SD1
Managing Northern Kentucky's
Wastewater and Storm Water

July 30, 2012

Director of the Division of Enforcement
Department for Environmental Protection
300 Fair Oaks Lane
Frankfort, KY 40601

Chief, Environmental Enforcement Section
Environmental and Natural Resources Division
U.S. Department of Justice
601 D street NW
Washington, DC 20005
DOJ Case No. 90-5-1-1-08591

Chief, Water Program Enforcement Branch
Water Management Division
U.S. Environmental Protection Agency, Region 4
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303

Re: Consent Decree Case No. 2:05-cv-00199-WOB

To Whom It May Concern:

Pursuant to the above-referenced Consent Decree, Sanitation District No. 1 (SD1) is required to submit quarterly reports that demonstrate SD1's compliance with the Consent Decree:

> **42. Quarterly Reports**. The District shall submit to the Cabinet/EPA a quarterly report that describes the District's progress in complying with this Consent Decree for the previous quarter no later than thirty days after the end of each calendar quarter. The first such report shall be submitted to the Cabinet/EPA no later than thirty days after the second full quarter after entry of this Consent Decree.

Information contained within the enclosed Quarterly Report describes SD1's compliance with Consent Decree Case No. 2:05-cv-00199-WOB for the period of April 1, 2012 through June 30, 2012. This report also contains an outlook for the upcoming calendar quarter period of July 1, 2012 through September 30, 2012.

A certification as required by the Consent Decree is also enclosed (Consent Decree paragraph 38).

I am confident in the integrity of the enclosed document, and I am certain that its content not only satisfies regulatory requirements, but also helps further the mission and vision of SD1 by demonstrating aggressive, proactive, achievable measures underway in Northern Kentucky to protect water resources and enhance the quality of life.

If you have any questions or concerns, do not hesitate to contact me at 859-578-7465 or by e-mail at drager@sd1.org.

Best regards,

David E. Rager
Executive Director

DER/jlh
Enclosures

Sanitation District No. 1
July 30, 2012

Consent Decree
Quarterly Report No. 19
(April 1, 2012 through June 30, 2012)

SD1
Managing Northern Kentucky's
Wastewater and Storm Water

CERTIFICATION

Consent Decree Quarterly Report No. 19
Consent Decree Case No. 2:05-cv-00199-WOB

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

David E. Rager
Executive Director

7/27/2012
Date

COMMONWEALTH OF KENTUCKY

)ss.

COUNTY OF Kenton

The foregoing instrument was acknowledged before me this 27th day of July, 2012 by David E. Rager, Executive Director of Sanitation District No. 1.

Jenna Prather
NOTARY PUBLIC #465864

Kenton County, Kentucky

My commission expires: 5/3/2016

1045 Eaton Drive • Ft. Wright, KY 41017 • phone 859-578-7450 • fax 859-331-2436 • www.sd1.org

CONSENT DECREE
QUARTERLY REPORT NO. 19

July 30, 2012

Sanitation District No. 1
1045 Eaton Drive
Ft. Wright, KY 41017

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LIST OF ACRONYMS AND ABBREVIATIONS

Cabinet	Kentucky Energy and Environment Cabinet
CSO	Combined Sewer Overflow
EPA	U.S. Environmental Protection Agency
SD1	Sanitation District No. 1
SSO	Sanitary Sewer Overflow

SECTION 1. INTRODUCTION

1.1 Purpose

This Quarterly Report is submitted to fulfill the requirements of Sanitation District No. 1's (SD1) Consent Decree as entered on April 18, 2007. This Consent Decree is a legal agreement with the U.S. Environmental Protection Agency (EPA) and the Kentucky Energy and Environment Cabinet (Cabinet). The purpose of the Consent Decree is to address sanitary sewer overflows (SSOs) in SD1's sanitary sewer system and combined sewer overflows (CSOs) in the combined sewer system in an effort to improve water quality throughout SD1's service area. Specifically, Section V Reporting Requirements, states that:

> **42. Quarterly Reports.** The District shall submit to the Cabinet/EPA a quarterly report that describes the District's progress in complying with this Consent Decree for the previous quarter no later than thirty days after the end of each calendar quarter.

1.2 Report Period

Information contained within this report describes SD1's compliance with Consent Decree Case No. 2:05-cv-00199-WOB for the period of April 1, 2012 through June 30, 2012. This report also contains an outlook for the upcoming calendar quarter period of July 1, 2012 through September 30, 2012.

1.3 Consent Decree Compliance Schedule

A comprehensive compliance schedule for meeting the requirements of the Consent Decree can be found in Appendix A. Additionally, a more detailed listing of the projects and activities conducted to comply with the requirements of the Consent Decree, including schedules, project updates for the current reporting period, and planned activity for the subsequent quarter can be found in Appendix B. SD1 has also incorporated the status of the projects proposed in the first five years of the revised Draft Integrated Watershed Plan, which was submitted on March 31, 2011, into Appendix B.

SECTION 2. OVERFLOW DATA

This section of the Quarterly Report presents SD1's estimates of overflow activity in the collection systems. While SD1 has a long history of comprehensive data collection and inspection programs, we have been working over the last several years to realign and optimize our existing programs, originally implemented to meet pre-Consent Decree needs, to fit into the framework of the quarterly reports. This realignment continues to

be improved and optimized as part of SD1's wet-weather management activities, and future reports will continue to incorporate expanded overflow metrics based on more quantitative measures as they become available.

Over the last quarter, SD1 has made further progress with developing standardized reports in its computerized maintenance management system, Lucity (previously known as GBA Master Series or gbaMS), to help support the specific reporting needs for these quarterly reports and to better utilize the collected data to track system performance. SD1 is continuing to fine-tune and optimize its tracking and reporting capabilities to increase efficiency in its work. SD1 has been using Lucity since 1999 and has added several modules and applications in response to evolving needs over the years. As there are now new uses for this tool after entering into the Consent Decree, SD1 is undergoing adjustments to both the data input and output processes for Lucity to generate more precise data for use in these quarterly reports. SD1 continues to move forward with structuring its reporting procedures, and enhancing and improving data input and output quality assurance and quality control processes.

Overflow Categories

For reporting and system performance measurement purposes, SD1 has categorized sewer overflows throughout the service area into five distinct categories:

- *SSOs Due to Wet Weather Capacity Issues* – Recurring and inactive overflows from SD1's sanitary sewer system due to a lack of capacity during wet weather. This category includes wet-weather discharges at pump stations that may or may not have a constructed bypass. Overflows are determined to be "recurring" if they have been observed to overflow twice in a running twelve month period. Overflows are determined to be "inactive" until they occur more than once in a running twelve month period. Inactive overflows are generally under investigation as suspected or predicted hydraulic model overflow points in the collection system.

- *SSOs Due to Operational Issues* – Overflows from SD1's sanitary sewer system, including pump stations that are not a result of wet weather capacity issues. Many of these are one-time, dry-weather occurrences caused by temporary system issues that are investigated and corrected as soon as practicable.

- *Wet Weather CSOs* – Wet-weather discharges from the combined sewer system.

- *Dry Weather CSOs* – Dry-weather discharges from the combined sewer system.

- *Building Backups* – The release of raw sewage from a service lateral into a building in SD1's service area. Building backups can be caused by several factors, such as constrained capacity during wet weather or a blockage or collapse in the service lateral or main line, and can be determined to be either SD1's responsibility or the building owner's responsibility.

Quantitative Estimates

SD1 uses three general methods for developing quantitative estimates of overflow activity:

- Field inspections during or shortly after wet-weather events to identify activations. This inspection program has been in place since 2005 and is expanded as warranted for ongoing reporting and sewer overflow response cleanup. SD1's wet weather crew continues to perform routine inspections before, during and after rain events at prioritized recurring, inactive and suspected SSO locations to understand and verify overflow activity and the need for sewer overflow response cleanup. This is part of SD1's ongoing effort to characterize and verify overflows throughout the collection systems and ensure they are categorized accurately and cleaned up after rain events. Proper characterization of overflows ensures that the hydraulic model that SD1 utilizes maintains and improves upon its accuracy and will help identify the most appropriate and effective solutions to be included in SD1's Watershed Plans.

- Simple hydraulic estimating using Manning's Gravity Flow and Pipe Calculation to report overflows from pump stations with constructed bypasses, and industry standard volume estimations techniques and calculations are used for spills or for any witnessed overflow from a manhole. The only exception to this calculation methodology is at the Lakeview Pump Station, which has a metered bypass pipe. This method has been used historically for reporting purposes, and its results are included in this Quarterly Report.

- Estimates developed from SD1's system-wide collection system models. SD1 completed a year-long flow monitoring program in 2008, consisting of more than 245 flow meters and 45 rain gauges installed throughout the combined and separate sewer systems, that was utilized to update the calibration and validation of the system-wide hydraulic models. This calibration was undertaken to provide a model network that could confidently be used as an accurate tool in preparing SD1's Watershed Plans. In addition to the use of the models for planning future capital improvements, the models are also being used to provide information about the current performance of SD1's system. Based on the results of the model calibration and verification, SD1 has developed a highly calibrated hydraulic model that provides an accurate representation of the sewer system. This tool allows SD1 to have confidence in the results of the overflow volumes from the sewer system and to provide estimates of the overflow locations within the system for quarterly reporting purposes. In addition, the model is updated on a quarterly and annual basis to incorporate the latest data gathered from ongoing targeted flow monitoring, sewer inspections, completed projects and SSO inspections and characterization. This process ensures that the model is kept up-to-date and accurately reflects the current state of the collection system. This approach is consistent with SD1's commitment to provide the best available information on overflow activity within these reports.

For this submittal, SD1 has collected rainfall data from a series of 18 rain gauges located across the system and simulated the rainfall that occurred April 1, 2012 through June 30, 2012 within the hydraulic models. The results of the model simulations have been summarized and included as an estimate of the frequency and total volume of the overflow locations within SD1's system for this period. For the modeled locations, these results are not a summary of observed or confirmed activations but are a confident estimate of the overflow statistics based on the calibrated and verified model.

The modeled overflow activity in this submittal does not reflect system improvements related to the redirection of flow to the new Western Regional Water Reclamation Facility, which was previously going to the Dry Creek Wastewater Treatment Plant. The Western Regional Water Reclamation Facility accepted its first flows on April 23, 2012 and is currently treating approximately 3 to 4 million gallons per day, with a projected increase to 6 million gallons per day by the end of the summer. As the final phases of the western regional collection system improvement projects are completed, the system inventory will be fully updated and the hydraulic model will be adjusted to account for the redirected flow. SD1 anticipates the model to be fully calibrated for the submittal of Quarterly Report No. 20, due on October 30, 2012.

As noted in earlier quarterly reports and the Sewer Overflow Response Plan, SD1 is actively realigning and optimizing their field activities and this process includes continually performing field inspections to verify the model results against actual field conditions through monitoring and observation. Over time, these field verifications will continue to improve the model as appropriate to better reflect any discrepancies found with observed conditions. It is an ongoing and continual process to refine the modeling tools in order to provide the most accurate information possible about overflow locations, including future model updates to incorporate system improvements.

Precipitation Data

Rainfall statistics are an important component of overflow reporting, as rainfall conditions represent an uncontrolled variable impacting SD1's wet weather CSO and SSO activity. Quarterly CSO and SSO activations and volumes will constantly vary over time, with or without system improvements, due to natural variations in rainfall patterns and the associated groundwater and antecedent moisture conditions. Over time, SD1 expects system improvements to show a clear trend in reduced overflow activity. However, reviewing overflow reports for any individual quarter relative to the previous quarter also requires careful review of the rainfall associated with each quarter, in order to understand the relative impact of rainfall patterns. For this reason, storm event summaries are included in all overflow reporting submittals. The data in Table 2.1 is from the Cincinnati-Northern Kentucky International Airport rain gauge maintained by the National Weather Service (CVG).

Table 2.1 Summary of Storm Events
(April 1, 2012 – June 30, 2012)

Month	Approximate # of Storm Events[1]	Rainfall (in)
April	9	3.57
May	7	4.38
June	3	1.09
Total	**19**	**9.04**

[1] *A storm event is defined as at least 0.01" of rain with a minimum inter-event time of 7 hours.*

The remainder of this section reports overflows that occurred throughout SD1's service area during the period of April 1, 2012 through June 30, 2012. A cumulative accounting of SD1's overflow activity from January 2008 through the current reporting period and an annual comparison of the 2008 through 2011 overflow activity can be found in Appendix C.

2.1 SSOs Due to Wet Weather Capacity Issues

As previously described, this category includes recurring and inactive overflows from SD1's sanitary sewer system due to lack of capacity during wet weather. This includes wet-weather discharges at pump stations that may or may not have a constructed bypass. Overflows are determined to be "recurring" if they have been observed to overflow twice in a running twelve month period. Overflows are determined to be "inactive" until they have been observed to overflow more than once in a running twelve month period. Inactive overflows are generally under investigation as suspected or predicted hydraulic model overflow points in the collection system.

Recurring Wet Weather SSOs

Modeled activation and volume statistics for the 183 recurring wet weather SSO locations for the current reporting period can be found in Appendix D. Updates to the locations of SD1's recurring SSOs are reported on an annual basis to include any revisions based upon the field inspection and hydraulic modeling programs. Appendix E of SD1's April 2012 Quarterly Report included revisions to the recurring SSO list. Therefore, any revisions to the SSO list documented after April 2012 will be published in the April 2013 Quarterly Report.

Recurring Pump Station Overflows

In addition to the 183 recurring wet weather SSOs, there are also 14 pump stations identified in the Consent Decree that have historically documented recurring wet weather capacity issues. Table 2.2 lists each of the 14 pump stations identified in Exhibit E of the Consent Decree and demonstrates their wet weather SSO occurrences during the current reporting period.

One of the 14 pump stations listed in the Consent Decree discharged a total of 2 times due to lack of capacity during the current reporting period, with an estimated overflow volume of 787,500 gallons.

