

Consent Decree Quarterly Report No. 5

Reporting Period:

October 1, 2006 through December 31, 2006

Submitted to:

United States Environmental Protection Agency

Kentucky Department of Environmental Protection

United States Department of Justice

Submitted by:

Louisville and Jefferson County Metropolitan Sewer District

700 W. Liberty Street

Louisville, Kentucky 40203-1911

Date:

January 30, 2007



MSD

Louisville and Jefferson County
Metropolitan Sewer District

Consent Decree Quarterly Report 5
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INTRODUCTION

MSD has entered into a Consent Decree with the Kentucky Department of Environmental Protection (DEP) and the United States Environmental Protection Agency (EPA). The Consent Decree was signed by United States District Judge Simpson and entered in United States District Court, Western Division of Kentucky, Louisville Division, on August 12, 2005.

This is the fifth Quarterly Report submitted in accordance with Paragraph 25 of the Consent Decree. This Report covers the second quarter of MSD's Fiscal Year 2007, which is defined as October 1, 2006 through December 31, 2007. The report format has been slightly modified since the previous quarterly report to more closely align with the Consent Decree Annual Report dated December 31, 2006. The structure for this report is outlined as follows:

Section 1: Program Activities Performed during the Reporting Period – This section describes the scope, schedule, and status for projects and other activities that were active during the reporting period of October 1, 2006 through December 31, 2007. The projects and activities described are those that demonstrate the efforts conducted to comply with the Consent Decree.

Section 2: Performance Overview – This section provides an accounting of the number of occurrences of overflows, including unauthorized discharges, from the separate sanitary sewer and combined sewer systems and the estimated volumes of each. A discussion of the probable reductions in both unauthorized discharge points and the discharges from MSD's CSO locations identified in the MFWTP KPDES permit that are expected to result from MSD's projects and activities during the reporting period is also contained in this section.

Section 3: Program Activities for the Next Reporting Period – This section describes the anticipated projects and activities that are scheduled to be performed during the next reporting period (January 1, 2007 through March 31, 2007) for continued compliance with the Consent Decree.

SECTION 1: Program Activities Performed during the Reporting Period

The Consent Decree requires a number of programs, projects, and activities to be completed under Paragraph 23 – Early Action Plan. The Early Action Plan includes a Nine Minimum Controls Compliance Report, a Capital Improvement Project List for projects to be initiated prior to completion of the discharge abatement plans, a Capacity Management Operations and Maintenance Programs Self-Assessment, and an updated Sewer Overflow Response Protocol. Activities required also include the development of discharge abatement plans for both the separate sanitary sewer and combined sewer systems. The section describes the activities completed during the reporting period of October 1, 2006, through December 31, 2006.

1.1 Early Action Plan

The projects and activities conducted as part of the Early Action Plan are described in the following sections. Refer to Figure 1–1 for a Gantt chart outlining these initiatives.

1.1.1 Nine Minimum Controls (NMC) Compliance

MSD had previously submitted a NMC Compliance Report in 1997. In response to the Consent Decree requirements, a revised NMC Compliance Report was submitted February 10, 2006. MSD received comments from EPA and DEP on May 5, 2006. MSD discussed comments with representatives of EPA and DEP at a meeting in Frankfort on May 9, 2006. A conference call was held with the same parties on May 17, 2006, to continue discussion and receive additional clarification. The revised NMC Compliance Report was submitted on June 3, 2006, in accordance with the Consent Decree.

MSD received a disapproval letter on August 22, 2006. MSD developed the information required for a re-submittal to bring this document into compliance and resubmitted on September 15, 2006. EPA and DEP are currently reviewing this submittal. Regularly scheduled conferences calls have been part of the increased communications.

The following activities were completed by September 30, 2006. While these activities were prior to the reporting period, they have been included to clarify the activities that have been accomplished.

- Active CSOs were evaluated to determine if some form of solids and floatable capture was feasible. More than 70 solids and floatable control devices were installed by September 15, 2006.
- MSD considered the potential for approximately 27,000 non-domestic discharger (NDD) facilities to impact the quality or quantity of CSOs. Significant Industrial Users were considered, along with other facilities such as hospitals, high volume water users, General Discharges Permittees, and businesses required to have a Hazardous Materials Spill Prevention and Control plan related to the manufacture, use or storage of hazardous materials. These NDDs were evaluated for their potential to contribute to discharges of pollutants of concern during wet weather CSOs. Those with a reasonable potential for this to occur, were further investigated through telephone contacts, site visits and follow-up correspondence. MSD has pursued voluntary controls with these users. The effectiveness of those controls is being assessed by both MSD and the users.



- Overflow Advisory Signs were installed along the streams within the combined sewer system and the Ohio River, augmenting the existing CSO identification signs already in place. More than 200 signs were installed. Additional public notification activities included developing and mailing information related to the Consent Decree to each MSD customer account, developing and mailing information to the properties within 500 feet of Beargrass Creek and the Ohio River within the combined sewer area, developing and implementing of the website based information and public notification system, development and use of door hangers, television and radio notifications, and press releases.

1.1.2 Capital Improvement Program

This section documents progress made towards completion of the separate sanitary sewer and combined sewer system projects specifically defined in paragraph 23 (b) of the Consent Decree.

1.1.2.1 Separate Sanitary Sewer System

All capital improvement projects in the separate sanitary sewer system that were included in the EAP have previously been completed.

1.1.2.2 Combined Sewer System

The following projects were completed within the timeframe of this report and have been certified complete under previous transmittal:

- CSO 87 Elimination – This project involved downspout disconnection and other system modifications. The areas draining to CSO 87 includes 12 residential properties, 8 commercial properties, and 1 industrial property. The combined sewer also conveys runoff from Interstate 64. Sewer separation work not anticipated was performed. CSO 87 was eliminated on September 18, 2006, and certified on October 7, 2006, in accordance with the Consent Decree.

The following projects were under construction during this reporting period:

- CSO 147 Elimination – The CSO 147 elimination project will require the disconnection of approximately 75% of the downspouts from the 233 area homes. Previous efforts in the sub-basin include constructing a new storm sewer in the project area. CSO 147 currently overflows to South Fork of Beargrass Creek. Most of the downspout disconnections have been performed. Flow monitoring will be performed prior to elimination of CSO 147. This project is scheduled to be completed by September 30, 2007, in accordance with the Consent Decree.

1.1.3 Capacity Management Operations and Maintenance (CMOM)

In early 2005, MSD began the process of developing a CMOM program by conducting a "Challenge Analysis". This Challenge Analysis was intended to identify areas in MSDs operations that warranted a more focused look as part of CMOM program development. When the Consent Decree imposed additional requirements on the development of the CMOM program, the Challenge Analysis was used as the basis for a more comprehensive self-assessment. The CMOM Self-Assessment was submitted on February 10, 2006, in accordance with the Consent Decree. Comments were received from EPA and DEP on March 30, 2006. A



conference call was held on April 12, 2006, with EPA and DEP to discuss the comments. A revised CMOM Self-Assessment was submitted on May 12, 2006, in accordance with the Consent Decree, and included additional clarifications and corrections made to the Backup Power Analysis. MSD received an approval letter for the CMOM re-submittal on August 22, 2006. The approved document can be viewed on the MSD Project WIN website www.msdlouky.org/projectwin/.

MSD continued to implement the recommendations from the CMOM Self-Assessment report. The activities are being performed using a combination of in-house resources and consultants. MSD requested, and obtained, Board approval to fund \$900,000 of CMOM related planning, evaluation, and implementation activities on November 13, 2006, for Fiscal Year 2007. Additionally, MSD prepared detailed scopes of work and select engineering and consulting firms to perform many of the tasks.

A summary of the activities which occurred during this reporting period is presented below:

- Utility Information Management (UIM) Support Plan. MSD conducted internal workshops to set goals, objectives and performance measures with staff in all Divisions whose work is directly related to the successful implementation of the CMOM programs.
- Private Property Ordinance. A draft ordinance was written that requires property owners to ensure their property service connections (sewer laterals) are in sound condition and do not convey non-sanitary flows. It will be submitted to local government elected officials for consideration by the Louisville Metro Council as specified in the approved CMOM Self Assessment.
- Implement Back-up Power. MSD obtained generator information from manufacturers, developed generator sizing criteria and identified site and easement requirements to implement the pump station back-up power plan that was included in Appendix C of the CMOM self-assessment report.
- Greenline Analysis. The project kick-off meeting with the consultant team was held. MSD has mapped the affected property locations upstream of each pumped sanitary sewer overflow in Hikes Point and Beechwood Village areas and performed a preliminary field investigation with the consultant team.
- Fats, Oil and Grease Program. Inspection and enforcement benchmarks for the FOG program were developed.
- Force Main and Air Relief Preventive Maintenance Program. Preventive maintenance activities and frequencies were entered into the Hansen Management Information System. MSD also developed procedures to implement this program.

1.1.4 Sewer Overflow Response Protocol (SORP)

As a result of the Consent Decree, MSD revised its SORP. This revised SORP was submitted February 10, 2006, in accordance with the Consent Decree. MSD received comments from EPA and DEP on March 14, 2006, via a letter dated March 13, 2006. A conference call was held on April 5, 2006, to discuss and clarify the comments. Based on those discussions and questions related to the interpretation of 401 KAR 5:015, it was determined that responding within the 30 days required by the Consent Decree was not feasible. An extension of time was



requested and approved. A meeting was held in Frankfort on May 9, 2006, to resolve the outstanding issues. The revised SORP, along with supporting information, was re-submitted on May 12, 2006, in accordance with the Consent Decree and the extension approval letter. MSD received an approval letter for the SORP re-submittal on August 22, 2006. The approved document can be viewed on the MSD Project WIN website www.msdlouky.org/projectwin/.

Approximately 400 Overflow Advisory Signs were installed along the creeks within the separate sanitary sewer system as outlined in the approved SORP.

In accordance with the approved SORP and to ensure that the specific requirements of the SORP were well understood and adhered to by staff in positions of SORP responsibilities, the training program outlined in the SORP was completed on December 14, 2006.

1.2 Discharge Abatement Plans

The projects and activities conducted as part of the development of Discharge Abatement Plans are described in the following sections. Refer to Figures 1 – 2 and 1-3 for the Gantt chart outlining these initiatives.

1.2.1 Sanitary Sewer Discharge Plan

1.2.1.1 Updated Sanitary Sewer Overflow Plan

MSD prepared and submitted an updated SSOP on February 10, 2006. This plan included an overview of the MSD sanitary sewer overflow abatement program and specific actions taken to reduce/eliminate overflows from the sanitary sewer system. This document includes a list of the proposed improvements to be accomplished by December 31, 2008.

The following projects were completed within the reporting period and have been certified complete under previous transmittal:

- Northern Ditch Pump Replacement – Existing pumps were showing signs of aging. This project replaced the four submersible pumps, each rated at 14,000 gallon per minute. The new pumps have been installed and the related work is complete. This project is an integral part of the Real Time Control strategy that was presented in the Interim CSO Long Term Control Plan. This project was completed on November 30, 2006, and certified on December 29, 2006, in accordance with the Consent Decree.
- Watterson Woods Wastewater Treatment Plant – The Watterson Woods Wastewater Treatment plant was eliminated on December 14, 2006, and certified on December 29, 2006, in accordance with the Consent Decree. The flow from this plant was diverted to the recently expanded West County Wastewater Treatment Plant.

1.2.1.2 Interim Sanitary Sewer Discharge Plan

As part of the Interim Sanitary Sewer Discharge Plan development, MSD has continued to review and analyze options and problems associated with the Hikes Point, Beechwood Village, Highgate Springs Pump Station, and Southeastern Diversion Structure. During the reporting period, the scope of this investigation was modified to include the potential for additional wet weather flows that may be routed from the Southeast Diversion Structure and upstream wet weather problem areas to the West County Wastewater Treatment Plant. Efforts continued to



investigate the feasibility of adding high-rate secondary treatment capacity to the West County Wastewater Treatment Plant to address peak wet weather flows.

1.2.2 Long Term Control Plan

1.2.2.1 Interim Long Term Control Plan

The Interim CSO Long Term Control Plan was submitted February 10, 2006. MSD received comments from EPA and the Kentucky Department of Environmental Protection (DEP) on May 5, 2006. MSD discussed comments with EPA and DEP at a meeting in Frankfort on May 9, 2006. A conference call was held with all parties on May 17, 2006, to continue discussion and receive additional clarification. The revised Interim CSO LTCP was submitted on June 3, 2006, in accordance with the Consent Decree. This plan includes an overview of the MSD program, efforts taken to reduce/eliminate discharges from the combined sewer system, and the list of proposed improvements to be accomplished by December 31, 2008.

The following projects were completed or certified as complete during the reporting period:

- CSO 81 Closure – CSO 81 was eliminated on September 7, 2006, and certified on October 7, 2006, in accordance with the Consent Decree.
- Northern Ditch Pump Replacement – Existing pumps were showing signs of aging. This project replaced the four submersible pumps, each rated at 14,000 gallon per minute. The new pumps have been installed and the related work is complete. This project is an integral part of the Real Time Control strategy that was presented in the Interim CSO Long Term Control Plan. This project was completed on November 30, 2006 and certified on December 29, 2006, in accordance with the Consent Decree.

