msd
Safe, clean waterways

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January 30, 2017

Jeffrey A. Cummins, Director
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Municipal & Industrial Enforcement Section
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Chief, Environmental Enforcement Section
Environmental and Natural Resources Division
U.S. Department of Justice
Post Office Box 7611
Washington, DC 20044-7611

Subject: Quarterly Report 45
Civil Action No. 3:08-cv-00608-CRS

Attention Director and Chiefs:

Please find attached our Quarterly Report, prepared in accordance with Paragraph 29 of our Amended Consent Decree. This report is for the period October 1, 2016 – December 31, 2016, pertaining to Consent Decree compliance activities. Included are sections on Project WIN activities related to: NMC, SORP, Discharge Abatement Plans, Public Outreach, Education, Notification and Participation, CMOM and Performance Overview.

I certify under penalty of law that this document and all attachments were prepared under our 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.

If you have questions or need additional information, please contact me at (502) 540-6136.

Sincerely,

Angela Akridge, PE
Louisville MSD Chief Engineer

cc: James A. Parrott
Paula Purifoy
File

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Rev. 1/9/2017

Louisville and Jefferson County Wet Weather Consent Decree Quarterly Report #45

Reporting Period:
October 1, 2016 through December 31, 2016

Submitted To:
Kentucky Department of Environmental Protection
United States Environmental Protection Agency
United States Department of Justice

Submitted By:
Louisville and Jefferson County Metropolitan Sewer District
700 W. Liberty Street
Louisville, Kentucky 40203-1911

Submittal Date:
January 30, 2017

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INTRODUCTION

The Louisville and Jefferson County Metropolitan Sewer District (MSD) is currently under an Amended Consent Decree with the Kentucky Department of Environmental Protection (KDEP), the United States Environmental Protection Agency (EPA), and the United States Department of Justice. The Amended Consent Decree was signed by United States District Judge Simpson on April 10, 2009 and filed in United States District Court, Western Division of Kentucky, Louisville Division, on April 15, 2009.

Quarterly Reporting Period

This is the forty-fifth Quarterly Report submitted in accordance with Paragraph 29 of the Amended Consent Decree. This report covers the time period from October 1, 2016, through December 31, 2016. The structure for this report is outlined as follows:

Section 1: Program Activities for Nine Minimum Controls – This section describes the data collected for NMC 2 – Maximization of Storage in the Collection System, and NMC 4 – Maximization of Flow at the Morris Forman Water Quality Treatment Center (WQTC) that were active during the reporting period.

Section 2: Program Activities for Sewer Overflow Response Protocol Program Activities for Sewer Overflow Response Protocol – This section describes the training attendance records, overflow data, and overflow reconnaissance inspection routes related to SORP that were active during the reporting period.

Section 3: Program Activities for Discharge Abatement Plans – This section describes the schedule and status for projects related to the DAP by means of an updated Gantt chart for active DAP projects during the reporting period. This section also includes the anticipated projects and activities that are scheduled for continued compliance with the Amended Consent Decree.

Section 4: Program Activities for Public Outreach, Education, Notification and Participation – This section describes the activities related to public outreach that were active during the reporting period.

Section 5: Capacity Management Operations and Maintenance Report – The CMOM program activities and programmatic activities for WQTCs generating capital projects are reported in a Gantt chart for the reporting period. This section also includes the schedule for activities planned for the next reporting period are included in this section for continued compliance with the Amended Consent Decree.

Section 6: Project WIN Performance Overview – This section provides an accounting of unauthorized discharges from the separate sanitary and combined sewer systems, and the estimated volumes along with performance information on bypasses at WQTCs. A discussion of the probable reductions in both unauthorized discharge points and the discharges from MSD's Combined Sewer Overflow (CSO) locations, identified in the Morris Forman Water Quality Treatment Center Kentucky Pollutant Discharge Elimination System (KPDES) permit, that are expected to result from MSD's projects and activities during the reporting period are also contained in this section.

SECTION 1: PROGRAM ACTIVITIES FOR NINE MINIMUM CONTROLS

1.1. NINE MINIMUM CONTROLS PROGRAM BACKGROUND

Per Paragraph 24.a. of the Amended Consent Decree, the Nine Minimum Controls (NMC) Compliance Report was initially submitted to EPA and KDEP on February 10, 2006. MSD received approval of the report on February 22, 2007. The approved NMC compliance document can be viewed on the MSD Project WIN (Waterway Improvements Now) website, available at **www.msdprojectwin.org**. Highlights of the NMC program implementation over this reporting period are outlined below.

1.2. NMC 2: MAXIMIZATION OF STORAGE IN THE COLLECTION SYSTEM

MSD has continued operation of Phase 1 and Phase 2 of the Real Time Control (RTC) system. During this reporting period, approximately 143 MG were stored in the system during rain events and routed to the Morris Forman WQTC once the system was able to handle the flow. See Figure 1.1 at the end of this section for a detailed report.

During this reporting period, the following activities were continued and/or completed:

- RTC Integration – MSD staff and the RTC consultant completed the wet weather Standard Operating Procedures (SOPs) for the system that also includes the Southeast Diversion Structure, Buechel Basin, Northern Ditch Diversion, and the Derek R. Guthrie WQTC Wet Weather Treatment Facility. Full integration in an automated mode will not be achieved until the RTC software (Csoft) is upgraded to the most current version and the hydraulic engine is converted to use MSD's InfoWorks Integrated Catchment Modeling (ICM) hydraulic model. While this work is being completed, the SOPs are being implemented incrementally, starting with a period of manual operation to validate the control assumptions, followed by increasing levels of system automation as the automated controls for individual components are implemented, validated, and then incorporated into the overall RTC system.

  During this reporting period, testing and validation of the RTC ICM hydraulic model in preparation for deployment of the Csoft upgrade continued. Staff completed the review and revision of the SOPs for the Southeast Diversion Structure, Buechel Basin, Northern Ditch Diversion, and the Derek R. Guthrie WQTC Wet Weather Treatment Facilities. Staff continued to develop the RTC process layer controls and SOPs for the Bells Lane campus, Logan and Breckinridge storage basins and CSO Interceptor, and upgraded Nightingale Pump Station (PS) facilities.

  During the next reporting period, MSD anticipates completing RTC ICM Model off-line testing and initiating deployment of the latest version of Csoft. Full implementation of the revised SOPs will be completed after the Csoft and InfoWorks ICM hydraulic model integration is complete and as new or upgraded facilities are brought into service. Full deployment of the latest version of Csoft utilizing the integrated ICM model is anticipated to be completed in the April to June 2017 reporting period.

- RTC Performance Assessment and Improvements – The main objective of the RTC Performance Assessment is to determine whether the available flow and storage capacities within the system are being utilized to their full potential. MSD staff continues to review and prioritize strategies for performance improvement. During the next reporting period, MSD staff and the RTC consultant will continue working to implement hardware, software and set-point changes as applicable on a site-by-site basis. A configuration update was made to address invalid operating mode signals from local stations by automatically revising the mode to loss of communication. This change allows the RTC system to remain available and continue operating sites with valid mode signals. A revised approach to writing data utilizing an OLE for Process Controls (OPC) Server to improve stability of the system and reduce Human Machine Interface (HMI) programming complexity is under review for deployment with the Csoft upgrade. A simplified HMI program for the Southwestern Outfall Relief – Phase 2 (SWOR2) site and adjustment to position and flow deadband parameters aimed at reducing the number of gate movements and improving site performance are under evaluation. MSD continued to evaluate potential equipment upgrades and site improvements at the Sneads Branch facility. The study is expected to be completed in the January to March 2017 period. The 60% design for upgrades to the Ashland Avenue gate structure were completed. The design is based on findings for the preliminary design report and include replacing the existing single gate system with a dual gate single actuator system, installation of new check valves to prevent backflow from the downstream trunk sewer, and a backup generator. The final design is expected to be completed during the January to March 2017 reporting period.
- Southwest Sluice Gate / Southwestern Outfall Relief Phase 1 (SWSG/SWOR1) – A gate failure at the SWSG facility on April 1, 2016, has impacted the ability of the RTC system to fully utilize storage. The center gate (one of three) broke loose and is inoperable in the closed position. A hydraulic analysis indicates the two remaining gates are capable of handling most events; however, it was necessary to limit the maximum storage level to 10 feet to ensure safe operations and reduce risks for flooding and basement surcharging. Consequently, the available storage has been reduced from 14.5 MG to 2.2 MG. In addition, the change has impacted the ability to effectively dewater upstream sites including SWOR2, Brady Lake, Executive Inn, and Ashland Avenue. MSD continued to implement improvements to the Southwestern Outfall dewatering strategy in Csoft and temporary revisions to local programmable logic controller (PLC) coding to improve management during this period. Repairs and upgrades to the SWSG are in progress and anticipated to be completed in the April to June 2017 reporting period.

1.3. NMC 4: MAXIMIZATION OF FLOW AT THE MORRIS FORMAN WATER QUALITY TREATMENT CENTER

Plant Outages

The Morris Forman WQTC Headworks Replacement Project continues. The West Headworks was returned to service in November 2016. This resulted in a plant capacity of 210 MGD for the remainder of the reporting period. Flows at Morris Forman WQTC were sustained at or above 210 MGD before allowing overflows at CSO015, CSO016 and CSO191 due to rain events during the quarter. The West Headworks status governed the plant capacity at this time due to performance testing. MSD anticipates that the East Headworks will begin construction during the next reporting period.