As previously mentioned, SD1 uses Manning's Gravity Flow and Pipe Calculation to estimate discharge volume from pump stations. The only exception to this calculation methodology is at the Lakeview Pump Station, which has a metered bypass pipe.

Table 2.2 Discharges from Consent Decree Pump Stations Due to Lack of Capacity during Wet Weather
(April 1, 2012 – June 30, 2012)

Name of Pump Station	Number of Wet-Weather Related Discharge Occurrences	Total Estimated Volume (gallons)
Allen-Fork	0	0
Crestview	0	0
Kentucky Aire	0	0
Lakeview	2	787,500
TOTAL	**2**	**787,500**
Alex-Licking	Overflows Eliminated	
Harrison Harbor		
Highland Acres		
Riley Road		
Ripple Creek		
South Hampton		
South Park		
Sunset		
Taylorsport		
Union		

In addition to tracking the recurring wet weather SSOs at the pump stations listed in the Consent Decree, SD1 continuously monitors all pump stations throughout the service area for recurring wet weather capacity issues. During the current reporting period, the Highland Heights Pump Station was the only pump station with a documented recurring wet weather capacity issue that discharged. The pump station had a total of 9 occurrences with a total estimated volume of 126,575 gallons.

Inactive Wet Weather SSOs

During the current reporting period, there were no additional structures observed overflowing during wet weather due to lack of capacity, including pump stations and structures in the collection system under investigation as suspected or predicted hydraulic model overflow points.

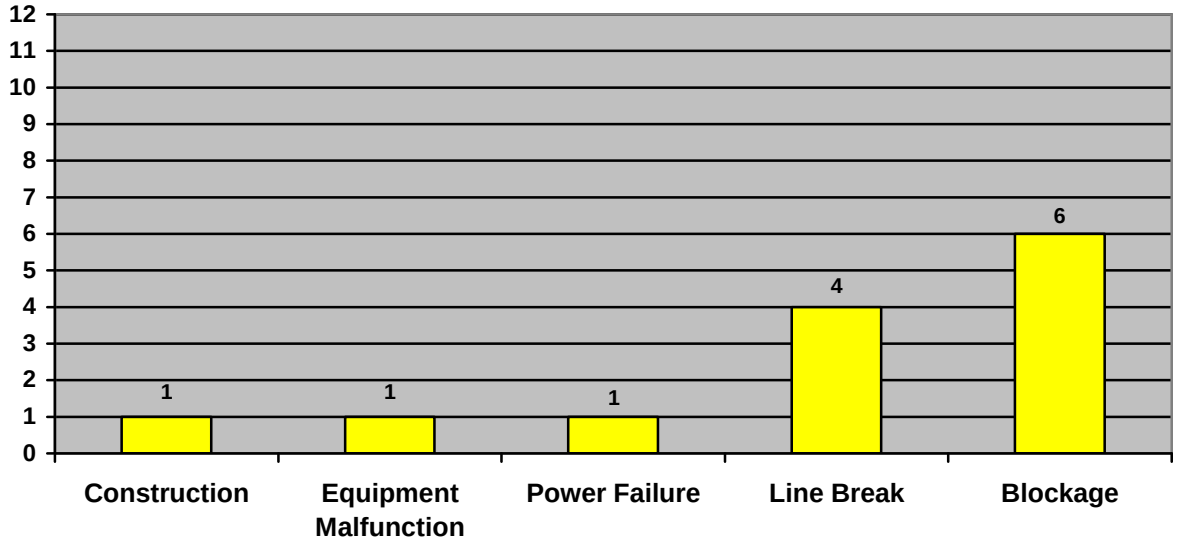
2.2 SSOs Due to Operational Issues

As previously mentioned, this category of overflows includes discharges from SD1's sanitary sewer system that are not a result of wet weather capacity issues. Many of these are one-time, dry-weather occurrences caused by temporary system issues that are investigated and corrected as soon as practicable.

During the current reporting period, there were a total of 13 SSOs due to operational issues throughout SD1's service area with a total estimated overflow volume of 52,100 gallons.

The 13 overflows reported in this category can be broken down by the primary causes demonstrated in Figure 2.1. Of the 6 SSOs caused by blockages, 5 were blockages of debris and one was a blockage of grease.

Figure 2.1 Causes of Operational Issues Resulting in SSOs
(April 1, 2012 – June 30, 2012)



These SSOs were immediately acted upon and the problems repaired. The sewers where blockages occurred were put into the cleaning program to be inspected and cleaned as-needed in the next six months as part of the Continuous Sewer Assessment Program, which also provides appropriate next actions to permanently address the cause of the blockages. All overflow events are recorded in Lucity and are periodically reviewed to identify if any trends or localized problem areas (such as past overflows or proximity to recurring SSOs) exist that warrant the need for a larger-scale inspection or rehabilitation/ repair project. Overflows due to blockages of grease are further evaluated as part of our Fat, Oil, and Grease Program.

2.3 Wet Weather CSOs

Included in Appendix E are the modeled activation and volume statistics for SD1's 94 CSOs. This data was generated from the hydraulic modeling program previously described in Section 2.1.

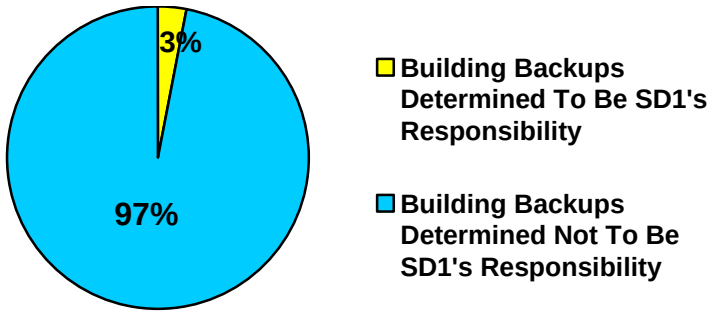
2.4 Dry Weather CSOs

During the current reporting period, there was one dry weather discharge from the combined sewer system. The dry weather CSO happened on June 19, 2012 at the Kennedy Street CSO diversion, which is also a gatewell for the flood station (Structure ID# 1440146), with a total estimated discharge volume of 400 gallons. An inspection of the dry weather diversion pipe revealed a blockage of debris caused by a flat grade. The debris was captured by netting at the outfall and 18 linear feet of debris was jetted out of the pipe. The dry weather diversion pipe has been placed on a more frequent cleaning schedule to prevent accumulation of debris in the future, and the diversion structure will continue to be inspected weekly.

2.5 Building Backups

During the current reporting period, there were approximately 94 building backups throughout SD1's service area. Of these 94**,** approximately 3 were determined to be SD1's responsibility and 91 were determined not to be the responsibility of SD1, as shown in Figure 2.2. The backups determined not to be the responsibility of SD1 were due to causes such as breaks and blockages in private service laterals. The three building backups determined to be SD1's responsibility were caused by blockages – 1 of debris, 1 of roots, and 1 of grease.

Figure 2.2 Building Backups: Public vs. Private
(April 1, 2012 – June 30, 2012)



The sewers where blockages occurred were put into the cleaning program to be inspected and cleaned as-needed in the next six months as part of the Continuous Sewer Assessment Program, which also provides appropriate next actions to permanently address the cause of the blockages. All building backups are recorded in Lucity and are periodically reviewed to identify if any trends or localized problem areas

(such as past overflows or proximity to recurring SSOs) exist that warrant the need for a larger-scale inspection or rehabilitation/ repair project. Building backups due to blockages of grease are further evaluated as part of our Fat, Oil, and Grease Program.

APPENDIX A:

Consent Decree Compliance Schedule

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Consent Decree Compliance Schedule

	CONSENT DECREE ACTIVITY	PERCENT COMPLETE	DUE DATE	DATE OF COMPLETION
	ASSESSED STIPULATED PENALTY			
✓	$14,000 for 9 DWOs, between April 18, 2009 through June 30, 2010	100%	1/9/2011	12/21/2010
	CIVIL PENALTY			
✓	Pay Civil Penalties to EPPC and US EPA	100%	06/18/07	06/18/07
	CMOM PROGRAM REQUIREMENTS – 2007 through 2014			
✓	Submit CMOM Program Self-Assessment	100%	10/18/07	10/17/07
✓	Submit Grease Control Program	100%	10/18/07	09/17/07
✓	Submit Pump Station Backup Power Plan	100%	04/18/08	12/14/07
✓	Submit Sewer Overflow Response Plan (SORP)	100%	10/18/07	10/09/07
Submit CMOM Annual Report				
✓	CMOM Annual Report 1	100%	12/31/07	12/28/07
✓	CMOM Annual Report 2	100%	12/31/08	12/19/08
✓	CMOM Annual Report 3	100%	12/31/09	12/18/09
✓	CMOM Annual Report 4	100%	12/31/10	12/21/10
✓	CMOM Annual Report 5	100%	12/31/11	12/21/11
	CMOM Annual Report 6	0%	12/31/12	
	CMOM Annual Report 7	0%	12/31/13	
	CMOM Annual Report 8	0%	12/31/14	
Phased Grease Control Implementation				
✓	Phase 1 Tasks	100%	01/08/09	01/08/09
✓	Phase 2 Tasks	100%	01/08/10	01/08/10
✓	Phase 3 Tasks	100%	01/08/11	01/08/11
✓	Phase 4 Tasks / Full Implementation	100%	01/08/12	12/31/11
Complete Pump Station Backup Power Projects (110 Total)		65%	12/31/2015	
Complete SORP Annual Review				
✓	SORP Annual Review 1	100%	05/14/09	07/10/09
✓	SORP Annual Review 2	100%	11/10/10	10/01/10
✓	SORP Annual Review 3	100%	11/10/11	11/10/11
	SORP Annual Review 4	0%	11/10/12	
	SORP Annual Review 5	0%	11/10/13	
	SORP Annual Review 6	0%	11/10/14	
	INITIAL WATERSHED PROJECTS			
	Complete Initial Watershed Projects (51 Total)	96%	12/31/14	
Submit Initial Watershed Projects Annual Report				
✓	Initial Watershed Projects Annual Report 1	100%	04/18/08	04/08/08
✓	Initial Watershed Projects Annual Report 2	100%	06/07/09	06/05/09
✓	Initial Watershed Projects Annual Report 3	100%	06/07/10	06/04/10
✓	Initial Watershed Projects Annual Report 4	100%	06/07/11	06/07/11
✓	Initial Watershed Projects Annual Report 5	100%	06/07/12	06/07/12
	Initial Watershed Projects Annual Report 6	0%	06/07/13	
	Initial Watershed Projects Annual Report 7	0%	06/07/14	
	NMC PROGRAM REQUIREMENTS – 2007 through 2014			
✓	Submit NMC Documentation of Compliance	100%	04/18/08	03/12/08
✓	Complete Additional NMC Compliance Activities (51 Total)	100%	04/18/09	4/18/09[1]
Submit NMC Annual Report				
✓	NMC Annual Compliance Report 1	100%	09/04/09	05/11/09
✓	NMC Annual Compliance Report 2	100%	09/04/10	06/04/10
✓	NMC Annual Compliance Report 3	100%	09/04/11	06/21/11
✓	NMC Annual Compliance Report 4	100%	09/04/12	07/02/12
	NMC Annual Compliance Report 5	0%	09/04/13	
	NMC Annual Compliance Report 6	0%	09/04/14	

Consent Decree Compliance Schedule

	CONSENT DECREE ACTIVITY	PERCENT COMPLETE	DUE DATE	DATE OF COMPLETION
	PUBLIC PARTICIPATION			
✓	Watershed Summit	100%	N/A	08/30/07
✓	Watershed Community Council Meeting 1	100%	N/A	11/27/07
✓	Watershed Community Council Meeting 2	100%	N/A	02/26/08
✓	Watershed Community Council Meeting 3	100%	N/A	05/20/08
✓	Watershed Community Council Meeting 4	100%	N/A	08/19/08
✓	Watershed Community Council Meeting 5	100%	N/A	11/18/08
✓	Watershed Community Council Meeting 6	100%	N/A	02/17/09
✓	Watershed Community Council Meeting 7	100%	N/A	05/20/10
✓	Watershed Community Council Meeting 8	100%	N/A	11/03/10
	PUMP STATION OVERFLOW ELIMINATION PLAN (PSOEP) – 2007 through 2014			
✓	Submit PSOEP	100%	10/18/07	09/18/07
Submit PSOEP Annual Report				
✓	PSOEP Annual Report 1	100%	05/14/09	05/11/09
✓	PSOEP Annual Report 2	100%	05/14/10	05/14/10
✓	PSOEP Annual Report 3	100%	05/14/11	05/13/11
✓	PSOEP Annual Report 4	100%	05/14/12	05/14/12
	PSOEP Annual Report 5	0%	05/14/13	
	PSOEP Annual Report 6	0%	05/14/14	
	REPORTING – 2007 through 2014			
Submit Quarterly Report				
✓	Submit Quarterly Report 1	100%	01/30/08	01/30/08
✓	Submit Quarterly Report 2	100%	04/30/08	04/30/08
✓	Submit Quarterly Report 3	100%	07/30/08	07/30/08
✓	Submit Quarterly Report 4	100%	10/30/08	10/30/08
✓	Submit Quarterly Report 5	100%	01/30/09	01/30/09
✓	Submit Quarterly Report 6	100%	04/30/09	04/30/09
✓	Submit Quarterly Report 7	100%	07/30/09	07/30/09
✓	Submit Quarterly Report 8	100%	10/30/09	10/30/09
✓	Submit Quarterly Report 9	100%	01/30/10	01/29/10
✓	Submit Quarterly Report 10	100%	04/30/10	04/30/10
✓	Submit Quarterly Report 11	100%	07/30/10	07/30/10
✓	Submit Quarterly Report 12	100%	10/30/10	10/29/10
✓	Submit Quarterly Report 13	100%	01/30/11	01/28/11
✓	Submit Quarterly Report 14	100%	04/30/11	04/29/11
✓	Submit Quarterly Report 15	100%	07/30/11	07/29/11
✓	Submit Quarterly Report 16	100%	10/30/11	10/28/11
✓	Submit Quarterly Report 17	100%	01/30/12	01/30/12
✓	Submit Quarterly Report 18	100%	04/30/12	04/30/12
✓	Submit Quarterly Report 19	100%	07/30/12	07/30/12
	Submit Quarterly Report 20	0%	10/30/12	
	Submit Quarterly Report 21	0%	01/30/13	
	Submit Quarterly Report 22	0%	04/30/13	
	Submit Quarterly Report 23	0%	07/30/13	
	Submit Quarterly Report 24	0%	10/30/13	
	Submit Quarterly Report 25	0%	01/30/14	
	Submit Quarterly Report 26	0%	04/30/14	
	Submit Quarterly Report 27	0%	07/30/14	
	Submit Quarterly Report 28	0%	10/30/14	

