39A	14.3	1	Replace	7-43: Covered, Locate & Replace 7-45: Brick 7-44: Brick	9	Roadside	Paved	14	36	Conc	2	Rehab	Clear.	0
7-41	15.4	1	Replace	7-114	15.5	1	Replace	7-46: Brick 7-47: Concrete	115	Roadside	Paved	15	30	Conc	2	Rehab	Infiltration weeper at 22 ft. Roots fine at 55 ft. Sag at 66 ft.	2311
7-42	14.2	1	Replace	7-41	15.4	1	Replace	7-48: Concrete 7-47: Concrete	277	Roadway/Roadside	Paved	15	30	Conc	2	Rehab	Infiltration at 80, 110, 183 ft. Infiltration (runners) at 217 & 226 ft. Multiple fracture at 227 ft. Hole at 231 ft. Sag at 248 ft.	5144
7-43		-	Covered/Replace	7-42A	-	-	Covered/Replace	7-49: Brick 7-48A: Brick	111	Easement	Unpaved	14.2	30	Conc	2	Rehab	Intruding tap at 40 ft (~2-3"). Roots at 5, 10, 40, 107 ft. Crack at 40 ft. Infiltration (runner) at 40 ft.	4131
7-44	12.6	1	Replace	7-43	-	-	Covered/Replace	7-50: Brick 7-49: Brick	167	Roadway	Paved	12.6	30	Conc	2	Rehab	Dripper at 153 ft. Pipe is clear.	2400
7-45	9.8	2	Rehab	7-44	12.6	1	Replace	7-51: Brick 7-50: Brick	81	Roadway	Paved	11	30	Conc	2	Rehab	Clear.	0
7-46	12.6	1	Replace	7-45	9.8	2	Rehab	7-53: Brick 7-203: Concrete	350	Roadway	Paved	11	30	Conc	2	Rehab	Intruding lateral (~2"). Otherwise the pipe is clear. Dig up service & rehab.	2200
7-47	12.10	3	Leave as is	7-46	12.6	1	Replace	7-54: Brick 7-53: Brick	124	Roadway	Paved	12	30	Conc	2	Rehab	Hole & infiltration runner at 8.5 ft. Surface reinforcement visible at 8.5 ft.	5200
7-48	11.8	3	Leave as is	7-47	12.10	3	Leave as is	7-56: Brick 7-204: Concrete	28	Roadway	Paved	12	30	Conc	2	Rehab	Clear.	0
7-49	6.6	2	Replace	7-48A		2	Abandon	7-57: Brick 7-56: Brick	162	Roadside	Paved	6.6	8	Clay/Conc	2	Re-route	Infiltration (weeper) at 47, 71, 74, 80, 83, 98 ft. Multiple fractures at 122, 123, 127 ft. Roots at 137, 143, 151 ft. Re-route sewer to MH 7-46 and abandon existing sewer.	4213
7-50	6.4	2	Replace	7-49	6.6	2	Replace	7-58: Brick 7-57: Brick	207	Sidewalk/Roadway	Paved	7	8	Conc	2	Rehab	Encrustations throughout pipe ranging from 2-5 %. Infiltration (dripper) at 190 & 196.	322A
7-51	3.50	2	Replace	7-198	3.90	3	Leave as is	7-59: Brick 7-58: Brick 7-60: concrete	203	Roadway/Easement	Paved	4	8	PVC	3	Leave as is	Pipe changes from PVC to DIP ? b/t 56 - 120 ft. Pipe is in good condition.	0
7-51	3.50	2	Replace	7-50	6.4	2	Replace	7-61: Brick/Conc 7-60: concrete	238	Parking	Paved	5	8	Terra Cotta	1	Replace	Fracture at 228 & 232. Cracked & broke at 234 ft.	3326
7-53	10.6	1	Replace	7-203	10.2	1	Replace	7-61: Brick/Conc 7-60: concrete	56	Easement	Unpaved	10	30	Conc	2	Rehab	Grease at 10, 12 ft. Pipe broken at 26 ft soil is visible. Roots at 26 ft.	4111
7-54	10.10	1	Replace	7-53	10.6	1	Replace	7-61: Brick/Conc 7-60: concrete	263	Roadside	Paved	10	30	Conc	2	Rehab	Hole (small) in pipe at 45 ft. Roots at 110. Infiltration (dripper) at 146 ft. Deposits at 146 ft. Roots at 183 & 199 ft.	5131
7-56	12.85	1	Abandon	7-204	13.4	3	Replace	7-61: Brick/Conc 7-60: concrete	182	Roadway	Paved	13	8	Conc	1	Replace	Sags at 22, 35, 45, 98, 122, 128, 143, 165, 170, 175 ft (5-35%) Infiltration runner at 175 ft. Material change to PVC at 178 ft. Abandon sewer with flowable fill. Install new pipe between MH 7-57 & MH 7-204	4131
7-57	12.7	1	Replace	7-56	12.85	1	Abandon	7-61: Brick/Conc 7-60: concrete	14	Roadway	Paved	13	8	Conc	3	Replace	Clear. Eliminate sewer and fill MH 7-56 with flowable fill. Install new pipe between MH 7-57 & MH 7-204	0
7-58	12	1	Replace	7-57	12.7	1	Replace	7-61: Brick/Conc 7-60: concrete	268	Roadway	Paved	12	8	Conc	2	Rehab	Multiple areas of grease. Infiltration (weeper) at 94 ft. Multiple sags ranging from ~5-15%.	322A
7-59	5.50	2	Rehab	7-58	12	1	Replace	7-61: Brick/Conc 7-60: concrete	289	Roadway	Paved	9	8	Conc	2	Rehab	Medium build up of grease throughout pipe. Heavy grease at 282 ft. (KUB)	2A00
7-60	4.80	2	Rehab	7-61	4.50	2	Replace	7-61: Brick/Conc 7-60: concrete	248	Roadway	Paved	5	8	Conc	2	Rehab	Grease at 56 ft. (KUB)	-
7-60	4.80	2	Rehab	7-59	5.50	2	Rehab	7-61: Brick/Conc 7-60: concrete	258	Roadway	Paved	5	8	Conc	2	Rehab	Pipe is clear. (KUB)	-

Appendix H

CSM Screen Shots for SSO Response

Main Form

Work Order ID: 31823749 Time SSO Occurred 10:00 House Number 928
 General SSO ID: 31831641 SSO Type Dry Weather Name of Street/Subbasin COLONIAL AVE
 Requestor roger lewelling SSO Category SSO Subbasin Number 16 All Street Addresses
 Date Reported 1/4/2006 Were Temp. Signs Placed? ☒ Hot Spot

Assign Employee(s) Location Suspicious Substance Control Zone Containment Filtration Remediation Clean Up/Disinfection Receiving Surface Water Loss Volume Est. Photo

Assign Employee(s) to this SSO Work Order

KUB Employees: Arnold, Denny; Atkins, Randall; Bailey, Tracy; Baker, Charles; Ballard, James; Becker, John; Reeler, Mark
 Selected Employees: Arnold, Denny; Ballard, James; Howard, Benny; Day, James; Moles, Matthew

* - Required field Save Close

Record: 14 of 49

Pipe Inspection Add/Edit

Pipe ID: 1243475 Invert 1: 24-5 Address: 929 COLONIAL AVE Work Order ID: 31823749
 Subbasin: 16 Invert 2: 24-19 Address: 919 COLONIAL AVE
 CA=Credul Man Riparian
 Flow Up No Flow Up
 Cause Is

Signs Exception

Pipe Ins. Details

	Unit of Measure	Amount of Feet/Cu. Yards	Equipment No.	Amount of Water Used	Number of Workers
Inch Link 4 - 1.1831	-	1.1831	1011	1111	111
Work Line 11 1/2 - 11.1831	-	11.1831	1011	1111	111
Inch Link 2 - 1.1831	-	1.1831	1011	1111	111
Work Line 11 1/2 - 11.1831	-	11.1831	1011	1111	111
* Inch Link	-	11	1011	1111	111

Given Control

Record: 14 of 2 (Filtered)

Main Form

Work Order ID: 31823749 Time SSO Occurred 10:00 * House Number 928
 General SSO ID: 31631641 SSO Type Dry Weather * Name of Street/Subbasin COLONIAL AVE
 Requestor roger lewelling * SSO Category SSO * Subbasin Number: 16 All Street Addresses
 Date Reported 1/4/2006 * Were Temp. Signs Placed? ☒ Hot Spot

Assign Employee(s) Location Suspicious Substance Control Zone Containment Filtration Remediation Clean Up/Disinfection Receiving Surface Water Loss Volume Est. Photo

From Main Line From Manhole From Force Main From Pump Station Others

Manhole

Manhole IPID 1243576 * Manhole Number 24-20
 Manhole Address 928 COLONIAL AVE
 Sub Basin Num: 16

Manhole Cause

Broken Pipe	>	Roots
Construction Failure		
Debris		
Grease		
Heavy Rainfall		
Pump Station Failure	<	
Roots		
WWTP		

* - Required field Save Close

Pipe Inspection Add/Edit

Pipe IPID 1243475 * Manhole 1 24-5 Address 939 COLONIAL AVE Work Order ID 31823749
 Subbasin 16 Manhole 2 24-19 Address 919 COLONIAL AVE
 CAP Credit Non Riparian *
 Follow Up No Follow Up

System Disruption

Comments

Pipe Job Details

	Unit of Measure	Amount of Feet/Cubic Yards	Equipment No	Amount of Water Used	Number Passes
Job Code 46 - FLUSH	Feet	328 5823		1000	1.0
Work Code 08M - Main - 8"					
Job Code 175 - TV	Feet	328 5023		0	1.0
Work Code 08M - Main - 8"					
		0		0	0.0

Manhole Inspection Add/Edit

Manhole ID 1243576 * Work Order ID 31823749

Non-editable Manhole Information

Insp. Status GIS Discrepancy ☐
 Street Address 928 COLONIAL AVE MH Number 24-20 Subbasin # 16
 Latitude Surface Cover CAP Credit
 Longitude Elevation

Is Surcharged? ☐ Height (FT.) 0.0 Corrosion? ☐ H2S (PPM)

Comments

Photo Name

Component Inspection Manhole Pipe Connections

New

Pipe Connection	Condition	Connection Type	Pipe Type	Follow Up
Outgoing Pipe			Concrete pipe	Repair Pipe Connection with MH

Save Close

Record: 1 of 3 (Filtered)

0002503

Work Order Add/Edit

Work Order Information

MIMS Work Order #: su005003 * Date Started: 1/4/2006 7:55:47 AM Work Order ID: 31823749