1.2.2.2 Final Long Term Control Plan

Efforts associated with the final LTCP continue to be ongoing as part of the interim LTCP. These efforts are primarily focused on planning associated with preparing the portion of the interim LTCP that are related to the manner in which MSD will prepare the final LTCP as outlined in the Consent Decree Paragraph 24(b)(2)(B).

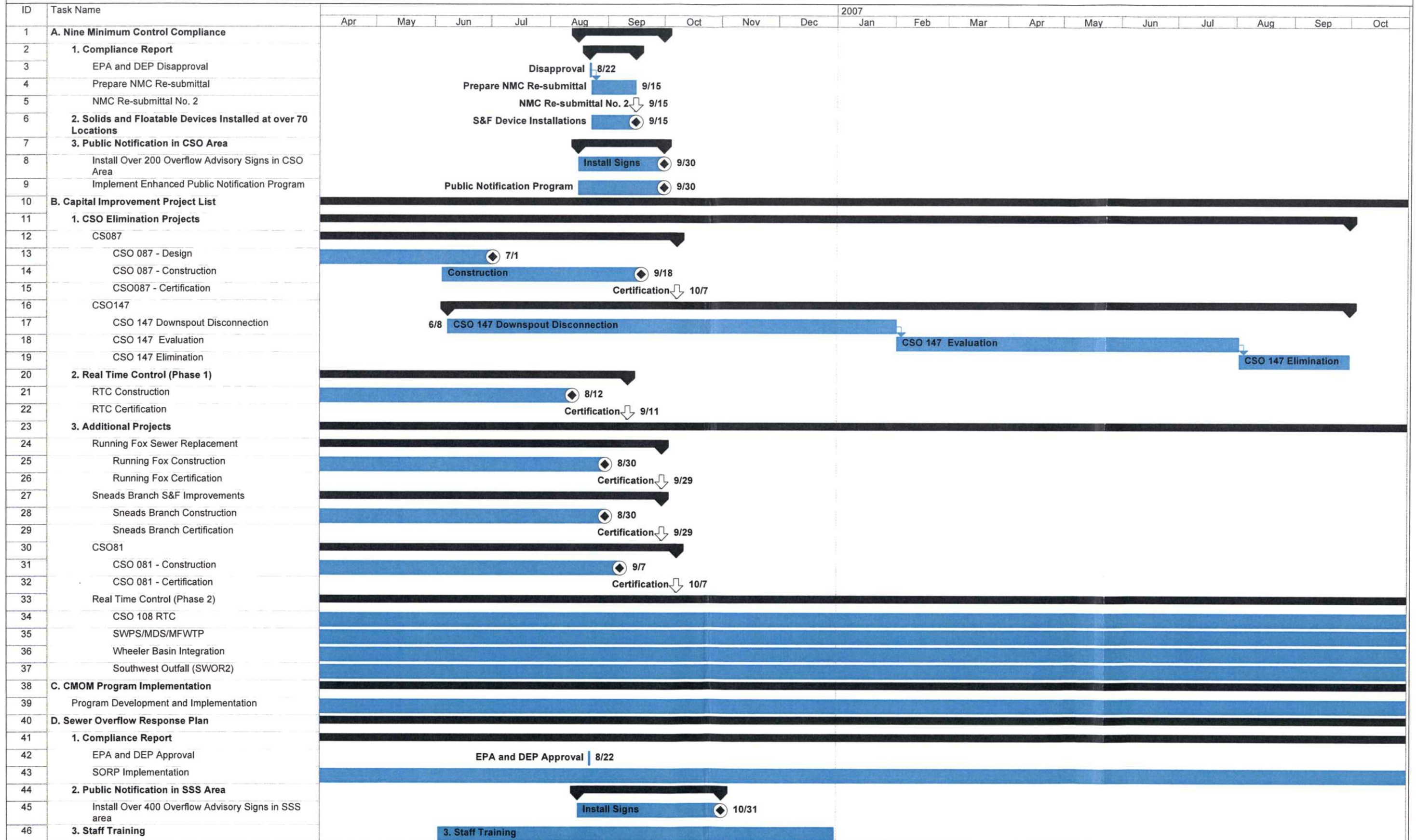
1.3 Public Participation Process

MSD continued efforts related to an in-house training program for employees related to the Consent Decree. Copies of the Consent Decree and supporting information were distributed to employees. New employee training has been modified to include information regarding this Consent Decree.

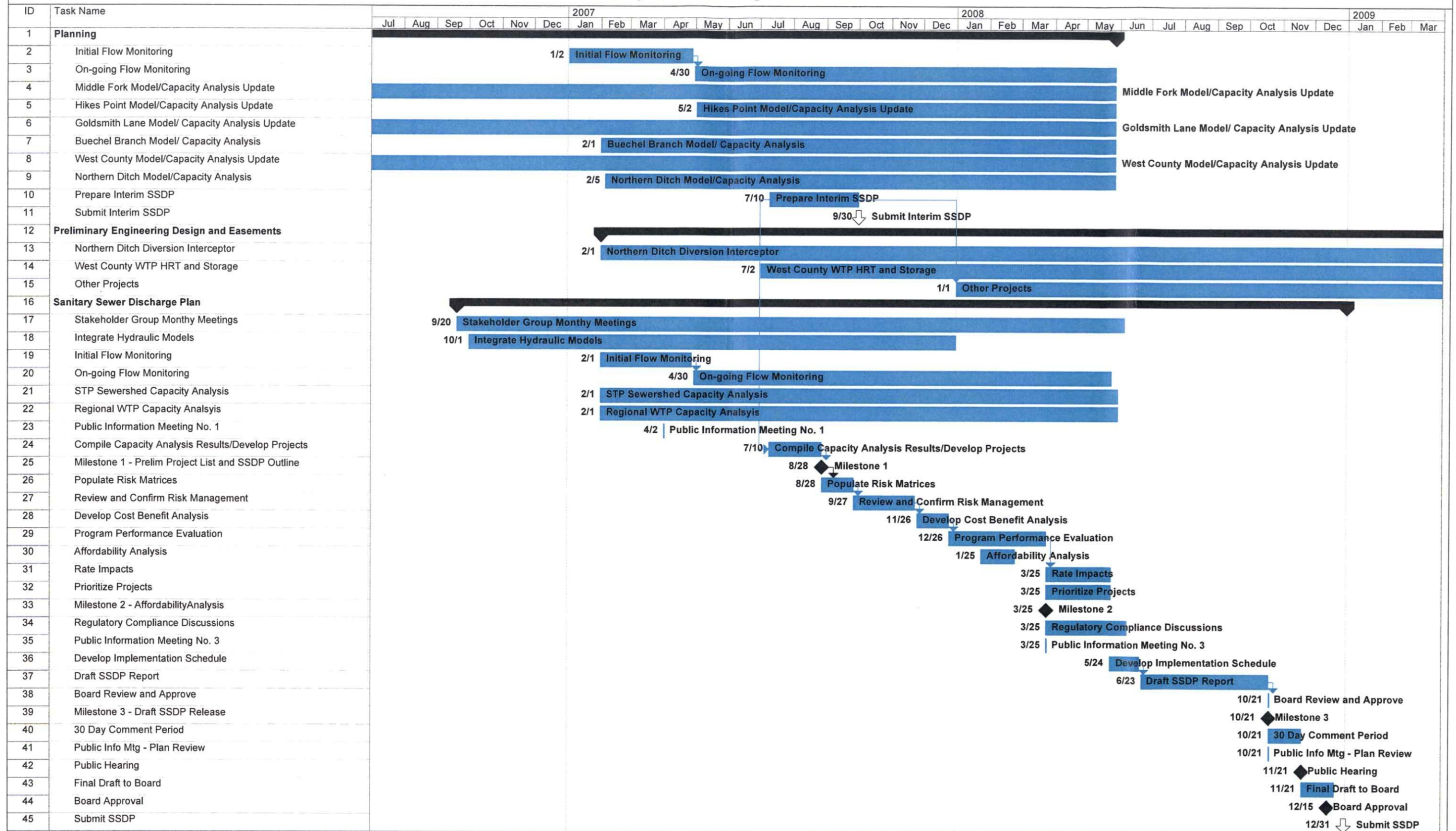
MSD has developed a public outreach program aimed at educating the public on the MSD's primary business functions with emphasis on wastewater, stormwater, and flood protection. Presentations were given to numerous community groups during the reporting period. A portion of the presentation contains information related to the Consent Decree, including potential program direction and anticipated costs.

The process of organizing a Wet Weather Team (WWT) as outlined in Consent Decree Paragraph 22 has been completed and WWT meetings are underway. An external facilitator has been retained to manage the WWT participation process. WWT meetings are held in accordance with the schedule previously outlined.

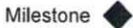
**Figure 1-1
Early Action Plan Schedule**



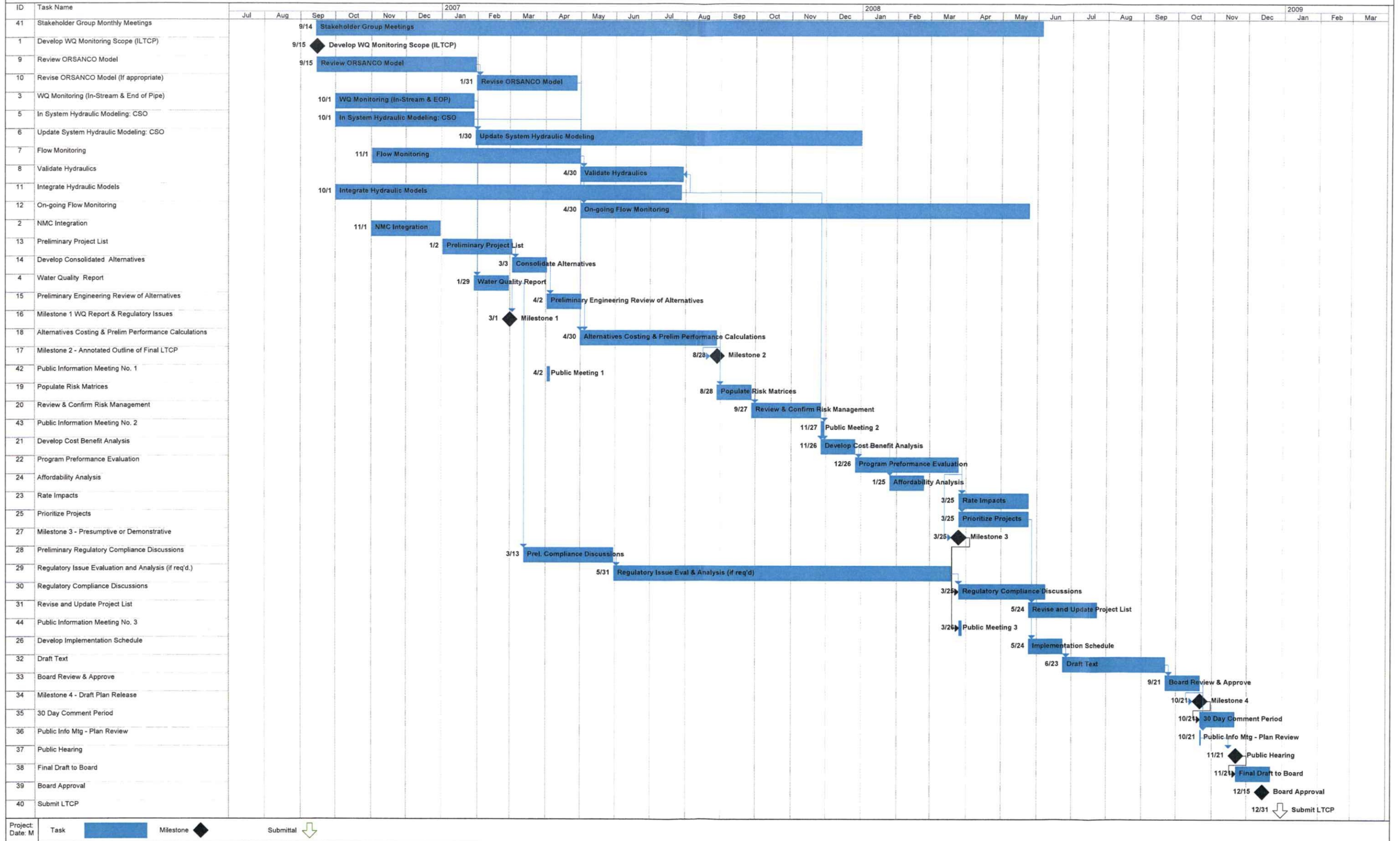
**Figure 1-2
Sanitary Sewer Discharge Plan Schedule**



Project: SSDP
Date: Mon 1/29/07

Task  Milestone  Summary  Submittal 

Long Term Control Plan Schedule





SECTION 2: Performance Overview**2.1 Unauthorized Discharges to Waters of the United States**

Appendix A includes information related to MSD's discharges to waters of the United States for the reporting period. This information is entered and maintained in the Hansen Information Management System (Hansen) utilizing procedures reviewed and improved through efforts associated with various components of the Consent Decree. These discharges have previously been reported to DEP and EPA through telephone calls, weekly reports, wastewater treatment plant daily monitoring reports (DMRs), and Consent Decree quarterly reports.