Morris Forman WQTC Projects

- Morris Forman WQTC Headworks – West Headworks is completed. Two channels in the East Headworks will be removed for modification during the next reporting period.
- Final Effluent Pump Station (FEPS) Generator – The generator installation is completed and will be tested in the next reporting period.
- Electrical High Yard Project – Site work continues on the project. Equipment is scheduled for delivery and installation during the next reporting period.
- Centrifuge Backdrive Controls – Construction continues on the project.
- Oxygen Generation – Site preparation between Oxygen Batteries A and B is anticipated to be substantially complete during the next reporting period.

Morris Forman WQTC Performance

Figures 1.2 through 1.4 located at the end of this section illustrate performance in maximizing flow during wet weather to the Morris Forman WQTC. The top of the chart shows rainfall in inches per day. The middle part of the chart shows Morris Forman WQTC effluent flow and secondary treatment flow. The difference between these is the secondary bypass flow. The bottom of the chart shows days with a CSO activation at the five CSOs in the vicinity of the Morris Forman WQTC (CSOs 015, 016, 191, 210, and 211). Note that the flow meter downstream from CSO211 is known to be affected by backwater effects of the Ohio River and the ultrasonic signal is sometimes blocked by mist and condensation when air and sewage temperatures are significantly different. Therefore, CSO activations at CSO211 are keyed to water levels upstream and downstream of the inflatable dam in the Main Diversion Structure. The other CSO activations are tied to flow measurement downstream of the respective CSO. At times, “blips” representing very small volumes of overflow are indicated by flow meters even though an overflow cannot be verified by level measurements or other indicators. These blips are not reported as overflows, but are noted in the CSO monitoring data reported in Appendix B. There are occasions in which a communications failure with telemetry has led to short-term gaps in the data. In addition, indications of rainfall and CSO activations are shown on the day they happened, but are not aligned with the exact time, so the effluent flow graph (which is tied to actual time) may show peaks that are offset from the indicated rain or CSO events by as much as 24 hours, as illustrated by the CSO event shown on October 1, 2016 that was caused by a rain event that began on September 28, 2016 and ended September 30, 2016.

For the month of October 2016, Morris Forman WQTC did not meet the Seven and 30 Day Secondary Effluent Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD) Limits and percent removal for TSS. For the month of November 2016, Morris Forman WQTC did not meet the Seven and 30 Day Secondary Effluent Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD) Limits.

These permit issues can be attributed to ongoing capital construction involving process area shutdowns that impact plant performance at the Morris Forman WQTC. Compromised solids processing capability has also contributed the exceedances. Morris Forman WQTC continues to employ additional solids removal strategies to meet solids removal demands.

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Figure 1.1. Wet Weather Storage in the Morris Forman Sewer System via the RTC System

Louisville/Jefferson County
Metropolitan Sewer District

WET WEATHER STORAGE IN THE MORRIS FORMAN SEWER SYSTEM VIA THE RTC SYSTEM

Period	
From :	10/01/2016
To :	12/31/2016

Event Number	Wet Weather Event			Rainfall			CSO Saved Volume (MG)								High River Levels	Comments
	Start Date	End Date	Duration	Average* TRFD (in)	Max** TRFD (in)	Max** Rain Gauge	SWPS SG Chamber (2.2)+	SWOR2 (7.5)	Brady Lake and Executive Inn Storage (13.4)	Southern Outfall (3.5)	Ashland (1.0)	Ohio River Interceptor (4.1)	Sneads Branch (2.5)	Total (46.5)		
2016-078	10/20/16 8:30	10/21/16 12:35	28:05:00	0.73	1.23	TR14	4.10	1.70	2.40	3.50	0.60	4.10	0.00	16.40	No	Large storm cells heterogeneously distributed over the service area . The SWSG site was controlled manually. The storage capacity at the SWSG site is restricted due to the damaged Gate 2. The inflatable gate at the SWOR2 site was used. The Sneads Branch site has been in wet weather mode since September 30th.
2016-081	11/23/16 5:40	11/25/16 6:15	48:35:00	0.31	0.37	TR13	4.50	2.05	0.65	1.15	0.35	3.00	0.10	11.80	No	Moderate storm cells heterogeneously distributed over the service area. The SWSG site was controlled manually. The storage capacity at the SWSG site is restricted due to the damaged Gate 2. The SWOR2 site was temporaroly controlled manually at the end of the rainfall event.
2016-082	11/28/16 14:25	11/29/16 21:40	31:15:00	0.81	1.35	TR14	4.20	1.80	1.70	3.50	0.40	4.10	0.30	16.00	No	Large storm cells heterogeneously distributed over the service area. The SWSG site was controlled manually. The storage capacity at the SWSG site is restricted due to the damaged Gate 2. The SWOR2 site was temporarily controlled manually during the rainfall event.
2016-084	12/6/16 1:35	12/7/16 20:35	43:00:00	1.04	1.51	TR14	5.25	2.30	2.25	3.50	0.45	4.45	0.35	18.55	No	Large storm cells homogeneously distributed over the service area. The SWSG site was controlled manually. The storage capacity at the SWSG site is restricted due to the damaged Gate 2.
2016-085	12/11/16 17:05	12/12/16 16:45	23:40:00	0.43	0.73	TR14	3.20	1.20	1.10	1.50	0.50	3.55	0.10	11.15	No	Moderate storm cells heterogeneously distributed over the service area. The SWSG site was controlled manually. The storage capacity at the SWSG site is restricted due to the damaged Gate 2.
2016-086	12/16/16 22:20	12/20/16 17:00	90:40:00	2.88	3.49	TR04	6.65	3.65	8.70	3.50	0.65	4.10	2.70	29.95	No	Very large storm cells homogeneously distributed over the service area. The SWSG site was controlled manually. The storage capacity at the SWSG site is restricted due to the damaged Gate 2. The SWOR2 site was temporaroly controlled manually during the rainfall event (its dam was deflated during the event).
2016-087	12/23/16 19:25	12/25/16 11:10	39:45:00	0.56	0.72	TR14	6.30	1.80	2.25	3.50	0.70	4.45	0.50	19.50	No	Moderate storm cells homogeneously distributed over the service area. The SWSG site was controlled manually. The storage capacity at the SWSG site is restricted due to the damaged Gate 2.
2016-088	12/26/16 15:50	12/27/16 8:25	16:35:00	0.48	0.90	TR14	6.80	2.40	1.40	3.50	0.60	4.50	0.35	19.55	No	Moderate storm cells heterogeneously distributed over the service area. The SWSG site was controlled manually. The storage capacity at the SWSG site is restricted due to the damaged Gate 2.
TOTAL							41.00	16.90	20.45	23.65	4.25	32.25	4.40	142.90		

* Average total rainfall depth based on rain gauge TR04, TR05, TR11, TR12, TR13, TR14 and TR15

** Maximum total rainfall depth measurement and its location during the wet weather event

*** MDS is always manually controlled by operator

\+ The capacity has been reduced from 14.5 MG to 2.2 MG since April 1, 2016 due to the failure of Gate 2 at SWSG.

Figure 1.2. Morris Forman WQTC – Plant Flows and Associated CSO Activations – October 2016

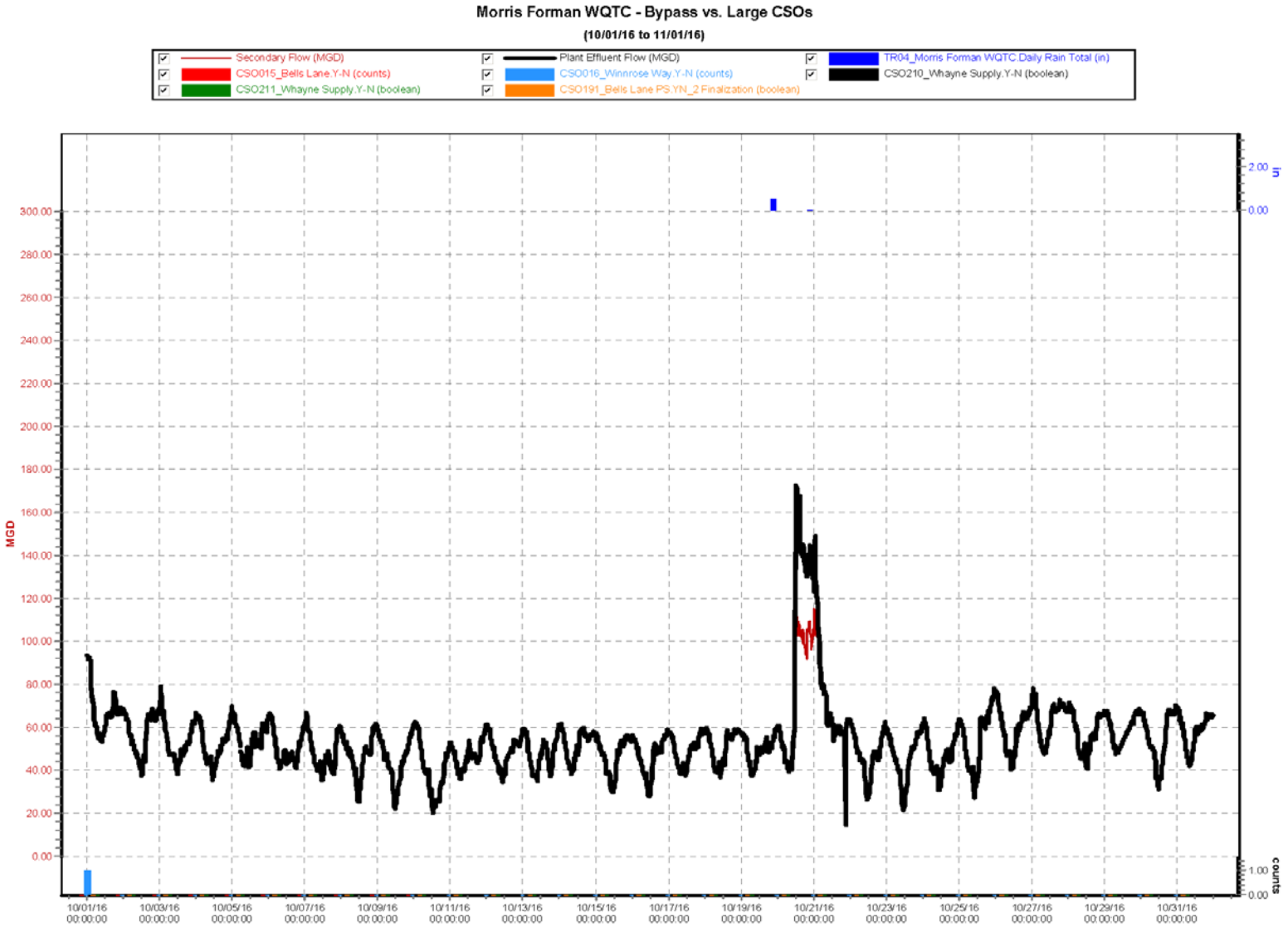


Figure 1.3. Morris Forman WQTC – Plant Flows and Associated CSO Activations – November 2016