CIS FO#: 8119747344 Date Completed: 1/4/2006

Crew Leader: Lewelling, Roger *

Manhole Information

Pipe Information

Time Log

Street Cut

Yard Cut

SSQ

Smoke Test

Complete Order

Save Work Order

Save and Close

Cancel

* - Required field

Time Log

Employee Number	Regular Hours	Overtime Hours	Scheduled OT	Equipment Number	Equipment Hours
3785 *	4.00 *		☐	5023 *	4 *
3806 *	4.00 *		☐	0 *	0 *
5286 *	4.00 *		☐	5823 *	4 *
* *	*		☐	* *	*

Save and Close

Cancel

0002504

Appendix I

Sample SSO and Building Backup Files

923 Biddle St.



PM & Reactive
Sewer Work

Main ☐ Lateral ☐ BBU ☐ SSO ☐ Team ☐ PM ☐ Reactive ☐ Standby

Tracking Number

8157110514

WorkOrder#

54005002

Total Hrs This W/O

2.00

W/O ID

8366

Date

10/26/2006

Crew Leader

5736

Street #

800

Street Name

Graves St

Cross Street

Employee#

5736

Regular Hours

Overtime Hours

3.00

Material Item#

Quantity

5008

Equipment#

5823

Hours

3.00

Beginning Mileage

Work Done

☒ Check & Advise ☐ Rat Poison

☐ Check & Refer ☐ Seal Manhole

☐ Clean Up ☐ Deodorant Block

☐ Locatelateral ☐ Other

☐ Easement Line? ☒ Yes ☐ No

☐ Overflowing Manhole? ☒ Yes ☐ No

Manhole No (enter dash)

29

Length

615

Size

08

Drainage Basin#

25

Estimated Duration

6.00

Estimated Overflow

17 GPM

Amount of Line Cleared

Reason for Overflow: ☒ Stoppage ☐ I&I

☐ Possibly Caused by Commercial Grease? ☐ Yes ☒ No

Foreman Comments

Flushed man to unstop, had sog in main, will have hot crew to investigate main more, also done clean up.

4423134720 PM&ReactiveSewer 6/7/05

0002506

Initial Overflow Report



Ray Edwards/SYS/EAO/KUB

10/26/2006 11:12 AM

To SSO Email Group

cc

bcc

Subject SSO - ~~800 Graves St~~ - Initial Overflow Report

Corrected report address: 923 Biddle St.

The following information is being provided to the Tennessee Department of Environment and Conservation (TDEC) in accordance with the requirements of KUB's NPDES Permits.

Confirmed Sanitary Sewer Overflow (SSO):

Date: 10/26/2006

Time: 10:42:00 AM

Location: 800 Graves St

Collection System: Kuwahee

25

KUB is responding in accordance with its Sewer Overflow Response Plan. Please direct any questions regarding this correspondence to Dwayne Frye @ 594-8210.

KUD Customer -
Rose Spears

0002507

Final Overflow Report



Dwayne Frye/CSI/EAO/KUB

10/27/2006 03:57 PM

To SSO Email Group

cc

bcc

Subject Sanitary Sewer Overflow (SSO)
923 Biddle Street
Previously reported as 800 Graves Street

The following information is being provided to the Tennessee Department of Environment and Conservation (TDEC) in accordance with the requirements of KUB's NPDES Permits.

An Unpermitted Discharge has occurred in the **Kuwahee Collection System**.

Date -	October 26, 2006
Time -	10:42 AM
Observer -	KUB Customer - Rose Spears
Location -	923 Biddle Street (MH 29) Previously reported as 800 Graves Street
Reason -	There was a partial blockage in the sewer main caused by grease.
Action Taken -	The sewer main was flushed to clear the blockage. The area was cleaned.
KUB Responders -	Brian Griffith, Bryan Buchanan, Sherman Holmes and Roger Long
Est. Recovered Volume -	0 gallons
Est. Not Recovered Volume -	62 gallons
Duration -	6 Hours
Water of the State -	Yes
Receiving Water -	Swale to Williams Creek
Photographs -	Copies of photographs are available upon request.

Please call me @ 594-8210 or reply to this email if there are any questions.

Thank you,
Dwayne Frye, P. E.
Collection System Improvements

0002508



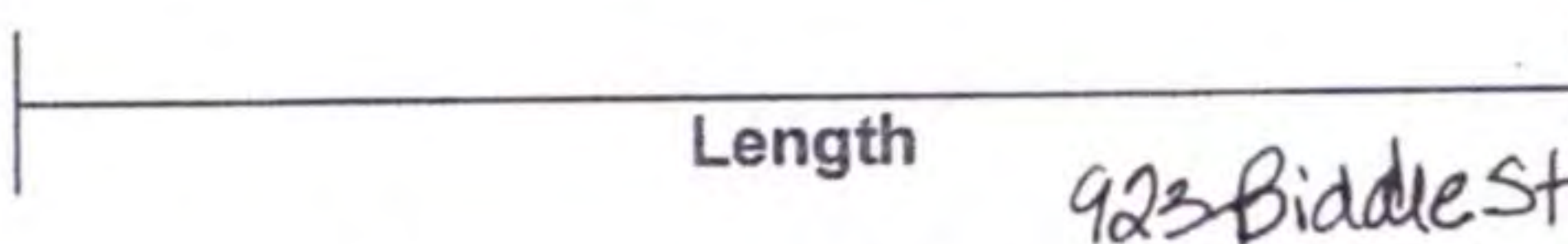
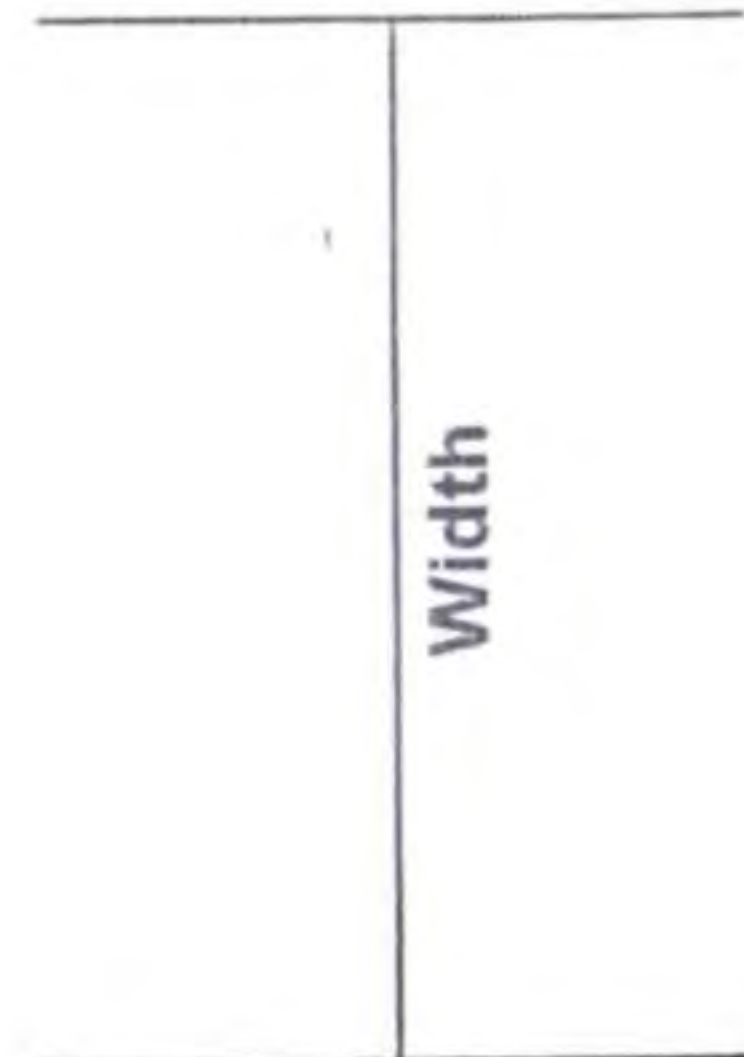
(Before)



(After)

Volume Discharge Estimation

Calculating Rectangular Spill Areas



Date: 10/26/06 Location: 923 Biddle St. Employee #: 5236

Length of Spill (Ft): 10' (1)

Width of Spill (Ft): 10' (2)

Area of Spill (Sq. Ft) 100 (3) = (1) x (2)

Depth of Discharge (Feet): .083 (4)
Convert Inches to Feet by Dividing by 12

Estimated Volume of Discharge: 8.3 (5) = (3) x (4)

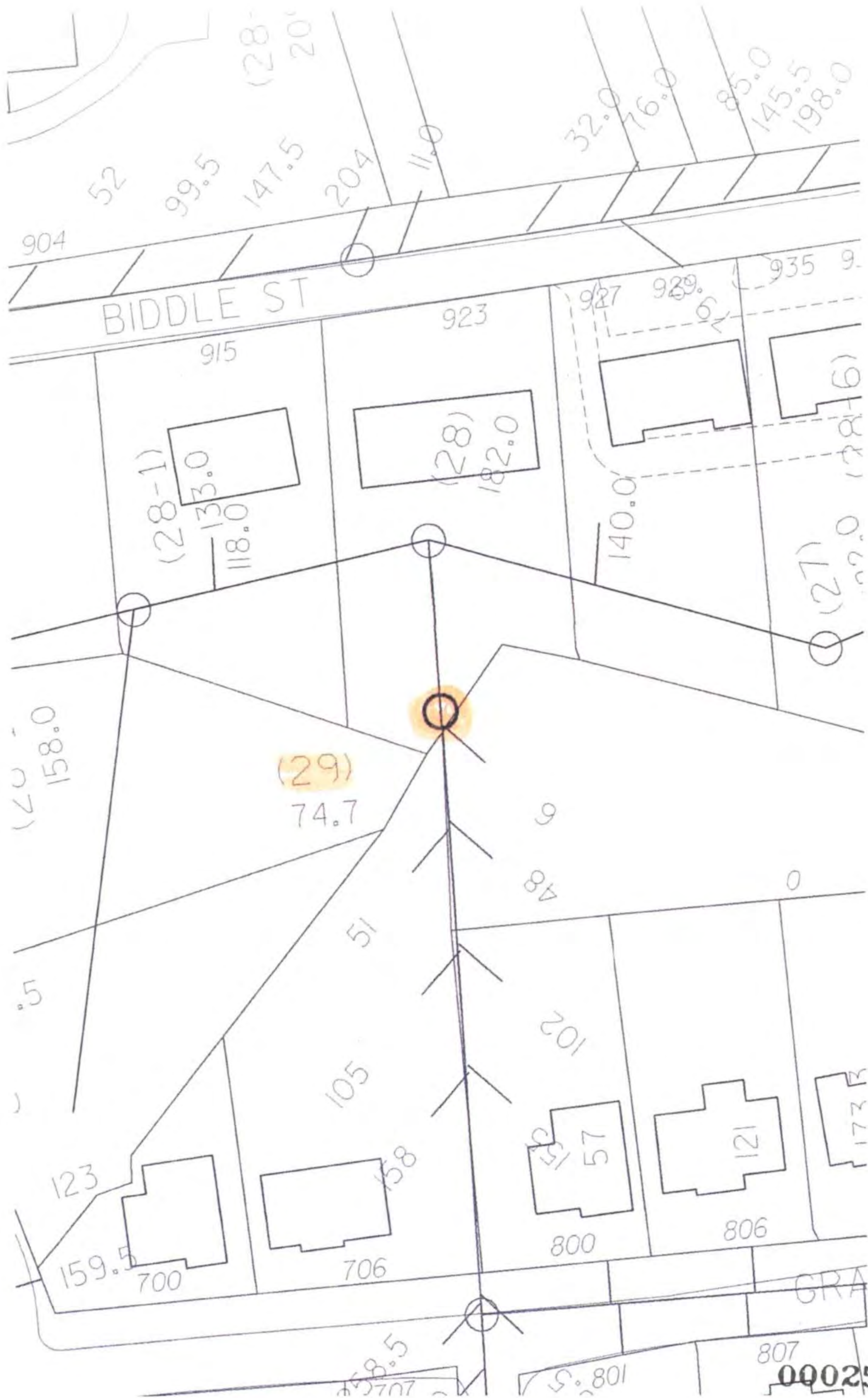
Convert Cubic Feet to Gallons: 62 (6) = (5) x 7.48

Report Estimate Discharge Volume: 62 gal. (6)

Example

The approximate spill area is 100 feet by 50 feet and 6 inches deep. What is the Estimated Volume?

