

**SECTION 1: SIGNIFICANT ACCOMPLISHMENTS**

MSD has entered into a Consent Decree with the Kentucky Environmental and Public Protection Cabinet 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 first Quarterly Report has been organized in accordance with Paragraph 25 of the Consent Decree. It overviews program elements, issues, and accomplishments relating to Consent Decree compliance activities. The structure for this and future reports is outlined as follows:

- Section 1: Significant Accomplishments – summarizes the high-level milestones achieved during this quarter and other important information.
- Section 2: Current Activities Review – describes the project scope, schedule, and status for past projects and activities that demonstrate the efforts conducted to comply with the Consent Decree.
- Section 3: Performance Overview – an accounting of the current quarter and the cumulative reductions in volume and in number of occurrences of unauthorized discharges from the SSS, CSS, WTPs, and the discharges from MSD’s CSO locations identified in the MFWTP KPDES permit.
- Section 4: Planned Activities – describes the anticipated projects and activities that are scheduled to be performed for continued compliance with the Consent Decree.

MSD has developed and provided internal and external training related to the Consent Decree (CD) to employees and consultants. A revised public outreach program aimed at updating the public on the MSD’s primary business functions with emphasis on wastewater, stormwater, and flood protection has been presented to more than 100 community groups over the past 13 months. A portion of the presentation includes information related to the CD, including potential program direction and anticipated costs.

A directorship-level position that reports directly to MSD’s Executive Director and the MSD Board was created and filled as required in CD Paragraph 22. The process of organizing a Wet Weather Team (WWT) as outlined in CD Paragraph 22 has been initiated. A potential external facilitator has been identified and a preliminary list of participants is being reviewed.

Several projects have been completed thereby eliminating or reducing discharges from the sanitary and combined sewer systems. CSO 209 has been eliminated. Additional completed projects are listed in the next two tables.

CSOs receiving Solids and Floatables Devices

CSO 109	CSO 113	CSO 125	CSO 126
CSO 127	CSO 144	CSO 166	CSO 28
CSO 30	CSO 34	CSO 54	CSO 119
CSO 83	CSO 121	CSO 82	



**MSD**

Louisville and Jefferson County  
Metropolitan Sewer District

**Quarterly Report Number 1  
January 31, 2006**

Sanitary Sewer Overflow (SSO) Abatement Projects

7204 Preston Highway	West Goose Creek Pump Station
Park Ridge Woods Pump Station	Vagabond and Siesta
Melody Pump Station	Cedar Creek Wastewater Treatment Plant
12700 Abbey Lane	Fairway View Pump Station
Olde Copper Pump Station	Running Creek Wastewater Treatment Plant
Savage Drive Pump Station	Woodland Hills Pump Station
English Station Wastewater Treatment Plant	Jarvis Lane Pump Station
Hurstbourne Lane Pump Station	Hite Creek Wastewater Treatment Plant
Shelbyville & Marshall	

**SECTION 2: CURRENT ACTIVITIES REVIEW**

**2.1 APPLICATION AND SCOPE (CONSENT DECREE PARAGRAPHS 19 AND 20)**

MSD initiated and completed an in-house training program for employees related to the Consent Decree (CD). Training sessions included an overview of the Clean Water Act, CD elements, KPDES permit requirements, and the MSD plan for implementation of the CD. Copies of the CD and supporting information were distributed to each employee.

New employee training has been modified to include information regarding this CD. Copies of the CD are provided to new employees.

MSD has conducted one CD training session for the consultant community. Copies of the CD are provided to consultants and contractors performing activities related to the CD.

MSD began a revised public outreach program approximately 13 months ago and has presented an update of our progress and direction to more than 100 community groups. This presentation covers MSD's primary business functions: wastewater, stormwater, and flood protection. The wastewater portion of the presentation includes information related to the CD, including potential program direction and anticipated costs.

**2.2 COMPLIANCE PROGRAM AND SCHEDULES (CD PARAGRAPHS 22-24)**

**2.2.1 Director and Wet Weather Team (CD Paragraph 22)**

MSD created and filled a directorship-level position that reports directly to MSD's Executive Director and the MSD Board as required in CD Paragraph 22 prior to completion of CD negotiations. Brian Bingham holds this position as Regulatory Management Services Director.