Routine QA/QC identified one overflow (Work Order 608759) that was originally transmitted as an unauthorized discharge by the electronic notification system. This was an overflow to exterior, but did not reach Waters of the United States.

2.2 Overflows to Ground

Appendix B includes information related to overflows to the ground that did not reach waters of the United States for the reporting period. This information is entered and maintained in Hansen utilizing procedures reviewed and improved through efforts associated with various components of the Consent Decree. These overflows have previously been reported to DEP and EPA through telephone calls, weekly reports, DMRs, and Consent Decree quarterly reports.

2.3 CSO Reductions

Appendix B includes the December 31, 2006 version of modeled Annual Average Overflow Volume (AAOV) for the permitted CSOs.

Significant reduction in wet weather CSO volume was accomplished in the reporting period.

- CSO 87 Elimination, as reported in Section 1.1, was completed.
- CSO 81 Closure, as reported in Section 1.2, was completed.
- CSO 147 Elimination, as reported in Section 1.1 was nearing completion. This CSO was estimated to have a CSO AAOV of approximately 1.3 million gallons per year.

Appendix C includes CSO flow monitoring information for the reporting period, including the recently installed flow monitors at CSO 105, CSO 132, and CSO 166. The flow monitor at CSO 206 is currently out of service, and is not included in the report.

2.4 SSO Reductions

Estimation of SSO volume is not available in the same manner as it is for the CSO locations. The SSO volume reductions are estimates based on actual observations or from flow monitoring information. The following capital projects have been completed in an effort to reduce or eliminate SSOs located at, or associated with, the project.

- Northern Ditch Pump Replacement
- Watterson Woods Wastewater Treatment Plant Elimination

Additional information related to these and other capital projects is located in Section 1.1.2 of this report.



SECTION 3: Program Activities for the Next Reporting Period

The Consent Decree requires a number of programs, projects, and activities to be completed under Paragraph 23 – Early Action Plan. The Early Action Plan includes a Nine Minimum Controls Compliance Report, a Capital Improvement Project List for projects to be initiated prior to completion of the discharge abatement plans, a Capacity Management Operations and Maintenance Programs Self-Assessment, and an updated Sewer Overflow Response Protocol. Activities required also include the development of discharge abatement plans for both the separate sanitary sewer and combined sewer systems. The section describes the activities projected for completion during the reporting period of January 1, 2007, through March 31, 2007.

3.1 Early Action Plan

The projects and activities conducted as part of the Early Action Plan are described in the following sections. Refer to Figure 3–1 for a Gantt chart outlining these initiatives.

3.1.1 Nine Minimum Controls Compliance (NMC)

As noted in Section 1, a revised NMC Compliance Report was submitted on June 3, 2006, in accordance with the Consent Decree. MSD received a disapproval letter on August 22, 2006. MSD developed the information required for a re-submittal to bring this document into compliance on September 15, 2006. EPA and DEP are currently reviewing this submittal. Regularly scheduled conferences calls have been part of the increased communications.

Continue discussion and work towards receiving approval for the NMC Compliance Report. Continue to perform NMC activities and enhance the program where applicable.

3.1.2 Capital Improvement Program

A schedule of capital improvements included in the Consent Decree or initiated during the previous reporting period was previously presented in Figures 1-1 and 1-2. Figures 3-1, 3-2 and 3-3 present a schedule for other capital projects that are scheduled for completion and/or initiation in the next reporting period.

3.1.2.1 Separate Sewer System

All separate sanitary sewer system projects as identified by name in the Consent Decree as part of the Early Action Plan have been completed.

3.1.2.2 Combined Sewer System

The following combined sewer system projects will be under construction during the next reporting period.

- CSO 147 Elimination – The CSO 147 elimination project will require the disconnection of downspouts within the area. Previous efforts in the area include constructing a new storm sewer in the project area. CSO 147 currently overflows to South Fork Beargrass Creek. This project is scheduled to be completed in September of 2007, in accordance with the Consent Decree.



3.1.3 Capacity Management Operations and Maintenance (CMOM)

MSD received an approval letter for the CMOM re-submittal on August 22, 2006. The approved document can be viewed on the MSD Project WIN website www.msdlouky.org/projectwin/.

MSD plans to initiate, continue, or complete the following CMOM activities during the next reporting period:

- Utility Information Management (UIM) Support Plan. MSD will continue work on the UIM Support Plan to identify data integration needs and data management requirements based on the goals, objectives and performance measures developed by MSD staff in all Divisions.
- Inventory Protocols. MSD will review the asset description requirements of its newly-purchased hydraulic modeling software and confirm or revise asset inventory protocols to ensure that the asset management system contains all the necessary attributes pertaining to MSD's collection and transmission system.
- Design and Construction Standards. MSD will begin the process to review and revise the current design and constructions standards to address industry "best practices" that could help reduce unauthorized discharges from MSD's system.
- Continuing Sewer System Assessment (CSSA). MSD will begin to develop standard methodologies to assess sewer conditions and maintenance programs for at-risk assets.
- System Capacity Assurance Program (SCAP). MSD will initiate a capacity evaluation for its major facilities.
- Fleet Equipment Plan. MSD will complete a fleet equipment plan to improve the availability and reliability of the equipment used to maintain the collection system.
- Customer Compliant Protocols. MSD will refine complaint management communication among different MSD Divisions. This task will be performed in conjunction with the UIM Support Plan.
- Ordinance Private Property. MSD's executive management will review and revise the draft ordinance and present the revised draft ordinance to potential Council member sponsors.
- Water Quality Data Access. MSD will initiate a process to improve the accessibility of water quality data for internal staff and the public. This task will be performed in conjunction with the UIM Support Plan.
- Implement Back-up Power. MSD will continue the selection and purchase of standby generators and acquire easements for their installation.
- Update Pump Station Standard Operating Procedures. MSD will review pump station SOPs to incorporate industry best management practices.
- Greenline Analysis. MSD and its consultants will continue to evaluate the existing overflow points and SOPs in the separate sewer system to ensure that private properties are protected without causing unnecessary sanitary sewer overflows.



- Fats, Oil and Grease Program. MSD will review whether changes to the FOG program are necessary based on the recommendations of the inspection and enforcement benchmark report.
- Flow Monitoring Program. MSD will initiate a plan and procedures for locating and deploying flow monitors, data collection, storage, retrieval and analysis. Temporary monitors will be deployed in support of the CMOM, SSDP and LTCP programs.
- Modify/Develop Pump Station Preventive Maintenance Plan. MSD will review pump station preventive and predictive maintenance programs.
- Force Main and Air Relief Preventive Maintenance Program. MSD will train staff and implement the recently developed force main and air relief preventive maintenance program by the end of the second quarter of 2007.
- Gravity Line Preventive Maintenance. MSD will initiate development of a risk-based preventive maintenance schedule for the gravity sewers and interceptors.

3.1.4 Sewer Overflow Response Protocol (SORP)

Submittal Development

MSD received an approval letter for the SORP re-submittal on August 22, 2006. The approved document can be viewed on the MSD Project WIN website www.msdlouky.org/projectwin/. Submittal development activities in the next reporting period will primarily be related to continued staff training, in addition to the annual review for necessary refinements of the SORP.

The following activities will be performed as to enhance the activities identified in the approved SORP:

- An "overflow simulator" will be designed and constructed to increase staff skill levels in estimating overflow volumes.
- Staff will begin to develop for enhanced volume estimation training utilizing the "overflow simulator".

3.2 Discharge Abatement Plans

The schedules for the discharge abatement plans (SSDP and LTCP) are shown in Figures 1-2 and 1-3. While the schedules are shown separately, many of the same activities are required, such as alternative development and evaluation, performance evaluations etc. In addition, some of the activities such as affordability evaluation and rate impacts are programmatic in nature, applying to both discharge abatement plans. These are scheduled to be completed on an integrated program rather than the individual components.

3.2.1 Separate Sewer Discharge Plan

3.2.1.1 Updated Sanitary Sewer Overflow Plan

As noted previously, the schedule for development of the Sanitary Sewer System discharge abatement plan is shown in Figure 1-2. The following projects are under design and/or construction, and will be active during the next reporting period:



- Sonne Pump Station Pump Replacement – The existing pumps and motors are worn and outdated. This project will include the replacement or upgrading of pump station components. This project will be completed by the end of March of 2007, in accordance with the Consent Decree.
- Rosa Terrace Pump Station Pump Replacement – This project will include the replacement or upgrading of pump station components. This project will be completed by the end of June of 2007, in accordance with the Consent Decree.

3.2.1.2 Interim Sanitary Sewer Discharge Plan and Final Sanitary Sewer Discharge Plan

Submittal of the Interim Sanitary Sewer Discharge Plan (ISSDP) is required by September 30, 2007. To comply with this date, many of the planning activities will be starting or continuing during the next reporting period. As noted on Figure 1–2, flow monitoring will be performed to support the hydraulic modeling, and capacity analysis updates will proceed for the sewersheds of the major sanitary sewer overflows. The capacity analyses will include the development and evaluation of alternatives for each of the locations.

Evaluations completed to date have indicated that the overall mitigation plan for the sanitary sewer overflows at the Southeastern Diversion Structure, Highgate Springs Pump Station, and the Hikes Point area will include rerouting flows from the Southeast Diversion Structure, through the Northern Ditch Interceptor, to the West County Wastewater Treatment Plant. Feasibility investigations of the connection between the Northern Ditch Interceptor and the Pond Creek Interceptor will be completed during the next reporting period. To achieve the required overflow elimination schedule in the Consent Decree, it is anticipated that portions of the preliminary engineering, route selection, and easement acquisition will also need to begin during the next reporting period. Similarly, the feasibility of adding high-rate secondary treatment for wet weather flows will be confirmed during the next reporting period, and project scoping and consultant selection will be completed to allow preliminary engineering of a combination of high-rate treatment and storage to be initiated.

Historically, the sewer models have been separate hydraulic models for the combined sewer system and various sanitary sewershed areas. This approach was driven, primarily, by the run-time and stability limitations of the XP-SWMM modeling software, system complexity, and level of detail of the models. MSD has purchased a different (more robust) sewer modeling package, with greater capability to analyze larger sewersheds. An coordinated or integrated sewer model of the combined sewer system and tributary sanitary sewer areas will be developed to provide a more accurate analytical tool for alternative selection. Over time, these models will be invaluable tool for making decisions related to the planning effort.

The hydraulic models will also be coordinated to support the Capacity Analysis updates for the unauthorized discharges from the Hikes Point and Beechwood Village areas, the Highgate Pump Station, and the Southeast Diversion Structure. Hydraulic models will also be developed and integrated or coordinated where appropriate to support capacity analyses for the other regional treatment plant sewer sheds (Jeffersontown, Floyd's Fork, Cedar Creek, Hite Creek and West County). For SSOs occurring in the sewersheds of the small treatment plants hydraulic modeling or more limited engineering analyses will be performed to support the development and evaluation of mitigation approaches.

MSD will perform an initial three- to four-month flow monitoring study throughout the system to support the hydraulic modeling and capacity assurance efforts. The initial study will be followed by a long-term flow monitoring effort to fine tune and, if needed, update the model calibrations.

Each of the sewersheds containing sanitary sewer overflows will use the sewer models to perform capacity analyses. These capacity analyses will include the development of alternatives for mitigation of capacity limitations that are causing or suspected to cause SSOs. The capacity analyses may identify alternatives that result in additional flows being routed to wastewater treatment plants (either regional or small plants). For those plants that are projected to receive additional flows as a result of overflow elimination projects, a capacity review of that plant will be conducted in accordance with EPA guidance documents. Note that this evaluation will draw upon the results of capacity analyses also planned under the CMOM program.

3.2.2 Interim Long Term Control Plan and Final Long Term Control Plan

As noted in Section 1, the revised Interim CSO LTCP was submitted on June 3, 2006, in accordance with the Consent Decree. MSD received a disapproval letter on August 22, 2006. MSD will develop the information required for a re-submittal to bring this document into compliance by September 15, 2006. Major issues that were addressed include a better definition of the monitoring and characterization approach for the sewer system, CSO, and receiving waters. Additional concerns were raised relative to the public involvement and public outreach programs, and the decision process that will be used to determine the selected plan. The proposed activities and related schedule to address these issues are shown on Figure 1-3. A brief description of the major activities planned in the next reporting period is contained in the following paragraphs.

The Ohio River Valley Water Sanitation Commission (ORSANCO) produced a report to transfer the model developed in a similar Cincinnati/Northern Kentucky study area to a segment of the Ohio River in the vicinity of Louisville. The model evaluated the impacts of combined sewer overflows (CSOs) on the water quality of a large river and resulting benefits of certain CSO abatement scenarios. MSD is reviewing this model to determine its suitability for more detailed evaluation of CSO control approaches. MSD may make some modifications to this model to improve its utility in evaluating alternatives developed in the LTCP, or may use the model as it exists. It is expected that this evaluation report will be the basis for initiating discussions with EPA and DEP relative to potential approaches to water quality standard compliance in the Ohio River.

MSD re-evaluated the on-going water quality monitoring program to confirm alignment of this work with the needs of the wet weather program and development of the final LTCP. This evaluation will follow EPA CSO Guidance for Monitoring and Modeling by first reformulating and documenting the objectives of the CSO Program.