Length of Spill (Ft):	<u>100</u>	(1)
Width of Spill (Ft):	<u>50</u>	(2)
Area of Spill (Sq. Ft)	<u>5000</u>	(3) = (1) x (2)
Depth of Discharge (Feet):	<u>6/12 = 0.5</u>	(4)
Estimated Volume of Discharge:	<u>2500</u>	(5) = (3) x (4)
Convert Cubic Feet to Gallons:	<u>18,700</u>	(6) = (5) x 7.48
Report Estimate Discharge Volume:	<u>18,700 Gallons</u>	(6)



923 Biddle St.



**SSO
Cleanup
Report**

Date

10 / 26 / 2006

Crew Leader

5236

☐ StandBy

Tracking No

8157110514

WorkOrderNo

Su 005011

Manhole No

29 -

DrainageBasinNo

25

TimeOnJob

3:30

☐ AM

☒ PM

TimeOffJob

6:30

☐ AM

☒ PM

LengthOfAreaCleaned

10

StreetNo

800

Street

Graves St

WidthOfAreaCleaned

10

Please mark all that
was used in this
cleanup

☒ Rake & Shovel ☒ Lime ☒ Straw ☐ DumpTruck ☐ Backhoe ☐ Trackhoe ☐ Bobcat ☐ Highlift
☐ Broom/Sweep ☐ Vac Truck

Tracking No

WorkOrderNo

Manhole No

DrainageBasinNo

TimeOnJob

☐ AM

☐ PM

TimeOffJob

☐ AM

☐ PM

LengthOfAreaCleaned

StreetNo

Street

WidthOfAreaCleaned

Please mark all that
was used in this
cleanup

☐ Rake & Shovel ☐ Lime ☐ Straw ☐ DumpTruck ☐ Backhoe ☐ Trackhoe ☐ Bobcat ☐ Highlift
☐ Broom/Sweep ☐ Vac Truck

Tracking No

WorkOrderNo

Manhole No

DrainageBasinNo

TimeOnJob

☐ AM

☐ PM

TimeOffJob

☐ AM

☐ PM

LengthOfAreaCleaned

StreetNo

Street

WidthOfAreaCleaned

Please mark all that
was used in this
cleanup

☐ Rake & Shovel ☐ Lime ☐ Straw ☐ DumpTruck ☐ Backhoe ☐ Trackhoe ☐ Bobcat ☐ Highlift
☐ Broom/Sweep ☐ Vac Truck

Tracking No

WorkOrderNo

Manhole No

DrainageBasinNo

TimeOnJob

☐ AM

☐ PM

TimeOffJob

☐ AM

☐ PM

LengthOfAreaCleaned

StreetNo

Street

WidthOfAreaCleaned

Please mark all that
was used in this
cleanup

☐ Rake & Shovel ☐ Lime ☐ Straw ☐ DumpTruck ☐ Backhoe ☐ Trackhoe ☐ Bobcat ☐ Highlift
☐ Broom/Sweep ☐ Vac Truck

Tracking No

WorkOrderNo

Manhole No

DrainageBasinNo

TimeOnJob

☐ AM

☐ PM

TimeOffJob

☐ AM

☐ PM

LengthOfAreaCleaned

StreetNo

Street

WidthOfAreaCleaned

Please mark all that
was used in this
cleanup

☐ Rake & Shovel ☐ Lime ☐ Straw ☐ DumpTruck ☐ Backhoe ☐ Trackhoe ☐ Bobcat ☐ Highlift
☐ Broom/Sweep ☐ Vac Truck

923 Biddle St.

Control Central - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Go

http://n106.kub.org:9080/psp/csprd09/EMPLOYEE/CIS/c/CI_CI_CI_SPC/GBLTFolderPath=PORTAL_ROOT_OBJECT_CI_CONTROL_CENTRAL&Folder=fi

PeopleSoft

Menu Search

- My Favorites
- Maintain Customer Information
- Enter Financial Information
- Monitor Credit Collections
- Manage Field Information
- Process Workflow
- Maintain Assets
- Enter Meter Reads
- Structure Rates
- Configure General Options
- Worklist
- Application Diagnostics
- Reporting Tools
- PeopleTools
- Control Central
- Meter Search
- Item Search
- Change My Password
- My Personalizations
- My System Profile
- My Dictionary

Field Activity

Account 5395710000 Cur Bal \$116.46 Customer Spears, Rose N

Premise 800 Graves St Knoxville TN 37915-1717 Unknown Item (Not installed)

Field Activity 800 Graves St Knoxville TN 37915-1717 - Unknown, Trouble On WasteWater, Completed, ID 8157199258

Scheduled 2006-10-26

Characteristics

Start Date	Type	Description	Value	Description / Ad Hoc Value
10/26/2006	WWTRBL	Type of WasteWater Trouble	FLUSH LATRL/MAIN	Flush Lateral/Main
10/26/2006	HAZARD	Is this a hazard?	PEDESTRIAN HAZRD	Pedestrian Hazard
10/26/2006	WHENOCUR	When did problem occur?	TODAY	Today
10/26/2006	PROP DMG	Has Property Damage Occurred?	UNSURE	Unsure
10/26/2006	SEVERITY	How severe is problem?	HIGH	High
10/26/2006	LOC PROB	Where is problem located?		main
10/27/2006	ST RSLV	Service Tech Resolves	COMP	Completed OK
10/26/2006	1ST CALL	Is this the 1st call?	YES	Yes

Local intranet

Control Central - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Go

http://n106.kub.org:9080/psp/csprd09/EMPLOYEE/CIS/c/CI_CI_CI_SPC/GBLTFolderPath=PORTAL_ROOT_OBJECT_CI_CONTROL_CENTRAL&Folder=fi

PeopleSoft

Menu Search

- My Favorites
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- Maintain Assets
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- Configure General Options
- Worklist
- Application Diagnostics
- Reporting Tools
- PeopleTools
- Control Central
- Meter Search
- Item Search
- Change My Password
- My Personalizations
- My System Profile
- My Dictionary

Account 5395710000 Cur Bal \$116.46 Customer Spears, Rose N

Premise 800 Graves St Knoxville TN 37915-1717 Unknown Item (Not installed)

Premise ID: 8157110000 Trouble ID: 8157131203

Call Date/Time: 10/26/06 Previous Call Date/Time: User ID: YWD06349

SP ID: 10:36:06AM Water/Sewer-RES (Master), Unit Z1, KUB Service Area, In Service, W Only Description Yvonne Dunlap

InService Address:

Account ID: 5395710000 Spears, Rose N

Authorized By: [Name] Premise Phone: [Number] Contact Phone: [Number]

Current Status

Dispatch Status: Estimated Restoration Time: Disposition: COMP OK FA ID 8157191215

Trouble Information

Trouble Type: Sewer Leak

Additional Trouble Information

Description

1 Is this a hazard? Please select one:

2 Not a hazard

Customer Comments:

Per Rose Spears 523-9387 strong sewage smell and sewage in creek beside her house, also says a milky film on the water in the creek, not affecting her plumbing in house

Local intranet

0002513

923 Biddle St.

Control Central - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address http://n106.kub.org:9080/psp/csprd09/EMPLOYEE/CIS/c/CI_CI_CI_SRCH.GBL?FolderPath=PORTAL_ROOT_OBJECT.CI_CONTROL_CENTRAL&Folder=...

PeopleSoft

Menu

Search

My Favorites

Maintain Customer Information

Enter Financial Information

Monitor Credit Collections

Manage Field Information

Process Workflow

Maintain Assets

Enter Meter Reads

Structure Rates

Configure General Options

Worklist

Application Diagnostics

Reporting Tools

PeopleTools

Control Central

Meter Search

Item Search

Change My Password

My Personalizations

My System Profile

My Dictionary

Account 5395710000 Cur Bal \$116.46 Customer Spears, Rose N

Premise 800 Graves St Knoxville TN 37915-1717, Unknown Item (Not installed)

Field Activity 800 Graves St Knoxville TN 37915-1717 - Unknown, Trouble On WasteWater, Completed, ID 8157199258

Scheduled 2006-10-26

Service Point ID Water/Sewer-RES (Master), Unit 21, KUB Service Area, In Service, W Only

Activity Type T-WWTRBL Trouble On WasteWater

Created: 10/26/06 03:21 PM by user Mike Webber.

Schedule Date/Time 10/26/06

Override Eligible for Dispatch

Field Activity Priority

Status Completed

Hold Reason

Cancel Reason

Dispatch Group Outage Mgmt / Mobile Data

Field Order ID Completed - Worked: 10/27/06 (1 activity)

Test Selection ID

Instructions poss overflow @ manhole beside house and creek. prev order worked by 4079. need to flush main. SSO previously created.

Comments TVED FROM MANHOLE 31 TO 28 FOUND 2 SWAGS 1 IN EACH SECTION WILL ADVISE TOM HAUCK OF BA. PER 5736

Local intranet

Control Central - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address http://n106.kub.org:9080/psp/csprd09/EMPLOYEE/CIS/c/CI_CI_CI_SRCH.GBL?FolderPath=PORTAL_ROOT_OBJECT.CI_CONTROL_CENTRAL&Folder=...

PeopleSoft

Menu

Search

My Favorites

Maintain Customer Information

Enter Financial Information

Monitor Credit Collections

Manage Field Information

Process Workflow

Maintain Assets

Enter Meter Reads

Structure Rates

Configure General Options

Worklist

Application Diagnostics

Reporting Tools

PeopleTools

Control Central

Meter Search

Item Search

Change My Password

My Personalizations

My System Profile

My Dictionary

Field Activity

History...