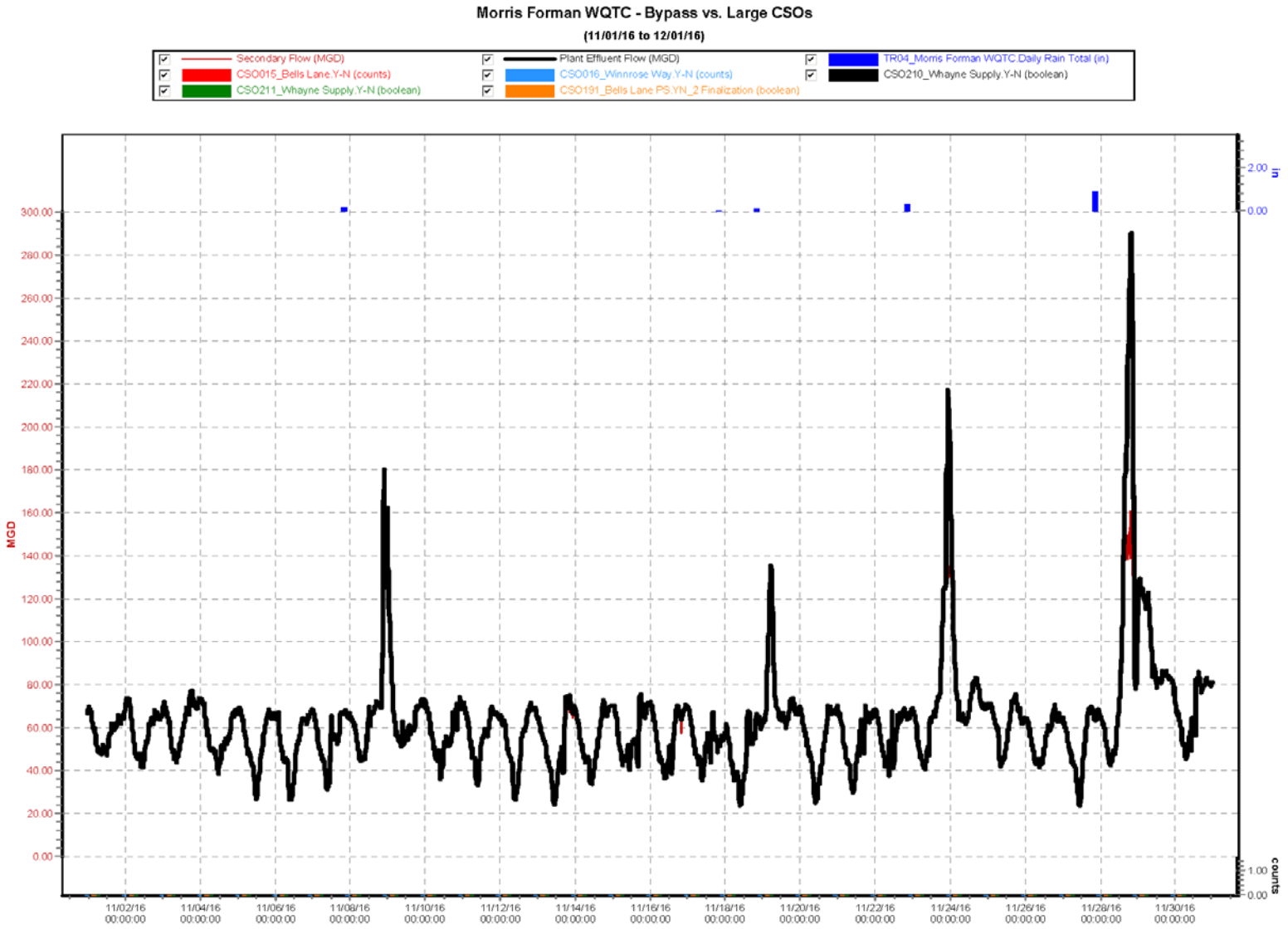
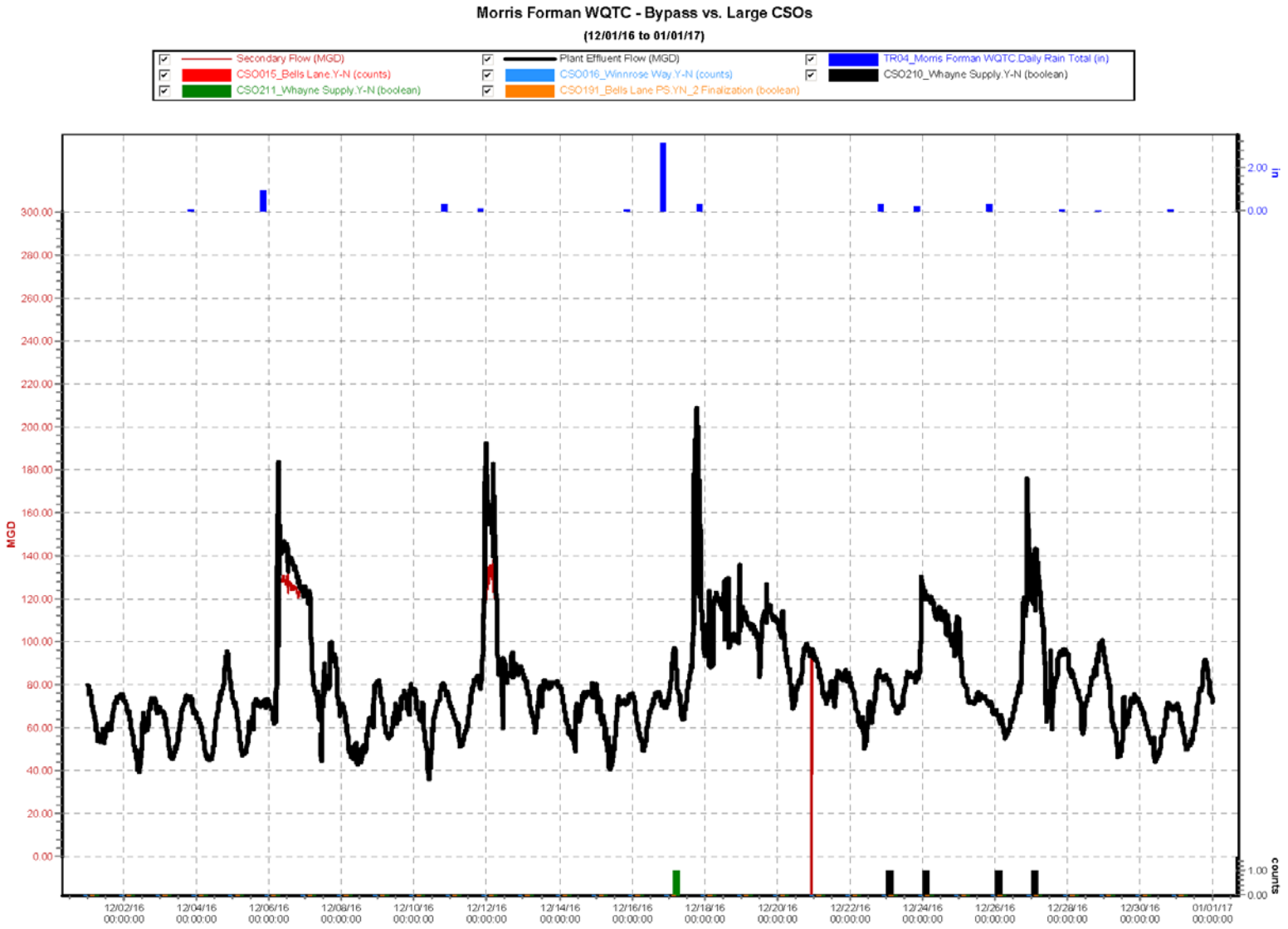


Figure 1.4. Morris Forman WQTC – Plant Flows and Associated CSO Activations – December 2016



1.4. NMC 6: CONTROL OF SOLIDS AND FLOATABLE MATERIALS IN COMBINED SEWER OVERFLOWS

MSD continued to monitor and document performance of the CSO108 Solids and Floatables control CDS operation in accordance with the MOU with the Kentucky Nature Preserve. A report of the efficacy of the CDS unit was submitted to the Kentucky Nature Preserve prior to December 31, 2016. A copy of the report is provided in Appendix F.