The process of organizing a Wet Weather Team (WWT) as outlined in CD Paragraph 22 has been initiated. An external facilitator has been identified and a preliminary list of participants is being reviewed.

**2.2.2 Early Action Plan (CD Paragraph 23)**

**2.2.2.1 Previously Completed Projects**

Capital Improvement Project List (CD Paragraph 23(b)) – The following projects were completed prior to August 12, 2005, and were certified as complete on September 12, 2005, through a separate transmittal:

CSOs Receiving Solids and Floatables Devices

CSO 109	CSO 113	CSO 125	CSO 126
CSO 127	CSO 144	CSO 166	CSO 28
CSO 30	CSO 34	CSO 54	CSO 119
CSO 83	CSO 121	CSO 82	



Sanitary Sewer Overflow (SSO) Abatement Projects

7204 Preston Highway	West Goose Creek Pump Station
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Hurstbourne Lane Pump Station	

**2.2.2.2 Completed Projects – Capital Improvement Project List (CD Paragraph 23(b))**

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

- CSO 209 Elimination – The final phases of this project involved the disconnection of the last remaining residential property service connections tied to this line. These connections were redirected to an adjacent sanitary sewer and the CSO was closed by MSD staff, allowing this previous outfall for CSO 209 to become a stormwater outlet pipe. Completed September 30, 2005, and certified on October 28, 2005.
- Hite Creek Wastewater Treatment Plant (HCWTP) – Improvements to HCWTP include construction of additional clarifiers, renovation of the filters, and installation of backup generators. Completed December 31, 2005, and certified on January 30, 2006.
- Shelbyville and Marshall – The Shelbyville and Marshall project represents one of the five pumped SSO locations in the Beechwood Village area. Previous work included slip-lining the 8" main sewer and some of the longer segments of the public side of the 4" property service connections (PSC). The scope for this project was to perform a demonstration project by MSD staff and consisted of slip-lining the public and private portions of the property service connections. These lines were inspected with mini cameras prior to the work and more than 90% of the PSC lines were found to have severe root problems on the private side of the line. Additionally, main sewer line cleaning and root cutting were performed downstream of the project area. Flow meters have been installed in each direction around the previously pumped manhole to collect data that will be evaluated for project effectiveness.

**2.2.2.3 Current Projects – Capital Improvement Project List (CD Paragraph 23(b))**

The projects listed below are currently in design or construction. Additional information related to planned activities for these projects is provided in Section 4.

- Canoe Lane PS – The Canoe Lane Pump Station is a duplex pump station within the MFWTP system that was constructed in 1970 to serve an area currently including approximately 175 homes. MSD has reported 10 events that resulted in a discharge through the constructed overflow at this location. Initial effort to abate these discharges involved providing additional pumping capacity related to modifications to Pump 2 that were completed in April 2003. The only known discharge that has occurred since these modifications were completed was related to a wet weather event that included 10 to 12

inches of snow and ice melting during more than 3 inches of rainfall. While a significant increase in pumping capacity was realized through the previous improvements, additional improvement may be accomplished through improvements to Pump 1. The draft design report has been presented. This project will be completed by June 30, 2006, in accordance with the Consent Decree.