Water quality and in-stream hydraulic monitoring will be conducted at selected receiving water locations to calibrate and validate a Water Quality Tool. The WQT is comprised of three integrated models (HSPF, XP-SWMM and CE-QUAL Riv 1). This tool will be used in the development of a TMDL for Beargrass Creek, and also in LTCP process to evaluate the effectiveness of various CSO control alternatives. The WQT is scheduled to be completed and validated during the next reporting period. A report on the findings of this watershed



investigation is expected to be the basis for initiating discussions with EPA and DEP relative to compliance strategies for the Beargrass Creek CSO combined sewer area. This report will be the first of four milestones in the development of the LTCP.

In addition to the ongoing combined sewer system flow monitoring work, MSD will perform flow monitoring on approximately 22 CSO outfalls (those with a predicted annual average overflow volume greater than 10 million gallons). Data obtained as part of this monitoring effort will be used to validate the CSO model and provide general guidance on the operational characteristics of the combined sewer system. This effort will also be followed by a long-term flow monitoring program.

After developing a wide range of potential risk reduction approaches, a preliminary engineering review of potential alternatives will be performed. This preliminary engineering review will screen potential alternatives based on a variety of factors related to protecting community values, including an assessment of the potential hydraulic and pollutant reduction, probable benefits in achieving water quality objectives, consideration of sensitive areas, and probable costs. It is expected that a wide range of structural, non-structural and operational alternatives will be developed and carried forward for further analysis.

The following projects are under design and/or construction, and will be active during the next reporting period:

- **RTC at CSO 108** –This project, part of Phase 2 of the Real Time Control program, involves improving the connection between the Beargrass Interceptor and the Beargrass Interceptor Relief and automating the control of flow through these systems and, therefore, Nightingale Pump Station. This project will be completed by the end of December of 2008, in accordance with the Consent Decree.
- **RTC at Southwestern Outfall SWOR2** – This project, part of Phase 2 of the Real Time Control program, involves the installation of an inflatable dam for storage near the upper end of the Southwestern Outfall. Storage will primarily occur in the Upper Dry Run Trunk and the Mill Creek Trunk. The storage will be integrated into the Global Optimization Real Time Control system. This project will be completed by the end of December of 2008, in accordance with the Consent Decree.
- **Integration of Southwestern Pump Station/Main Diversion Structure/Morris Forman Wastewater Treatment Plant** – This project, part of Phase 2 of the Real Time Control program, links the Southwestern Pump Station, Main Diversion Structure, and the Morris Forman Wastewater Treatment Plant with the Global Optimization Real Time Control system. This project will be completed by the end of December of 2008, in accordance with the Consent Decree.
- **Integration of Wheeler Basin** –This project, part of Phase 2 of the Real Time Control program, employs additional controls to better utilize approximately one million gallons of storage in the trunk line that drains the Wheeler Basin. This project will be completed by the end of December of 2008, in accordance with the Consent Decree.

3.3 Public Participation Process

The public participation process consists of several related components: Stakeholder involvement as part of the Wet Weather Team; public outreach through community meetings



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and MSD's Speaker's Bureau; public education through MSD mailings, brochures, newsletters and MSD's webpage; and, public input through a series of public meetings and a public hearing.

As noted in Section 1, the first 3 elements are underway. Over 100 presentations have been made at community meetings, and this activity is planned to continue throughout this reporting period. MSD has already sent out a series of informational mailings, and has initiated a regular Consent Decree progress report as part of its Update newsletter.

The Wet Weather Team has been formed, and regular meetings will be conducted approximately every four to six weeks during this reporting period. As previously discussed, this team will address the issues related both to the development of the Sanitary Sewer Discharge Plan and Long Term Control Plan. Although the meetings are shown in both schedules, they are one in the same. The stakeholder component of this team is comprised of community leaders, environmental advocates, and industry representatives. The stakeholder group will assist MSD in the development and implementation of programs and projects that will satisfy the requirements of the Consent Decree while meeting the level of service objectives of the community.

Scheduled public meetings are shown on Figures 1-2 and 1-3. The first public meeting is scheduled to be held after the next reporting period, currently anticipated to be in April of 2007.

In addition to public participation, an active public notification process has been implemented, as described in Section 1. This process will continue through the next reporting period.

Information related to this Consent Decree and Project WIN may be found at the MSD website www.msdlouky.org, or at the MSD Project WIN website www.msdlouky.org/projectwin/.



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APPENDIX A

Unauthorized Discharges to Waters of the US

Note: The attached discharge report is prepared from discharge information stored in the MSD Hansen System.



MSD Louisville and Jefferson County
Metropolitan Sewer District

IMS0124
Discharge Report

Oct 01, 2006 12:00 AM thru Dec 31, 2006 11:59 PM

Report Selections: Excluding PPI, CSO, UPSET, BYPAS, Result: WUS, Act Code: DISDW, DISREV, DISSUS

KPDES #	Facility ID	Treatment Plant Name	Receiving Stream of Treatment Plant	Region
KY0025194	MSD0255	JEFFERSONTOWN	CHENOWETH RUN	CENT

Facility Type	Facility ID	Facility Address	If Pump Station, Name of Pump Station:	Receiving Stream	Discharge to
SMH Sewer Manhole	28386	9902 TAYLORSVILLE RD		UNNAMED	

Activity Code / Description	WO #	Initiated	Initiated By	Problem	Resolution	Completed
DISDW: DRY WEATHER DISCHARGE	608367	11/14/06 4:26 PM	CONNIE MILLER	GREASE BLOCKAGE	DISCHARGE TO WATERS OF THE US	11/14/06 05:11 PM

Spot Inspections:

Discharge Amount:	50 GAL
Cause:	GREASE IN MAIN SEWER FROM APARTMENT COMPLEX.
Clean Up:	WORK ORDER #608382 - CREW CLEANED AREA AROUND OVERFLOW LOCATION.
Control Zone:	TEMPORARY SIGNS POSTED ALONG CREEK.
Impact:	SEWAGE ENTERED CREEK.
Repair:	WO 608380 - MSD FLUSHED THE LINE AND WO 608381 - MSD VACTORED MAIN SEWER AND THE CREEK. IWD PLACED "FAT FREE SEWERS" BROCHURES IN APT ENTRYWAYS.

Notifications:

11/14/06 04:28 PM	CONTACTED THE DOW TO ADVISE SPOKE WITH LISA JEFFRIES. INCIDENT#2251007
11/14/06 04:35 PM	CONTACT BOH TO ADVISE LEFT A VOICE MESSAGE CALLED BACK TODAY 11/16/06 SPOKE WITH MS WILDER



MSD Louisville and Jefferson County
Metropolitan Sewer District

IMS0124

Discharge Report

Oct 01, 2006 12:00 AM thru Dec 31, 2006 11:59 PM

Report Selections: Excluding PPI, CSO, UPSET, BYPAS, Result: WUS, Act Code: DISDW, DISREV, DISSUS

KPDES #	Facility ID	Treatment Plant Name	Receiving Stream of Treatment Plant	Region
KY0078956	MSD0277	WEST COUNTY	OHIO RIVER	WEST

Facility Type	Facility ID	Facility Address	If Pump Station, Name of Pump Station:	Receiving Stream	Discharge to
SLS Sewer Lift Station	MSD1099-LS	8901 ZABEL WAY	ZABEL PS	FERN CREEK	DITCH

<u>Activity Code / Description</u>	<u>WO #</u>	<u>Initiated</u>	<u>Initiated By</u>	<u>Problem</u>	<u>Resolution</u>	<u>Completed</u>
DISDW: DRY WEATHER DISCHARGE	616450	12/06/06 12:00 AM	JAMES PORTER JR	MECHANICAL FAILURE	DISCHARGE TO WATERS OF THE US	12/06/06 12:30 AM

Spot Inspections:

Discharge Amount:	50 GAL
Cause:	CHECK VALVE FAILED AT PUMP STATION.
Clean Up:	A SMALL AMOUNT OF WATER OVERFLOWED TO A DITCH. THERE WAS NO DEBRIS IN THE DITCH.
Control Zone:	CONES WERE SET UP AT THE POINT OF THE OVERFLOW.
Impact:	A SMALL AMOUNT OF WATER OVERFLOWED TO A DITCH.
Repair:	MAINTENANCE REPAIRED THE CHECK VALVE - WORK ORDER # 4010907.

Notifications:

12/06/06 01:00 AM	Email notification of unauthorized discharge sent to Zapata.Cesar@epamail.epa.gov and eppc.ert@ky.gov
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MSD Louisville and Jefferson County
Metropolitan Sewer District

IMS0124

Discharge Report

Oct 01, 2006 12:00 AM thru Dec 31, 2006 11:59 PM

Report Selections: Excluding PPI, CSO, UPSET, BYPAS, Result: WUS, Act Code: DISDW, DISREV, DISSUS

KPDES #	Facility ID	Treatment Plant Name	Receiving Stream of Treatment Plant	Region
KY0022411	MSD0278	MORRIS FORMAN	OHIO RIVER	WEST

Facility Type	Facility ID	Facility Address	If Pump Station, Name of Pump Station:	Receiving Stream	Discharge to
SMH Sewer Manhole	08935-SM	1001 BRECKENRIDGE LN		MIDDLE FORK BEARGRASS CREEK	STREAM

<u>Activity Code / Description</u>	<u>WO #</u>	<u>Initiated</u>	<u>Initiated By</u>	<u>Problem</u>	<u>Resolution</u>	<u>Completed</u>
DISREV: RAIN EVENT DISCHARGE	602526	10/28/06 1:32 AM	MICHAEL GRIFFITH	LACK OF SYSTEM CAPACITY	DISCHARGE TO WATERS OF THE US	10/28/06 09:47 AM

Spot Inspections:

Discharge Amount:	576,000 GAL
Cause:	SEVERE RAIN EVENT IN AREA.
Clean Up:	THE MAGNITUDE OF THIS STORM DID NOT ALLOW CLEANUP EFFORTS TO BE INITIATED
Control Zone:	THE MAGNITUDE OF THE STORM DID NOT ALLOW CONTROL ZONE SETUP
Impact:	THE MAJORITY OF THIS OVERFLOW CONSISTED PRIMARILY OF STORMWATER WITH SOME SEWAGE.
Repair:	THIS LOCATION IS IN MSD'S CAPITAL PLAN FOR ABATEMENT

Notifications:

10/28/06 09:46 PM	called kdow - contact person: officer Wayne
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MSD Louisville and Jefferson County
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IMS0124

Discharge Report

Oct 01, 2006 12:00 AM thru Dec 31, 2006 11:59 PM

Report Selections: Excluding PPI, CSO, UPSET, BYPAS, Result: WUS, Act Code: DISDW, DISREV, DISSUS

KPDES # KY0022411 (Cont'd)	Facility ID MSD0278	Treatment Plant Name MORRIS FORMAN	Receiving Stream of Treatment Plant OHIO RIVER	Region WEST
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Facility Type	Facility ID	Facility Address	If Pump Station, Name of Pump Station:	Receiving Stream	Discharge to
SMH Sewer Manhole	18298	2201 GERALD CT		SOUTH FORK BEARGRASS CREEK	STREAM

<u>Activity Code / Description</u>	<u>WO #</u>	<u>Initiated</u>	<u>Initiated By</u>	<u>Problem</u>	<u>Resolution</u>	<u>Completed</u>
DISREV: RAIN EVENT DISCHARGE	629401	10/03/06 10:25 AM	STACY PRITCHARD	LACK OF SYSTEM CAPACITY	DISCHARGE TO WATERS OF THE US	10/03/06 10:30 AM

Spot Inspections:

Discharge Amount:	50,600 GAL
Cause:	HEAVY RAIN IN AREA.
Clean Up:	WORK ORDER 594383 - MSD RAKED UP DEBRIS AND SPRAYED DOWN AREA AROUND OVERFLOW SITE AFTER RAIN EVENT SUBSIDED.
Control Zone:	THE MAGNITUDE OF THE RAIN EVENT DID NOT ALLOW CONTROL ZONE SETUP.
Impact:	MANHOLE OVERFLOWED DURING A RAIN EVENT CAUSING SEWAGE TO ENTER DRAINAGE SYSTEM.
Repair:	THIS LOCATION IS MONITORED DURING RAIN EVENTS AND IS BEING EVALUATED TO DETERMINE ITS PRIORITY FOR ABATEMENT.