Consent Decree Compliance Schedule

	CONSENT DECREE ACTIVITY	PERCENT COMPLETE	DUE DATE	DATE OF COMPLETION
	STATE ENVIRONMENTAL PROJECTS			
✓	Setup 6 Separate Escrow Accounts	100%	10/18/07	10/18/07
	Conservancies	100%	04/18/12	04/18/12
✓	*Boone County*	100%	04/18/12	03/26/12
✓	*Campbell County*	100%	04/18/12	02/23/12
✓	*Kenton County*	100%	04/18/12	04/17/12
✓	Licking River Watershed Watch	100%	04/18/12	09/28/11
✓	Split Rock	100%	04/18/12	12/18/08
✓	Education Programs	100%	04/18/12	08/04/11
✓	State Environmental Project Completion Report	100%	06/17/12	06/15/12
	SUPPLEMENTAL PROJECTS			
✓	Supplemental Environmental Projects	100%	04/18/12	04/12/12
✓	SEP Completion Reports	100%	06/17/12	06/15/12
	WATERSHED PLANS			
Framework for Developing Watershed Plans				
✓	Obtain Public Input on Framework for Watershed Plans	100%	04/09/08	04/09/09
✓	Submit Framework for Watershed Plans	100%	04/18/08	04/17/08
First Round Watershed Plans				
✓	Obtain Public Input on First Round of Watershed Plans	100%	06/27/09	06/08/09
✓	*Public Comment Period (5/7/09-6/8/09)*	100%	06/08/09	06/08/09
✓	*Boone County Public Meeting*	100%	N/A	05/14/09
✓	*Campbell County Public Meeting*	100%	N/A	05/19/09
✓	*Kenton County Public Meeting*	100%	N/A	05/21/09
✓	Submit First Round of Watershed Plans	100%	06/30/09	06/30/09
✓	Resubmit First Round of Watershed Plans	100%	03/31/11	03/31/11
Second Round Watershed Plans				
	Obtain Public Input on Second Round of Watershed Plans	0%	Summer 2014[2]	
	Submit Second Round of Watershed Plans	0%	Summer 2014[2]	
Third Round Watershed Plans				
	Obtain Public Input on Third Round of Watershed Plans	0%	Summer 2019[2]	
	Submit Third Round of Watershed Plans	0%	Summer 2019[2]	
	Consent Decree Compliance			
	Complete all Consent Decree Compliance Measures	29%	12/31/25	

[1] Projects schedules for three of the 51 projects were extended beyond 4/18/2009, as described in the 2009 NMC Annual Report. The three projects were complete as of December 2009.

[2] Deadline is dependent on the approval date of each Watershed Plan.

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APPENDIX B:

Watershed Improvement Program

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Initial Watershed Projects

CIP Title	Basin	Scheduled Completion Date	Actual Completion Date		
Initial Watershed Projects					
Strawberry PS Elimination	North	2006	2005	Complete	
Beechwood Outfall Sewer Replacement	North	2007	2007	Complete	
Eastern Regional - Contract 1--Pond Creek Force Main and Gravity Sewer to Eastern Regional WRF	East	2008	2007	Complete	
Eastern Regional - Contract 2--Kahn's Gravity Sewer and Gravity Sewer to the Pond Creek PS	East	2008	2007	Complete	
US 27 at Summit Assessment	East	2008	2006	Complete	
Eastern Regional - Contract 4--Alex-Licking Gravity Sewer & Force Main to Contract 1	East	2009	2008	Complete	
Eastern Regional - Contract 6--Pond Creek PS	East	2008	2007	Complete	
Eastern Regional - Contract 8A--Alex-Licking PS	East	2009	2009	Complete	
Parkside PS Relocation	East	2008	2007	Complete	
Eastern Regional Water Reclamation Facility	East	2008	2008	Complete	
Highland Heights PS Study	East	2006	2006	Complete	
Wilson/Waterworks Road Relief Sewer Study	East	2008	2007	Complete	
Pinehill/Skyview Terrace Sewer	East	2006	2005	Complete	
Eastern Regional - Contract 7--Riley Road #2 PS	East	2009	2009	Complete	
Eastern Regional - Contract 3--Riley Force Main and Gravity Sewer to the ERWRF	East	2009	2010	Complete	
Western Regional - KDOT - Turkeyfoot Road Force Main	West	2006	2005	Complete	
Western Regional - Union Sewer (North and South)	West	2013	2008	Complete	
American Sign PS Rehabilitation	West	2008	2008	Complete	
Allen Fork Collection System - Phase I Improvements	West	2009	2007	Complete	
Duncan Drive Assessment Project	West	2007	2006	Complete	
Western Regional - Sunnybrook Sewer	West	2013	2010	Complete	
Western Regional - Gunpowder Interceptor Sewer	West	2013	2010	Complete	
Banklick PS Screening Facility	Central	2006	2005	Complete	
Stevenson Road Relief Sewer Project Phase II	Central	2006	2006	Complete	
Latonia Combined Sewer Separation	Central	2009	2007	Complete	
Licking River Sewer Crossing Study	Central	2007	2007	Complete	
McMillan PS Removal	Central	2006	2005	Complete	
Meyer Road PS Rehabilitation	Central	2008	2008	Complete	
Macke PS Rehabilitation	Central	2008	2008	Complete	

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Initial Watershed Projects

CIP Title	Basin	Scheduled Completion Date	Actual Completion Date	Past Activity for 04/01/2012 to 06/30/2012	Planned Activity for 07/01/2012 to 09/30/2012
Initial Watershed Projects					
Richwood PS Improvements	Central	2006	2005	Complete	
Patton Street Sewer Study	Central	2006	2006	Complete	
South Hills Outfall	Central	2008	2007	Complete	
Grit Chamber Projects	Multiple	2010	2008	Complete	
Fort Wright Illicit Discharge Removal	Multiple	2007	2006	Complete	
Fort Wright Sanitary Sewer Rehabilitation Phase 1	Multiple	2007	2006	Complete	
Fort Wright Outfall Sewer - Phase II	Multiple	2006	2006	Complete	
Dry Creek Treatment Plant - Grit Removal Modifications	Multiple	2006	2005	Complete	
Large Diameter Sewer Assessment Program - Phase III	Multiple	2007	2006	Complete	
Brookwood Subdivision SSES Study	Multiple	2006	2006	Complete	
Southern Kenton Drainage Study	Multiple	2007	2006	Complete	
Wilson Road Sewer Assessment Project	Multiple	2006	2005	Complete	
Apple Drive Sewer Outfall	Multiple	2006	2006	Complete	
Bluegrass Swim Club Sewer Separation	Multiple	2008	2007	Complete	
Eastern Regional – Sunset Pump Station and Force Main Improvements	East	2010	2010	Complete	
Western Regional Conveyance System to Western Regional WRF	West	2013	2012	Complete	
Western Regional Water Reclamation Facility	West	2013	2012	Complete	
Western Regional - Narrows Road Diversion PS	West	2013	2012	Complete	
Western Regional - Frogtown Interceptor Sewer (from Sunnybrook Dr. to Frogtown Rd.)	West	2014	2012	Complete	
Western Regional - South Fork Gunpowder Interceptor Sewer and Rosetta Sewer	West	2013	2012	Complete	
Western Regional - Richwood Sewer and Force Main	West	Requested Removal as Initial Action Project - Awaiting Approval (see Watershed Plans)			
Western Regional - Turkeyfoot Industrial Road Force Main	West	2013	n/a	Force main Construction was split into 4 phases. Phases 1, 2 & 3 are complete. Phase 4 is under construction.	

Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Proposed Solution	Scheduled Completion Date	Actual Completion Date	Status
Category 1 Projects (4 total projects)						
Alex Licking	East	Permanent Generator	n/a	2008	2008	Complete
American Sign	West	Permanent Generator	n/a	2008	2008	Complete
Riley Road	East	Permanent Generator	n/a	2009	2009	Complete
Sunset	East	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2010	2010	Complete
Category 2 Projects (21 total projects)						
Kahns	East	PS Elimination	n/a	2007	2007	Complete
Meadow Hill	Central	PS Elimination Study	PS Elimination	Study - 2008 2012 - 2015	2008 2010	Complete
Riley Road No. 1 Riley Road No. 2	East	PS Elimination	n/a	2009	2009	Complete
Riverwatch PS	North	PS Elimination Study	PS Elimination	Study - 2008 2012 - 2015	2008 2008	Complete Complete
South Park Industrial	North	PS Elimination Study	Backup Dry Prime Pump with a Diesel Engine	Study - 2008 2012 - 2015	2008 2010	Complete Complete
Wedgewood Dr	Central	PS Elimination Study	Evaluating Solutions	Study - 2008 2015	2008	Complete Evaluating Solutions
Willow Bend No. 2	West	PS Elimination Study	Evaluating Solutions	Study - 2008 2015	2008 n/a	Complete Evaluating Solutions
Army Reserve	East	PS Elimination Study	Evaluating Solutions	Study - 2008 2015	2008 n/a	Complete Evaluating Solutions
Eagles Landing	West	PS Elimination Study	Evaluating Solutions	Study - 2008 2015	2008 n/a	Complete Evaluating Solutions
Evergreen	Central	PS Elimination Study	Evaluating Solutions	Study - 2008 2015	2008 n/a	Complete Evaluating Solutions
Lamphill	East	PS Elimination Study	Electrical hook up for portable generator	Study - 2008 2011	2008 2011	Complete Complete
Mill House Crossing	Central	PS Elimination Study	Backup Dry Prime Pump with a Diesel Engine	Study - 2008 2012	2008 2012	Complete Complete
Ridgefield	North	PS Elimination Study	Evaluating Solutions	Study - 2008 2015	2008 n/a	Complete Evaluating Solutions

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Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Proposed Solution	Scheduled Completion Date	Actual Completion Date	Status
Category 2 Projects (continued)						
War Admiral	West	PS Elimination Study	PS Elimination	Study - 2008 2012 - 2015	2008 2011	Complete Complete
Blackstone	West	PS Elimination Study	Evaluating Solutions	Study - 2008 2015	2008 n/a	Complete Evaluating Solutions
Dublin Green No. 1	West	PS Elimination Study	Evaluating Solutions	Study - 2008 2015	2008 n/a	Complete Evaluating Solutions
Fowler Creek	West	PS Elimination	These stations will be eliminated after the Western Regional collection system is operational.	2013	2011	Complete
Gammon Calmet	West	PS Elimination		2013	2012	Complete
Gunpowder	West	PS Elimination		2013	2012	Complete
Union	West	PS Elimination		2013	2012	Complete
CIP Title	**Basin**	**Original Proposed Solution**	**Updated Proposed Solution**	**Scheduled Completion Date**	**Actual Completion Date**	**Status**
Category 3 Projects (24 total projects)						
Airport Exchange Ind Park	North	Permanent Generator	n/a	2009	2009	Complete
Barrs Branch	East	Permanent Generator	Portable Generator	2009	2009	Complete
Cedar Point	East	Permanent Generator	n/a	2009	2009	Complete
Bullitsville	North	Permanent Generator	n/a	2008	2008	Complete
Catalpa	Central	Permanent Generator	n/a	2009	2009	Complete
Centerplex	East	Permanent Generator	n/a	2008	2008	Complete
Hempsteade	West	Permanent Generator	n/a	2009	2009	Complete
Highland Heights	East	Portable Generator	n/a	2009	2009	Complete
Dublin Green No. 2	West	Permanent Generator	n/a	2009	2009	Complete
Brookwood	East	Permanent Generator	n/a	2009	2009	Complete
Ky Aire	West	Permanent Generator	n/a	2008	2007	Complete
Levi	West	Permanent Generator	n/a	2008	2007	Complete
Maple Ave	Central	Permanent Generator	n/a	2009	2009	Complete
Sand Run	North	Permanent Generator	n/a	2008	2008	Complete
Saturn	West	Permanent Generator	n/a	2009	2009	Complete
Second Street	Central	Permanent Generator	n/a	2009	2009	Complete
Skyport	North	Permanent Generator	n/a	2008	2008	Complete
South Hampton	West	Permanent Generator	n/a	2008	2007	Complete
Thornwilde	North	Permanent Generator	n/a	2008	2008	Complete
Bunning Lane	East	PS Elimination Study	Evaluating Solutions	2015	n/a	Evaluating Solutions
Kees	East	Permanent Generator	Back up dry pump system with diesel engine	2011	2011	Complete
Overlook	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Riverview Farms	North	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Stillwater	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions

Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Proposed Solution	Scheduled Completion Date	Actual Completion Date	Status
Category 4 Projects (50 total projects)						
Banklick	Central	Permanent Generator	n/a	2009-2014	2009	Complete
Cedar	Central	Permanent Generator	n/a	2009-2014	2009	Complete
Fowler Ridge	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2009-2014	2010	Complete
Lassing Green	West	Permanent Generator	n/a	2009-2014	2009	Complete
Leathers Rd	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2009-2014	2010	Complete
Marshall Rd	Central	Permanent Generator	n/a	2009-2014	2010	Complete
Mineola Pike	North	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2009-2014	2010	Complete
Newport Steel Mill	East	Permanent Generator	n/a	2009-2014	2009	Complete
Paul Rd	East	Permanent Generator	Portable Generator	2009-2014	2010	Complete
Rosewood Lane	East	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2009-2014	2010	Complete
Shadow Lake	East	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2009-2014	2009	Complete
Wolf Rd	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2009-2014	2009	Complete
Air Park West	North	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2009-2014	2011	Complete
Arbortech	North	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2012	2012	Complete
Arborwood	North	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Brandtly Ridge	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2012	2012	Complete
Brentwood	North	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Brushup Lane	West	Permanent Generator	PS Elimination	2012		Complete
Carlisle Ave	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Cinnamon Ridge	West	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2012	2012	Complete
Cold Spring Crossing	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Cold Spring Plaza	East	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2012	2012	Complete
Darma Ct	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Deer Creek No. 1	North	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2009-2014	2011	Complete
Deer Creek No. 2	North	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2009-2014	2011	Complete
Eighth Street	Central	Connect to Grid Power	Evaluating Solutions	2015	n/a	Evaluating Solutions
Gerrard Ave	East	Permanent Generator	Portable Generator	2009-2014	2011	Complete
Golf Course	Central	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Hampton Ridge	West	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Harrison Harbor	East	Permanent Generator	Portable Generator	2009-2014	2011	Complete

Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Proposed Solution	Scheduled Completion Date	Actual Completion Date	Status
Category 4 Projects (continued)						
Harvest Hill	Central	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
ICH	Central	Permanent Generator	Electrical hook up for portable generator	2011	2011	Complete
IDI	North	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Independence Station Rd	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2009-2014	2011	Complete
Jefferson Ave	East	Permanent Generator	Portable Generator	2009-2014	2011	Complete
Jericho Rd	Central	Permanent Generator	Electrical hook up for portable generator	2011	2011	Complete
Jonathan	West	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Litton	North	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Ohio Ave	East	Permanent Generator	Portable Generator	2009-2014	2011	Complete
Orchard Estates	West	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Parkside No. 2	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Patton Street	Central	Dual Utility Power Feed	Evaluating Solutions	2015	n/a	Evaluating Solutions
Ria Vista	North	Permanent Generator	Electrical hook up for portable generator	2011	2011	Complete
Silver Grove	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
St Annes	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Sycamore	West	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Taylor Mill Rd	Central	Permanent Generator	Electrical hook up for portable generator	2011	2011	Complete
Wilder	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Wyndemere	North	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Youell Rd	West	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions

Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Proposed Solution	Scheduled Completion Date	Actual Completion Date	Status
Category 5 Projects (6 total projects)						
Keavy	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2010-2015	2010	Complete
Meadow Lane	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2010-2015	2009	Complete
Cardinal Cove	North	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Crestview	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Ripple Creek	East	PS Elimination Study	PS Elimination	2010-2015	2010	Complete
Winters Lane No. 2	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
CIP Title	**Basin**	**Original Proposed Solution**	**Updated Proposed Solution**	**Scheduled Completion Date**	**Actual Completion Date**	**Status**
Category 6 Projects (5 total projects)						
Enzweiller	East	Permanent Generator	n/a	2012-2015	2009	Complete
Mafred	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2012-2015	2009	Complete
Ridgeway	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2012-2015	2009	Complete
Richwood	West	Permanent Generator	Backup Dry Prime Pump with a Diesel Engine	2012	n/a	Project In-Progress
Twin Lakes	Central	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions

Progress Summary	Number
2007 Complete Projects	4
2008 Complete Projects	8
2009 Complete Projects	24
2010 Complete Projects	10
2011 Complete Projects	16
2012 Complete Projects	9
Total Complete	**71**
2012 Active Projects	1
Total Project Activity	**72**

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Pump Station Overflow Elimination Plan

CIP Title	Basin	Scheduled Completion Date	Actual Completion Date	Past Activity for 04/01/2012 to 06/30/2012	Planned Activity for 07/01/2012 to 09/30/2012
Pump Station Overflow Elimination Projects					
Alex-Licking	East	12/31/2010	2008	Complete	
Harrison Harbor	East	12/31/2010	*See PS Oveflow Elimination Annual Report May 11, 2009	Complete	
Highland Acres	West	12/31/2010	2010	Complete	
Riley Road No.1	East	12/31/2010	2009	Complete	
Ripple Creek	Central	12/31/2010	2010	Complete	
South Hampton	West	3/31/2013	2012	Complete	
South Park	North	12/31/2010	2010	Complete	
Sunset	Central	12/31/2010	2010	Complete	
Taylorsport	North	12/31/2010	2004	Complete	
Union	West	3/31/2013	2012	Complete	
Allen Fork	North	12/31/2015	n/a	Initial Design	Initial Design
Crestview	East	12/31/2015	n/a	Phase 1 - Sewer and lateral rehab design is complete. Construction is underway.	
Kentucky Aire	West	12/31/2013	n/a	Final Design	Final Design
Lakeview	Central	Requested Delay - Awaiting Approval (see Watershed Plans)			

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Watershed Plan Projects: Five Year Program (2009 - 2014)

System-wide Programs

CIP Title	Basin	Project Description	Target Project Benefit	Scheduled Completion Date	Actual Completion Date	Past Activity for 04/01/2012 to 06/30/2012	Planned Activity for 07/01/2012 to 09/30/2012
(Schedules listed in this section are subject to change based on the approval of SD1's Watershed Plans.)							
Priority Inflow and Infiltration Source Identification & Removal Program							
Lakeview I/I Source Identification & Removal	Central	SSES activities and I/I removal in areas where found to be cost effecitve and feasible upstream of the Lakeview Pump Station	Reduce I/I and SSOs in Lakeview PS service area	Beyond 2014	n/a	Initial Design	Initial Design
Licking River Siphon Source Identification and Removal	Central	SSES activities and I/I removal in areas where found to be cost effecitve and feasible upstream of the Licking River Siphon	Reduce I/I and SSOs in Licking River Siphon area	Beyond 2014	n/a	Initial Design	Initial Design
Taylor Creek Source Identification and Removal	East	SSES activities and I/I removal in areas where found to be cost effecitve and feasible in the Taylor Creek area	Reduce I/I and SSOs in Taylor Creek area	Beyond 2014	n/a	Initial Design	Initial Design
Green Programs (DRIP & GrIPP)							
Boone Woods YMCA Detention Model	North	Partnership with Northern Kentucky University Center for Applied Ecology to retrofit a detention basin on Boone Woods YMCA property	Improve Water Quality	2010	2010	Complete	
City of Covington: 12th Street Bioswale	North	Partnership with City of Covington to install street planters leading to a bioswale and rain garden along 12th Street	Reduce CSO volume	2011	2011	Complete	
City of Covington: Main Strasse Gateway Biofiltration Swale	North	Partnership with City of Covington and Transit Authority of Northern Kentucky to install biolfiltration swales on city property at the Bakewell parking lot	Reduce CSO volume	2012	n/a	Complete	
Notre Dame Academy Basin Retrofit	North	Partnership with Notre Dame Academy to retrofit an existing detention basin on school property	Reduce CSO volume	2009	2009	Complete	
City of Ft. Thomas: Rossford Park Rain Garden	East	Partnership with City of Ft. Thomas to install rain gardens at Rossford Park	Improve Water Quality	2012	2012	Complete	
City of Ft. Thomas: Memorial Parkway Bioswalw	East	Partnership with City of Ft. Thomas to install a bioswale at the Northern Kentucky Water District property located along Memorial Parkway.	Improve Water Quality	2010	2010	Complete	
Kenton County School District: Turkeyfoot Middle School	Central	Partnership with Kenton County School District to install rain garden at Turkeyfoot Middle School	Improve Water Quality	2010	2010	Complete	
City of Covington: Madison Ave. Rain Garden	North	Partnership with City of Covington to install two rain gardens or street planters within the right-of-way along Madison Avenue	Reduce CSO volume	2012	n/a	Final Design	Final Design
Kenton County Public Library: Mary Ann Morgan Branch	North	Partnership with Kenton County Library to install rain gardens and permeable pavers on site at the Mary Ann Mongan Branch	Reduce CSO volume	2012	n/a	Construction	Construction
Demonstration Projects (Pilot Projects & Innovative Technology Testing)							
St. Elizabeth Detention Basin Retrofit	North	Modification of an existing dry detention basin located on property owned by St. Elizabeth Medical Center.	Reduce CSO volume in the Willow Run Sewershed	2009	2009	Post-Construction Monitoring	
Prisoner's Lake Rainwater Harvesting	North	Construction of a small storm water pumping station and force main to capture storm water runoff from Prisoner's Lake that will be re-used in an irrigation pond for a small public golf course.	Manage storm water entering the CSS	2010	2010	Post-Construction Monitoring	
Terraced Reforestation	North	Construction of a series of vegetated, terraced berms within the I-71/75 right-of-way in the City of Covington.	Manage storm water entering the CSS	2010	2011	Post-Construction Monitoring	
Watershed Controls Pilot Projects - Regional and Decentralized Controls							
Regional Project: Banklick Regional Wetlands	Central	Constructed wetland that treats flow diverted from Banklick Creek to reduce bacteria concentrations.	Improve water quality of Banklick Creek	2011	2011	Post-Construction Monitoring	
Decentralized Control Project	Central	Storm water control measures such as wetlands, biofiltration basins, and enhanced retention serving upstream drainage areas smaller than one square mile, but typically greater than five acres	Improve water quality of local streams	Beyond 2014	n/a	Initial Design	Initial Design

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Watershed Plan Projects: Five Year Program (2009 - 2014)

Specific Basin Projects

CIP Title	Basin	Project Description	Target Project Benefit	Scheduled Completion Date	Actual Completion Date	Past Activity for 04/01/2012 to 06/30/2012	Planned Activity for 07/01/2012 to 09/30/2012
(Schedules listed in this section are subject to change based on the approval of SD1's Watershed Plans.)							
Van Deren Sanitary Sewer Improvements	North	Sanitary and storm sewer improvements in a 100 home area to separate common manholes and remove illicit connections and I/I	Reduce SSOs and illicit discharges in Lakeside Park	2011	2011	Post-Construction Monitoring	
Avon Drive Sanitary Sewer Improvements	North	Replacement of 570 LF of 12-inch sewer with 24-inch pipe and installation of new storm sewer	Reduce SSOs in Lakeside Park	2010	2010	Post-Construction Monitoring	
Willow Run Direct Entry Point Bar Racks	North	Installed bar racks on 10 direct entry points where open storm channels discharge into sewer system	Reduce debris entry into system, maintain capacity and reduce blockages	2009	2010	Post-Construction Monitoring	
KYTC Basin - Green Infrastructure Retrofit	North	Conversion of traditional detention basin near I-75 to provide greater detention and infiltration by modifying the outlet structure and other improvements	CSO reduction, informs future green infrastructure design	2012	2011	Post-Construction Monitoring	
Lakeview PS Pump Replacement	Central	Replaceament of 8 pumps at the Lakeview pump station along with piping and electrical improvements to provide a reliable peak capacity of 22.5 MGD	Reduce SSOs at Lakeview PS and increase PS reliability	2014	n/a	Construction	Construction
Church Street (gray, green, and watershed controls) Phase 1	Central	Disconnection of downspouts from approximately 130 homes, the separation of street load on six streets, new biofiltration basin and installation of approximately 1,300 linear feet of new 72-inch sewer	Reduce CSO frequency and volume into Banklick Creek and improve structural integrity of sewer infrastructure.	2013	n/a	Final Design	Final Design
Vernon Lane – Public & Private Source I/I Removal	Central	Combinbination of private I/I removal, sewer rehabilitation, manhole lining, and stormwater BMPs in area comprising approximatley 270 homes	Eliminate Vernon Ln. SSO and improve water quality	Beyond 2014	n/a	Final Design	Final Design
Ash Street PS and Forcemain	East	Construction of a new approximately 7 MGD pump station in Silver Grove and new force main to the Riley Rd. Pump Station in Alexandria Also includes new force main to redirect flow from the Silver Grove PS to the Ash St. PS	Zero overflows from Silver Grove CSO in the typical year and SSO reduction in the Highland Heights PS and Silver Grove PS service areas.	2014	n/a	Final Design	Final Design
Riviera Sewer Replacement	East	Replacement of approximately 4,100 LF of deteriorated 24-inch pipe in the Taylor Creek area	Reduce CSOs into Taylor Creek and address structural issues	Beyond 2014	n/a	n/a	n/a
Lakeside Park – Public Sewer Rehab and Private Source Removal	North	Combinbination of private I/I removal, sewer rehabilitation/replacment and manhole lining, and stormwater BMPs where feasible in Lakeside Park	Eliminate SSOs in Lakside Park	Beyond 2014	n/a	Final Design	Final Design
Willow Run Dynamic Control Facility	North	Construction of a dynamic weir facility at the Willow Run overflow diversion to provide in-line storage	CSO reduction using in-line storage	2014	n/a	Initial Design	Initial Design

Other Committed Projects

CIP Title	Basin	Project Description	Target Project Benefit	Scheduled Completion Date	Actual Completion Date	Past Activity for 04/01/2012 to 06/30/2012	Planned Activity for 07/01/2012 to 09/30/2012
(Schedules listed in this section are subject to change based on the approval of SD1's Watershed Plans.)							
Donnemeyer Improvements, Newport Pavilion Improvements, Bellevue Relief Sewer, Wilson/Waterworks Road, Covert Run	East	Multiple sewer projects including replacement with larger 18-30 -inch diameter sewers in the Taylor Creek area. Also included private source removal	Reduce CSO and SSO in Taylor Creek area and address basement flooding	2011	2011	Post-Construction Monitoring	Post-Construction Monitoring
Dry Creek WWTP Headworks Imrpovements	North	Construction of a new 110 MGD headworks facility at the Dry Creek WWTP	Increase reliability and wet weather treatment cpacity at Dry Creek WWTP	2013	n/a	Construction	Finish Construction