Account 5395710000 Cur Bal \$116.46 Customer Spears, Rose N

Premise 800 Graves St Knoxville TN 37915-1717, Unknown Item (Not installed)

Field Activity 800 Graves St Knoxville TN 37915-1717 - Unknown, L-SLEAK - CSR's - DO NOT USE, ID 8157191219

Completed, Scheduled 2006-10-26 11:18AM

Characteristics

Start Date	Type	Description	Value	Description / Ad Hoc Value
10/26/2006	HAZARD	Is this a hazard?	PEDESTRIAN HAZRD	Pedestrian Hazard
10/26/2006	PROP DMG	Has Property Damage Occurred?	UNSURE	Unsure
10/26/2006	S-LEAK	Type of Sewer Leak	SEWAGE BACKED UP	Sewage Backed Up
10/26/2006	TOTL PREM	Is it affecting total premise?	UNSURE	Unsure
10/26/2006	WHENOCUR	When did problem occur?	TODAY	Today
10/26/2006	ST RSLV	Service Tech Resolves	COMP	Completed OK

Save Return to Search Refresh Related Links Add

Local intranet

0002514

923 Biddle St.

Control Central - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Go

Address http://h106.kub.org:9080/ppp/csprdes/EMPLOYEE/CIS/ci_ci_ci_SRCH.GBL?FolderPath=PORTAL_ROOT_OBJECT.CI_CONTROL_CENTRAL&Folder=ci

PeopleSoft

Menu

Search:

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- Worklist
- Application Diagnostics
- Reporting Tools
- PeopleTools
- Control Central
 - Meter Search
 - Item Search
 - Change My Password
 - My Personalizations
 - My System Profile
 - My Dispenser

Field Activity

Account 5095710030 Cur Bal \$116.46 Customer Spears Rock N

Premise 800 Graves St Knoxville TN 37915-1717, Unknown Item (Not installed)

Field Activity 800 Graves St Knoxville TN 37915-1717 - Unknown, L-SLEAK - CSR's - DO NOT USE, ID 8157191219

Completed, Scheduled 2006-10-26 11:18AM

Service Point ID Water/Sewer-RES (Master), Unit 21, KUB Service Area, In Service, W Only

Activity Type L-SLEAK L-SLEAK - CSR's - DO NOT USE

Created: 10/26/06 11:18 AM by user Mobile Data System Account(MDS).

Schedule Date/Time Override Eligible for Dispatch

Field Activity Priority Reason

Status Completed

Hold Reason

Cancel Reason

Dispatch Group Mobile Data Terminal

Field Order ID No Field Order Information

Test Selection ID

Instructions

Comments SEWER LINE STOPPED UP, SEWER CREW TO FLUSH. 4079

Done Local intranet

start

0002515

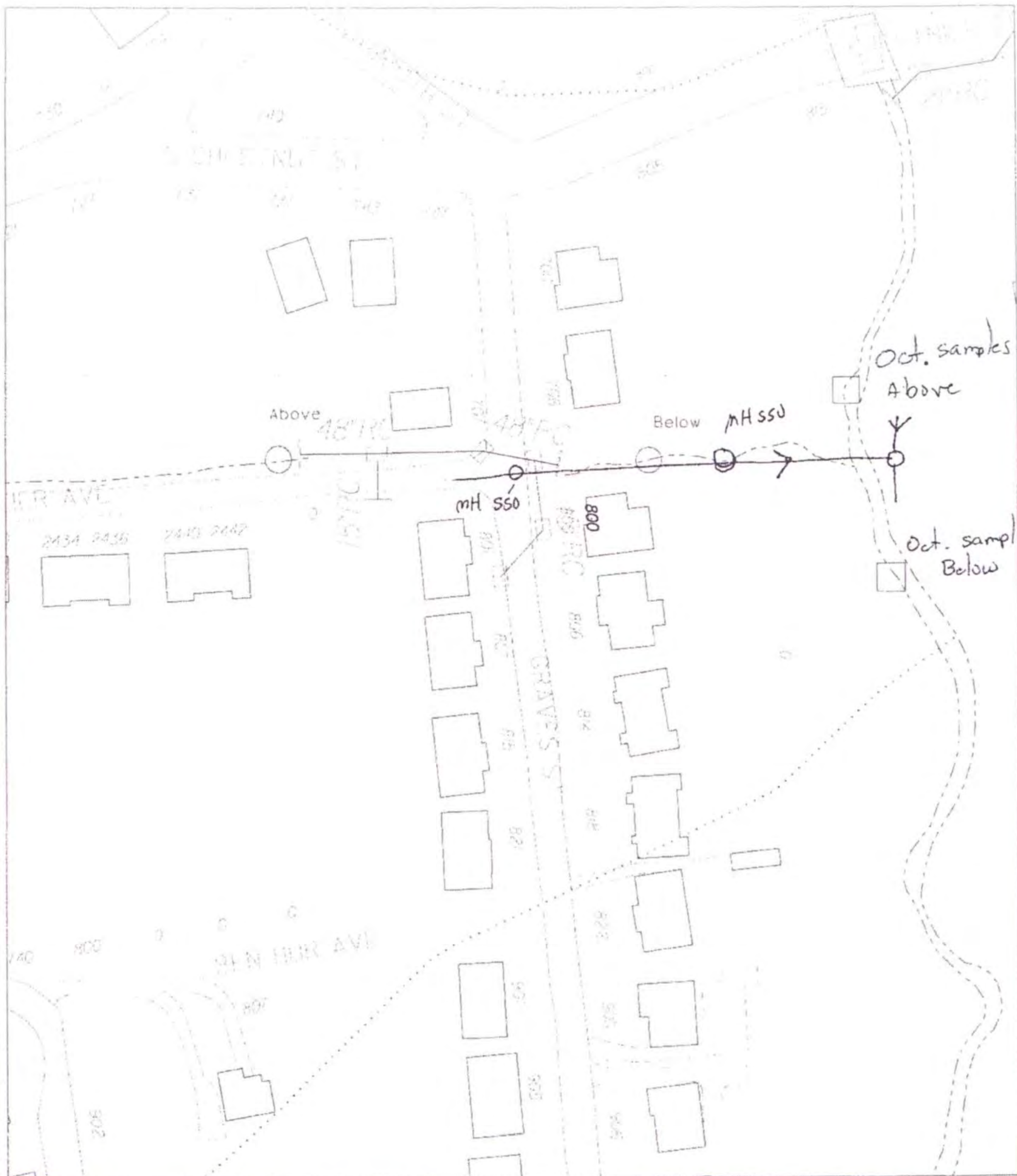
CSM Field Information Email

Yanti Miller/ENG/EAO/KUB
10/27/2006 02:25 PM

To Dwayne Frye/CSI/EAO/KUB@KUB
cc
bcc
Subject Sanitary Sewer Overflow (SSO)
923 Biddle Street

Date -	October 26, 2006
Time -	10:42 AM
Observer -	
Location -	923 Biddle Street (MH #29)
Reason -	
Action Taken -	Flushed, Cleaned
KUB Responders -	Bryan Buchanan, Brian Griffith, Sherman Holmes, Roger Long
Est. Recovered Volume -	0 gallons
Est. Not Recovered Volume -	62.08 gallons (Area: Length: 10' Width: 10', Depth: 0.1')
Duration -	Unknown
Water of the State -	
Receiving Water -	Creek
Photographs -	Copies of photographs are available upon request.
Completion Date -	Cleaning: October 26, 2006 CCTV: n/a
Pictures -	camera -u-0059-0-pic-1 During camera-u-0059-0-pic-2 After Cleanup

0002516



Your source
for energy and
water services

GAS
SEWER
WATER

800

Graves St at Williams Ck

DISCLAIMER: This map was prepared from the latest available information system maintained by the Kalamazoo County Geographic Information System. This map should not be relied on for engineering, design, or surveying work or other critical applications. The information on this map is provided as a service and is not a warranty of accuracy or fitness for use for a particular purpose. Kalamazoo County, Michigan, and its officials, employees, and contractors do not warrant the accuracy of this map.



Printed: 1/25/2006

0002517



Laboratory Analysis Report

Report Date: 11/3/2006

800 Graves- Willams Creek ABov

Sample Date: Thursday, October 26, 2006

Sample Time: 14:50

Lab ID # AE15444

Sample Collector: D. OBENSCHAIN

Knoxville Utilities Board

Water Quality Assurance Laboratory

Debbie Ailey - Supervisor

835 East Jackson Avenue

Knoxville, Tennessee 37950

(865) 594-8286 Fax: (865) 594-8245

Analysis	Result	Units	Analyst	Analysis Date & Time
Dissolved Oxygen (field)	7.8	mg/l	DO	10/26/06 14:50
E-coli by Quanti-Tray	170	MPN	JBP	10/26/06 15:25
Fecal Coliform, Membrane Filter	140	CFU/100 ml	JBP	10/26/06 15:14
pH (Field)	7.5	pH units	DO	10/26/06 14:50
Temperature (Field)	12	degrees C	DO	10/26/06 14:50



Laboratory Analysis Report

Report Date: 11/3/2006

800 Graves- Williams Creek ~~Above~~ Below

Sample Date: Thursday, October 26, 2006

Sample Time: 14:50

Lab ID # AE15444

Sample Collector: D. OBENSCHAIN

Knoxville Utilities Board
Water Quality Assurance Laboratory
Debbie Ailey - Supervisor
835 East Jackson Avenue
Knoxville, Tennessee 37950
(865) 594-8286 Fax: (865) 594-8245

Analysis	Result	Units	Analyst	Analysis Date & Time
Dissolved Oxygen (field)	7.7	mg/l	DO	10/26/06 14:55
E-coli by Quanti-Tray	>2400	MPN	JBP	10/26/06 15:25
Fecal Coliform, Membrane Filter	54000	CFU/100 ml	JBP	10/26/06 15:20
pH (Field)	7.3	pH units	DO	10/26/06 14:55
Temperature (Field)	11	degrees C	DO	10/26/06 14:55



Laboratory Analysis Report

Report Date: 11/3/2006

Knoxville Utilities Board
Water Quality Assurance Laboratory
Debbie Ailey - Supervisor
835 East Jackson Avenue
Knoxville, Tennessee 37915
(865) 594-8286 Fax: (865) 594-8245

Williams Creek @ Graves Above

Sample Date: Tuesday, October 31, 2006

Sample Time: 13:12

Lab ID # AE15658

Sample Collector: D. OBENSCHAIN

Analysis	Result	Units	Analyst	Analysis Date & Time
Dissolved Oxygen (field)	7.5	mg/l	DO	10/31/06 13:12
E-coli by Quanti-Tray	310	MPN	JBP	10/31/06 14:40
Fecal Coliform, Membrane Filter	180	CFU/100 ml	JBP	10/31/06 14:28
pH (Field)	7.4	pH units	DO	10/31/06 13:12
Temperature (Field)	12	degrees C	DO	10/31/06 13:12