SECTION 2: PROGRAM ACTIVITIES FOR SEWER OVERFLOW RESPONSE PROTOCOL

2.1. PROGRAM BACKGROUND

Per Paragraph 24.d. of the Amended Consent Decree, MSD initially submitted the Sewer Overflow Response Protocol (SORP) to EPA and KDEP on February 10, 2006, and received comments on March 13, 2006.

MSD completely revised the SORP documentation in 2011. The draft of this revised document was submitted for comment on August 22, 2011. Comments from EPA and KDEP were received and addressed, and the document was resubmitted October 28, 2011. Final approval of the updated SORP document was received February 21, 2012. A hard copy of the approved document has been distributed to each division throughout MSD and a viewable, downloadable electronic version has been posted to the MSD Project WIN website, available at **www.msdprojectwin.org**. The following activities were performed during this reporting period.

2.2. OVERFLOW MANAGEMENT AND FIELD DOCUMENTATION

MSD monitored approximately 149 sanitary sewer overflow (SSO) sites, which have been grouped into routes based on the range of rainfall rates necessary to cause a SSO. These routes are monitored during rain events depending on the magnitude and location of the storm. If an overflow is observed, a Discharge Work Order is created to document the event. During this quarter, seventeen unauthorized discharges were identified through route reconnaissance. Inspection routes were run during rain events, as described in Table 2.1.

MSD Operations staff did not haul due to capacity related issues during this reporting period. Hauling was initiated due to other issues as indicated in Table 2.2.

Table 2.1. Rain Event Inspection Routes

ROUTE DESCRIPTION	DECEMBER 6, 2016	DECEMBER 17, 2016
HIKES POINT RAIN EVENT SSO INSPECTION ROUTE	X	X
JEFFERSONTOWN RAIN EVENT SSO INSPECTION ROUTE (JTOWN MANHOLES WITHIN 2000 LF OF HEADWORKS)	X	X
JEFFERSONTOWN/FERN CREEK RAIN EVENT SSO INSPECTION ROUTE	X	X
MIDDLE/MUDDY FORK RAIN EVENT SSO INSPECTION ROUTE		X
ENGINEERING RAIN EVENT SSO INSPECTION ROUTE		X

Table 2.2. Hauled Volumes in Gallons

PROBLEM	OCTOBER	NOVEMBER	DECEMBER
ELECTRICAL PROBLEMS AT MSD	11,500	0	3,000
UTILITY DAMAGE	0	3,000	0

2.3. STAFF TRAINING AND COMMUNICATION

Reviewed and updated the training documentation for the 2016 fourth quarter SORP training that included Completing the Overflow Reporting Form, Reporting Requirements and Data Entry and Documentation. Conducted the following SORP Quarterly and Annual Overview training sessions which were attended by 579 employees. Details are shown in Table 2.3.

Table 2.3. Staff Training Participation – Current Reporting Period

DATE	INTENDED AUDIENCE	LOCATION	MODULE	ATTENDEES
November 9, 2016	Operations Staff	Morris Forman WQTC	Annual Overview & Completing the Overflow Reporting Form, Reporting Requirements and Data Entry	31
November 9, 2016	Operations Staff	Morris Forman WQTC	Annual Overview & Completing the Overflow Reporting Form, Reporting Requirements and Data Entry	9
November 10, 2016	Operations Staff	CMF	Annual Overview & Completing the Overflow Reporting Form, Reporting Requirements and Data Entry	35
November 11, 2016	Operations Staff	CMF	Annual Overview & Completing the Overflow Reporting Form, Reporting Requirements and Data Entry	13
November 11, 2016	Operations Staff	CMF	Annual Overview	15
November 15, 2016	Main Office Staff	Main Office	Annual Overview	45
November 16, 2016	Operations Staff	Morris Forman WQTC	Annual Overview & Completing the Overflow Reporting Form, Reporting Requirements and Data Entry	32
November 16, 2016	Operations Staff	Morris Forman WQTC	Annual Overview & Completing the Overflow Reporting Form, Reporting Requirements and Data Entry	12
November 17, 2016	Operations Staff	Main Office	Annual Overview	36
November 18, 2016	Operations Staff	CMF	Annual Overview & Completing the Overflow Reporting Form, Reporting Requirements and Data Entry	15
November 29, 2016	Operations Staff	CMF	Annual Overview	22
November 30, 2016	Operations Staff	Cedar Creek WQTC	Annual Overview & Completing the Overflow Reporting Form, Reporting Requirements and Data Entry	25
November 30, 2016	Operations Staff	Floyds Fork WQTC	Annual Overview & Completing the Overflow Reporting Form, Reporting Requirements and Data Entry	13
December 6, 2016	Operations Staff	CMF	Annual Overview	63
December 7, 2016	Operations Staff	Derek R. Guthrie WQTC	Annual Overview & Completing the Overflow Reporting Form, Reporting Requirements and Data Entry	9
December 7, 2016	Main Office Staff	Main Office	Annual Overview	25
December 8, 2016	Operations Staff	CMF	Annual Overview & Completing the Overflow Reporting Form, Reporting Requirements and Data Entry	41
December 9, 2016	Operations Staff	CMF	Annual Overview	45
December 9, 2016	Operations Staff	CMF	Annual Overview	7
December 13, 2016	Main Office Staff	Main Office	Annual Overview	49
December 14, 2016	Operations Staff	CMF	Annual Overview	37

SECTION 3: PROGRAM ACTIVITIES FOR DISCHARGE ABATEMENT PLANS

3.1. INTEGRATED OVERFLOW ABATEMENT PLAN

As a requirement of the Amended Consent Decree, per Paragraph 25, MSD is to prepare and submit for review and approval discharge abatement plans for the elimination of unauthorized discharges from the separate sanitary and the combined sewer systems, the reduction and control of discharges from the CSO locations identified in the Morris Forman WQTC KPDES permit, and the improvement of water quality in the receiving waters.

The Final Sanitary Sewer Discharge Plan (SSDP) and the Final CSO Long Term Control Plan (LTCP) were submitted concurrently and certified on December 19, 2008, under the title of the Integrated Overflow Abatement Plan (IOAP). The IOAP was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by an Order signed February 12, 2010, and was entered into public record on February 15, 2010.

MSD submitted an IOAP modification request to EPA/KDEP on September 20, 2012, with partial approval granted via certified letter on October 25, 2012. The modified project package, including program descriptions, progress, and updated supporting text, was submitted to EPA/KDEP for approval on June 14, 2013. On June 19, 2014, MSD received approval of the 2012 IOAP Modification from EPA/KDEP. The project and program modifications proposed within this submittal resulted from additional information gathered from ongoing system monitoring, hydraulic modeling and best professional judgment. MSD's adaptive management approach to overflow abatement has justified modifications which provide a higher level of overflow control. These modifications will be completed faster than originally proposed for approximately the same overall budget.

Since the June 19, 2014, approval of the 2012 IOAP Modification, minor project modification requests have been submitted and approved on an individual project basis.

3.2. SANITARY SEWER DISCHARGE PLAN

The Sanitary Sewer Discharge Plan (SSDP) addresses the overflows and unauthorized discharges from the separate sanitary sewer system. Three separate plans have been submitted under this program as described below and outlined in Paragraph 25.a. of the Amended Consent Decree.

3.2.1 UPDATED SANITARY SEWER OVERFLOW PLAN IMPLEMENTATION

MSD prepared and submitted the Updated Sanitary Sewer Overflow Plan (SSOP) on February 10, 2006. This plan included an overview of the MSD sanitary sewer overflow abatement program and specific actions taken to reduce/eliminate overflows from the sanitary sewer system. This document included a list of the proposed improvements to be accomplished by December 31, 2008. Activities required under the Updated SSOP have been completed.

3.2.2 INTERIM SANITARY SEWER DISCHARGE PLAN

MSD submitted an Interim Sanitary Sewer Discharge Plan (ISSDP) for approval on September 30, 2007. Comments were received on January 8, 2008. MSD resubmitted the revised ISSDP on March 7, 2008, and received an approval letter for the ISSDP on July 24, 2008. The approved ISSDP document can be viewed on the MSD Project WIN website, available at **www.msdprojectwin.org**.

All projects required by the ISSDP have been completed and certified. The Derek R. Guthrie WQTC Project's completion was delayed in accordance with the construction contract documents due to existing litigation and performance by the general contractor. However, the full functionality and capacity of the plant upgrades under this project met the demands of the service area. With this understanding, a revised certification letter dated October 19, 2015, was submitted certifying that the Derek R. Guthrie WQTC Project is performing in accordance with its stated intent and purpose, and is in compliance with the Consent Decree requirements.

3.2.3 FINAL SANITARY SEWER DISCHARGE PLAN

MSD submitted for approval a Final SSDP on December 19, 2008, as Volume 3 of the IOAP. The IOAP was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by an Order signed February 12, 2010, and was entered into public record on February 15, 2010. A revised SSDP was included in the 2012 IOAP Modification, submitted on June 14, 2013. On June 19, 2014, MSD received approval of the 2012 IOAP Modification from EPA/KDEP.

The following is a summary of remaining activities that support elimination of the Prospect WQTCs.

- The Prospect #3: - ORFM System Improvements includes the construction of the 2 MG Muddy Fork Basin and installing a new parallel force main for the Muddy Fork PS along with pump upgrades at Muddy Fork PS, Winding Falls/Phoenix Hill PS and New Market PS. All phases of this project are complete. A certification letter, dated December 19, 2016, was submitted certifying the completion of this project.