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APPENDIX C:

Cumulative and Annual Overflow Data

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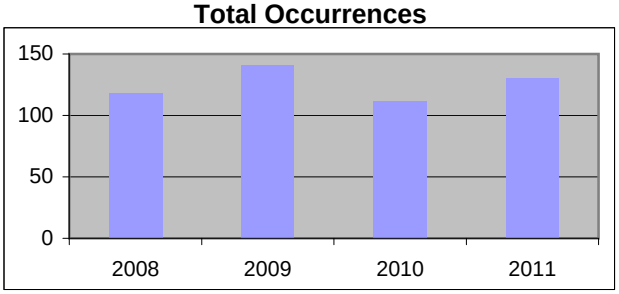
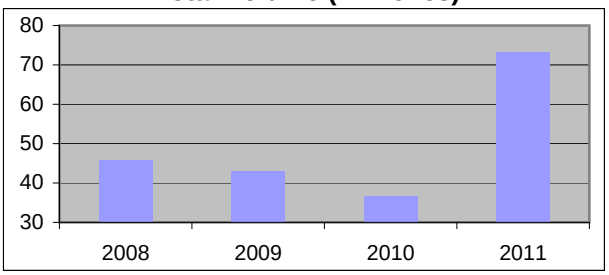
Annual Cumulative Overflow Data
2008 through 2011

Rainfall

Total Occurrences

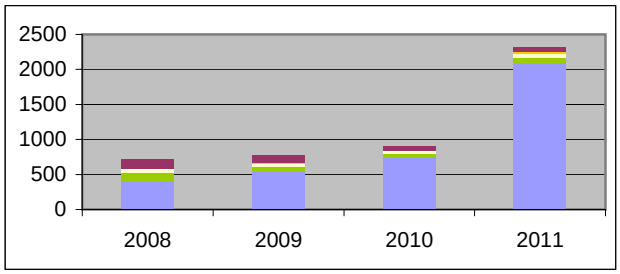


Total Volume (In Inches)

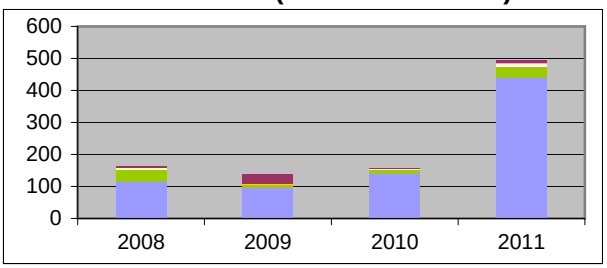


SSOs - Due to Wet Weather (WW) and Operational Issues

Total Occurrences



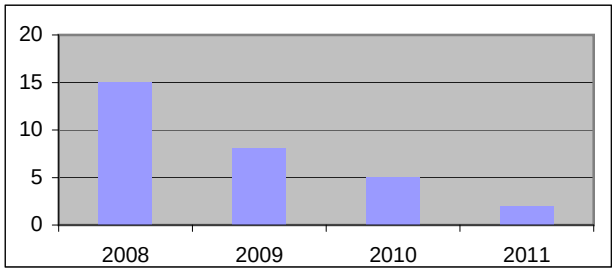
Total Volume (In Million Gallons)



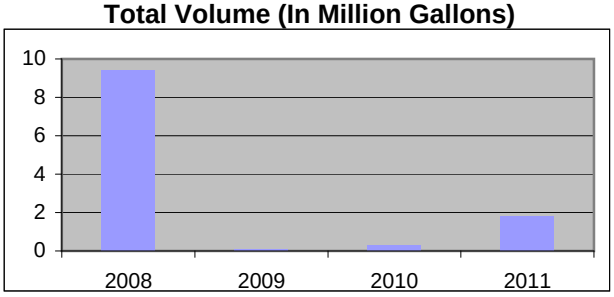
Recurring WW SSOs
Recurring WW CD Pump Station Overflows
Recurring WW Other Pump Station Overflows
Inactive WW Overflows
SSOs Due to Operational Issues

Dry Weather CSOs

Total Occurrences

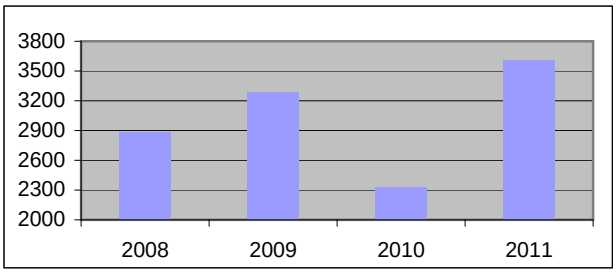


Total Volume (In Million Gallons)

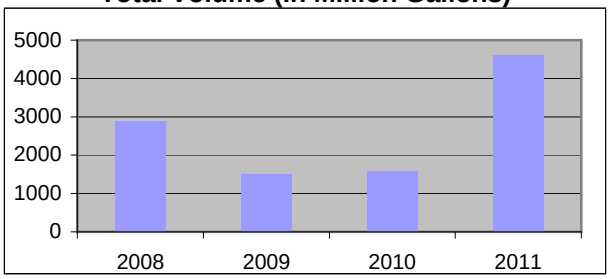


Wet Weather CSOs

Total Occurrences

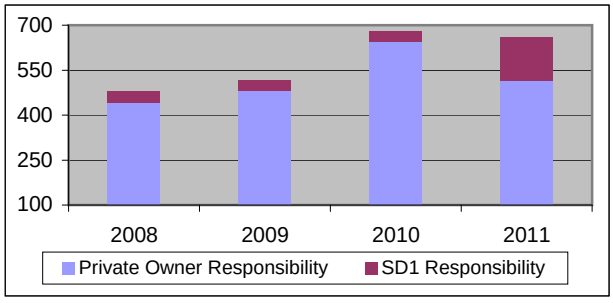


Total Volume (In Million Gallons)



Building Backups

Total Occurrences



Change from 2010 to 2011			
	Occurrences	Volume	
Rainfall	18	36.59	inches
Recurring WW SSOs	1386	333.11	MG
Inactive WW SSOs	25	1.18	MG
Operational SSOs	3	4.54	MG
Dry Weather CSOs	-3	1.53	MG
Wet Weather CSOs	1270	3020.84	MG
Building Backups (Private)		-131	
Building Backups (SD1)		110	

Updated: January 30, 2012

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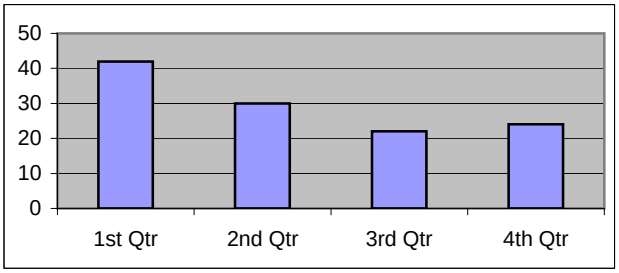
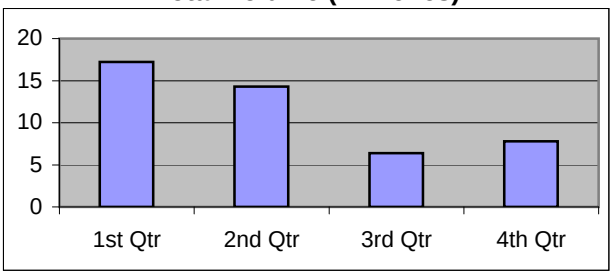
Cumulative Overflow Data
January 1, 2008 through December 31, 2008

Rainfall

Total Occurrences

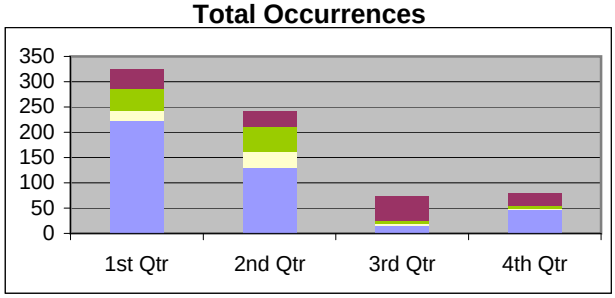


Total Volume (In Inches)

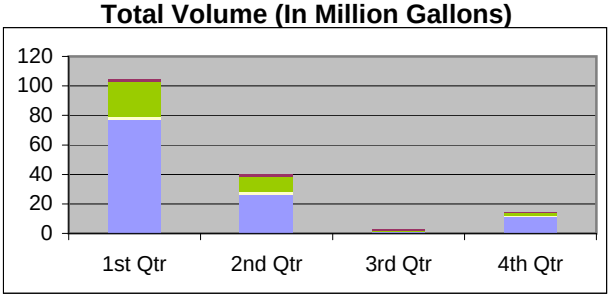


SSOs - Due to Wet Weather (WW) and Operational Issues

Total Occurrences



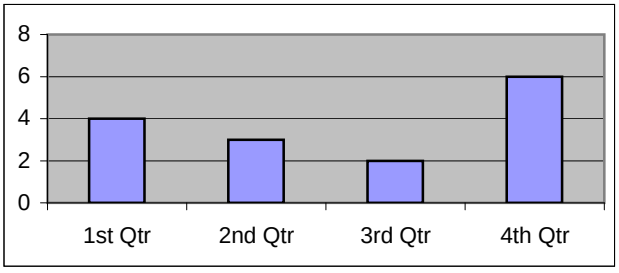
Total Volume (In Million Gallons)



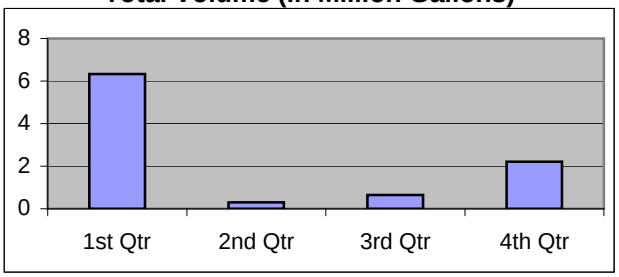
Recurring WW CD Pump Station Overflows
Recurring WW Other Pump Station Overflows
SSOs Due to Operational Issues
Recurring WW SSOs

Dry Weather CSOs

Total Occurrences

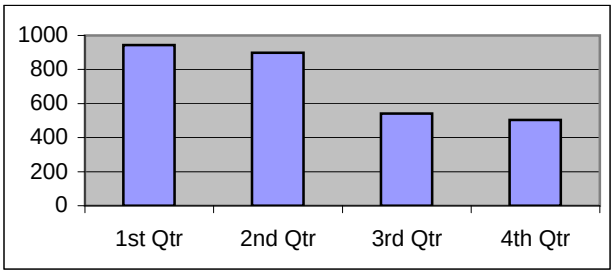


Total Volume (In Million Gallons)

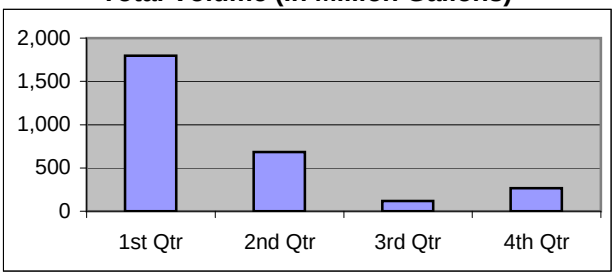


Wet Weather CSOs

Total Occurrences

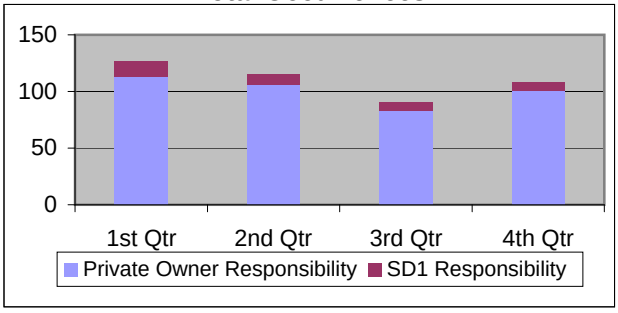


Total Volume (In Million Gallons)



Building Backups

Total Occurrences



2008 Overflow Summary

	Occurrences	Volume	
Rainfall	118	45.66	inches
Recurring WW SSOs	576	158	MG
Inactive WW SSOs	N/A	N/A	
Operational SSOs	143	5	MG
Dry Weather CSOs	15	9	MG
Wet Weather CSOs	2888	2,869	MG
Building Backups (Private)		402	
Building Backups (SD1)		39	

Updated January 29, 2010

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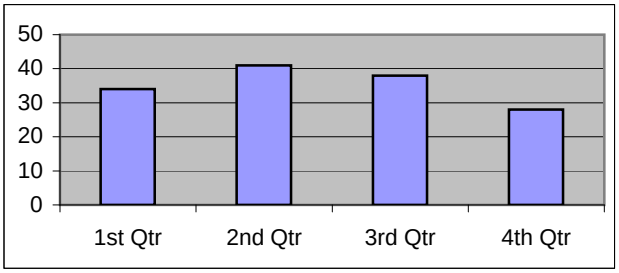
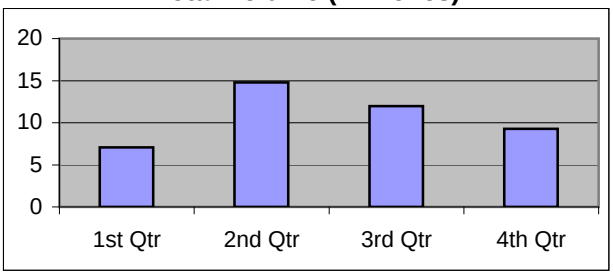
Cumulative Overflow Data
January 1, 2009 through December 31, 2009