Reviewed by: _____

Williams Creek @ Graves Above, AE15658

0002520



Laboratory Analysis Report

Report Date: 11/3/2006

Knoxville Utilities Board
Water Quality Assurance Laboratory
Debbie Ailey - Supervisor
835 East Jackson Avenue
Knoxville, Tennessee 37915
(865) 594-8286 Fax: (865) 594-8245

Williams Creek @ Graves Below

Sample Date: Tuesday, October 31, 2006

Sample Time: 13:07

Lab ID # AE15659

Sample Collector: D. OBENSCHAIN

Analysis	Result	Units	Analyst	Analysis Date & Time
Dissolved Oxygen (field)	6.9	mg/l	DO	10/31/06 13:07
E-coli by Quanti-Tray	380	MPN	JBP	10/31/06 14:40
Fecal Coliform, Membrane Filter	290	CFU/100 ml	JBP	10/31/06 14:31
pH (Field)	7.4	pH units	DO	10/31/06 13:07
Temperature (Field)	14	degrees C	DO	10/31/06 13:07

Reviewed by: _____

Williams Creek @ Graves Below, AE15659

0002521

Grease-Related SSO Email

Kelly Liford/PLT/EAO/KUB
11/07/2006 10:11 AM

To Joe Snyder/PLT/EAO/KUB@KUB, Thomas
Hauck/CSI/EAO/KUB@KUB, Ben
Parker/TCH/EAO/KUB@KUB, Kelly
cc Wayne Loveday/CSI/EAO/KUB@KUB, Gretchen
Weir/SYS/EAO/KUB@KUB, Debbie
Ailey/PLT/EAO/KUB@KUB, David
bcc
Subject 131 Ingersoll (UG Flow) & 923 Biddle Street (MH 29)
Residential SSOs

An SSO has occurred in the Kuwahee Collection System.

Date - October 17, 2006
Time - 6:30 PM
Observer - KUB Employee - Roger Lewelling
Location - 131 Ingersoll Avenue (Underground Flow)
Reason - There was a partial blockage in the sewer main
caused by grease and roots.
Action Taken - The sewer main was flushed to clear the blockage.
The area was cleaned.
KUB Responders - Roger Lewelling, James Horner, Richard Brogdon,
Brad Irwin and Jim Matthews
Est. Recovered Volume - 0 gallons
Est. Not Recovered Volume - 3,366 gallons
Duration - 3 Hours
Water of the State - No
Receiving Water - Ditchline to Soil Saturation
Photographs - Copies of photographs are available upon request.

Follow-up MH Investigation Report (Residential Overflow)

Initial Investigation Date: November 6, 2006

Results: 32 residential customers were identified as potential grease contributors.

Identified Contributor: 32 residential customers were identified as potential grease contributors from a Landviewer query.

Comments: All residential customers will be mailed a grease can, magnet and brochure. Commercial facilities will be inspected soon.

GC Post-SSO Comments: jeff holbert tved main and found some lite grease and havy sags in the main he root cut main.. this line is alrady on the pm list will have tom back it up



131 Ingersoll Avenue (Underground Flow).xls

An Unpermitted Discharge has occurred in the Kuwahee Collection System.

Date - October 26, 2006
Time - 10:42 AM
Observer - KUB Customer - Rose Spears
Location - 923 Biddle Street (MH 29)
Reason - Previously reported as 800 Graves Street
There was a partial blockage in the sewer main
caused by grease.
Action Taken - The sewer main was flushed to clear the blockage.
The area was cleaned.
KUB Responders - Brian Griffith, Bryan Buchanan, Sherman Holmes
and Roger Long

0002522

Est. Recovered Volume -	0 gallons
Est. Not Recovered Volume -	62 gallons
Duration -	6 Hours
Water of the State -	Yes
Receiving Water -	Swale to Williams Creek
Photographs -	Copies of photographs are available upon request.

Follow-up MH Investigation Report (Residential Overflow)

Initial Investigation Date: November 6, 2006

Results: 121 residential customers were identified as potential grease contributors.

Identified Contributor: 121 residential customers were identified as potential grease contributors from a Landviewer query.

Comments: All residential customers will be mailed a grease can, magnet and brochure. Commercial facilities will be inspected soon.

GC Post-SSO Comments:



923 Biddle Street (MH 29).xls

J. Kelly Liford
Grease Program Coordinator
Knoxville Utilities Board
(865) 594-8337

CUSTOMER	ADDRESS	CITY	STATE	POSTAL
Brenda L Cutwright	305 Ben Hur Ave	Knoxville	TN	37915-1607
Willie Irvin	615 Chestnut St SE	Knoxville	TN	37914-0000
Patricia A Reece	2437 Selma Ave SE	Knoxville	TN	37915-1628
Juan L Lopez	2413 Wilson Ave SE	Knoxville	TN	37915-1632
Leroy A Jones Jr	2411 Wilson Ave	Knoxville	TN	37915-1632
Belinda Hall	511 Ben Hur Ave SE	Knoxville	TN	37915-1611
Christopher D Posey	2400 Wilson Ave	Knoxville	TN	37915-1631
Frenchie B Neal	2440 Selma Ave SE	Knoxville	TN	37915-1627
Pauline L Harris	2325 Wilson Ave SE	Knoxville	TN	37915-1630
Summer D Cody	2406 Louise Ave SE	Knoxville	TN	37915-1616
Terry B Livsey	2411 Selma Ave SE	Knoxville	TN	37915-1628
Lawrence Love	2421 Selma Ave SE	Knoxville	TN	37915-1628
James E Battle	314 Ben Hur Ave SE	Knoxville	TN	37915-1606
Sharynn O Logan	310 Ben Hur Ave SE	Knoxville	TN	37915-1606
Annie P Chestnutt	326 Ben Hur Ave SE	Knoxville	TN	37915-1606
Melvin R King Jr	508 Ben Hur Ave SE	Knoxville	TN	37915-1610
Tomekia R Hall	2406 Wilson Ave SE	Knoxville	TN	37915-1631
Charles H Scott	504 Ben Hur Ave SE	Knoxville	TN	37915-1610
Verlin L Holt	2410 Wilson Ave	Knoxville	TN	37915-1631
Marlene Y Whitmire	512 Ben Hur Ave SE	Knoxville	TN	37915-1610
Wilma J Chandler	516 Ben Hur Ave SE	Knoxville	TN	37915-1610
Ruth Staffney	520 Ben Hur Ave	Knoxville	TN	37915-1610
James T West	500 Ben Hur Ave SE	Knoxville	TN	37915-1610
Olivia L Hayes	524 Ben Hur Ave SE	Knoxville	TN	37915-1610
Durrell Mc Galry	322 Ben Hur Ave	Knoxville	TN	37915-1606
Warren E Hodge	622 Ben Hur Ave SE	Knoxville	TN	37915-1612
Reolla M Davis	318 Ben Hur Ave SE	Knoxville	TN	37915-1606
Anna D Cates	306 Ben Hur Ave	Knoxville	TN	37915-1606
Walter A Martin	603 Ben Hur Ave SE	Knoxville	TN	37915-1613
David L Anderson Sr	2421 Wilson Ave SE	Knoxville	TN	37915-1632
Juanita M Greenlee	2415 Selma Ave	Knoxville	TN	37915-1628
Stephen A Clark	631 Ben Hur Ave Apt 1	Knoxville	TN	37915-1613
Shuli Chen	515 Ben Hur Ave Lot 1	Knoxville	TN	37915-1611
John R Baucom	715 Chestnut St SE	Knoxville	TN	37914-5832
Christopher Harshaw Sr	631 Ben Hur Ave Apt 2	Knoxville	TN	37915-1613
Connie Patrick	736 Ben Hur Ave SE	Knoxville	TN	37915-1705
Katherine M Simpson	1920 Ulster Ave	Knoxville	TN	37915-1749
James H Johnson	724 Ben Hur Ave	Knoxville	TN	37915-1705
Claire Smith	1912 Victoria St	Knoxville	TN	37915-1733
Connie Patrick	737 Ben Hur Ave	Knoxville	TN	37915-1706
Willie J Banks	901 Kurtzman St	Knoxville	TN	37915-1722
Rosemary Durant	628 Ben Hur Ave SE	Knoxville	TN	37915-1612
Ruth Proctor	715 Ben Hur Ave SE	Knoxville	TN	37915-1706
Maceo Alford	700 Ben Hur Ave	Knoxville	TN	37915-1705
Kristopher J Elwood	1900 Ulster Ave Apt B	Knoxville	TN	37915-1729
Louise H Webb	702 Ben Hur Ave SE	Knoxville	TN	37915-1705
Mack H Williams	706 Ben Hur Ave	Knoxville	TN	37915-1705
Leroy Connelly Jr	614 Ben Hur Ave SE	Knoxville	TN	37915-1612
Shelia E Wright	2412 Victoria St	Knoxville	TN	37915-1735