- **Gunpowder Pump Station** – The Gunpowder Pump Station is fed by four small pump stations and conveys the flow to the Hunting Creek North Wastewater Treatment Plant (HCNWTP). Evaluations of the Gunpowder and the tributary pump stations indicate that the tributary pump stations are capable of conveying more flow than Gunpowder PS can convey. Recommendations have been made to construct additional wet weather storage adjacent to the Prospect Pointe Pump Station and install communications between the Gunpowder and Prospect Pointe Pump Stations. This communication will allow Prospect Pointe to continue normal operations until Gunpowder begins to experience high wet well conditions at which point the Prospect Pointe PS will stop pumping and begin storing flows until it receives communications allowing it to resume pumping. This project will be completed by June 30, 2006, in accordance with the Consent Decree.
- **34<sup>th</sup> Street Pump Station Backup Power** – The 34<sup>th</sup> Street Pump Station is located within the CSS. A power failure during dry weather would likely result in unauthorized discharge of combined sewage to the Ohio River. Site work is nearly complete, the 350kW generator has been delivered to the site, and installation has commenced. This project will be completed by March 31, 2006, in accordance with the Consent Decree.
- **Starkey Pumping Plant (formerly Buchanan Pump Station) Backup Power** – Construction has recently been completed on the Starkey Pumping Plant. This project was not included in the Capital Project List of the Consent Decree; however, installation of backup power is required by the Consent Decree. The backup power project is currently in the construction phase. Site work is proceeding and the 1,250kW generator has been ordered. This project will be completed by June 30, 2006, in accordance with the Consent Decree.
- **CSO 87 Elimination** – The CSO 87 elimination project involves evaluation and potential 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. The evaluation phase has been initiated for this project. This project will be completed by September 30, 2006, in accordance with the Consent Decree.
- **CSO 147 Elimination** – The CSO 147 elimination project will require the disconnection of approximately 75% of the downspouts from the 233 homes 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. The evaluation and design phases have been started. This project will be completed by September 30, 2007, in accordance with the Consent Decree.

- Real Time Control System, Initial Implementation Phase – The initial implementation phase of Real Time Control (RTC) is estimated to achieve a minimum of 10% reduction of the average annual overflow (AAOV) from the Combined Sewer System (CSS). The RTC software has been configured and installed at the Computer Room at Morris Forman Wastewater Treatment Plant (MFWTP). System modifications are ongoing at the following locations: Southeastern Diversion, Nightingale Pump Station, Southwestern Pump Station Sluice Gate Chamber, Sneads Branch In-line Storage site, and the Upper Dry Run Trunk System storage basins (Brady Lake and Executive Inn). Construction is 90% complete and local station programming is 80% complete. This project will be completed by August 12, 2006, in accordance with the Consent Decree.

#### **2.2.2.4 Nine Minimum Controls (NMC) Compliance (CD Paragraph 23(a))**

MSD is currently preparing a report to document the compliance status and proposed activities in accordance with the "Guidance for Nine Minimum Controls." The report will be submitted by February 12, 2006, in accordance with the Consent Decree.

#### **2.2.2.5 Capacity, Management, Operations, and Maintenance (CMOM) Programs Self-Assessment (CD Paragraph 23(c))**

MSD is completing the self-assessment as outlined in the CD. This assessment is currently undergoing an internal review and finalization of the proposed program elements and associated implementation schedules. The CMOM Self-Assessment will be submitted by February 12, 2006, in accordance with the Consent Decree.

#### **2.2.2.6 Sewer Overflow Response Protocol (SORP) (CD Paragraph 23(d))**

MSD is enhancing the pre- August 12, 2005, version of its SORP. This document is currently undergoing a review and finalization of revised and expanded protocols. The SORP will be submitted by February 12, 2006, in accordance with the Consent Decree.

#### **2.2.3 Discharge Abatement Plans (CD Paragraph 24)**

##### **2.2.3.1 Sanitary Sewer Discharge Plan (CD Paragraph 24(a))**

- Updated Sanitary Sewer Overflow Plan (SSOP) (CD Paragraph 24(a)(1)) – MSD is currently finalizing the updated SSOP. This plan includes an overview of the MSD program and efforts taken to reduce/eliminate discharges from the sanitary sewer system. This report is currently undergoing an internal review and finalization list of the proposed improvements to be accomplished by December 31, 2008. The updated SSOP will be submitted by February 12, 2006, in accordance with the Consent Decree.
- Interim Sanitary Sewer Discharge Plan (SSDP) (CD Paragraph 24(a)(2)) – MSD has continued to review and analyze options and problems associated with the Hikes Point, Beechwood Village, Highgate Springs Pump Station, and Southeastern Diversion to determine if any of the required or prerequisite projects for these areas could be included in the updated SSOP. MSD will submit an interim SSDP by September 30, 2007, in accordance with the Consent Decree.