Rainfall

Total Occurrences

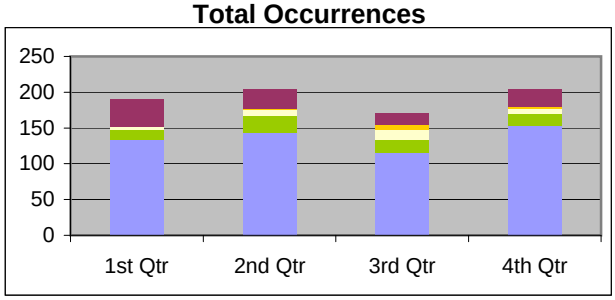


Total Volume (In Inches)

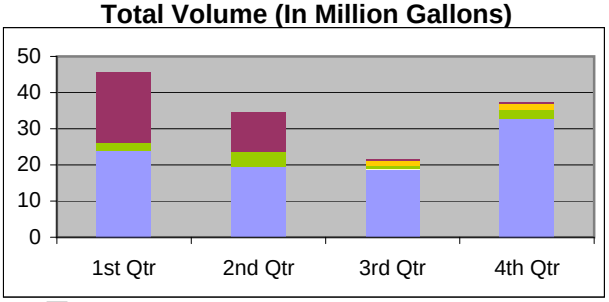


SSOs - Due to Wet Weather (WW) and Operational Issues

Total Occurrences



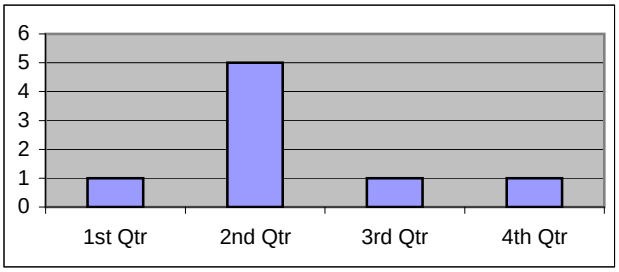
Total Volume (In Million Gallons)



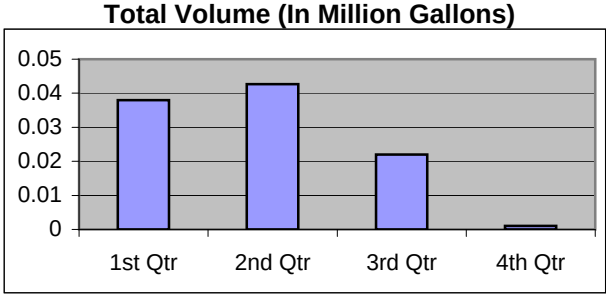
Recurring WW SSOs
Recurring WW CD Pump Station Overflows
Recurring WW Other Pump Station Overflows
Inactive WW Overflows
SSOs Due to Operational Issues

Dry Weather CSOs

Total Occurrences

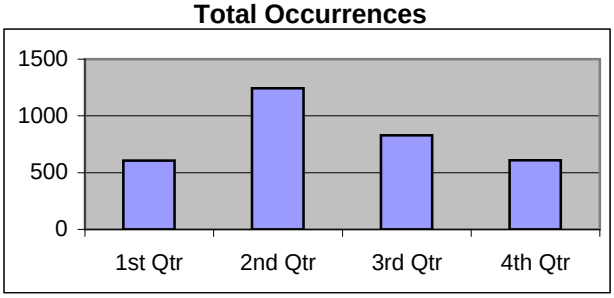


Total Volume (In Million Gallons)

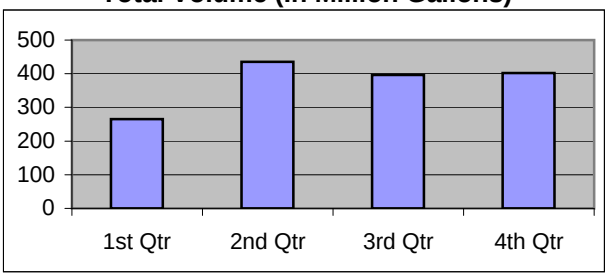


Wet Weather CSOs

Total Occurrences

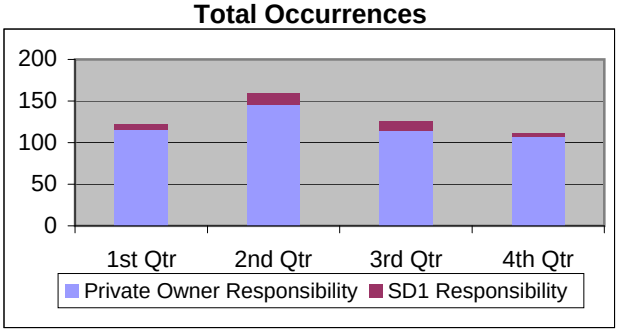


Total Volume (In Million Gallons)



Building Backups

Total Occurrences



2009 Overflow Summary			
	Occurrences	**Volume**	
Rainfall	141	43.11	inches
Recurring WW SSOs	651	105	MG
Inactive WW SSOs	13	3	MG
Operational SSOs	108	31	MG
Dry Weather CSOs	8	0.104	MG
Wet Weather CSOs	3289	1,502	MG
Building Backups (Private)		482	
Building Backups (SD1)		36	

Updated January 29, 2010

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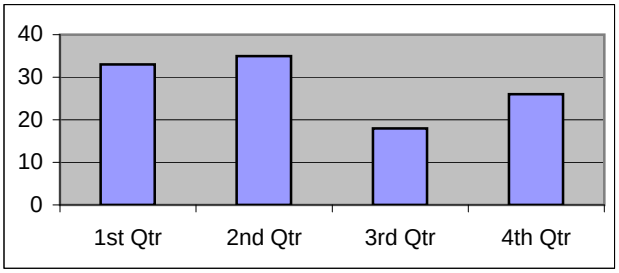
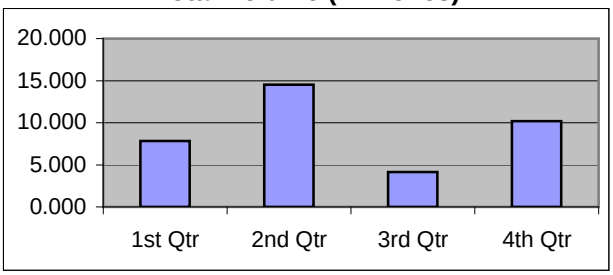
Cumulative Overflow Data
January 1, 2010 through December 31, 2010

Rainfall

Total Occurrences

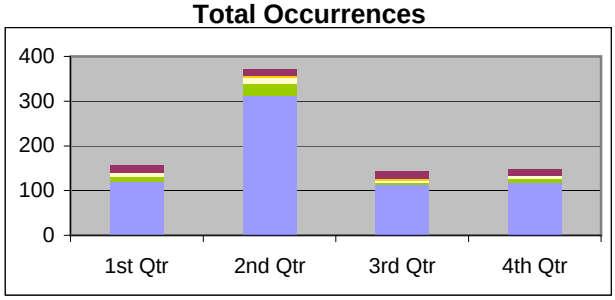


Total Volume (In Inches)

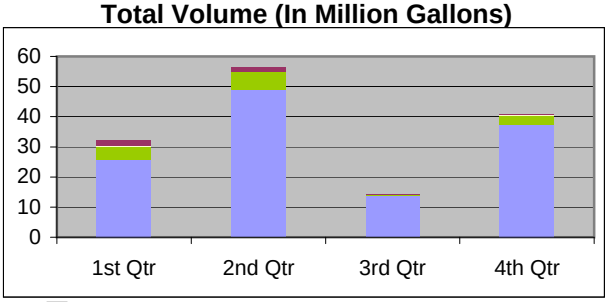


SSOs - Due to Wet Weather (WW) and Operational Issues

Total Occurrences



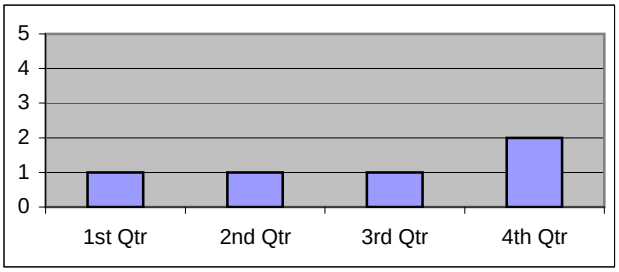
Total Volume (In Million Gallons)



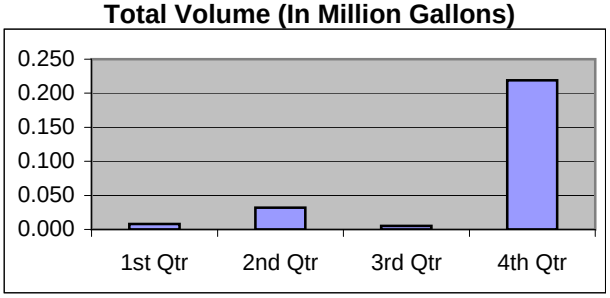
Recurring WW SSOs
Recurring WW CD Pump Station Overflows
Recurring WW Other Pump Station Overflows
Inactive WW Overflows
SSOs Due to Operational Issues

Dry Weather CSOs

Total Occurrences

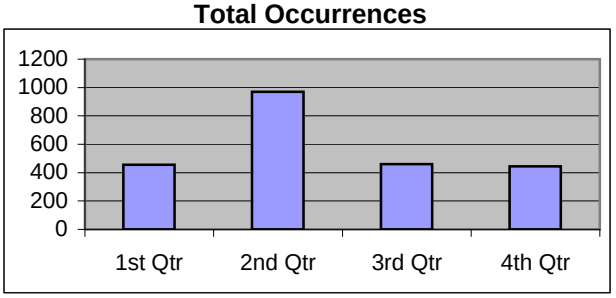


Total Volume (In Million Gallons)

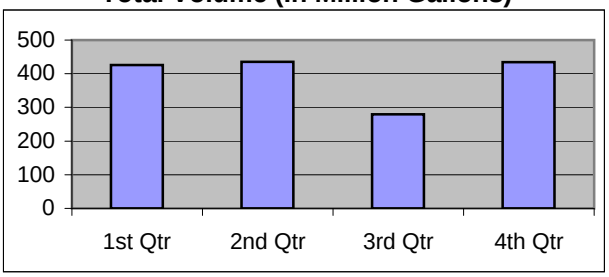


Wet Weather CSOs

Total Occurrences

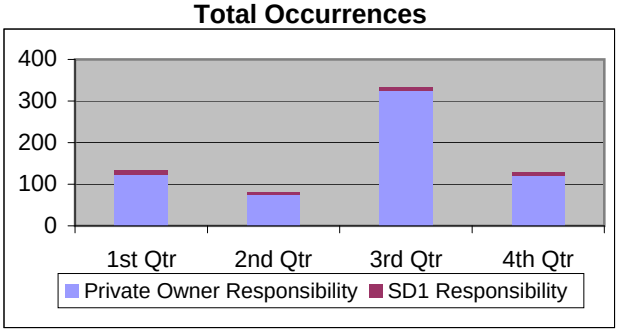


Total Volume (In Million Gallons)



Building Backups

Total Occurrences



2010 Overflow Summary			
	Occurrences	**Volume**	
Rainfall	112	36.670	inches
Recurring WW SSOs	748	140.280	MG
Inactive WW SSOs	11	0.064	MG
Operational SSOs	63	3.486	MG
Dry Weather CSOs	5	0.264	MG
Wet Weather CSOs	2332	1575.500	MG
Building Backups (Private)		644	
Building Backups (SD1)		36	

Updated: January 25, 2011

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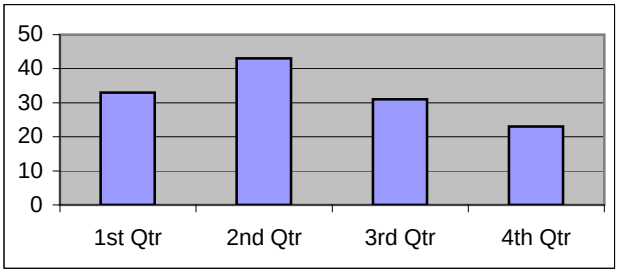
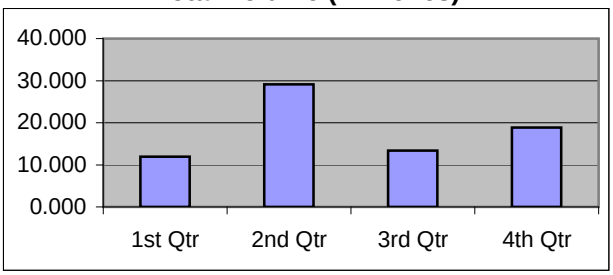
Cumulative Overflow Data
January 1, 2011 through December 31, 2011

Rainfall

Total Occurrences

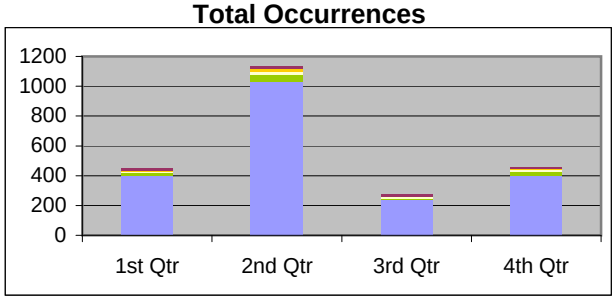


Total Volume (In Inches)

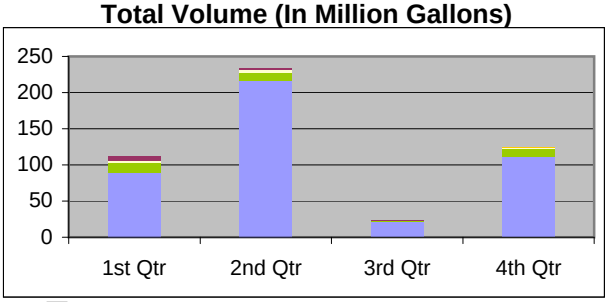


SSOs - Due to Wet Weather (WW) and Operational Issues

Total Occurrences



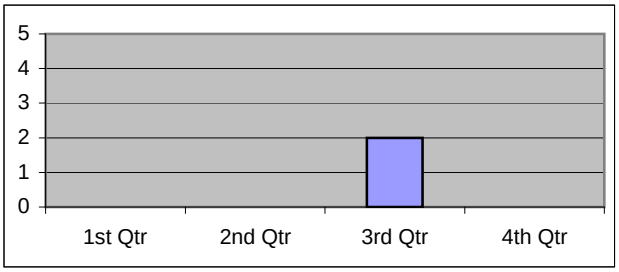
Total Volume (In Million Gallons)