Carlotta B Roach	2404 Victoria St	Knoxville	TN	37915-1735
Rose N Spears	800 Graves St	Knoxville	TN	37915-1717
Annie F Clark	801 Graves St	Knoxville	TN	37915-1718
Jeffrey L Troutman	807 Graves St	Knoxville	TN	37915-1718
Johnny L Williams Sr	806 Graves St	Knoxville	TN	37915-1717
Larry W Peck	814 Graves St	Knoxville	TN	37915-1717
Paulette B Herbin	815 Graves St	Knoxville	TN	37915-1718
Rose M Blue	816 Graves St	Knoxville	TN	37915-1717
Edith D Fleet	821 Graves St	Knoxville	TN	37915-1718
Laverne D Stokes	822 Graves St	Knoxville	TN	37915-1717
Walter L Conwell	900 Graves St	Knoxville	TN	37915-1719
Eugene Summerour	906 Graves St	Knoxville	TN	37915-1719
Anne Mc Kissick	901 Graves St	Knoxville	TN	37915-1720
Roberta Davis	905 Graves St	Knoxville	TN	37915-1720
Samuel L Holt	2434 Cavalier St	Knoxville	TN	37915-1711
Tiffany M Booker	2440 Cavalier St	Knoxville	TN	37915-1711
Charles L Earls	2436 Cavalier St	Knoxville	TN	37915-1711
Michelle D Hatchett	2430 Cavalier St	Knoxville	TN	37915-1711
Debra Hinton	909 Graves St	Knoxville	TN	37915-1720
Angela C Turner	911 Graves St	Knoxville	TN	37915-1720
Margaret M Zeigler	915 Graves St	Knoxville	TN	37915-1720
David W Mills	917 Graves St	Knoxville	TN	37915-1720
Elaine Goodman	1900 Ulster Ave Apt A	Knoxville	TN	37915-1729
James F Cronin	503 Ben Hur Ave SE	Knoxville	TN	37915-1611
Carlton E Scott	507 Ben Hur Ave	Knoxville	TN	37915-1611
Tara Singleton	329 Ben Hur Ave SE	Knoxville	TN	37915-1607
Maria Bingham	2422 Wilson Ave SE	Knoxville	TN	37915-1631
Walter Fieldsa	2427 Wilson Ave SE	Knoxville	TN	37915-1632
Catherine Terrell	519 Ben Hur Ave SE	Knoxville	TN	37915-1611
Jimmy J Smith	627 Ben Hur Ave Apt 2	Knoxville	TN	37915-1613
William F Martin	523 Ben Hur Ave SE	Knoxville	TN	37915-1611
J B Person	709 Chestnut St SE	Knoxville	TN	37914-5832
Roger E Lyttleton	2418 Wilson Ave SE	Knoxville	TN	37915-1631
Dedria L Fritts	2412 Selma Ave SE	Knoxville	TN	37915-1627
Hubert A Clemons	2436 Selma Ave SE	Knoxville	TN	37915-1627
Derrell Jacobs	2422 Selma Ave SE	Knoxville	TN	37915-1627
Blenda J Mc Crary	2317 Wilson Ave	Knoxville	TN	37915-1630
Maury A Jackson	2028 Ulster Ave	Knoxville	TN	37915-1731
Barbara J Young	311 Ben Hur Ave SE	Knoxville	TN	37915-1607
Kenneth Barton	2409 Wilson Ave SE	Knoxville	TN	37915-1632
Terry B Livsey	2429 Selma Ave SE	Knoxville	TN	37915-1628
Jessica Gunn	1900 Victoria St	Knoxville	TN	37915-0000
John E Bourne	2332 Wilson Ave SE	Knoxville	TN	37915-1629
Verlin L Holt	2329 Wilson Ave SE	Knoxville	TN	37915-1630
Melvin W Jackson	2445 Selma Ave SE	Knoxville	TN	37915-1628
Andrea Viney	2020 Ulster Ave	Knoxville	TN	37915-1731
Ronald E Glenn	2328 Wilson Ave SE	Knoxville	TN	37915-1629
R H Chappel	605 Ben Hur Ave SE	Knoxville	TN	37915-1613
William Farris Jr	2316 Wilson Ave SE	Knoxville	TN	37915-1629
Elaine Taylor	807 Ben Hur Ave	Knoxville	TN	37915-1708
Herbert C Plumlee Jr	731 Ben Hur Ave SE	Knoxville	TN	37915-1706
Bernadine P Dorsett	616 Ben Hur Ave	Knoxville	TN	37915-1612

Leroy Smith Jr	1907 Victoria St	Knoxville	TN	37915-1734
Marcus Yarbrough	706 Graves St	Knoxville	TN	37915-1715
Bernard Phillips	818 Graves St	Knoxville	TN	37915-1717
Linda J Hodge	820 Graves St	Knoxville	TN	37915-1717
Lisa M Schooler	707 Graves St	Knoxville	TN	37915-1716
Johnny L Johnson	2442 Cavalier St	Knoxville	TN	37915-1711
Christina E Locke	2428 Cavalier Ave	Knoxville	TN	37915-1711
John A Sibley	910 Graves St	Knoxville	TN	37915-1719
Fredda Mc Donald	916 Graves St	Knoxville	TN	37915-1719
Rebecca S Harrison	706 Trigg St Apt 1	Knoxville	TN	37915-2133
Francisco Baltazar	333 Ben Hur Ave SE	Knoxville	TN	37915-1607
Charles Williams	726 Ben Hur Ave	Knoxville	TN	37915-1705
Lillie Porter	509 Chestnut St SE	Knoxville	TN	37914-0000
Barbara Washburn	2334 Louise Ave	Knoxville	TN	37915-1614
Gary G Long	2360 Louise Ave SE	Knoxville	TN	37915-1614
Annie L Jackson	609 Ben Hur Ave SE	Knoxville	TN	37915-1613
Hattie M Matthews	608 Ben Hur Ave	Knoxville	TN	37915-1612
Walter H Donaldson	2351 Louise Ave	Knoxville	TN	37915-1615
Melain Josey	912 Graves St	Knoxville	TN	37915-1719
Shirley A Shaw	2424 Cavalier St	Knoxville	TN	37915-1711
Johnny L Wykle	2338 Louise Ave	Knoxville	TN	37915-1614

Initial Backup Report



John Phelps/SYS/EAO/KUB
11/08/2006 03:13 PM

To SSO Email Group
cc
bcc
Subject Building Backup - 1317 Louisiana Avenue - Building Backup Report

The following information is being provided to the Tennessee Department of Environment and Conservation (TDEC) in accordance with the requirements of KUB's NPDES Permits.

Building Backup Report:
Date: 11/08/2006
Time: 03:00:00 PM
Location: 1317 Louisiana Avenue
Collection System: Kuwahee

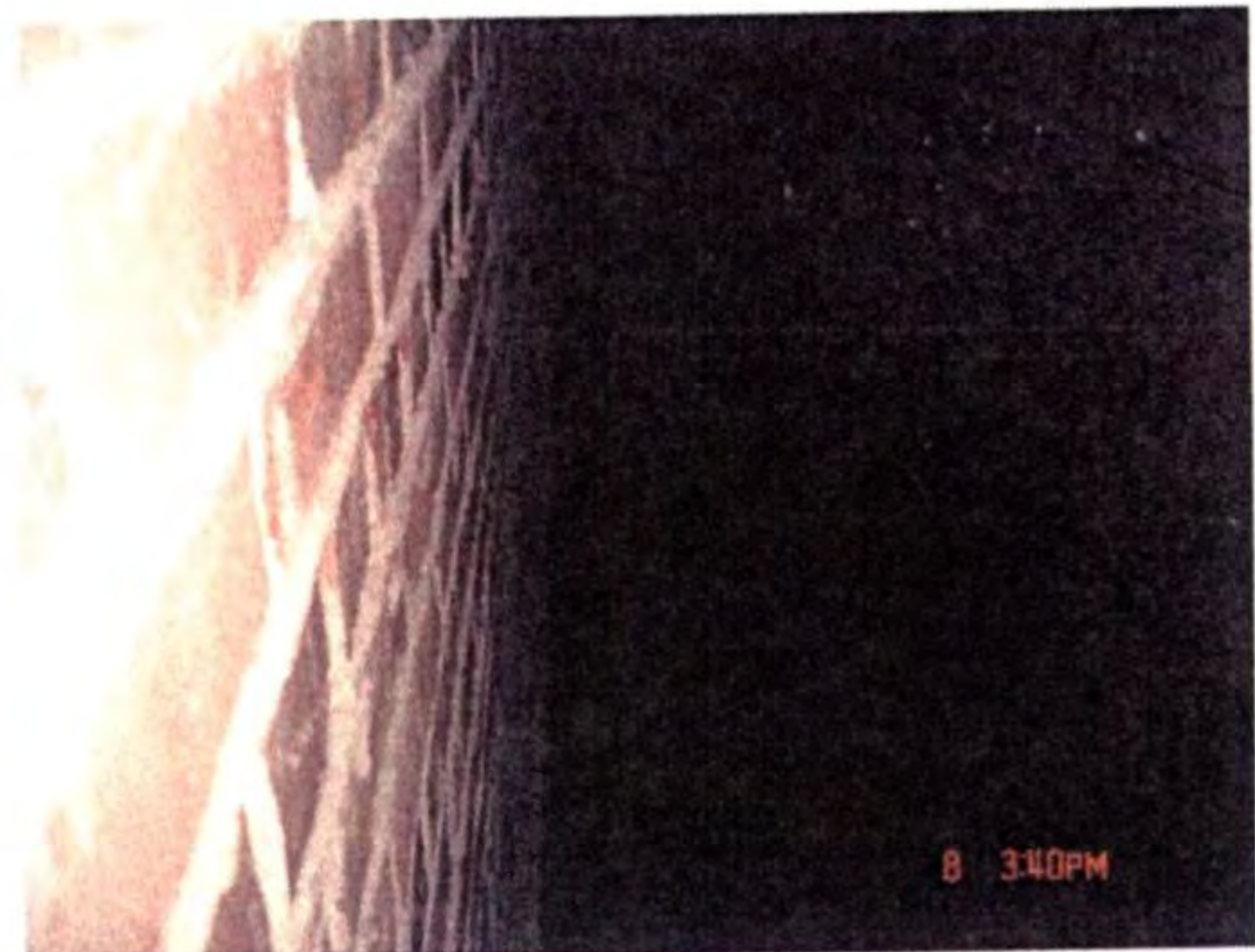
15

KUB is responding in accordance with its Sewer Overflow Response Plan. Please direct any questions regarding this correspondence to Dwayne Frye @ 594-8210.

KUB Employee - Paul Chapman

0002527







Control Central Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address http://n106.kub.org:9080/psp/cisprd89/EMPLOYEE/CIS/q/CI_CI_CI_SRCH.GBL?FolderPath=PORTAL_ROOT_OBJECT.CI_CONTROL_CENTRAL&IsFolder=false Go

PeopleSoft

Menu Search

My Favorites
Maintain Customer Information
Enter Financial Information
Monitor Credit Collections
Manage Field Information
Process Workflow
Maintain Assets
Enter Meter Reads
Structure Rates
Configure General Options
Worklist
Application Diagnostics
Reporting Tools
PeopleTools

Control Central

Meter Search
Item Search
Change My Password
My Personalization
My System Profile
My Dictionary

Account 2554010000 Cup Bal \$0.00 Customer Lonsdale Elem
Premise 1317 Louisiana Ave NW Knoxville TN 37921-2532 Item (Not installed)
School

Field Activity 1317 Louisiana Ave NW Knoxville TN 37921-2532 - School, L-SLEAK - CSR's - DO NOT ID 7609062755
USE, Completed, Scheduled 2006-11-08 5:37PM

Characteristics

Start Date	Type	Description	Value	Description / Ad Hoc Value
11/08/2006	HAZARD	Is this a hazard?	NO	No
11/08/2006	PROP DMG	Has Property Damage Occurred?	NO	No
11/08/2006	S-LEAK	Type of Sewer Leak	SEWAGE BACKED UP	Sewage Backed Up
11/08/2006	TOTL PREM	Is it affecting total premise?	NO	No - Partial
11/08/2006	WHEN OCUR	When did problem occur?	TODAY	Today
11/08/2006	ST RSLV	Service Tech Resolves	COMP	Completed OK

Save Return to Search Refresh Related Links Add

Control Central Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address http://n106.kub.org:9080/psp/cisprd89/EMPLOYEE/CIS/q/CI_CI_CI_SRCH.GBL?FolderPath=PORTAL_ROOT_OBJECT.CI_CONTROL_CENTRAL&IsFolder=false Go