Facility Type	Facility ID	Facility Address	If Pump Station, Name of Pump Station:	Receiving Stream	Discharge to
SMH Sewer Manhole	25676	3703 ALCONA LN		SOUTH FORK BEARGRASS CREEK	GROUND

<u>Activity Code / Description</u>	<u>WO #</u>	<u>Initiated</u>	<u>Initiated By</u>	<u>Problem</u>	<u>Resolution</u>	<u>Completed</u>
DISREV: RAIN EVENT DISCHARGE	629403	10/03/06 10:06 AM	STACY PRITCHARD	LACK OF SYSTEM CAPACITY	DISCHARGE TO WATERS OF THE US	10/03/06 10:11 AM

Spot Inspections:

Discharge Amount:	4,680 GAL
Cause:	DISCHARGE DURING WET WEATHER
Clean Up:	RAKEAD AREA AND WASHED DOWN
Repair:	WO# 594159 CLEANED UP AREA



MSD Louisville and Jefferson County
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Discharge Report

Oct 01, 2006 12:00 AM thru Dec 31, 2006 11:59 PM

Report Selections: Excluding PPI, CSO, UPSET, BYPAS, Result: WUS, Act Code: DISDW, DISREV, DISSUS

KPDES # KY0022411 (Cont'd)	Facility ID MSD0278	Treatment Plant Name MORRIS FORMAN	Receiving Stream of Treatment Plant OHIO RIVER	Region WEST
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Facility Type	Facility ID	Facility Address	If Pump Station, Name of Pump Station:	Receiving Stream	Discharge to
SMH Sewer Manhole	48368	4040. ORMOND RD		MUDDY FORK BEARGRASS CREEK	GROUND

<u>Activity Code / Description</u>	<u>WO #</u>	<u>Initiated</u>	<u>Initiated By</u>	<u>Problem</u>	<u>Resolution</u>	<u>Completed</u>
DISDW: DRY WEATHER DISCHARGE	609665	11/20/06 10:00 PM	SHERRI SUTTON	ROOTS	DISCHARGE TO WATERS OF THE US	11/21/06 04:00 PM

Spot Inspections:

Discharge Amount:	100 GAL
Cause:	OBSTRUCTION OF ROOTS IN MAIN SEWER.
Clean Up:	WORK ORDER 611749 - MSD CLEANED THE AREA AROUND THE OVERFLOW SITE.
Control Zone:	WORK ORDER #609464 - MSD PLACED SIGNS TO WARN PUBLIC.
Impact:	SEWAGE OVERFLOWED TO A DITCH AND ENTERED A DRAINAGE CONVEYANCE.
Repair:	WORK ORDER #609825 - MSD ROOT CUT THE SEWER TO CLEAR TO ROOTS.

Notifications:

11/21/06 08:43 AM	called DOW
11/21/06 08:43 AM	called BOH



MSD Louisville and Jefferson County
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Discharge Report

Oct 01, 2006 12:00 AM thru Dec 31, 2006 11:59 PM

Report Selections: Excluding PPI, CSO, UPSET, BYPAS, Result: WUS, Act Code: DISDW, DISREV, DISSUS

KPDES # KY0022411 (Cont'd)	Facility ID MSD0278	Treatment Plant Name MORRIS FORMAN	Receiving Stream of Treatment Plant OHIO RIVER	Region WEST
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Facility Type	Facility ID	Facility Address	If Pump Station, Name of Pump Station:	Receiving Stream	Discharge to
SSL Sewer Service Line	743911610	11612 MAIN ST			

<u>Activity Code / Description</u>	<u>WO #</u>	<u>Initiated</u>	<u>Initiated By</u>	<u>Problem</u>	<u>Resolution</u>	<u>Completed</u>
DISDW: DRY WEATHER DISCHARGE	620636	12/19/06 11:22 AM	CONNIE MILLER	ROOTS	DISCHARGE TO WATERS OF THE US	12/19/06 03:39 PM

Spot Inspections:

Discharge Amount:	50 GAL
Cause:	ROOTS IN THE MAIN SEWER
Clean Up:	WORK ORDER 620664 - MSD CLEANED THE AREA AROUND THE OVERFLOW SITE.
Control Zone:	WORK ORDER #620649 - POSTED SIGNS AT THE CREEK
Impact:	SEWAGE & DEBRIS TO THE CREEK
Repair:	ROOT CUT MAIN SEWER UNDER W/O#620633.

Notifications:

12/19/06 01:00 PM	Email notification of unauthorized discharge sent to Zapata.Cesar@epamail.epa.gov and eppc.ert@ky.gov
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MSD Louisville and Jefferson County
Metropolitan Sewer District

IMS0124

Discharge Report

Oct 01, 2006 12:00 AM thru Dec 31, 2006 11:59 PM

Report Selections: Excluding PPI, CSO, UPSET, BYPAS, Result: WUS, Act Code: DISDW, DISREV, DISSUS

KPDES #	Facility ID	Treatment Plant Name	Receiving Stream of Treatment Plant	Region
KY0022411 (Cont'd)	MSD0278	MORRIS FORMAN	OHIO RIVER	WEST

Facility Type	Facility ID	Facility Address	If Pump Station, Name of Pump Station:	Receiving Stream	Discharge to
SMH Sewer Manhole	CSO113	1215 ELLISON AVE		SOUTH FORK BEARGRASS CREEK	STREAM

<u>Activity Code / Description</u>	<u>WO #</u>	<u>Initiated</u>	<u>Initiated By</u>	<u>Problem</u>	<u>Resolution</u>	<u>Completed</u>
DISDW: DRY WEATHER DISCHARGE	595106	10/06/06 11:30 AM	CONNIE MILLER	OBSTRUCTION-NOT GREASE / ROOTS	DISCHARGE TO WATERS OF THE US	10/06/06 12:03 PM

Spot Inspections:

Discharge Amount:	300 GAL
Cause:	OBSTRUCTION IN LOW FLOW SEWER LINE.
Clean Up:	MSD CLEARED DEBRIS FROM THE OVERFLOW LOCATION.
Control Zone:	IT IS NOT FEASIBLE TO SET UP A CONTROL AT THE OVERFLOW LOCATION.
Impact:	OVERFLOW TO CSO DAM DURING DRY WEATHER.
Repair:	MSD REMOVED THE OBSTRUCTION FROM THE LINE AND HAD INCREASED INSPECTIONS OF THIS CSO LOCATION.

Notifications:

10/06/06 11:44 AM	CONTACTED DOW TO ADVISE SPOKE WITH LIS JEFFRIES
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MSD Louisville and Jefferson County
Metropolitan Sewer District

IMS0124

Discharge Report

Oct 01, 2006 12:00 AM thru Dec 31, 2006 11:59 PM

Report Selections: Excluding PPI, CSO, UPSET, BYPAS, Result: WUS, Act Code: DISDW, DISREV, DISSUS

KPDES #	Facility ID	Treatment Plant Name	Receiving Stream of Treatment Plant	Region
KY0022411 (Cont'd)	MSD0278	MORRIS FORMAN	OHIO RIVER	WEST

Facility Type	Facility ID	Facility Address	If Pump Station, Name of Pump Station:	Receiving Stream	Discharge to
SLS Sewer Lift Station	MSD0012-PS	3246 RADIANCE RD	HIGHGATE SPRINGS	SOUTH FORK BEARGRASS CREEK	STREAM

<u>Activity Code / Description</u>	<u>WO #</u>	<u>Initiated</u>	<u>Initiated By</u>	<u>Problem</u>	<u>Resolution</u>	<u>Completed</u>
DISREV: RAIN EVENT DISCHARGE	627004	12/31/06 7:00 PM	NOBLE MARKS JR	LACK OF SYSTEM CAPACITY	DISCHARGE TO WATERS OF THE US	12/31/06 07:40 PM

Spot Inspections:

Discharge Amount:	46,500 GAL
Cause:	RAIN EVENT IN AREA.
Clean Up:	MSD CLEANED UP AREA AROUND OVERFLOW LOCATION.
Control Zone:	SIGNS WERE POSTED IN AREA.
Impact:	SEWAGE OVERFLOWED TO BEARGRASS CREEK DURING A HEAVY RAIN EVENT.
Repair:	THIS LOCATION IS ON MSD'S CAPITOL PLAN FOR ABATEMENT.

Notifications:

12/31/06 01:00 PM	Email notification of unauthorized discharge sent to Zapata.Cesar@epamail.epa.gov and eppc.ert@ky.gov
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MSD Louisville and Jefferson County
Metropolitan Sewer District

IMS0124
Discharge Report

Oct 01, 2006 12:00 AM thru Dec 31, 2006 11:59 PM

Report Selections: Excluding PPI, CSO, UPSET, BYPAS, Result: WUS, Act Code: DISDW, DISREV, DISSUS

KPDES #	Facility ID	Treatment Plant Name	Receiving Stream of Treatment Plant	Region
KY0089540	MSD0289	CEDAR CREEK	CEDAR CREEK	CENT

Facility Type	Facility ID	Facility Address	If Pump Station, Name of Pump Station:	Receiving Stream	Discharge to
SSL Sewer Service Line	160264	6023 COOPER CHAPEL RD			

<u>Activity Code / Description</u>	<u>WO #</u>	<u>Initiated</u>	<u>Initiated By</u>	<u>Problem</u>	<u>Resolution</u>	<u>Completed</u>
DISDW: DRY WEATHER DISCHARGE	626308	12/27/06 10:42 PM	DARRELL GOODWIN SR	MECHANICAL FAILURE	DISCHARGE TO WATERS OF THE US	12/27/06 11:00 PM

Spot Inspections:

Discharge Amount:	20 GAL
Cause:	GREASE AND DEBRIS BUILDUP ON THE PUMP TILT BULBS CAUSED THE STATION TO GO DOWN.
Clean Up:	MSD WASHED DOWN THE OVERFLOW AREA AND PLACED LIME.
Control Zone:	PLACED TAPE AND TEMPORARY SIGNS ALONG CREEK AND PLACED DOOR HANGERS AT ADJACENT PROERTIES.
Impact:	SEWAGE OVERFLOWED TO THE CREEK.
Repair:	METRO OPERATIONS PERSONNEL RESTARTED THE PUMP STATION. THIS PUMP STATION WILL BE MONITORED CLOSELY FOR GREASE/DEBRIS BUILDUP.

Notifications:

12/27/06 01:00 PM	Email notification of unauthorized discharge sent to Zapata.Cesar@epamail.epa.gov and eppc.ert@ky.gov
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IMS0124

Discharge Report

Oct 01, 2006 12:00 AM thru Dec 31, 2006 11:59 PM

Report Selections: Excluding PPI, CSO, UPSET, BYPAS, Result: WUS, Act Code: DISDW, DISREV, DISSUS

KPDES #	Facility ID	Treatment Plant Name	Receiving Stream of Treatment Plant	Region
KY0089540 (Cont'd)	MSD0289	CEDAR CREEK	CEDAR CREEK	CENT

Facility Type	Facility ID	Facility Address	If Pump Station, Name of Pump Station:	Receiving Stream	Discharge to
SLS Sewer Lift Station	MSD1052-PS	9409 EXHIBITION CT	EXHIBITION CT	POND CREEK	DITCH

<u>Activity Code / Description</u>	<u>WO #</u>	<u>Initiated</u>	<u>Initiated By</u>	<u>Problem</u>	<u>Resolution</u>	<u>Completed</u>
DISDW: DRY WEATHER DISCHARGE	597015	10/15/06 5:00 PM	THERESA SINGLETON	MECHANICAL FAILURE	DISCHARGE TO WATERS OF THE US	10/15/06 07:00 PM

Spot Inspections:

Discharge Amount:	1,500 GAL
Cause:	A TOTAL OF 7500 GALLONS WAS RELEASE DUE TO A BROKEN PIPE AT THE BASE OF A PUMP AT THE PUMP STATION.
Clean Up:	6000 GALLONS OF THE 7500 GALLONS RELEASED WAS CONTAINED INSIDE THE FENCE OF THE STATION AND CLEANED UP/HAULED OFF SITE BY METRO OPERATIONS PERSONNEL.
Control Zone:	STATION IS SURROUNDED BY A WOODEN FENCE WHICH ACTED AS THE CONTROL ZONE SINCE THE BULK WAS CONTAINED WITHIN THE FENCELINE.
Impact:	1500 GALLONS OF SEWAGER OVERFLOWED TO THE CREEK.
Repair:	HAULED EXCESS SEWAGE; MOVED PUMP #1 TO PUMP #2'S POSITION. PARTS ARE ON ORDER FOR #2 PUMP.

Notifications:

10/16/06 12:04 PM	DOW & BOH have been notified regarding this event.
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MSD Louisville and Jefferson County
Metropolitan Sewer District

IMS0124

Discharge Report

Oct 01, 2006 12:00 AM thru Dec 31, 2006 11:59 PM

Report Selections: Excluding PPI, CSO, UPSET, BYPAS, Result: WUS, Act Code: DISDW, DISREV, DISSUS

KPDES #	Facility ID	Treatment Plant Name	Receiving Stream of Treatment Plant	Region
KY0042226	MSD0403	LAKE FOREST	CHENOWETH RUN	EAST

Facility Type	Facility ID	Facility Address	If Pump Station, Name of Pump Station:	Receiving Stream	Discharge to
SND Sewer Node	80351B-AG	14310 LAKE FOREST DR			

<u>Activity Code / Description</u>	<u>WO #</u>	<u>Initiated</u>	<u>Initiated By</u>	<u>Problem</u>	<u>Resolution</u>	<u>Completed</u>
DISDW: DRY WEATHER DISCHARGE	620313	12/16/06 10:30 AM	SHARON WINBURN	STRUCTURAL FAILURE	DISCHARGE TO WATERS OF THE US	12/16/06 03:02 PM

Spot Inspections:

Discharge Amount:	100 GAL
Cause:	STRUCTURAL FAILURE TO THE FORCE MAIN ASSET#SND80351B-AG
Clean Up:	LIME WAS SPREAD OVER AREA
Control Zone:	SIGNS WERE POSTED WARNING THE PUBLIC TO AVOID CONTACT WITH THE AREA.
Impact:	SEWAGE OVERFLOWED TO A CATCH BASIN WHICH DISCHARGES INTO A POND.
Repair:	WORK ORDER 620308 - MSD CONTRACTOR REPAIRED THE FORCE MAIN.