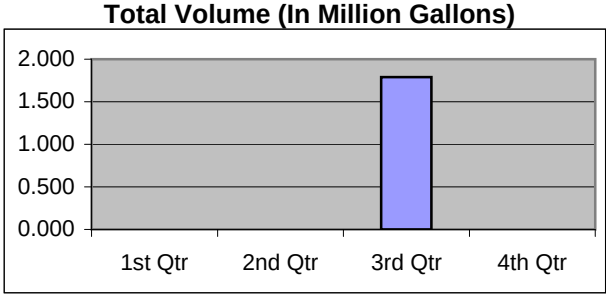
Recurring WW SSOs
Recurring WW CD Pump Station Overflows
Recurring WW Other Pump Station Overflows
Inactive WW Overflows
SSOs Due to Operational Issues

Dry Weather CSOs

Total Occurrences

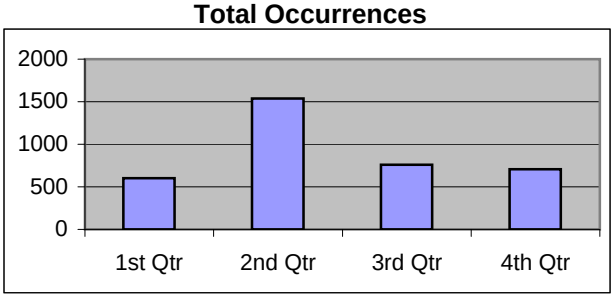


Total Volume (In Million Gallons)

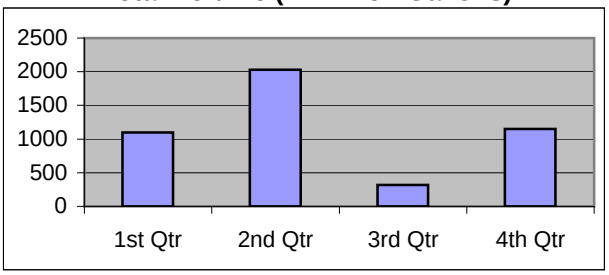


Wet Weather CSOs

Total Occurrences

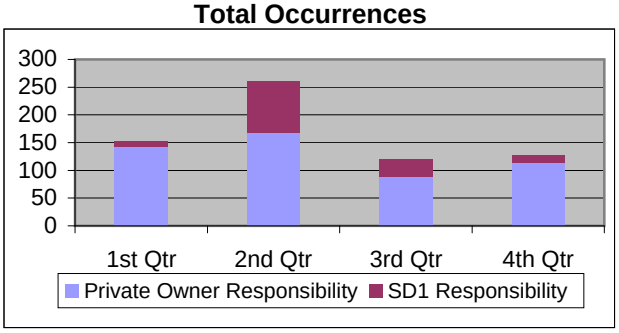


Total Volume (In Million Gallons)



Building Backups

Total Occurrences



2011 Overflow Summary			
	Occurrences	**Volume**	
Rainfall	130	73.260	inches
Recurring WW SSOs	2221	483.809	MG
Inactive WW SSOs	36	1.239	MG
Operational SSOs	66	8.030	MG
Dry Weather CSOs	2	1.790	MG
Wet Weather CSOs	3602	4596.340	MG
Building Backups (Private)		513	
Building Backups (SD1)		146	

Updated: January 30, 2012

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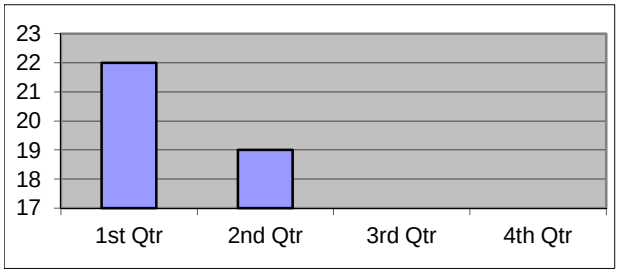
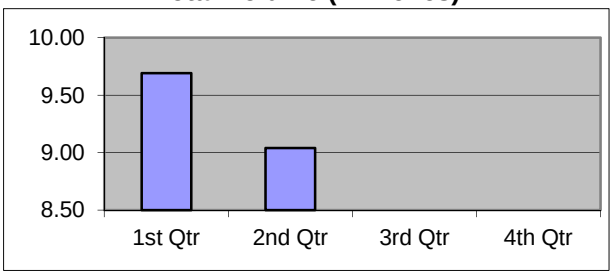
Cumulative Overflow Data
January 1, 2012 through December 31, 2012

Rainfall

Total Occurrences

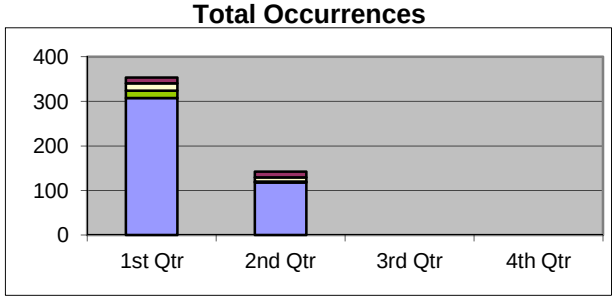


Total Volume (In Inches)

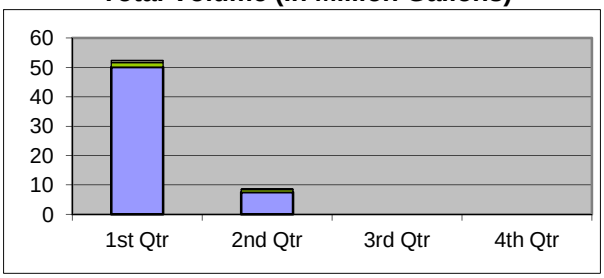


SSOs - Due to Wet Weather (WW) and Operational Issues

Total Occurrences



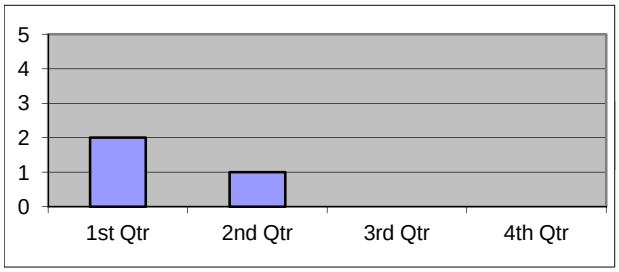
Total Volume (In Million Gallons)



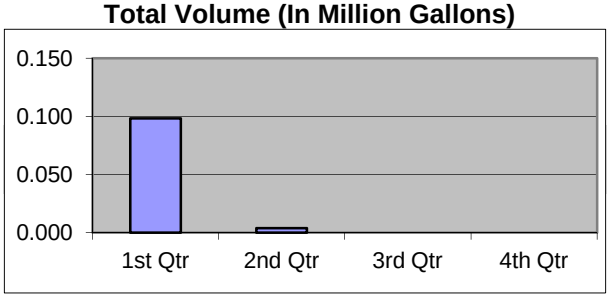
Recurring WW SSOs
Recurring WW CD Pump Station Overflows
Recurring WW Other Pump Station Overflows
Inactive WW Overflows
SSOs Due to Operational Issues

Dry Weather CSOs

Total Occurrences

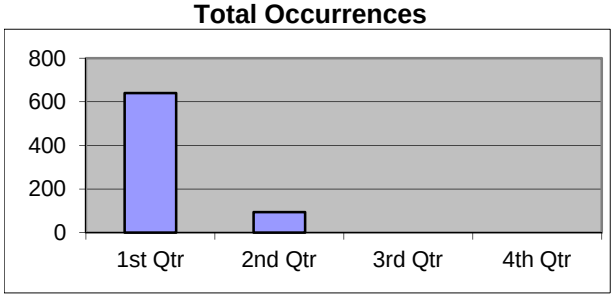


Total Volume (In Million Gallons)

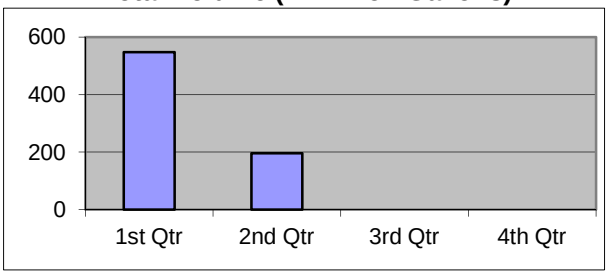


Wet Weather CSOs

Total Occurrences

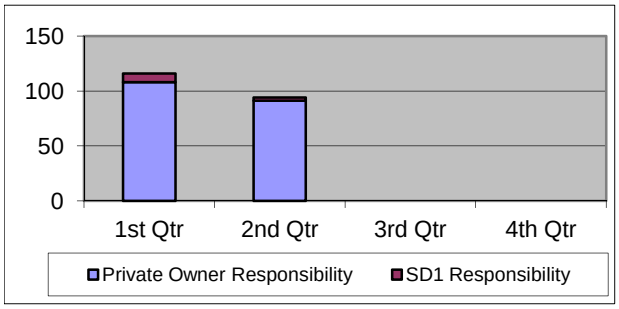


Total Volume (In Million Gallons)



Building Backups

Total Occurrences



2012 Overflow Summary			
	Occurrences	**Volume**	
Rainfall	41	18.730	inches
Recurring WW SSOs	469	60.772	MG
Inactive WW SSOs	0	0.000	MG
Operational SSOs	26	0.152	MG
Dry Weather CSOs	3	0.102	MG
Wet Weather CSOs	734	743.520	MG
Building Backups (Private)		199	
Building Backups (SD1)		11	

Updated: July 30, 2012

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APPENDIX D:

Recurring Wet Weather SSOs

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Recurring Wet Weather SSOs					
No.	**MHID**	**City**	**County**	**Model Predicted Overflow Activations**	**Model Predicted Overflow Volume (MG)**
1	0020006	Silver Grove	Campbell	5	0.10
2	0020007	Silver Grove	Campbell	5	0.02
3	0020008	Unicorp Campbell County	Campbell	5	0.04
4	0020031	Unicorp Campbell County	Campbell	0	0.00
5	0020032	Unicorp Campbell County	Campbell	0	0.00
6	0040003	Fort Thomas	Campbell	0	0.00
7	0050022	Fort Thomas	Campbell	1	0.01
8	0060001	Unicorp Campbell County	Campbell	2	0.03
9	0060002	Unicorp Campbell County	Campbell	1	0.00
10	0060004	Unicorp Campbell County	Campbell	1	0.00
11	0070044	Highland Heights	Campbell	0	0.00
12	0100002	Highland Heights	Campbell	2	0.06
13	0100003	Highland Heights	Campbell	0	0.00
14	0110002	Fort Thomas	Campbell	0	0.00
15	0110010	Highland Heights	Campbell	2	0.06
16	0120019	Highland Heights	Campbell	NA	NA
17	0150009	Wilder	Campbell	3	0.10
18	0150024	Southgate	Campbell	0	0.00
19	0150063	Wilder	Campbell	0	0.00
20	0150064	Wilder	Campbell	0	0.00
21	0150065	Wilder	Campbell	0	0.00
22	0150085	Fort Thomas	Campbell	0	0.00
23	0150086	Fort Thomas	Campbell	2	0.12
24	0150087	Fort Thomas	Campbell	0	0.00
25	0150356	Southgate	Campbell	0	0.00
26	0150399	Wilder	Campbell	2	0.10
27	0200003	Fort Thomas	Campbell	0	0.00
28	0220035	Southgate	Campbell	0	0.00
29	0220044	Fort Thomas	Campbell	1	0.00
30	0220056	Fort Thomas	Campbell	0	0.00
31	0220058	Fort Thomas	Campbell	0	0.00
32	0220086	Southgate	Campbell	0	0.00
33	0230011	Fort Thomas	Campbell	0	0.00
34	0230016	Fort Thomas	Campbell	0	0.00
35	0250002	Fort Thomas	Campbell	0	0.00
36	0260001	Fort Thomas	Campbell	0	0.00
37	0270020	Fort Thomas	Campbell	1	0.00
38	0270026	Fort Thomas	Campbell	0	0.00
39	0270062	Fort Thomas	Campbell	0	0.00
40	0270103	Fort Thomas	Campbell	1	0.00
41	0280001	Fort Thomas	Campbell	0	0.00
42	0280073	Fort Thomas	Campbell	0	0.00
43	0300035	Fort Thomas	Campbell	4	0.02
44	0330005	Fort Thomas	Campbell	0	0.00