**2.2.3.1 Combined Sewer Discharge Plan (CD Paragraph 24(b))**

- Interim CSO Long Term Control Plan (LTCP) Update (CD Paragraph 24(b)(1) – MSD is currently finalizing the interim CSO LTCP. This plan includes an overview of the MSD program and efforts taken to reduce/eliminate discharges from the CSS. An internal review is being conducted. The list of proposed projects is being reviewed and finalized for proposed improvements to be accomplished by December 31, 2008. The interim CSO LTCP will be submitted by February 12, 2006, in accordance with the Consent Decree.
- Final CSO LTCP (CD Paragraph 24(b)(2) – Efforts associated with the final LTCP are 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 CD Paragraph 24(b)(2)(B).

## **SECTION 3: PERFORMANCE OVERVIEW**

### **3.1 DRY WEATHER DISCHARGES**

Existing tracking and reporting procedures are being evaluated and revised as a parallel effort to the preparation of the Sewer Overflow Response Protocols (SORP). In future reports this section will contain an overview of the measures implemented to reduce or eliminate dry weather discharges from the SSS and CSS.

### **3.2 WET WEATHER DISCHARGES**

In future reports this section will contain an overview of the measures implemented to reduce or eliminate wet weather discharges from the SSS and CSS. This section will expand as modeling is completed, allowing quarterly reporting of Annual Average Overflow Volume (AAOV) for the permitted CSOs as outlined in the Interim CSO Long Term Control Plan.



## **SECTION 4: PLANNED ACTIVITIES**

### **4.1 SANITARY SEWER SYSTEM**

This section contains an overview of the planned or committed programmatic and capital design and construction activities in the planning, design, easement acquisition, or construction phase for the period of January 1, 2006, through March 31, 2006. Primavera P3 project schedules are included in the Appendix.

Significant issues identified within the SSS are capacity, mechanical reliability, backup power, system defects, and illicit connections. Numerous projects are planned or currently underway for continued improvement of the system to collect and convey wastewater flow with reduced I/I.

#### **4.1.1 Programmatic and Planning Activities**

The programmatic and planning activities projected for completion during the next quarter are detailed below. Additional information related to these activities is provided in Section 2 and project schedules are provided in the Appendix.

- Capacity, Management, Operations, and Maintenance (CMOM) Programs Self-Assessment (CD Paragraph 23(c)) – The self-assessment will be completed, including implementation schedules, as outlined in the CD. The CMOM Self-Assessment will be submitted by February 12, 2006, in accordance with the Consent Decree.
- Sewer Overflow Response Protocol (SORP) (CD Paragraph 23(d)) – The document will be completed, including revised and expanded protocols. The SORP will be submitted by February 12, 2006, in accordance with the Consent Decree.
- Updated Sanitary Sewer Overflow Plan (SSOP) (CD Paragraph 24(a)(1)) – The updated SSOP will be completed. This plan includes an overview of the MSD program, efforts taken to reduce/eliminate discharges from the sanitary sewer system, and the list of proposed improvements to be accomplished by December 31, 2008. The updated SSOP will be submitted by February 12, 2006, in accordance with the Consent Decree.
- Interim Sanitary Sewer Discharge Plan (SSDP) (CD Paragraph 24(a)(2)) – MSD will continue to review and analyze options and problems associated with Hikes Point, Beechwood Village, Highgate Springs Pump Station, and Southeastern Diversion. MSD will submit an interim SSDP by September 30, 2007, in accordance with the Consent Decree.

#### **4.1.2 Design, Construction, and Implementation Activities**

The projects listed below are currently in the design or construction phase. The specific activities listed are projected for completion during the next quarter. Additional information related to these planned activities is provided in Section 2 and project schedules are provided in the Appendix.

- Canoe Lane PS – Recommendations will be finalized and project construction and implementation will be initiated. An evaluation regarding actions required to plug the constructed overflow will be completed. The recommendations will specify the required modifications to Pump Number 1. This project will be completed by June 30, 2006, in accordance with the Consent Decree.