Notifications:

12/16/06 01:00 PM	Email notification of unauthorized discharge sent to Zapata.Cesar@epamail.epa.gov and eppc.ert@ky.gov
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MSD Louisville and Jefferson County
Metropolitan Sewer District

IMS0124

Discharge Report

Oct 01, 2006 12:00 AM thru Dec 31, 2006 11:59 PM

Report Selections: Excluding PPI, CSO, UPSET, BYPAS, Result: WUS, Act Code: DISDW, DISREV, DISSUS

Total Facilities Printed: 12



MSD

Louisville and Jefferson County
Metropolitan Sewer District

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APPENDIX B

CSO AAOV Reductions

Note: The AAOV information was developed utilizing XP-SWMM.

**SUMMARY OF WET WEATHER COMBINED OVERFLOWS
STATUS THROUGH DECEMBER 2006**

CSO NO.	CSO NAME	LOCATION	RECEIVING STREAM	NUMBER OF OVERFLOW INCIDENTS (NO./YR)	AVG. DURATION OF OVERFLOW (HRS)	AVG VOLUME PER INCIDENT (1000 G/INCIDENT)	STATUS	
OHIO RIVER WATERSHED								
015	SOUTHWESTERN PS	BELLS LN & I-264	OR	39	7.46	21,660	ACTIVE	
016	MILES PARK BYPASS	S OF 45th & WINNROSE	OR	0	0.00	0	ACTIVE	
019	34th STREET PS	34th & RUDD	OR	49	5.02	1,940	ACTIVE	
020	BUCHANAN PS	BUCHANAN & FRANKLIN	OR	41	3.65	980	ACTIVE	
022	FOURTH ST PS	FOURTH & MAIN	OR	13	1.15	570	ACTIVE	
023	ORI @ 4th ST PS	FOURTH & MAIN	OR	3	1.33	280	ACTIVE	
026	CRD 6th & BROADWAY	6th & BROADWAY	OR	0	0.00	0	ACTIVE	
027	CRD 7th & BROADWAY	7th & BROADWAY	OR	0	0.00	0	ACTIVE	
028	CRD 6th & YORK	6TH & YORK	OR	4	1.00	20	ACTIVE	
029	CRD 8th & YORK	8th & YORK	OR	24	1.50	120	ACTIVE	
030	CRD 9th & YORK "A"	9th & YORK	OR	17	1.17	80	ACTIVE	
031	CRD 6th & BRECKINRIDGE	6th & BRECKINRIDGE	OR	0	0.00	0	ACTIVE	
032	CRD 4th & BRECKINRIDGE	4th & BRECKINRIDGE	OR	0	0.00	0	ACTIVE	
033	CRD ON YORK E OF 4th	ON YORK E OF 4th	OR	2	1.00	6	ACTIVE	
034	CRD 4th & YORK	4th & YORK	OR	35	1.82	40	ACTIVE	
035	CRD 2nd & BROADWAY NO 1	2nd & BROADWAY	OR	0	0.00	0	ACTIVE	
036	CRD 3rd & BROADWAY	3rd & BROADWAY	OR	12	1.08	20	ACTIVE	
038	CRD 5th & BROADWAY	5th & BROADWAY	OR	2	1.00	2	ACTIVE	
049	PRESTON ST	PRESTON N OF JACKSON	OR			Eliminated	ELIMINATED	CSO Plugged
050	12th STREET	12th ST N OF MAIN	OR	34	4.23	200	ACTIVE	
051	11th STREET	11th ST N OF MAIN	OR	9	1.11	40	ACTIVE	
052	10th STREET	10th ST N OF MAIN	OR	8	1.25	60	ACTIVE	
053	8th STREET	8th ST N OF MAIN	OR	32	1.75	170	ACTIVE	
054	7th STREET	7th ST N OF MAIN	OR	18	2.38	50	ACTIVE	
055	6th STREET	6th ST N OF MAIN	OR	18	1.33	150	ACTIVE	
056	5th STREET	5th ST N OF MAIN	OR	33	2.93	130	ACTIVE	
057	FIRST STREET OVFL WEIR	1st & MAIN	OR	0	0.00	0	ACTIVE	
058	PRESTON ST OVFL WEIR	PRESTON & MAIN	OR	22	2.36	230	ACTIVE	
062	LOGAN COMPANY	N OF BUCHANAN PS	OR	47	9.74	1,030	ACTIVE	
104	SW PKWY SEWER @ BROADWAY	SW PKWY & BROADWAY	OR	21	1.90	290	ACTIVE	
105	WESTERN OUTFALL @ BROADWAY	BROADWAY @ SW PKWY	OR	82	6.26	4,280	ACTIVE	
150	8th ST @ COMMON PLACE	8th ST & COMMON PLACE	OR	49	2.42	80	ACTIVE	
155	ROWAN ST @ 12th ST	ROWAN & 12th	OR	4	1.25	10	ACTIVE	
156	6th & WASHINGTON SAN DIV	WASHINGTON W OF 6th	OR	0	0.00	0	ACTIVE	
160	SEWER IN ALLEY SAN DIV	1ST ST BTW MAIN & MARKET	OR	22	1.45	10	ACTIVE	
161	MARKET ST SAN DIV	FIRST & MARKET	OR	16	2.31	10	ACTIVE	
172	ADAMS STREET	ADAMS ST & I-64	OR	14	1.21	10	ACTIVE	
178	CRD 9th & YORK "B"	9th & YORK	OR	5	1.00	20	ACTIVE	

**SUMMARY OF WET WEATHER COMBINED OVERFLOWS
STATUS THROUGH DECEMBER 2006**

CSO NO.	CSO NAME	LOCATION	RECEIVING STREAM	NUMBER OF OVERFLOW INCIDENTS (NO./YR)	AVG. DURATION OF OVERFLOW (HRS)	AVG VOLUME PER INCIDENT (1000 G/INCIDENT)	STATUS	
181	CRD 2nd & BROADWAY NO 2	2nd & BROADWAY	OR	14	1.21	20	ACTIVE	
189	NORTHWESTERN SAN DIV	SHAWNEE PARK FLOOD PS	OR	54	8.59	10,240	ACTIVE	
190	SEVENTEENTH ST SAN DIV	17th ST & NW PKWY	OR	36	3.52	290	ACTIVE	
191	ALGONQUIN PKWY SAN DIV	SOUTHWESTERN PS	OR	14	1.21	290	ACTIVE	
192	CRD S 6th & GARLAND	6th & GARLAND	OR	14	1.21	10	ACTIVE	
193	CRD S 6th & KENTUCKY	6th & KENTUCKY	OR	14	1.21	10	ACTIVE	
194	CRD S OAK W OF 4th	OAK ST W OF 4th ST	OR	0	0.00	0	ACTIVE	
195	CRD S 4th & OAK	4th & OAK	OR	0	0.00	0	ACTIVE	
196	CRD S 3rd & OAK	3rd & OAK	OR	58	3.22	20	ACTIVE	
197	CRD S 3rd S OF OAK	3rd ST S OF OAK ST	OR	33	1.81	10	ACTIVE	
198	CRD S 3rd & ORMSBY	3rd & ORMSBY	OR	57	2.66	30	ACTIVE	
199	CRD S 3rd N OF MAGNOLIA	3rd ST N OF MAGNOLIA	OR	11	1.18	1	ACTIVE	
200	CRD S 3rd & MAGNOLIA	3rd & MAGNOLIA	OR	31	1.54	8	ACTIVE	
201	CRD S 5th & KENTUCKY	5th & KENTUCKY	OR	27	2.70	10	ACTIVE	
202	CRD S ORMSBY W OF 3rd	ORMSBY W OF 3rd ST	OR	19	1.15	4	ACTIVE	
203	CRD S 4th & ORMSBY	4th & ORMSBY	OR	0	0.00	0	ACTIVE	
204	CRD S 5th & BRECKINRIDGE	5th & BRECKINRIDGE	OR			Eliminated	ELIMINATED	CSO Plugged - 5/19/00
207	2nd & JEFFERSON	2ND & JEFFERSON	OR	0	0.00	0	ACTIVE	
208	12th & JEFFERSON	12th & JEFFERSON	OR	0	0.00	0	ACTIVE	
210	45th STREET-GREENWOOD	S OF 45th & WINNROSE	OR	54	3.96	390	ACTIVE	
211	MAIN DIVERSION STRUCTURE	WAYNE SUPPLY	OR	43	5.72	11,900	ACTIVE	

**SUMMARY OF WET WEATHER COMBINED OVERFLOWS
STATUS THROUGH DECEMBER 2006**

CSO NO.	CSO NAME	LOCATION	RECEIVING STREAM	NUMBER OF OVERFLOW INCIDENTS (NO./YR)	AVG. DURATION OF OVERFLOW (HRS)	AVG VOLUME PER INCIDENT (1000 G/INCIDENT)	STATUS	
BEARGRASS CREEK WATERSHED								
018	NIGHTINGALE PS	NIGHTINGALE & SFBGC	SF BGC	1	29.00	640	ACTIVE	
065	LAMPTON STREET	LAMPTON & SWAN	SF BGC			Eliminated	ELIMINATED	CSO Plugged
080	PAYNE STREET	LEXINGTON RD W OF PAYNE	MF BGC			Eliminated	ELIMINATED	Sewers Separated
081	LETTERLE	LETTERLE @ BGC PS	SF BGC			Eliminated	ELIMINATED	CSO Plugged 9/07/06
082	BGI AT BGC	BGC @ OMFT	SF BGC	12	1.25	40	ACTIVE	
083	BRENT ST & BROADWAY CONNECT	BRENT & BROADWAY	SF BGC	36	1.86	70	ACTIVE	
084	BRENT ST @ BGC	BRENT ST @ BGC	SF BGC	15	1.20	140	ACTIVE	
086	PAYNE AT SPRING	PAYNE ST @ SPRING ST	MF BGC	0	0.00	0	ACTIVE	
087	BLUEHORSE	FRANKFORT @ BLUEHORSE	SF BGC			Eliminated	ELIMINATED	CSO Plugged 9/18/06
088	MELLWOOD AVE INT	BROWNSBORO RD @ BGC	SF BGC	0	0.00	0	ACTIVE	Sewers Separated
091	SCHILLER AVE OVFL	SCHILLER & HIGHLAND	SF BGC	3	1.33	20	ACTIVE	
092	ST CATHERINE @ BGC	SCHILLER BTW KY & ST CATHERINE	SF BGC	2	1.00	15	ACTIVE	
093	SPRING STREET	SPRING ST N OF MELLWOOD	SF BGC	0	0.00	0	ACTIVE	
097	CANTONMENT SIPHON NO 2	BGC S OF EASTERN PKWY	SF BGC	56	6.98	880	ACTIVE	
106	ROYAL - NEFF	BACKYARD OF 1212 ROYAL	SF BGC	11	1.09	10	ACTIVE	
108	REG NO 1 - NEWBURG	NEWBURG @ TREVILIAN	SF BGC	34	2.17	1,160	ACTIVE	
109	REG NO 2 - DEER PARK	BEHIND O. L. O. P.	SF BGC	19	1.15	150	ACTIVE	
110	REG NO 3 - GOSS AVE	BGC S OF EASTERN PKWY	SF BGC	32	1.90	120	ACTIVE	
111	EMERSON STREET SEWER	BGC N OF EASTERN PKWY	SF BGC	39	2.74	240	ACTIVE	
113	ELLISON AVENUE SEWER	ELLISON & SCHILLER	SF BGC	46	5.13	170	ACTIVE	
117	REG NO 11 - DRY RUN	LOGAN & CALDWELL	SF BGC	37	3.02	2,230	ACTIVE	
118	REG NO 15 - E BRDWAY	BROADWAY W OF BGC	SF BGC	64	7.29	2,650	ACTIVE	
119	BRENT STREET SEWER	BGC N OF BROADWAY	SF BGC	27	1.62	80	ACTIVE	
120	PHOENIX HILL SEWER	E OF BGC & S OF BAXTER	SF BGC	24	1.50	180	ACTIVE	
121	REG NO 18 - GREEN ST	LEXINGTON RD W OF BGC	SF BGC	23	1.39	130	ACTIVE	
123	REG NO 20 - RUTH-SULGRV	ON BGC OP SPRING VALLEY	MF BGC			Eliminated	ELIMINATED	CSO Plugged
125	REG NO 24 - GRINSTEAD DR	GRINSTEAD @ I-64	MF BGC	30	7.16	610	ACTIVE	
126	REG NO 26 - RAYMOND AVE	I-64 & SAUNDERS LN	MF BGC	6	1.16	40	ACTIVE	
127	ETLEY AVENUE	LEXINGTON RD OP ETLEY	MF BGC	29	1.86	450	ACTIVE	
130	WEBSTER STREET	S OF STORY OP WEBSTER	SF BGC	26	3.53	250	ACTIVE	
131	REG NO 33 - MELWD & FRANKFORT	FRANKFORT AVE @ BGC	SF BGC	3	1.33	70	ACTIVE	
132	REG NO 35 - BROWNSBORO	BROWNSBORO & DRESCHER B	MudF BGC	64	6.62	1,830	ACTIVE	
137	CALVARY CEMETARY	CALVARY CEMETARY @ BGC	SF BGC	19	1.63	50	ACTIVE	
140	LOCUST STREET	LOCUST SW OF SPRING	MF BGC	28	1.92	180	ACTIVE	
141	BAXTER AVE @ BGC	BAXTER AVE & BGC	SF BGC	0	0.00	0	ACTIVE	
142	SBR LOGAN ST @ ST CATHERINE	LOGAN & ST CATHERINE	SF BGC	N/A	N/A	N/A	ACTIVE	
143	KENTUCKY STREET BLOW-OFF	OAK & BGC	SF BGC			Eliminated	ELIMINATED	Plugged-CSO not needed