PeopleSoft

Menu Search

My Favorites
Maintain Customer Information
Enter Financial Information
Monitor Credit Collections
Manage Field Information
Process Workflow
Maintain Assets
Enter Meter Reads
Structure Rates
Configure General Options
Worklist
Application Diagnostics
Reporting Tools
PeopleTools

Control Central

Meter Search
Item Search
Change My Password
My Personalization
My System Profile
My Dictionary

School

Field Activity 1317 Louisiana Ave NW Knoxville TN 37921-2532 - School, L-SLEAK - CSR's - DO NOT ID 7609062755
USE, Completed, Scheduled 2006-11-08 5:37PM

Service Point ID 2554010000 Water Oversize, Unit 08, KUB Service Area, In Service, EWG
Activity Type L-SLEAK L-SLEAK - CSR's - DO NOT USE
Created: 11/08/06 05:37 PM by user Mobile Data System Account(MOS),

Schedule Date/Time 11/08/2006 Override Eligible for Dispatch

Field Activity Priority 1317 Louisiana Ave NW Knoxville TN 37921-2532 Reason

Status Completed

Hold Reason

Cancel Reason

Dispatch Group 1317 Louisiana Ave NW Mobile Data Terminal

Field Order ID No Field Order Information

Test Selection ID

Instructions

POP PROBLEM FOUND

0002531

Control Central - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address http://n106.kub.org:9080/pep/csprd09/EMPLOYEE/CIS/c/CI_CI_CI_SRCH.GBL?FolderPath=PORTAL_ROOT_OBJECT.CI_CONTROL_CENTRAL&Folder=fa

Go

PeopleSoft

Menu

Search

My Favorites

Maintain Customer Information

Enter Financial Information

Monitor Credit Collections

Manage Field Information

Process Workflow

Maintain Assets

Enter Meter Reads

Structure Rates

Configure General Options

Worklist

Application Diagnostics

Reporting Tools

PeopleTools

Control Central

Meter Search

Item Search

Change My Password

My Personalizations

My System Profile

My Dictionary

Account 2854010000 Cur Bal \$0.00 Customer Lonsdale Elem

Premise 1317 Louisiana Ave New Knoxville TN 37921 2502 Item (Not installed)

School

Premise ID: 7609020000 Trouble ID: 7609096350

Call Date/Time: 11/08/06 Previous Call Date/Time: User ID: DAH05195

2:05:17PM

SP ID: Water-OverSize, Unit 08, KUB Service Area, In Service, EWG Description Debbie Homer

InService Address:

Account ID: 2854010000 Lonsdale Elem Premise

Phone:

Authorized By: Contact Phone:

Current Status

Dispatch Status: Estimated Restoration Time: Disposition: COMP OK FA ID 7609062751

Trouble Information

Trouble Type: Sewer Leak

Additional Trouble Information

Customize Find View All

First 1-2 of 25 Last

Description

1 Is this a hazard? Please select one:

2 Not a hazard

Customer Comments:

Knox County Plumbers on site, sewer backing up into crawl space can also contact Paul Chapman at 216-2841

Done

Local intranet

start

Any Jones Labor

Search results

Control Central - Main

Unpublished - Monitor

11/8/06

0002532

Claims Information



Elaine Reed/CLA/FIN/KUB
11/13/2006 01:55 PM

To Dwayne Frye/CSI/EAO/KUB@KUB

cc

bcc

Subject Fw: Building Backup - 1317 Louisiana Avenue - Building Backup Report

The following information is being provided to the Tennessee Department of Environment and Conservation (TDEC) in accordance with the requirements of KUB's NPDES Permits.

Date - November 08, 2006
Time - 3:00 PM
Observer - David Lusby, Leonard Newcombe, Chris Howe
Location - 1317 Louisiana
Reason - Not determined. May be ground water.
Action Taken - Disaster Cleaning and Restoration cleaned area.
KUB Responders - Wayne Loveday, Mike Widner, David Lusby
Est. Recovered Volume - 200 gallons
Est. Not Recovered Volume - gallons
Duration - 1.5 Hours
Water of the State - Yes
Receiving Water -

Photographs -    
    
 
Sewer Backup 010.jpg Sewer Backup.jpg Sewer Backup 001.jpg Sewer Backup 002.jpg
Sewer Backup 003.jpg Sewer Backup 004.jpg Sewer Backup 005.jpg Sewer Backup 006.jpg Sewer Backup 007.jpg
Sewer Backup 008.jpg Sewer Backup 009.jpg

KUB is responding in accordance with its Sewer Overflow Response Plan. Please direct any questions regarding this correspondence to Dwayne Frye @ 594-8210.

0002533

Final Backup Report

Dwayne Frye/CSI/EAO/KUB

11/13/2006 02:53 PM

To SSO Email Group

cc

bcc

Subject Building Back Up (BBU)
1317 Louisiana Avenue

The following information is being provided to the Tennessee Department of Environment and Conservation (TDEC) in accordance with the requirements of KUB's NPDES Permits.

A BBU has occurred in the Kuwahee Collection System.

Date -	November 8, 2006
Time -	3:00 PM
Observer -	KUB Employee - Paul Chapman
Location -	1317 Louisiana Avenue
Reason -	There was a BBU caused by an unidentified blockage.
Action Taken -	The sewer main was flushed to clear the blockage. The building was cleaned by Disaster Cleaning and Restoration.
KUB Responders -	Mike Widener, David Lusby, Jeff Holbert and Wayne Loveday
Est. Recovered Vol -	200 gallons
Est. Non-Recovered Vol. -	0 gallons
Duration -	1.5 Hours
Water of the State -	No
Receiving Water -	None
Photographs -	Copies of photographs are available upon request.

Please call me @ 594-8210 or reply to this email if there are any questions.

Thank you,
Dwayne Frye, P. E.
Collection System Improvements

0002534

Follow-up Email

Roger
Lewelling/UGC/CST/KUB
12/01/2006 07:52 AM

To Dwayne Frye/CSI/EAO/KUB@KUB, Jason
Brooks/CSI/EAO/KUB@KUB, Herschel
Hall/UGC/CST/KUB@KUB, Thomas
cc
bcc
Subject follow up on bbu at 1317 louisiana ave

5428 and 5737 tved main and found line broke in several places.turn over to hershel hall to be relined.

0002535

Appendix J

Private Lateral Tracker Screen Shots

Owner/Property Information

 Save & Close  Enter Contact Generate Forms...

Owner/Property | **KUB** | **Notification** | **Res. Assistance** | **City of Knoxville** | **County** | **Appeal** | **Contact History** |

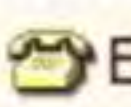
Owner Information

First Name: Last Name: KUB Account #:
Address: SSN:
City: State: TN Zip:
Contact Info:
Occupant: ☒ Owner ☐ Tenant
City Council Representative:
County Commissioner:

Premise Information

Premise ID: CLT #: Parcel #:
Notes: ☐ City ☐ County

KUB Inspection Information

 Save & Close  Enter Contact Generate Forms...

Owner/Property | **KUB** | **Notification** | **Res. Assistance** | **City of Knoxville** | **County** | **Appeal** | **Contact History** |

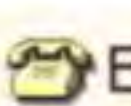
Owner Information

First Name: Last Name: KUB Account #:
Address: SSN:
City: State: TN Zip:
Contact Info:
Occupant: ☒ Owner ☐ Tenant
City Council Representative:
County Commissioner:

Premise Information

Premise ID: CLT #: Parcel #:
Notes: ☐ City ☐ County

Notification

 Save & Close  Enter Contact Generate Forms...

Owner/Property | **KUB** | **Notification** | **Res. Assistance** | **City of Knoxville** | **County** | **Appeal** | **Contact History** |

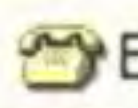
Owner Information

First Name: Last Name: KUB Account #:
Address: SSN:
City: State: TN Zip:
Contact Info:
Occupant: ☒ Owner ☐ Tenant
City Council Representative:
County Commissioner:

Premise Information

Premise ID: CLT #: Parcel #:
Notes: ☐ City ☐ County

Residential Assistance

 Save & Close  Enter Contact Generate Forms...

Owner/Property | **KUB** | **Notification** | **Res. Assistance** | **City of Knoxville** | **County** | **Appeal** | **Contact History** |

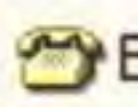
Owner Information

First Name: Last Name: KUB Account #:
Address: SSN:
City: State: Zip:
Contact Info:
Occupant: ☒ Owner ☐ Tenant
City Council Representative:
County Commissioner:

Premise Information

Premise ID: CLT #: Parcel #:
Notes: ☐ City ☐ County

City of Knoxville

 Save & Close  Enter Contact Generate Forms...

Owner/Property | **KUB** | **Notification** | **Res. Assistance** | **City of Knoxville** | **County** | **Appeal** | **Contact History** |

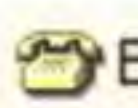
Owner Information

First Name: Last Name: KUB Account #:
Address: SSN:
City: State: Zip:
Contact Info:
Occupant: ☒ Owner ☐ Tenant
City Council Representative:
County Commissioner:

Premise Information

Premise ID: CLT #: Parcel #:
Notes: ☐ City ☐ County

County

 Save & Close  Enter Contact Generate Forms...

Owner/Property | **KUB** | **Notification** | **Res. Assistance** | **City of Knoxville** | **County** | **Appeal** | **Contact History** |

Owner Information

First Name: Last Name: KUB Account #:
Address: SSN:
City: State: Zip:
Contact Info:
Occupant: ☒ Owner ☐ Tenant
City Council Representative:
County Commissioner:

Premise Information

Premise ID: CLT #: Parcel #:
Notes: ☐ City ☐ County

Appeal

 Save & Close

 Enter Contact

Generate Forms...