3.3. CSO LONG TERM CONTROL PLAN

The CSO Long Term Control Plan (LTCP) addresses the overflows and unauthorized discharges from the Combined Sewer System (CSS). Two separate plans have been submitted under this program as described below and outlined in Paragraph 25.b. of the Amended Consent Decree.

3.3.1 INTERIM CSO LONG TERM CONTROL PLAN

The Interim CSO LTCP was initially submitted to EPA and KDEP on February 10, 2006, and MSD received an approval letter dated February 22, 2007. The approved Interim LTCP can be viewed on the MSD Project WIN website, available at **www.msdprojectwin.org**. 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. All projects associated with this plan have been completed.

3.3.2 FINAL CSO LONG TERM CONTROL PLAN

MSD submitted for approval the Final CSO LTCP on December 19, 2008, as Volume 2 of the Integrated Overflow Abatement Plan. The IOAP was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by an Order signed February 12, 2010, and was entered into public record on

February 15, 2010. A revised LTCP was included in the 2012 IOAP Modification, submitted June 14, 2013. On June 19, 2014, MSD received approval of the 2012 IOAP Modification from EPA/KDEP.

3.3.3 GREEN PROGRAM UPDATE

MSD continued program activities to provide incentives to private property owners to reduce the amount of impervious surface that drains to the combined sewer system. The continued coordination with the Green and MS4 programs is on-going to optimize resources and regulations to improve water quality.

The Green Program incentives are being used to promote green projects in the areas that provide the most value for residual AAOV reduction based on the latest modeling results. Project opportunities are optimized to best use available funding and provide additional overflow volume reduction benefits to complement LTCP projects.

MSD continues to administer urban reforestation and downspout disconnection programs to intercept rainwater and reduce the amount of stormwater entering the sewer system. Urban reforestation proposals require a Memorandum of Understanding for reporting tree location, condition and maintenance plan. Partners participating in the program are responsible for ongoing maintenance of the trees. Downspout disconnection participants must pass inspection and direct ties to the system are permanently blocked.

3.4. DISCHARGE ABATEMENT PLAN PROJECT STATUS

3.4.1 SANITARY SEWER DISCHARGE PLAN

Table 3.1 details SSDP projects completed and certified during the current reporting period. No SSDP projects are required to be completed and certified during the next reporting period.

Table 3.1. IOAP Project Completion Dates – SSDP – Current Reporting Period

BUDGET ID	ACD PROJECT NUMBER	PROJECT NAME	DATE CERTIFIED	ACD DATE
A12023	S_OR_MF_NB04_M_03_B_B	Prospect #3 - ORFM System Improvements	December 19, 2016	December 31, 2016

3.4.2 COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN

Table 3.2 details CSO LTCP projects completed and certified during the current reporting period. No CSO LTCP projects are required to be completed and certified during the next reporting period.

Table 3.2. IOAP Project Completion Dates – CSO LTCP – Current Reporting Period

BUDGET ID	ACD PROJECT NUMBER	PROJECT NAME	DATE CERTIFIED	ACD DATE
H09145	L_SO_MF_130_S_09B_B_A_8	Story Avenue and Spring Street Green Infrastructure	December 20, 2016	December 31, 2016

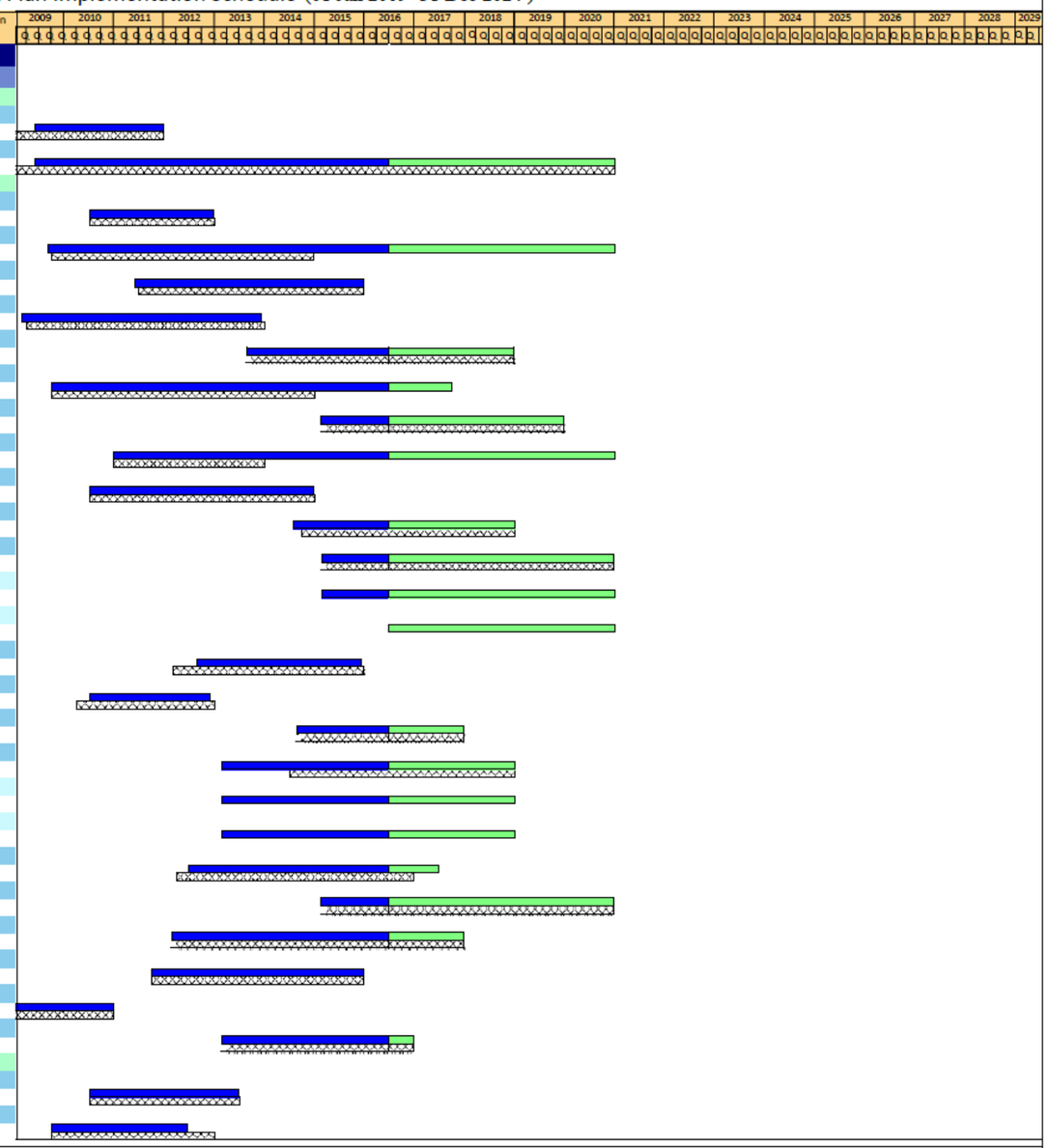
3.4.3 ACTIVITY PROGRESS CHART

A Gantt chart showing the 2012 IOAP Modification project schedules and subsequent approved minor modifications for the entire program is provided in Figure 3.1. Refer to IOAP, Volume 1 – Figure 6.3.1 for the previous chart.

Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009- 31 Dec 2024)