**SUMMARY OF WET WEATHER COMBINED OVERFLOWS
STATUS THROUGH DECEMBER 2006**

CSO NO.	CSO NAME	LOCATION	RECEIVING STREAM	NUMBER OF OVERFLOW INCIDENTS (NO./YR)	AVG. DURATION OF OVERFLOW (HRS)	AVG. VOLUME PER INCIDENT (1000 G/INCIDENT)	STATUS	
144	VANCE ST REGULATOR	S END OF VANCE & I-64	MF BGC	27	3.70	20	ACTIVE	
145	POINT PUMP STATION	POINT PUMP STATION	SF BGC			Eliminated	ELIMINATED	CSO Plugged
146	SNEADS BRANCH DIVERSION	SWAN ST S OF BGC	SF BGC	51	6.72	1,790	ACTIVE	
147	SWAN STREET DIVERSION	SWAN ST N OF BGC	SF BGC	65	3.10	20	ACTIVE	Sewers Separated
148	EASTERN PKWY DIVERSION	EASTERN PKWY E OF BGC	SF BGC	12	1.16	20	ACTIVE	
149	DRY RUN DIVERSION	KENTUCKY STREET & ST PAUL CT	SF BGC	19	8.26	360	ACTIVE	
151	REG NO 5 - CASTLEWOOD	BGC & CASTLEWOOD DELL	SF BGC	64	7.40	2,240	ACTIVE	
152	REG NO 7 - SOUTHEASTERN	BGC & RUFER AVENUE	SF BGC	42	2.88	810	ACTIVE	
153	COOPER STREET	LEXINGTON & COOPER	SF BGC	53	3.37	130	ACTIVE	
154	MELLWOOD @ SCHOEFFEL	MELLWOOD AVE & EDWD POND BR	MudF BGC	12	1.33	120	ACTIVE	
162	BEALS BRANCH HW REG	ON MFT S OF LEXINGTON	MF BGC			Eliminated	ELIMINATED	Overflow Plugged
166	BEALS BRANCH SAN DIV	LEXINGTON RD & I-64	MF BGC	31	1.83	520	ACTIVE	
167	BROWNSBORO LAT NO 2	BROWNSBORO & DRESCHER B	MudF BGC	0	0.00	0	ACTIVE	
174	SBR GOSS & BOYLE	GOSS AVE & BOYLE ST	SF BGC	18.0	1.2	110	ACTIVE	
179	KENTUCKY ST SEWER OVFL	KENTUCKY ST & ST PAUL CT	SF BGC	14	1.21	6	ACTIVE	
180	SBR ORMSBY AVE RELIEF	ORMSBY & CLAY	SF BGC	0	0.00	0	ACTIVE	
182	SBR SHELBY & BURNETT	BURNETT W OF SHELBY ST	SF BGC	38	2.00	290	ACTIVE	
183	SBR ALEXANDER & KESWICK	ALEXANDER & KESWICK	SF BGC	0	0.00	0	ACTIVE	
184	SBR FETTER & ALEXANDER	FETTER & ALEXANDER	SF BGC	14	1.21	20	ACTIVE	
185	SBR SHELBY & KESWICK	SHELBY & KESWICK	SF BGC	23	1.34	50	ACTIVE	
186	SBR LOGAN & OAK	LOGAN & OAK	SF BGC	0	0.00	0	ACTIVE	
187	SBR SHELBY & CAMP	SHELBY & CAMP	SF BGC	0	0.00	0	ACTIVE	
188	SBR SHELBY & CLAY	SHELBY & CLAY	SF BGC	0	0.00	0	ACTIVE	
205	SBR MORGAN STREET RELIEF	MORGAN & HOERTZ	SF BGC	0	0.00	0	ACTIVE	
206	CHEROKEE PARK @ SPRING DR	CHEROKEE RD & SPRING DR	MF BGC	63	10.50	1,410	ACTIVE	
209	CHEROKEE PK @ PARK BD RD	CHEROKEE PK @ PARK BD RD	MF BGC			Eliminated	ELIMINATED	Sewers Separated

TOTAL ACTIVE CSOs = 113

Notes:

This information was developed through computer model simulations processed on March 10, 2004. It is NOT measured data.

The rainfall data utilized as input was an average rainfall year developed through a statistical analysis evaluating 54 years of rainfall data (1948 to 2002) for Jefferson County, KY.

The model simulation was done assuming the peak capacity at MFWTP equal to 350 mgd. However, sustainability of 350 mgd has not yet been proven.

Summary updated to show the elimination of CSO 209 (closed 9/30/05).

OR - Ohio River

SF-BGC - South Fork of Beargrass Creek

MF-BGC - Middle Fork of Beargrass Creek

L-BGC - Lower Beargrass Creek

SBR - Sneads Branch Relief Sewer

CRD - Central Relief Drain

CSO Eliminate	
Sewer Separated	



MSD

Louisville and Jefferson County
Metropolitan Sewer District

Consent Decree Quarterly Report 5
January 30, 2007

APPENDIX C

CSO Flow Monitoring

Note: The CSO flow information was recorded by MSD flow monitors.

October 1, 2006 through December 31, 200620

October 1, 2006 through December 31, 2006

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October 1, 2006 through December 31, 200640%

October 1, 2006 through December 31, 2006

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October 1, 2006 through December 31, 2006604

Louisville MSD Flow Monitoring Data

October 1, 2006 through December 31, 2006

Date	Time	Flow	Flow	Flow	# 1 Flow	# 2 Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
October 16, 2006	9:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 16, 2006	10:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 16, 2006	11:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 16, 2006	12:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 16, 2006	13:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.087	0.000	0.000	0.147	0.486	0.062	0.000	0.000	0.000	0.000	0.000	
October 16, 2006	14:00	0.598	0.000		0.000	0.000	0.000	0.000	2.197	0.000	0.000	0.485	1.279	0.140	0.000	0.000	0.000	0.000	0.439	0.000	
October 16, 2006	15:00	2.101	0.000		0.000	0.000	0.000	0.367	2.644	0.000	0.000	0.678	0.900	0.179	0.000	0.000	0.000	0.000	1.515	0.000	
October 16, 2006	16:00	2.229	0.000		0.000	0.000	0.000	0.977	4.547	0.153	0.000	1.221	1.818	0.118	0.000	0.713	0.000	2.555	0.000	0.000	
October 16, 2006	17:00	10.349	0.016		0.000	0.000	0.000	7.551	14.568	1.576	0.552	1.865	4.439	0.495	8.710	6.578	0.136	4.932	14.975	0.000	
October 16, 2006	18:00	17.028	0.040		0.000	0.000	0.000	10.241	19.427	2.961	0.888	2.789	5.545	0.318	19.423	6.910	0.528	4.881	109.277	0.000	
October 16, 2006	19:00	9.450	0.000		1.123	0.449	0.000	7.328	11.171	2.601	0.000	2.287	3.539	0.271	13.867	2.770	0.000	4.952	79.105	0.000	
October 16, 2006	20:00	6.532	0.000		0.159	0.031	0.000	3.527	5.061	0.709	0.000	0.920	1.976	0.423	10.323	0.615	0.000	3.750	48.782	0.000	
October 16, 2006	21:00	2.831	0.000		0.013	0.000	0.000	1.894	4.288	0.067	0.000	0.818	0.883	0.464	4.616	0.000	0.000	3.138	20.194	0.000	
October 16, 2006	22:00	3.024	0.000		0.000	0.000	0.000	2.410	5.749	0.748	0.000	1.056	2.010	0.189	4.775	1.118	0.000	3.667	14.217	0.000	
October 16, 2006	23:00	12.525	0.258		0.000	0.000	0.000	11.930	26.755	3.204	2.422	2.774	5.315	0.156	15.703	10.884	0.100	6.305	79.668	0.000	
October 17, 2006	0:00	15.998	0.000		0.000	0.000	0.000	8.255	12.377	0.597	0.114	1.629	3.393	0.489	18.264	3.589	0.599	9.136	115.512	0.000	
October 17, 2006	1:00	7.499	0.000		0.252	0.077	0.000	4.724	6.468	0.158	0.000	1.058	1.346	0.828	9.434	0.558	0.033	3.852	51.388	0.000	
October 17, 2006	2:00	2.753	0.000		0.000	0.000	0.000	1.233	2.112	0.000	0.008	0.800	0.972	0.413	5.559	0.000	0.000	3.386	19.314	0.000	
October 17, 2006	3:00	0.650	0.000		0.000	0.000	0.000	0.033	0.271	0.000	0.013	0.685	0.307	0.064	0.610	0.000	0.000	2.888	8.799	0.000	
October 17, 2006	4:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.245	0.021	0.000	0.067	0.000	0.000	2.325	2.095	0.000	
October 17, 2006	5:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.027	0.000	0.000	0.030	0.000	0.000	2.000	0.000	0.000	
October 17, 2006	6:00	0.000	0.000		0.000	0.000	0.000	0.000	0.221	0.000	0.000	0.465	0.367	0.373	0.028	0.790	0.000	2.406	0.023	0.000	
October 17, 2006	7:00	12.543	0.000		0.000	0.000	0.000	3.753	8.742	0.077	0.144	1.399	1.088	0.438	15.158	6.743	0.334	5.368	6.479	0.000	
October 17, 2006	8:00	2.626	0.000		0.000	0.000	0.000	0.016	0.008	0.000	0.000	0.404	0.043	0.000	2.915	0.000	0.000	2.718	10.329	0.000	
October 17, 2006	9:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.036	0.000	0.000	0.033	0.000	0.000	2.102	0.401	0.000	
October 17, 2006	10:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.000	0.000	0.002	0.000	0.000	1.941	0.000	0.000	
October 17, 2006	11:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.000	1.472	0.000	0.000	
October 17, 2006	12:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.346	0.000	0.000	
October 17, 2006	13:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 17, 2006	14:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 17, 2006	15:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 17, 2006	16:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 17, 2006	17:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 17, 2006	18:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 17, 2006	19:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 17, 2006	20:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 17, 2006	21:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 17, 2006	22:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 17, 2006	23:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	0:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	1:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	2:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	3:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	4:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	5:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	6:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	7:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	8:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	9:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	10:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	11:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	12:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	13:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	14:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	15:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	16:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
October 18, 2006	17:00	0.000	0.000		0.000																

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Louisville MSD Flow Monitoring Data