Recurring Wet Weather SSOs					
No.	**MHID**	**City**	**County**	**Model Predicted Overflow Activations**	**Model Predicted Overflow Volume (MG)**
45	0360004	Dayton	Campbell	0	0.00
46	0360074	Dayton	Campbell	0	0.00
47	0370001	Fort Thomas	Campbell	1	0.01
48	0370009	Fort Thomas	Campbell	0	0.00
49	0380005	Fort Thomas	Campbell	0	0.00
50	0390007	Fort Thomas	Campbell	0	0.00
51	0400002	Fort Thomas	Campbell	5	0.07
52	0400017	Fort Thomas	Campbell	0	0.00
53	0400034	Fort Thomas	Campbell	0	0.00
54	0410010	Fort Thomas	Campbell	3	0.02
55	0410019	Fort Thomas	Campbell	2	0.02
56	0410036	Fort Thomas	Campbell	0	0.00
57	0430006	Newport	Campbell	7	0.23
58	0440074	Fort Thomas	Campbell	0	0.00
59	0490039	Newport	Campbell	0	0.00
60	0500047	Newport	Campbell	0	0.00
61	0530083	Newport	Campbell	0	0.00
62	0540064	Bellevue	Campbell	NA	NA
63	0860001	Wilder	Campbell	8	5.00
64	0860003	Wilder	Campbell	0	0.00
65	0860016	Wilder	Campbell	0	0.00
66	0870037	Covington	Kenton	5	0.03
67	1010002	Fort Thomas	Campbell	0	0.00
68	1010025	Fort Thomas	Campbell	1	0.00
69	1010027	Fort Thomas	Campbell	0	0.00
70	1040060	Independence	Kenton	0	0.00
71	1090069	Edgewood	Kenton	0	0.00
72	1110025	Erlanger	Kenton	0	0.00
73	1110051	Erlanger	Kenton	0	0.00
74	1110067	Erlanger	Kenton	0	0.00
75	1110161	Erlanger	Kenton	0	0.00
76	1110164	Erlanger	Kenton	0	0.00
77	1110174	Elsmere	Kenton	0	0.00
78	1110226	Elsmere	Kenton	0	0.00
79	1110275	Elsmere	Kenton	0	0.00
80	1110294	Erlanger	Kenton	0	0.00
81	1120029	Erlanger	Kenton	0	0.00
82	1190001	Erlanger	Kenton	0	0.00
83	1190012	Erlanger	Kenton	2	0.01
84	1210018	Erlanger	Kenton	0	0.00
85	1220016	Erlanger	Kenton	1	0.00
86	1220029	Erlanger	Kenton	0	0.00
87	1220054	Erlanger	Kenton	0	0.00
88	1230012	Erlanger	Kenton	NA	NA
89	1230019	Erlanger	Kenton	0	0.00
90	1240008	Erlanger	Kenton	0	0.00
91	1240012	Erlanger	Kenton	0	0.00
92	1550053	Fort Mitchell	Kenton	0	0.00
93	1560016	Fort Mitchell	Kenton	0	0.00
94	1560019	Fort Mitchell	Kenton	0	0.00
95	1560074	Fort Mitchell	Kenton	0	0.00

Recurring Wet Weather SSOs					
No.	**MHID**	**City**	**County**	**Model Predicted Overflow Activations**	**Model Predicted Overflow Volume (MG)**
96	1560092	Fort Mitchell	Kenton	0	0.00
97	1560102	Fort Mitchell	Kenton	0	0.00
98	1570025	Fort Mitchell	Kenton	0	0.00
99	1600029	Lakeside Park	Kenton	0	0.00
100	1600050	Lakeside Park	Kenton	0	0.00
101	1610053	Fort Mitchell	Kenton	0	0.00
102	1610054	Fort Mitchell	Kenton	0	0.00
103	1610102	Fort Mitchell	Kenton	0	0.00
104	1690043	Fort Wright	Kenton	0	0.00
105	1690072	Fort Wright	Kenton	0	0.00
106	1700006	Ludlow	Kenton	0	0.00
107	1700008	Covington	Kenton	0	0.00
108	1700025	Park Hills	Kenton	0	0.00
109	1730100	Crescent Springs	Kenton	0	0.00
110	1730103	Fort Mitchell	Kenton	0	0.00
111	1750076	Independence	Kenton	NA	NA
112	1760047	Edgewood	Kenton	0	0.00
113	1760048	Edgewood	Kenton	0	0.00
114	1770062	Erlanger	Kenton	0	0.00
115	1790003	Crescent Springs	Kenton	0	0.00
116	1830020	Unicorp Boone County	Boone	0	0.00
117	1830067	Unicorp Boone County	Boone	0	0.00
118	1850140	Covington	Kenton	0	0.00
119	1850141	Covington	Kenton	7	0.06
120	1860108	Taylor Mill	Kenton	0	0.00
121	1870013	Covington	Kenton	0	0.00
122	1870014	Covington	Kenton	0	0.00
123	1920086	Cold Spring	Campbell	0	0.00
124	1920097	Cold Spring	Campbell	0	0.00
125	1930007	Southgate	Campbell	0	0.00
126	1940006	Fort Wright	Kenton	0	0.00
127	1950014	Fort Wright	Kenton	2	0.20
128	1950232	Fort Wright	Kenton	NA	NA
129	1960002	Fort Wright	Kenton	0	0.00
130	1990018	Covington	Kenton	0	0.00
131	1990028	Covington	Kenton	1	0.21
132	1990032	Unicorp Kenton County	Kenton	1	0.07
133	2020035	Taylor Mill	Kenton	0	0.00
134	2020203	Covington	Kenton	0	0.00
135	2040040	Edgewood	Kenton	0	0.00
136	2070019	Elsmere	Kenton	0	0.00
137	2090008	Elsmere	Kenton	5	0.09
138	2090063	Elsmere	Kenton	0	0.00
139	2100002	Elsmere	Kenton	0	0.00
140	2100007	Elsmere	Kenton	0	0.00
141	2100036	Elsmere	Kenton	0	0.00
142	2100037	Elsmere	Kenton	0	0.00
143	2100057	Elsmere	Kenton	0	0.00
144	2100106	Elsmere	Kenton	1	0.00
145	2100126	Elsmere	Kenton	NA	NA

Recurring Wet Weather SSOs					
No.	**MHID**	**City**	**County**	**Model Predicted Overflow Activations**	**Model Predicted Overflow Volume (MG)**
146	2100128	Elsmere	Kenton	0	0.00
147	2100129	Elsmere	Kenton	4	0.05
148	2110001	Elsmere	Kenton	4	0.04
149	2110002	Elsmere	Kenton	2	0.03
150	2110006	Elsmere	Kenton	0	0.00
151	2120001	Elsmere	Kenton	1	0.00
152	2120041	Elsmere	Kenton	0	0.00
153	2130026	Erlanger	Kenton	0	0.00
154	2130027	Erlanger	Kenton	0	0.00
155	2130028	Erlanger	Kenton	0	0.00
156	2130286	Erlanger	Kenton	0	0.00
157	2150050	Crestview Hills	Kenton	0	0.00
158	2150090	Crestview	Campbell	4	0.02
159	2160004	Fort Mitchell	Kenton	1	0.00
160	2160005	Fort Mitchell	Kenton	0	0.00
161	2160006	Fort Mitchell	Kenton	0	0.00
162	2170006	Crestview Hills	Kenton	2	0.01
163	2170008	Crestview Hills	Kenton	0	0.00
164	2170013	Lakeside Park	Kenton	0	0.00
165	2170097	Crestview Hills	Kenton	0	0.00
166	2280010	Unicorp Kenton County	Kenton	0	0.00
167	2280011	Unicorp Kenton County	Kenton	2	0.04
168	2280016	Independence	Kenton	1	0.00
169	2290001	Crescent Springs	Kenton	0	0.00
170	2300016	Erlanger	Kenton	0	0.00
171	2300019	Erlanger	Kenton	0	0.00
172	2300121	Independence	Kenton	3	0.34
173	2300123	Unicorp Kenton County	Kenton	3	0.34
174	2301219	Erlanger	Kenton	1	0.02
175	2301274	Erlanger	Kenton	0	0.00
176	2350173	Unicorp Kenton County	Kenton	0	0.00
177	2360024	Unicorp Boone County	Boone	0	0.00
178	2370003	Unicorp Boone County	Boone	0	0.00
179	2380957	Unicorp Boone County	Boone	0	0.00
180	2390002	Unicorp Boone County	Boone	0	0.00
181	2400001	Unicorp Boone County	Boone	0	0.00
182	2410387	Unicorp Boone County	Boone	0	0.00
183	2450001	Alexandria	Campbell	0	0.00
			TOTAL	**118**	**7.58**

Threshold for model activation is 0.01 MGD and 0.001 MG
NA: Not Modeled

APPENDIX E:

Wet Weather CSOs

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Wet Weather CSOs				
No.	CSO ID	KPDES Permit #	Model Predicted Activations	Model Predicted Overflow Volume (MG)
1	0010220	To Be Permitted	7	0.31
2	0030031	KY0021466 - Outfall 10	0	0.00
3	0200069	KY0021466 - Outfall 11	10	0.09
4	0330100	KY0021466 - Outfall 12	0	0.00
5	0340050	KY0021466 - Outfall 14	6	0.09
6	0340051	KY0021466 - Outfall 13	5	0.02
7	0360079	To Be Permitted	5	0.28
8	0540009	To Be Permitted	14	0.25
9	0540044	To Be Permitted	14	0.28
10	0550134	To Be Permitted	1	0.00
11	0570089	KY0021466 - Outfall 16	2	0.37
12	0570090	KY0021466 - Outfall 17	0	0.00
13	0600094	KY0021466 - Outfall 18	13	0.38
14	0600096	To Be Permitted	5	0.05
15	0600097	KY0021466 - Outfall 19	11	0.72
16	0600104	To Be Permitted	1	0.00
17	0610071	KY0021466 - Outfall 21	9	7.14
18	0610072	KY0021466 - Outfall 20	4	0.06
19	0620075	KY0021466 - Outfall 23	15	2.25
20	0620077	KY0021466 - Outfall 22	10	0.12
21	0630061	KY0021466 - Outfall 83	12	0.66
22	0640090	KY0021466 - Outfall 24	17	18.36
23	0650054	To Be Permitted	0	0.00
24	0650090	KY0021466 - Outfall 26	5	0.17
25	0650098	To Be Permitted	6	1.09
26	0650100	KY0021466 - Outfall 25	4	0.05
27	0660085	To Be Permitted	0	0.00
28	0690059	To Be Permitted	0	0.00
29	0690067	To Be Permitted	0	0.00
30	0730129	To Be Permitted	18	0.33
31	0770096	KY0021466 - Outfall 28	11	0.66
32	0790084	KY0021466 - Outfall 31	19	3.15
33	0790086	KY0021466 - Outfall 29	15	12.58
34	0840111	To Be Permitted	0	0.00
35	0840112	To Be Permitted	15	0.60
36	0840116	KY0021466 - Outfall 27	19	1.22
37	0870078	KY0021466 - Outfall 33	4	0.02
38	0870079	KY0021466 - Outfall 34	18	5.89
39	0880081	KY0021466 - Outfall 36	18	3.95
40	0880082	KY0021466 - Outfall 35	5	0.03
41	0890081	To Be Permitted	NA	NA
42	0910065	KY0021466 - Outfall 38	17	15.48
43	0910066	To Be Permitted	0	0.00
44	0910068	KY0021466 - Outfall 37	9	5.46
45	0910084	To Be Permitted	6	0.09
46	0930102	KY0021466 - Outfall 43	0	0.00
47	0930103	KY0021466 - Outfall 42	0	0.00
48	0930104	KY0021466 - Outfall 40	1	0.00
49	0930105	KY0021466 - Outfall 41	18	5.27
50	0930106	KY0021466 - Outfall 39	0	0.00

Wet Weather CSOs				
No.	CSO ID	KPDES Permit #	Model Predicted Activations	Model Predicted Overflow Volume (MG)
51	0960063	KY0021466 - Outfall 45	6	0.27
52	0960064	KY0021466 - Outfall 44	0	0.00
53	0980073	KY0021466 - Outfall 46	4	0.02
54	0980080	KY0021466 - Outfall 47	2	0.02
55	0980081	KY0021466 - Outfall 48	20	9.83
56	1310100	To Be Permitted	NA	NA
57	1320112	To Be Permitted	0	0.00
58	1350155	KY0021466 - Outfall 49	0	0.00
59	1380132	To Be Permitted	2	0.07
60	1380146	To Be Permitted	1	0.00
61	1420141	KY0021466 - Outfall 50	14	0.18
62	1420142	KY0021466 - Outfall 51	20	9.43
63	1420144	KY0021466 - Outfall 52	0	0.00
64	1420145	KY0021466 - Outfall 53	0	0.00
65	1420146	KY0021466 - Outfall 54	0	0.00
66	1420147	KY0021466 - Outfall 55	1	0.00
67	1440204	KY0021466 - Outfall 59	0	0.00
68	1440206	KY0021466 - Outfall 61	14	0.47
69	1440207	To Be Permitted	0	0.00
70	1440209	KY0021466 - Outfall 56	21	14.55
71	1440508	KY0021466 - Outfall 60	7	0.20
72	1470089	KY0021466 - Outfall 62	1	0.02
73	1470093	KY0021466 - Outfall 63	13	9.58
74	1480185	To Be Permitted	9	0.21
75	1480187	KY0021466 - Outfall 30	18	47.61
76	1490132	KY0021466 - Outfall 65	4	0.10
77	1490172	KY0021466 - Outfall 64	0	0.00
78	1500131	KY0021466 - Outfall 66	14	1.29
79	1510133	To Be Permitted	0	0.00
80	1710114	KY0021466 - Outfall 69	3	0.06
81	1710116	KY0021466 - Outfall 68	15	2.60
82	1710119	KY0021466 - Outfall 70	6	0.62
83	1710121	KY0021466 - Outfall 71	5	0.24
84	1710124	KY0021466 - Outfall 72	5	0.39
85	1720109	KY0021466 - Outfall 73	7	2.60
86	1730259	KY0021466 - Outfall 75	6	0.50
87	1730262	To Be Permitted	0	0.00
88	1730263	KY0021466 - Outfall 74	7	0.44
89	1840130	To Be Permitted	14	0.38
90	1850158	KY0021466 - Outfall 76	20	6.80
91	1870193	KY0021466 - Outfall 78	14	0.32
92	1870194	KY0021466 - Outfall 79	4	0.02
93	1880090	KY0021466 - Outfall 81	4	0.11
94	1880091	KY0021466 - Outfall 80	0	0.00
		TOTAL	**650**	**196.44**

Threshold for model activation is 0.01 MGD and 0.001 MG