Actvity Name	Scheduled Finish	2009 IOAP Completon	IOAP Modificaton Completon Date
MSD IOAP ANNUAL SCHEDULE - 2016	31-Dec-24	31-Dec-24	31-Dec-24
LONG TERM CONTROL PLAN	31-Dec-20	31-Dec-20	31-Dec-20
GREEN DEMONSTRATION PROJECTS	31-Dec-20	31-Dec-20	31-Dec-20
GREEN INFRASTRUCTURE DEMONSTRATION PROJECTS	31-Dec-11 A	31-Dec-11	31-Dec-11
GREEN INFRASTRUCTURE DEMONSTRATION PROJECTS	31-Dec-11 A	31-Dec-11	31-Dec-11
GREEN INFRASTRUCTURE PROGRAM	31-Dec-20	31-Dec-20	31-Dec-20
GREEN INFRASTRUCTURE PROGRAM	31-Dec-20	31-Dec-20	31-Dec-20
GRAY INFRASTRUCTURE PROJECTS	31-Dec-20	31-Dec-20	31-Dec-20
CSO 123 DOWNSPOUT DISCONNECTION	30-Dec-12 A	31-Dec-12	31-Dec-12
CSO 123 DOWNSPOUT DISCONNECTION	30-Dec-12 A	31-Dec-12	31-Dec-12
I-64 AND GRINSTEAD DRIVE STORAGE BASIN	31-Dec-20	21-Dec-14	31-Dec-20
I-64 AND GRINSTEAD DRIVE STORAGE BASIN	31-Dec-20	21-Dec-14	31-Dec-20
CSO 140 STORAGE AND GREEN INFRASTRUCTURE CONTROLS	23-Dec-15 A	31-Dec-15	31-Dec-15
CSO 140 STORAGE AND GREEN INFRASTRUCTURE CONTROLS	23-Dec-15 A	31-Dec-15	31-Dec-15
CSO 206 SEWER SEPARATION	12-Dec-13 A	31-Dec-13	30-Dec-13
CSO 206 SEWER SEPARATION	12-Dec-13 A	31-Dec-13	30-Dec-13
CLIFTON HEIGHTS STORAGE BASIN	31-Dec-18	31-Dec-18	31-Dec-18
CLIFTON HEIGHTS STORAGE BASIN	31-Dec-18	31-Dec-18	31-Dec-18
BELLS LANE WET WEATHER TREATMENT FACILITY AND IN LINE STORAGE	30-Sep-17	31-Dec-14	30-Sep-17
BELLS LANE WET WEATHER TREATMENT FACILITY AND IN LINE STORAGE	30-Sep-17	31-Dec-14	30-Sep-17
PORTLAND WHARF STORAGE BASIN	31-Dec-19	31-Dec-19	31-Dec-19
PORTLAND STORAGE BASIN	31-Dec-19	31-Dec-19	31-Dec-19
STORY AVENUE AND MAIN STREET STORAGE BASIN	31-Dec-20	31-Dec-13	31-Dec-20
STORY AVENUE AND MAIN STREET STORAGE BASIN	31-Dec-20	31-Dec-13	31-Dec-20
CSO 058 IN-LINE STORAGE AND GREEN INFRASTRUCTURE CONTROLS	23-Dec-14 A	31-Dec-14	31-Dec-14
CSO 058 IN-LINE STORAGE AND GREEN INFRASTRUCTURE CONTROLS	23-Dec-14 A	31-Dec-14	31-Dec-14
SOUTHWESTERN PARKWAY STORAGE BASIN	31-Dec-18	31-Dec-18	31-Dec-18
SOUTHWESTERN PARKWAY STORAGE BASIN	31-Dec-18	31-Dec-18	31-Dec-18
13TH STREET AND ROWAN STREET STORAGE BASIN	31-Dec-20	31-Dec-20	31-Dec-20
13TH STREET AND ROWAN STREET STORAGE BASIN	31-Dec-20	31-Dec-20	31-Dec-20
13TH STREET AND ROWAN STREET STORAGE BASIN	31-Dec-20		31-Dec-20
13TH STREET AND ROWAN STREET STORAGE BASIN	31-Dec-20		31-Dec-20
CENTRAL RELIEF DRAIN IN-LINE STORAGE, GREEN INFRASTRUCTURE AND DISTRIBUTED STORAGE	31-Dec-20		31-Dec-18
CENTRAL RELIEF DRAIN IN-LINE STORAGE, GREEN INFRASTRUCTURE AND DISTRIBUTED STORAGE	31-Dec-20		31-Dec-18
CSO 160 IN-LINE STORAGE AND GREEN INFRASTRUCTURE CONTROLS	10-Dec-15 A	31-Dec-15	31-Dec-15
CSO 160 IN-LINE STORAGE AND GREEN INFRASTRUCTURE CONTROLS	10-Dec-15 A	31-Dec-15	31-Dec-15
ADAMS STREET SEWER SEPARATION AND STORAGE BASIN	28-Nov-12 A	31-Dec-12	31-Dec-12
ADAMS STREET SEWER SEPARATION AND STORAGE BASIN	28-Nov-12 A	31-Dec-12	31-Dec-12
CSO 190 GREEN INFRASTRUCTURE PROJECT	31-Dec-17	31-Dec-17	31-Dec-17
CSO 190 GREEN INFRASTRUCTURE PROJECT	31-Dec-17	31-Dec-17	31-Dec-17
ALGONQUIN PARKWAY STORAGE BASIN	31-Dec-18	31-Dec-18	31-Dec-18
ALGONQUIN PARKWAY STORAGE BASIN	31-Dec-18	31-Dec-18	31-Dec-18
SOUTHERN OUTFALL IN-LINE STORAGE (SOR 1)	31-Dec-18		31-Dec-18
SOUTHERN OUTFALL IN-LINE STORAGE AT 43RD ST. (SOR 1)	31-Dec-18		31-Dec-18
MORRIS FORMAN WQTC HEADWORKS	31-Dec-18		31-Dec-18
MORRIS FORMAN WQTC HEADWORKS	31-Dec-18		31-Dec-18
NIGHTINGALE PUMP STATION REPLACEMENT AND STORAGE	30-Jun-17	31-Dec-16	30-Jun-17
NIGHTINGALE PUMP STATION REPLACEMENT AND STORAGE	30-Jun-17	31-Dec-16	30-Jun-17
LEXINGTON ROAD AND PAYNE STREET STORAGE BASIN	31-Dec-20	31-Dec-20	31-Dec-20
LEXINGTON ROAD AND PAYNE STREET STORAGE BASIN	31-Dec-20	31-Dec-20	31-Dec-20
LOGAN STREET AND BRECKENRIDGE ST STORAGE BASIN	31-Dec-17	31-Dec-17	31-Dec-17
LOGAN STREET AND BRECKENRIDGE ST STORAGE BASIN	31-Dec-17	31-Dec-17	31-Dec-17
CSO 093 STRUCTURAL MODIFICATIONS AND GREEN INFRASTRUCTURE	23-Dec-15 A	31-Dec-15	28-Dec-15
CSO 093 STRUCTURAL MODIFICATIONS AND GREEN INFRASTRUCTURE CONTROLS	23-Dec-15 A	31-Dec-15	28-Dec-15
CSO 108 DAM MODIFICATIONS	31-Dec-10 A	31-Dec-10	31-Dec-10
CSO 108 DAM MODIFICATIONS	31-Dec-10 A	31-Dec-10	31-Dec-10
STORY AVENUE AND SPRING STREET GREEN INFRASTRUCTURE CONTROLS	31-Dec-16	31-Dec-16	31-Dec-16
STORY AVENUE AND SPRING STREET GREEN INFRASTRUCTURE CONTROLS	31-Dec-16	31-Dec-16	31-Dec-16
FLOOD PUMP STATION PROJECTS	18-Dec-14 A	31-Dec-14	31-Dec-14
27TH STREET FLOOD PUMP STATION	28-Jun-13 A	30-Jun-13	30-Jun-13
27TH STREET FLOOD PUMP STATION DRY WEATHER OVERFLOW ELIMINATION	28-Jun-13 A	30-Jun-13	30-Jun-13
34TH STREET FLOOD PUMP STATION	11-Jun-12 A	31-Dec-12	31-Dec-12
34TH STREET FLOOD PUMP STATION DRY WEATHER OVERFLOW ELIMINATION	11-Jun-12 A	31-Dec-12	31-Dec-12



Approved 2009 IOAP
Remaining Work
Completed Work
- Approved 2012 IOAP Modification and additional approved minor modifications to date

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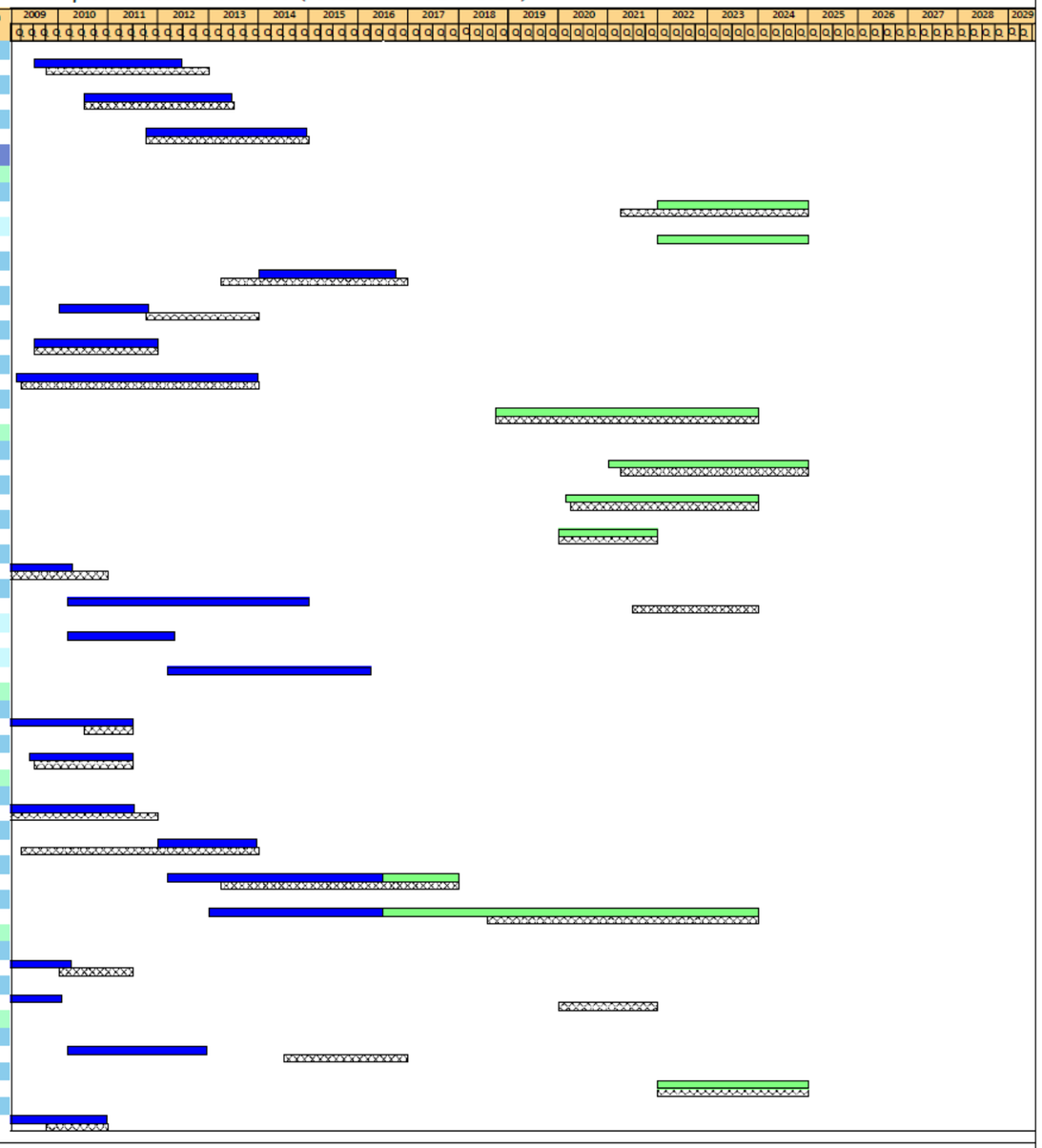
Data Date:30-Jun-16

Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009- 31 Dec 2024)

Actvity Name	Scheduled Finish	2009 IOAP Completon	IOAP Modificaton Completon Date
4TH STREET FLOOD PUMP STATION	15-Jun-12 A	31-Dec-12	31-Dec-12
4TH STREET FLOOD PUMP STATION DRY WEATHER OVERFLOW ELIMINATION	15-Jun-12 A	31-Dec-12	31-Dec-12
SHAWNEE FLOOD PUMP STATION	18-Jun-13 A	30-Jun-13	30-Jun-13
SHAWNEE FLOOD PUMP STATION DRY WEATHER OVERFLOW ELIMINATION	18-Jun-13 A	30-Jun-13	30-Jun-13
17TH STREET FLOOD PUMP STATION	18-Dec-14 A	31-Dec-14	31-Dec-14
DRY WEATHER OVERFLOW ELIMINATION - 17TH STREET FLOOD PUMP STATION	18-Dec-14 A	31-Dec-14	31-Dec-14
SANITARY SEWER DISCHARGE PLAN	31-Dec-24	31-Dec-24	31-Dec-24
BEARGRASS CREEK MIDDLE FORK AREA	31-Dec-24	31-Dec-24	31-Dec-24
GOOSE CREEK PUMP STATION	31-Dec-24	31-Dec-24	31-Dec-24
GOOSE CREEK PUMP STATION	31-Dec-24	31-Dec-24	15-Apr-16
GOOSE CRK PS PH2 - PS & WET WEATHER STORAGE	31-Dec-24		31-Dec-24
GOOSE CRK PS PH2 - PS & WET WEATHER STORAGE	31-Dec-24		31-Dec-24
ANCHOR ESTATES- ANCHOR ESTS PS 1 & 2 PS ELIMINATIONS	30-Sep-16 A	31-Dec-16	31-Dec-16
ANCHOR ESTATES- ANCHOR ESTS PS 1 & 2 PS ELIMINATIONS	30-Sep-16 A	31-Dec-16	31-Dec-16
ANCHOR ESTATES- VANNAH PS ELIMINATION	15-Oct-11 A	31-Dec-13	31-Dec-13
ANCHOR ESTATES- VANNAH PS ELIMINATION	15-Oct-11 A	31-Dec-13	31-Dec-13
HURSTBOURNE I&I INVESTIGATION & REHABILITATION	27-Dec-11 A	31-Dec-11	31-Dec-11
HURSTBOURNE I&I INVESTIGATION & REHABILITATION	27-Dec-11 A	31-Dec-11	31-Dec-11
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE, AND UMFLS DIVERSION 1 - BUECHEL BASIN	27-Dec-13 A	31-Dec-13	31-Dec-13
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE, & UMFLS DIVERSION 1 - BUECHEL BASIN	27-Dec-13 A	31-Dec-13	31-Dec-13
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE, AND UMFLS DIVERSION 2 PS & WET WEATHER ST	31-Dec-23	31-Dec-23	31-Dec-23
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE, & UMFLS DIVERSION 2 - PS & WET WEATHER STO	31-Dec-23	31-Dec-23	31-Dec-23
CEDAR CREEK AREA	31-Dec-24	31-Dec-24	31-Dec-24
LITTLE CEDAR CREEK INTRECEPTOR IMPROVEMENTS	31-Dec-24	31-Dec-24	31-Dec-24
LITTLE CEDAR CREEK INTRECEPTOR IMPROVEMENTS	31-Dec-24	31-Dec-24	31-Dec-24
IDLEWOOD INLINE STORAGE	31-Dec-23	31-Dec-23	31-Dec-23
IDLEWOOD INLINE STORAGE	31-Dec-23	31-Dec-23	31-Dec-23
BARDSTOWN RD PS IMPROVEMENTS	31-Dec-21	31-Dec-21	31-Dec-21
BARDSTOWN RD PS IMPROVEMENTS	31-Dec-21	31-Dec-21	31-Dec-21
RUNNING FOX PS ELIMINATION	05-Apr-10 A	31-Dec-10	31-Dec-10
RUNNING FOX PS ELIMINATION	05-Apr-10 A	31-Dec-10	31-Dec-10
FAIRMOUNT RD PS IMPROVMENTS	30-Mar-16 A	31-Dec-23	31-Dec-23
FAIRMOUNT RD PS IMPROVMENTS	31-Dec-14 A	31-Dec-23	31-Dec-14
FAIRMOUNT RD PS IMPROVEMENTS	24-Apr-12 A		31-Dec-23
FAIRMOUNT RD PS IMPROVEMENTS	24-Apr-12 A		31-Dec-23
FAIRMOUNT RD PS OFFLINE STORAGE BASIN	30-Mar-16 A		31-Mar-16
FAIRMOUNT RD PS OFFLINE STORAGE BASIN	30-Mar-16 A		31-Mar-16
COMBINED SEWER SYSTEM AREA	30-Jun-11 A	30-Jun-11	30-Jun-11
HAZELWOOD PS I&I INVESTIGATION & REHABILITATION	30-Jun-11 A	30-Jun-11	30-Jun-11
HAZELWOOD PS I&I INVESTIGATION & REHABILITATION	30-Jun-11 A	30-Jun-11	30-Jun-11
SONNE PUMP STATION I&I INVESTIGATION & REHABILITATION	30-Jun-11 A	30-Jun-11	30-Jun-11
SONNE PUMP STATION I&I INVESTIGATION & REHABILITATION	30-Jun-11 A	30-Jun-11	30-Jun-11
CAMP TAYLOR SYSTEM IMPROVEMENTS	31-Dec-23	31-Dec-23	31-Dec-23
CAMP TAYLOR SYSTEM IMPROVEMENTS PHASE 1 SSES	08-Jul-11 A	31-Dec-11	31-Dec-13
CAMP TAYLOR SYSTEM IMPROVEMENTS PHASE 1 SSES	08-Jul-11 A	31-Dec-11	31-Dec-13
CAMP TAYLOR SYSTEM IMPROVEMENTS PHASE 2 SEWER REPLACEMENT	20-Dec-13 A	31-Dec-13	31-Dec-13
CAMP TAYLOR SYSTEM IMPROVEMENTS PHASE 2 SEWER REPLACEMENT	20-Dec-13 A	31-Dec-13	31-Dec-13
CAMP TAYLOR SYSTEM IMPROVEMENTS PHASE 3 SEWER REPLACEMENT AND REHABILITATION	31-Dec-17	31-Dec-17	31-Dec-17
CAMP TAYLOR SYSTEM IMPROVEMENTS PHASE 3 SEWER REPLACEMENT AND REHABILITATION	31-Dec-17	31-Dec-17	31-Dec-17
CAMP TAYLOR SYSTEM IMPROVEMENTS PHASE 4 STORAGE BASIN AND SEWER UPSIZE	31-Dec-23	31-Dec-23	31-Dec-23
CAMP TAYLOR SYSTEM IMPROVEMENTS PHASE 4 STORAGE BASIN AND SEWER UPSIZE	31-Dec-23	31-Dec-23	31-Dec-23
FLOYDS FORK AREA	01-Apr-10 A	31-Dec-21	01-Apr-10
WOODLAND HILL PS DIVERSION	01-Apr-10 A	30-Jun-11	01-Apr-10
WOODLAND HILL PS DIVERSION	01-Apr-10 A	30-Jun-11	01-Apr-10
ASHBURTON PS IMPROVEMENTS AND DIVERSION	22-Jan-10 A	31-Dec-21	22-Jan-10
ASHBURTON PS IMPROVEMENTS AND DIVERSION	22-Jan-10 A	31-Dec-21	22-Jan-10
HITE CREEK AREA	31-Dec-24	31-Dec-24	31-Dec-24
MEADOW STREAM PS AND FORCE MAIN	18-Dec-12 A	31-Dec-16	31-Dec-16
MEADOW STREAM PS AND FORCE MAIN	18-Dec-12 A	31-Dec-16	31-Dec-16
KAVANAUGH RD PS IMPROVEMENTS	31-Dec-24	31-Dec-24	31-Dec-24
KAVANAUGH RD PS IMPROVEMENTS	31-Dec-24	31-Dec-24	31-Dec-24
FLOYDSBURG RD I/I INVESTIGATION AND REHABILITATION	17-Dec-10 A	31-Dec-10	31-Dec-10
FLOYDSBURG RD I/I INVESTIGATION AND REHABILITATION	17-Dec-10 A	31-Dec-10	31-Dec-10