- Gunpowder Pump Station – MSD will initiate design to construct additional wet weather storage adjacent to the Prospect Pointe Pump Station and install communications between the Gunpowder and Prospect Pointe Pump Stations. This project will be completed by June 30, 2006, in accordance with the Consent Decree.

## **4.2 COMBINED SEWER SYSTEM**

### **4.2.1 Programmatic and Planning Activities**

The programmatic and planning activities projected for completion during the next quarter are detailed below. Additional information related to these activities is provided in Section 2 and project schedules are provided in the Appendix.

- Nine Minimum Controls (NMC) Compliance Report (CD Paragraph 23(a)) – The report will be completed to document compliance status and proposed activities in accordance with the “Guidance for Nine Minimum Controls.” The report will be submitted on or before February 12, 2006, in accordance with the Consent Decree.
- Sewer Overflow Response Protocol (SORP) (CD Paragraph 23(d)) – The document will be completed, including revised and expanded protocols. The SORP will be submitted by February 12, 2006, in accordance with the Consent Decree.
- Interim CSO Long Term Control Plan (LTCP) Update (CD Paragraph 24(b)(1)) – MSD will complete the interim CSO LTCP. This plan includes an overview of the MSD program, efforts taken to reduce/eliminate discharges from the CSS, and the list of proposed improvements to be accomplished by December 31, 2008. The interim CSO LTCP will be submitted by February 12, 2006, in accordance with the Consent Decree.

### **4.1.2 Design, Construction, and Implementation Activities**

The projects listed below are currently in the design or construction phase. The specific activities listed are projected for completion during the next quarter. Additional information related to these planned activities is provided in Section 2 and project schedules are provided in the Appendix.

- 34<sup>th</sup> Street Pump Station Backup Power – The 34<sup>th</sup> Street Pump Station is located within the CSS. The 350kW generator will be installed. This project will be completed by March 31, 2006, in accordance with the Consent Decree.
- Starkey Pumping Plant (formerly Buchanan Pump Station) Backup Power – Site preparation work will continue for placement of the 1,250kW generator upon arrival. This project will be completed by June 30, 2006, in accordance with the Consent Decree.
- CSO 87 Elimination – The respective evaluation and design phases will be completed. This project will be completed by September 30, 2006, in accordance with the Consent Decree.
- CSO 147 Elimination – The respective evaluation and design phases will be continued. Bid documents will be prepared for the first phase of downspout disconnection projects. This project will be completed by September 30, 2007, in accordance with the Consent Decree.
- Real Time Control System, Initial Implementation Phase – Construction and central/local station programming will be substantially completed. This project will be completed by August 12, 2006, in accordance with the Consent Decree.

## **APPENDIX**

### **Primavera P3 Schedules**

Note: The attached project schedules were prepared in Primavera and are utilized to manage and track projects as part of MSD Project Controls efforts. There are project naming discrepancies between the Consent Decree project titles and internal MSD project titles. The following list provides the Consent Decree project title and the MSD internal project title. Project schedules are included for active and recently completed projects. Many of the projects completed prior to August 12, 2005 are not included as they have been archived. Project schedules are arranged alphabetically based on MSD Project Titles.

Consent Decree Project Title

34<sup>th</sup> Street Pump Station Backup Power  
Buchanan Street Pump Station  
Canoe Lane Pump Station  
CSO 87 Elimination  
CSO 121 Solids and Floatables  
CSO 125 Solids and Floatables  
CSO 144 Solids and Floatables  
CSO 147 Elimination  
Gunpowder Pump Station  
Hite Creek WTP  
Hurstbourne Lane PS  
Shelbyville & Marshall

Internal MSD Project Title

34<sup>th</sup> & Buchanan St. Backup Power  
34<sup>th</sup> & Buchanan St. Backup Power  
Canoe Lane PS SSO  
CSO #87 Separation Project  
CSO 121 S&F Removal Structure  
BGC S&F Projects @ CSOs 125 & 144  
BGC S&F Projects @ CSOs 125 & 144  
CSO 147 Evaluation  
Gunpowder PS SSO Abatement  
Hite Creek WTP Expansion  
Hurstbourne Lane PS  
Beechwood Village SSO Abatement