October 1, 2006 thru December 31, 2006

		CSO #019	CSO #088	CSO #105	CSO #108	CSO #108	CSO #110	CSO #117	CSO #118	CSO #127	CSO #132	CSO #140	CSO #151	CSO #152	CSO #166	CSO #182	CSO #189	CSO #190	CSO #191	CSO #210	CSO #211
Date	Time	Flow	Flow	Flow	# 1 Flow	# 2 Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
October 26, 2006	11:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 26, 2006	12:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 26, 2006	13:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 26, 2006	14:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 26, 2006	15:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 26, 2006	16:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 26, 2006	17:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 26, 2006	18:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 26, 2006	19:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 26, 2006	20:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 26, 2006	21:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 26, 2006	22:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 26, 2006	23:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 27, 2006	0:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 27, 2006	1:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 27, 2006	2:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 27, 2006	3:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 27, 2006	4:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 27, 2006	5:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 27, 2006	6:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
October 27, 2006	7:00	0.000	0.000		0.000	0.000	0.000	0.000	0.011	0.000		0.000	0.039	0.071		0.000	0.001	0.000	0.000	0.507	0.000
October 27, 2006	8:00	3.421	0.000		0.000	0.000	0.000	0.711	3.321	0.141		0.000	0.669	1.551		0.185	0.355	0.519	0.000	2.409	0.004
October 27, 2006	9:00	4.678	0.000		0.000	0.000	0.000	2.360	6.674	0.065		0.000	0.979	1.792		0.139	3.071	0.942	0.000	3.520	0.069
October 27, 2006	10:00	6.224	0.000		0.000	0.000	0.000	4.028	6.991	0.648		0.000	1.016	3.093		0.555	8.071	0.577	0.000	3.317	22.800
October 27, 2006	11:00	5.058	0.000		0.000	0.000	0.000	1.655	3.455	0.060		0.000	0.724	1.691		0.400	6.199	0.801	0.000	3.753	26.972
October 27, 2006	12:00	4.755	0.000		0.000	0.000	0.000	1.719	3.835	0.097		0.000	0.815	1.205		0.393	6.328	0.330	0.000	3.673	26.169
October 27, 2006	13:00	2.172	0.000		0.000	0.000	0.000	0.061	0.020	0.000		0.000	0.501	0.419		0.161	2.825	0.000	0.000	2.613	13.697
October 27, 2006	14:00	1.925	0.000		0.000	0.000	0.000	0.000	1.133	0.000		0.000	0.585	0.328		0.049	1.336	0.032	0.000	3.058	12.700
October 27, 2006	15:00	4.436	0.000		0.000	0.000	0.000	2.841	7.071	0.836		0.684	1.392	2.690		0.133	3.842	1.117	0.000	3.429	14.787
October 27, 2006	16:00	4.760	0.000		0.000	0.000	0.000	2.455	2.242	0.434		0.000	1.142	2.846		0.400	5.964	0.029	0.000	3.061	41.975
October 27, 2006	17:00	1.547	0.000		0.000	0.000	0.000	0.000	1.304	0.000		0.000	0.718	0.927		0.421	1.908	0.000	0.000	3.082	17.712
October 27, 2006	18:00	1.802	0.000		0.000	0.000	0.000	0.000	1.202	0.000		0.000	0.668	0.642		0.226	1.349	0.000	0.000	2.729	13.174
October 27, 2006	19:00	0.011	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.180	0.066		0.000	0.070	0.000	0.000	2.408	9.483
October 27, 2006	20:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.047	0.000		0.000	0.004	0.000	0.000	2.093	0.760
October 27, 2006	21:00	0.000	0.000		0.000	0.000	0.000	0.000	0.077	0.000		0.000	0.025	0.000		0.047	0.006	0.000	0.000	2.345	0.001
October 27, 2006	22:00	11.380	0.300		0.000	0.000	0.000	18.451	34.260	1.066		4.137	5.125	9.967		0.099	17.610	17.538	0.016	10.657	97.081
October 27, 2006	23:00	22.098	0.046		2.063	1.117	0.000	17.106	27.758	1.144		3.788	3.374	8.081		0.051	33.781	12.686	0.106	25.012	289.020
October 28, 2006	0:00	18.929	0.044		0.000	0.000	0.000	15.302	25.939	1.419		4.030	3.055	8.539		0.000	35.771	11.071	0.025	25.111	240.952
October 28, 2006	1:00	13.105	0.000		1.800	0.980	0.000	7.663	6.850	0.466		2.779	2.148	1.913		0.634	21.159	0.541	0.000	14.642	169.335
October 28, 2006	2:00	2.289	0.000		1.915	0.762	0.000	0.316	0.022	0.187		5.607	0.726	0.104		0.366	4.687	0.000	0.000	1.805	41.779
October 28, 2006	3:00	0.001	0.000		0.181	0.044	0.000	0.000	0.000	0.000		4.436	0.418	0.018		0.009	0.146	0.000	0.000	1.148	11.524
October 28, 2006	4:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		1.473	0.241	0.000		0.000	0.043	0.000	0.000	1.041	1.145
October 28, 2006	5:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		1.154	0.212	0.000		0.000	0.025	0.000	0.000	0.922	0.000
October 28, 2006	6:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.121	0.000		0.000	0.009	0.000	0.000	0.598	0.000
October 28, 2006	7:00	0.000	0.000		0.000	0.000	0.000.														

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		CSO #019	CSO #088	CSO #105	CSO #108	CSO #108	CSO #110	CSO #117	CSO #118	CSO #127	CSO #132	CSO #140	CSO #151	CSO #152	CSO #166	CSO #182	CSO #189	CSO #190	CSO #191	CSO #210	CSO #211
Date	Time	Flow	Flow	Flow	# 1 Flow	# 2 Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	
October 31, 2006	12:00	0.000	0.000		0.000	0.000	0.000	0.000	0.012	0.000		0.000	0.000	0.243		0.010	0.000	0.000	0.000	0.000	
October 31, 2006	13:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.111	0.295		0.047	0.000	0.000	0.000	0.000	
October 31, 2006	14:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
October 31, 2006	15:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
October 31, 2006	16:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
October 31, 2006	17:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
October 31, 2006	18:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
October 31, 2006	19:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
October 31, 2006	20:00	0.000	0.000		0.000	0.000	0.000	0.000	0.271	0.000		0.000	0.454	0.685		0.134	0.000	0.000	0.000	0.126	
October 31, 2006	21:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.041	0.064		0.000	0.000	0.000	0.000	0.000	
October 31, 2006	22:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
October 31, 2006	23:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	0:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	1:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	2:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	3:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	4:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	5:00	0.000	0.000		0.000	0.000	0.000	0.000	0.013	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	6:00	0.000	0.000		0.000	0.000	0.000	0.001	0.000	0.000		0.000	0.313	0.166		0.208	0.000	0.001	0.000	0.207	
November 1, 2006	7:00	2.152	0.000		0.000	0.000	0.000	0.000	0.003	0.000		0.000	0.126	0.245		0.001	0.000	0.000	0.000	0.223	
November 1, 2006	8:00	0.000	0.000		0.000	0.000	0.000	2.069	3.633	0.164		0.000	1.705	3.347		0.059	0.000	0.000	0.000	0.187	
November 1, 2006	9:00	0.000	0.000		0.000	0.000	0.000	0.409	0.030	0.021		0.000	0.621	0.737		0.049	0.000	0.000	0.000	0.658	
November 1, 2006	10:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.330	0.005		0.265	0.000	0.000	0.000	1.277	
November 1, 2006	11:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.019	0.000		0.000	0.000	0.000	0.000	1.156	
November 1, 2006	12:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.722	
November 1, 2006	13:00	0.000	0.000		0.000	0.000	0.000	0.000	0.009	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.025	
November 1, 2006	14:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	15:00	0.000	0.000		0.000	0.000	0.000	0.000	0.008	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	16:00	0.000	0.000		0.000	0.000	0.000	0.000	0.025	0.000		0.000	0.175	0.823		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	17:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	18:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	19:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	20:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	21:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	22:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 1, 2006	23:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	0:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	1:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	2:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	3:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	4:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	5:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	6:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	7:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	8:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	9:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	10:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	11:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.585	
November 2, 2006	12:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	13:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	14:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	15:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	16:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	17:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	18:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	19:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	20:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	21:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	22:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	
November 2, 2006	23:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	

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Date	Time	CSO #019 Flow	CSO #088 Flow	CSO #105 Flow	CSO #108 # 1 Flow	CSO #108 # 2 Flow	CSO #110 Flow	CSO #117 Flow	CSO #118 Flow	CSO #127 Flow	CSO #132 Flow	CSO #140 Flow	CSO #151 Flow	CSO #152 Flow	CSO #166 Flow	CSO #182 Flow	CSO #189 Flow	CSO #190 Flow	CSO #191 Flow	CSO #210 Flow	CSO #211 Flow
November 30, 2006	18:00	0.000	0.000		0.000	0.000	0.000	1.435	6.035	0.597		0.521	0.367	2.552		0.123	0.000	0.000	0.000	0.760	0.000
November 30, 2006	19:00	0.000	0.000		0.000	0.000	0.000	1.026	0.907	0.124		0.000	0.146	1.130		0.055	0.000	0.000	0.000	0.889	0.000
November 30, 2006	20:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	1.623	0.000
November 30, 2006	21:00	0.000	0.000		0.000	0.000	0.000	0.000	0.009	0.000		0.000	0.000	0.147		0.000	0.000	0.000	0.000	1.920	0.000
November 30, 2006	22:00	0.000	0.000		0.000	0.000	0.000	6.065	19.611	0.793		1.272	1.110	5.001		0.260	3.205	0.000	0.409	2.982	3.189
November 30, 2006	23:00	0.000	0.000		0.000	0.000	0.000	1.991	3.448	0.098		0.000	0.481	2.099		0.336	4.486	0.000	0.388	2.235	17.333
December 1, 2006	0:00	0.000	0.000		0.000	0.000	0.000	0.013	2.371	0.000		0.000	0.220	0.886		0.198	0.994	0.000	0.000	2.675	10.275
December 1, 2006	1:00	0.000	0.010		0.000	0.000	0.000	7.084	15.311	2.244		0.248	1.732	5.279		0.116	12.687	0.000	0.467	5.136	24.056
December 1, 2006	2:00	0.000	0.000		0.000	0.000	0.000	4.976	6.325	0.150		0.000	1.278	2.949		0.373	10.158	0.000	0.000	5.118	46.647
December 1, 2006	3:00	0.000	0.000		0.000	0.000	0.000	0.433	0.118	0.012		0.000	0.290	0.200		0.047	3.965	0.000	0.000	4.143	14.038
December 1, 2006	4:00	0.000	0.109		0.000	0.000	0.000	0.000	6.098	0.000		0.000	0.474	1.262		0.105	7.040	0.000	0.378	4.430	12.441
December 1, 2006	5:00	0.000	0.082		0.000	0.000	0.000	5.892	9.429	0.235		0.000	1.215	4.891		0.425	13.389	0.000	0.121	3.929	47.815
December 1, 2006	6:00	0.000	0.000		0.000	0.092	0.000	1.024	1.129	0.160		0.000	0.408	0.728		0.214	7.099	0.000	0.000	3.810	25.384
December 1, 2006	7:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.185	0.000	0.000	2.470	6.881
December 1, 2006	8:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.024	0.000	0.000	1.782	3.859
December 1, 2006	9:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.035	0.000	0.000	2.206	0.244
December 1, 2006	10:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.001	0.000	0.000	2.105	0.250
December 1, 2006	11:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.001	0.000	0.000	0.660	0.275
December 1, 2006	12:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 1, 2006	13:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 1, 2006	14:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 1, 2006	15:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 1, 2006	16:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 1, 2006	17:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 1, 2006	18:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 1, 2006	19:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 1, 2006	20:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 1, 2006	21:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 1, 2006	22:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 1, 2006	23:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	0:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	1:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	2:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	3:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	4:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	5:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	6:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	7:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	8:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	9:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	10:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	11:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	12:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	13:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	14:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	15:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	16:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	17:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	18:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	19:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	20:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	21:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	22:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 2, 2006	23:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 3, 2006	0:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 3, 2006	1:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
December 3, 2006	2:00	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0		

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Date	Time	CSO #019 Flow	CSO #088 Flow	CSO #105 Flow	CSO #108 # 1 Flow	CSO #108 # 2 Flow	CSO #110 Flow	CSO #117 Flow	CSO #118 Flow	CSO #127 Flow	CSO #132 Flow	CSO #140 Flow	CSO #151 Flow	CSO #152 Flow	CSO #166 Flow	CSO #182 Flow	CSO #189 Flow	CSO #190 Flow	CSO #191 Flow	CSO #210 Flow	CSO #211 Flow
December 31, 2006	0:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
December 31, 2006	1:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
December 31, 2006	2:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
December 31, 2006	3:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
December 31, 2006	4:00	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.009	0.221	0.000	0.000	0.000	0.000	0.000	0.000	0.000
December 31, 2006	5:00	0.000	0.000	0.036	0.000	0.000	0.000	0.000	0.001	0.000	1.533	0.000	0.207	0.395	0.000	0.002	0.000	0.000	0.000	0.000	0.000
December 31, 2006	6:00	0.983	0.000	0.201	0.000	0.000	0.480	1.359	4.143	0.088	2.986	0.000	1.024	3.087	0.000	0.341	0.000	3.831	0.000	1.389	0.000
December 31, 2006	7:00	6.248	0.000	8.897	0.000	0.000	0.683	1.290	3.475	0.083	2.284	0.000	0.889	1.361	0.000	0.619	2.954	0.036	0.000	2.641	0.011
December 31, 2006	8:00	0.602	0.000	5.291	0.000	0.000	0.273	0.036	1.421	0.002	1.268	0.000	0.418	1.272	0.000	0.123	0.352	0.000	0.000	2.686	1.901
December 31, 2006	9:00	0.095	0.000	0.059	0.000	0.000	0.112	0.000	0.156	0.095	0.978	0.000	0.906	2.217	0.000	0.279	0.000	0.000	0.000	2.659	7.201
December 31, 2006	10:00	0.000	0.000	0.003	0.000	0.000	0.273	0.000	0.000	0.000	0.549	0.000	0.310	0.177	0.000	0.000	0.000	0.000	0.000	2.788	4.843
December 31, 2006	11:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.029	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1.793	0.049
December 31, 2006	12:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.043	0.000
December 31, 2006	13:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.939	0.000
December 31, 2006	14:00	0.000	0.000	0.051	0.000	0.000	0.621	0.000	0.003	0.036	2.352	0.000	0.789	1.659	0.000	0.103	0.000	0.000	0.000	2.116	0.000
December 31, 2006	15:00	1.986	0.000	0.036	0.000	0.000	1.871	2.054	6.630	0.118	6.222	0.054	1.381	2.117	0.000	0.116	0.001	0.586	0.000	2.651	0.892
December 31, 2006	16:00	3.519	0.000	0.993	0.000	0.000	0.732	2.871	4.361	0.040	4.429	0.000	0.861	2.134	2.212	0.344	0.086	0.000	0.000	3.285	0.264
December 31, 2006	17:00	0.000	0.000	0.067	0.000	0.000	0.076	0.000	0.000	0.000	0.908	0.000	0.166	0.009	0.018	0.000	0.000	0.000	0.000	2.387	7.168
December 31, 2006	18:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.265	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	2.604	0.964
December 31, 2006	19:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.063	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.992	0.000
December 31, 2006	20:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.990	0.000
December 31, 2006	21:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.593	0.000
December 31, 2006	22:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.154	0.000
December 31, 2006	23:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.172	0.000