Owner/Property | KUB | Notification | Res. Assistance | City of Knoxville | County | Appeal | Contact History |

Owner Information

First Name:

Last Name:

KUB Account #:

Address:

SSN:

City:

State:

Zip:

Contact Info:

Occupant:☒ Owner ☐ Tenant

City Council Representative:

County Commissioner:

Premise Information

Premise ID:

CLT #:

Parcel #:

Notes:

☐ City ☐ County

Contact History

Owner/Property | KUB | Notification | Res. Assistance | City of Knoxville | County | Appeal | Contact History |

Appendix K

Pump Station Preventive Maintenance Program Spreadsheet With Sample Inspection Checklists

Procedure	Standard		Frequency		Number of
Number	Job	Description	(In days)	MST	WW Inspections
SMSP001	RSGN	General Inspection	varies	RS01	
SMSP002	RSFAC	Facility Inspection - Wastewater	3.5 - 7	RS02 - TS02	736
SMSP003	RSCRA	Crane Inspection - annual	365	RS03	12
SMSP004	RSMM	Milltronics Inspection	180	RS04	68
SMSP005	RSMMC	Motor control/electrical inspection	365	RS05	145
SMSP006	RSLASI	Alarm status (SCADA) inspection	180	RS06	72
SMSP007	RSFM	Flowmeter inspection	180	RS07	8
SMSP008	RSBSI	Facility Inspection - Water	3.5 - 7	RS08 - TS08	
SMSP009	RSBPV	Back flow preventer inspection	365	RS09	30
SMSP010	RSCRH	Crane inspection - routine	90	RS010	8
SMSP011	RSEP	Electric panel inspection	365	RS011	37
SMSP012	RSSS	Soft starter inspection	365	RS012	14
SMSP013	RSACMP	Air compressor inspection	180	RS013	25
SMSP014	RSVFD	VFD Inspection	365	RS014	9
SMSP015	RSMME	Muffin monster inspection	365	RS015	27
SMSP016	RSODOR	Mercaptan injector inspection	30	RS016	
SMSP017	RSPM1	Pump inspection - Wastewater	180	RS017	136
SMSP018	RSPM2	Sump pump inspection	180	RS018	24
SMSP019	RSCC	Climate control inspection (Heaters/fans)	180	RS019	22
SMSP020	RSML	Motorized louver inspection	365	RS020	4
SMSP021	RSDHM	Dehumidifier inspection	365	RS021	
SMSP022	RSLER	Emergency lights inspection - monthly	30	RS022	5
SMSP023	RSELA	Emergency lights inspection - annual	365	RS023	9
SMSP024	RSPM3	Belt drive pump inspection - 6 mos.	180	RS024	12
SMSP025	RSBDPA	Belt drive pump inspection - annual	365	RS025	
SMSP026	RSGNPM	Generator inspection	90	RS026	48
SMSP027	RSCFI	Chemical feed inspection	30	RS027	46
SMSP028	RSLET	Pump efficiency testing - Wastewater	365	RS028	38
SMSP029	RSPMP4	Pump inspection - Water	180	RS029	
SMSP030	RSWDPC	DP Cell inspection	180	RS030	
SMSP031	RSWCPC	CL2 & PH Analyzer Calibration	180	RS031	
SMSP032	RSGRIN	Annual inspection - Gas	365	RS032	
SMSP033	RSLS	Leak survey - Gas	365	RS033	
SMSP034	RSPTC	Transducer calibration	365	RS034	

SMSP035	RSOS	Odorant sampling	30	RSO35	
SMSP036	RSFMM	H2S / PH monitoring	30	RSO36	6
SMSP037	RSLVA / RSBVA	Vibration analysis	90	RSO37	2
SMSP038	RSCTC / RSBTC	Thermography check	540 days	RSO38	7
SMSP039	RSMRC	Master radio inspection	365	RSO39	1
SMSP040	RSMR	Meter Readings/charts	3.5 - 7	RSO40	12
SMSP041	RSGAS	Alarm status (SCADA) inspection - Gas	365	RSO41	
SMSP042	RSGGV	Grease valves - Gas	365	RSO42	
SMSP043	RSWAS	Alarm status (SCADA) inspection - Water	180	RSO43	
SMSP044	RSGFI	Site inspection - Gas	90	RSO44	
SMSP045	RSGNA	Generator inspection - annual	365	RSO45	1
SMSP046	RSWWI / RSCWI	Winterize station - Water / Wastewater	365	RSO46	58
SMSP047	RSGWI	Winterize station - Gas	365	RSO47	
	RSCIN	Routine Facility Inspections			616
		Total WW PM performed 2006			2238

Collection System Equipment List [PARTIAL LIST/EXAMPLE]					
Facility	Plant No	Standard Job	Freq	StdJob No	Procedure No
AMHERST	SSLAMLSFACILITY	SITE INSPECTION	7	RSFAC	SMSP002
	SSLAM01EAC01001	STATION ELECTRIC SERVICE INSPECTION	365	RSMMC	SMSP005
	SSLAM01HDG01001	DEHUMIDIFIER INSPECTION	180	RSDHM	SMSP021
	SSLAM01HFD02001	EXHAUST FAN INSPECTION	180	RSCC	SMSP019
	SSLAM01IMI01001	LEVEL CONTROL INSPECTION	180	RSM	SMSP004
	SSLAMLSFACILITY	ALARM / STATUS POINT INSPECTION	180	RSLASI	SMSP006
	SSLAM01MUS10001	MOTOR INSPECTION	365	RSMMC	SMSP005
	SSLAM01MUS10002	MOTOR INSPECTION	365	RSMMC	SMSP005
	SSLAM01PWM01001	PUMP INSPECTION	180	RSPM1	SMSP017
	SSLAM01PWM01002	PUMP INSPECTION	180	RSPM1	SMSP017
	SSLAMLSFACILITY	PUMP EFFICIENCY TESTING	365	RSLET	SMSP028
	SSLAM01EAZ01001	LIGHTING PANEL INSPECTION	365	RSEP	SMSP011
	SSLAM01PKE01001	SUMP PUMP INSPECTION	180	RSPM2	SMSP018
GINNEBROOKE	SSLBA42SS	SITE INSPECTION	3.5	RSFAC	SMSP002
	SSLBA42EKR01001	CONTROL CABINET INSPECTION	365	RSMMC	SMSP005
	SSLBA42IAC01001	FLOW METER INSPECTION	180	RSFM	SMSP007
	SSLBA42IMI01058	LEVEL CONTROL INSPECTION	180	RSM	SMSP004
	SSLBA42LCH01037	ALARM / STATUS POINT INSPECTION	180	RSLASI	SMSP006
	SSLBA42PUK01011	PUMP INSPECTION	180	RSPM2	SMSP018
	SSLBA42PUK01012	PUMP INSPECTION	180	RSPM2	SMSP018
	SSLBA42PUK01011	PUMP EFFICIENCY TESTING	365	RSLET	SMSP028
	SSLBA42PUK01012	PUMP EFFICIENCY TESTING	365	RSLET	SMSP028
BUD HAWKINS	SSLBDLSFACILITY	SITE INSPECTION	7	RSFAC	SMSP002
	SSLBD54BF	BACKFLOW PREVENTER INSPECTION	365	RSBPV	SMSP009
	SSLBDLSFACILITY	ALARM / STATUS POINT INSPECTION	180	RSLASI	SMSP006
	SSLBDLSFACILITY	PUMP EFFICIENCY TESTING	365	RSLET	SMSP028
	SSLBDLC	LEVEL CONTROLS INSPECTION	180	RSM	SMSP004
	SSLBDPU01	PUMP INSPECTION	180	RSPM3	SMSP024
	SSLBDPU02	PUMP INSPECTION	180	RSPM3	SMSP024
	SSLBDMOPU01	MOTOR INSPECTION	365	RSMMC	SMSP005
	SSLBDMOPU02	MOTOR INSPECTION	365	RSMMC	SMSP005
	SSLBDEF	EXHAUST FAN INSPECTION	180	RSCC	SMSP019
	SSLBDHT	HEATER INSPECTION	180	RSCC	SMSP019

SMSP PM Procedure - SMSP017 – RSPM1 (Grease/Inspect pump PM)

- () 1. Inspect the seal box for excessive leakage.
- () 2. Listen to the top and bottom bearing for excessive noise with stethoscope.
- () 2. Check the coupling for excessive wear.
- () 3. Look for any loose bolts or nuts on the pump.
- () 4. Lubricate bearings with Zeniplex grease.
 - a. Stop the unit, remove the grease drain plug and clean paint and dirt of the top of the grease fitting.
 - b. Check for blockage in the grease drain port by cleaning any hard grease out of the port.
 - c. Start the unit and inject grease into the grease fitting until the old grease is relived through the drain opening.
 - d. Continue to run the pump until the grease stops seeping from the drain and the bearing and the bearing housing temperature feels normal.
 - e. Stop the unit, wipe off all external grease and replace the drain plug.

❖ ENSURE THAT THE APPROPRIATE PPE IS UTILIZED

❖ RECORD ANY DEFICIENCIES

COMMENTS: _____

SMSP PM Procedure - SMSP028 – RSLET (Pump Efficiency Testing PM)

Performed by _____ Date _____

General Facility Information:

- Facility: _____
- Wetwell: (Length _____ x Width _____ x Depth _____) = Total Volume _____
(0.785 x Dia. _____ x Dia. _____ x Depth _____) = Total Volume _____
(Total Volume _____ x 7.48) = Total Gallons _____
(Total Gallons _____ / Depth _____) = Gallons per foot _____
- Wet well type depicts which volume formula to use (Cylindrical or Square/Rectangular)
- Three inflow measurements and three draw down measurements will be performed and timed for one minute in order to obtain the most accurate data. When applicable, take readings from the Milltronics level control unit when performing Inflow and Draw Down measurements. If using tape measure to obtain level readings, convert all inch readings to feet before completing calculations.

Inflow (The second reading taken will be the top reading in order to obtain the correct difference)

- Second Second Second
 Initial Initial Initial
 Difference Difference Difference

- Take the average of the three inflow measurements:

Average inflow _____ x Gallons per foot _____ = Inflow GPM _____

Draw Down

Pump #1

- Second _____ Second _____ Second _____
Initial _____ Initial _____ Initial _____
Difference _____ Difference _____ Difference _____

- Calculate the average of the three draw down measurements:

Average draw down _____ x Gallons per foot _____ = Draw down GPM _____

Draw down GPM _____ + Inflow GPM _____ = Total pump capacity GPM _____

- Pressure Readings (Discharge and Suction / Pump ON)

Pump ON discharge PSI reading _____ Pump ON suction PSI reading _____

- Motor amperage readings

A Phase _____ B Phase _____ C Phase _____

Pump #2

- Initial _____ Initial _____ Initial _____
Second _____ Second _____ Second _____
Difference _____ Difference _____ Difference _____

- Calculate the average of the three draw down measurements:

Average draw down _____ x Gallons per foot _____ = Draw down GPM _____

Draw down GPM _____ + Inflow GPM _____ = Total pump capacity GPM _____

- Pressure Readings (Discharge and Suction / Pump ON)

Pump ON discharge PSI reading _____ Pump ON suction PSI reading _____

- Motor amperage readings

A Phase _____ B Phase _____ C Phase _____

Pump Combination (Pumps involved _____)

- Initial _____ Initial _____ Initial _____
 Second _____ Second _____ Second _____
 Difference _____ Difference _____ Difference _____

- Calculate the average of the three draw down measurements:

Average draw down _____ x Gallons per foot _____ = Draw down GPM _____

Draw down GPM _____ + Inflow GPM _____ = Total pump capacity GPM _____

- Pressure Readings (Discharge and Suction / Pump ON)

Pump ON discharge PSI reading _____ Pump ON suction PSI reading _____

- Motor amperage readings

A Phase _____ B Phase _____ C Phase _____