Approved 2009 IOAP
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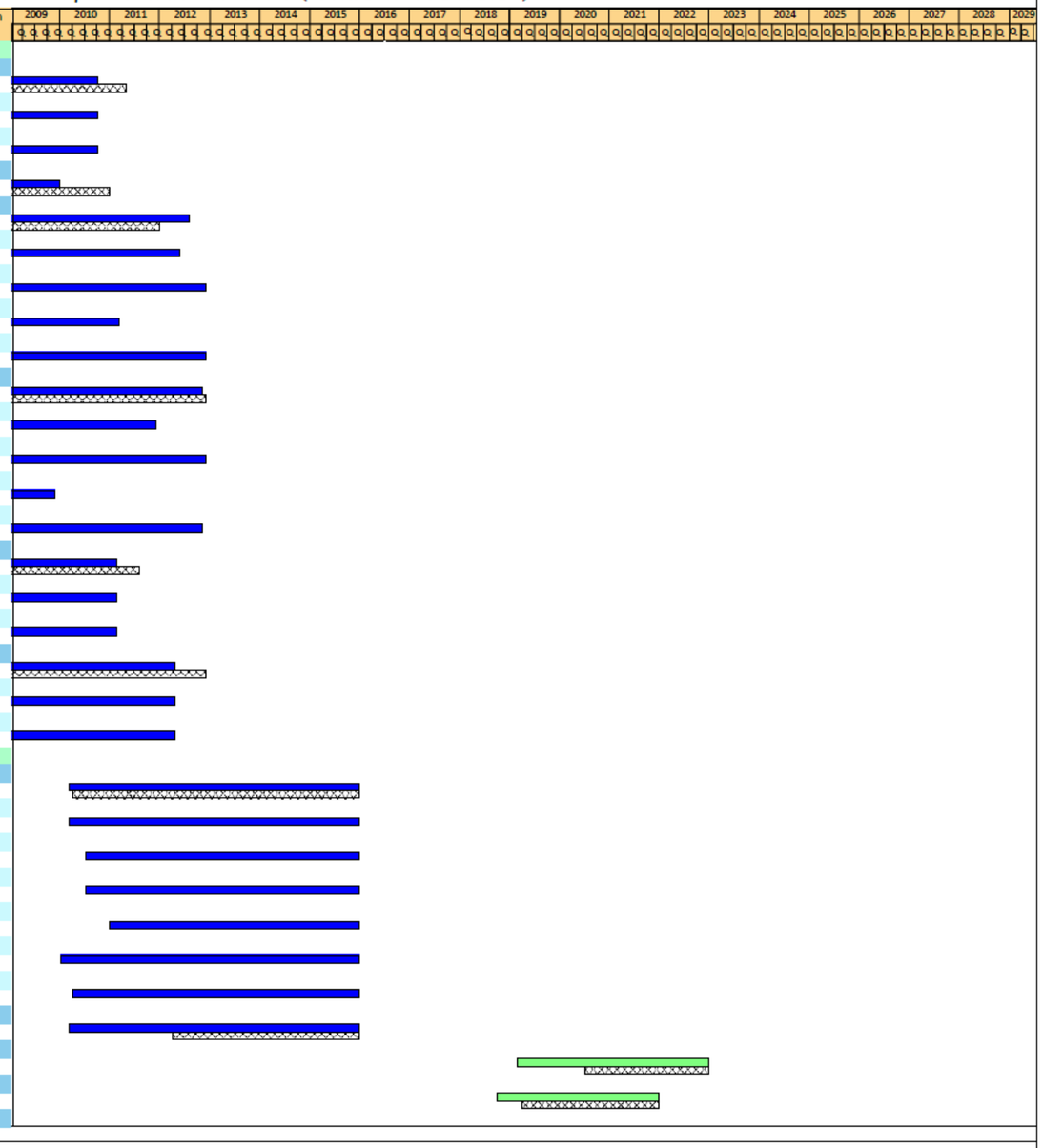
Data Date:30-Jun-16

Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009- 31 Dec 2024)

Actvity Name	Scheduled Finish	2009 IOAP Completon	IOAP Modificaton Completon Date
INTERIM SSDP PROJECTS	27-Nov-12 A	27-Nov-12	27-Nov-12
ISSDP BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT	29-Sep-10 A	27-Apr-11	27-Apr-11
ISSDP BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT	29-Sep-10 A	27-Apr-11	27-Apr-11
BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT (WEST)	29-Sep-10 A		27-Apr-11
BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT	29-Sep-10 A		27-Apr-11
BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT (EAST)	29-Sep-10 A		27-Apr-11
BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT	29-Sep-10 A		27-Apr-11
SINKING FORK RELIEF SEWER	23-Dec-09 A	30-Dec-10	23-Dec-09
SINKING FORK RELIEF SEWER	23-Dec-09 A	30-Dec-10	23-Dec-09
ISSDP DEREK R GUTHRIE WATER QUALITY TREATMENT CENTER	27-Nov-12 A	31-Dec-11	27-Nov-12
ISSDP DEREK R GUTHRIE WATER QUALITY TREATMENT CENTER	30-Jul-12 A	31-Dec-11	27-Nov-12
DEREK R GUTHRIE WQTC WET WEATHER TREATMENT FACILITY	20-May-12 A		27-Nov-12
DEREK R GUTHRIE WQTC WET WEATHER TREATMENT FACILITY	20-May-12 A		27-Nov-12
WCWTP: WW FLOW EQU & TMT	27-Nov-12 A		27-Nov-12
WCWTP: WW FLOW EQU & TMT	27-Nov-12 A		27-Nov-12
DRGWQTC: BLOWER PACKAGE	03-Mar-11 A		27-Nov-12
DRGWQTC: BLOWER PACKAGE	03-Mar-11 A		27-Nov-12
DRGWQTC: WET WEATHER EQUALIZATION BASIN	27-Nov-12 A		27-Nov-12
DRGWQTC: WET WEATHER EQUALIZATION BASIN	27-Nov-12 A		27-Nov-12
ISSDP HIKES LANE INTERCEPTOR /HIGHGATE SPRINGS PS	27-Nov-12 A	27-Nov-12	27-Nov-12
ISSDP HIKES LANE INTERCEPTOR /HIGHGATE SPRINGS PS	30-Oct-12 A	27-Nov-12	27-Nov-12
HIKES POINT INTERCEPTOR	30-Nov-11 A		27-Nov-12
HIKES POINT INTERCEPTOR	30-Nov-11 A		27-Nov-12
HIKES POINT INTERCEPTOR PHASE 2	27-Nov-12 A		27-Nov-12
HIKES POINT INTERCEPTOR PHASE 2	27-Nov-12 A		27-Nov-12
CARSON & RIBBLE RELIEF	20-Nov-09 A		27-Nov-12
CARSON & RIBBLE RELIEF	20-Nov-09 A		27-Nov-12
HIKES POINT RELIEF EFFORT	31-Oct-12 A		27-Nov-12
HIKES POINT RELIEF EFFORT	31-Oct-12 A		27-Nov-12
ISSDP NORTHERN DITCH DIVERSION INTERCEPTOR	16-Feb-11 A	31-Jul-11	31-Jul-11
ISSDP NORTHERN DITCH DIVERSION INTERCEPTOR	16-Feb-11 A	31-Jul-11	31-Jul-11
NORTHERN DITCH DIVERSION INTERCEPTOR	16-Feb-11 A		31-Jul-11
NORTHERN DITCH DIVERSION INTERCEPTOR	16-Feb-11 A		31-Jul-11
NORTHERN DITCH DIVERSION INTERCEPTOR PH 2	16-Feb-11 A		31-Jul-11
NORTHERN DITCH DIVERSION INTERCEPTOR PH 2	16-Feb-11 A		31-Jul-11
ISSDP SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR	19-Apr-12 A	27-Nov-12	30-Sep-12
ISSDP SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR	19-Apr-12 A	27-Nov-12	12-May-12
SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR	19-Apr-12 A		12-May-12
SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR	19-Apr-12 A		12-May-12
SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR Phase 2	19-Apr-12 A		30-Sep-12
SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR Phase 2	19-Apr-12 A		30-Sep-12
JEFFERSONTOWN AREA	31-Dec-22	31-Dec-22	31-Dec-22
JEFFERSONTOWN WQTC ELIMINATION	23-Dec-15 A	31-Dec-15	31-Dec-15
JEFFERSONTOWN WQTC ELIMINATION	23-Dec-15 A	31-Dec-15	31-Dec-15
JEFFERSONTOWN WQTC ELIMINATION	23-Dec-15 A		31-Dec-15
JEFFERSONTOWN WQTC ELIMINATION	23-Dec-15 A		31-Dec-15
JEFFERSONTOWN FORCE MAIN	23-Dec-15 A		31-Dec-15
JEFFERSONTOWN FORCE MAIN	23-Dec-15 A		31-Dec-15
GRAND AVENUE PUMP STATION	23-Dec-15 A		31-Dec-15
GRAND AVENUE PUMP STATION	23-Dec-15 A		31-Dec-15
UPPER BILLTOWN RD INTERCEPTOR	23-Dec-15 A		31-Dec-15
UPPER BILLTOWN RD INTERCEPTOR	23-Dec-15 A		31-Dec-15
BILLTOWN RD INTERCEPTOR SS	23-Dec-15 A		31-Dec-15
BILLTOWN RD INTERCEPTOR SS	23-Dec-15 A		31-Dec-15
BILLTOWN RD PS, FM & INT	23-Dec-15 A		31-Dec-12
BILLTOWN RD PS, FM & INT	23-Dec-15 A		31-Dec-12
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PS AND CHIPPEWA PS	31-Dec-15 A	31-Dec-15	31-Dec-15
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PS AND CHIPPEWA PS	31-Dec-15 A	31-Dec-15	31-Dec-15
DELL RD & CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	31-Dec-22	31-Dec-22	31-Dec-22
DELL RD & CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	31-Dec-22	31-Dec-22	31-Dec-22
RAINTREE & MARIAN CT PH1 - PS ELIMINATION	31-Dec-21	31-Dec-21	31-Dec-21
RAINTREE & MARIAN CT PH1 - PS ELIMINATION	31-Dec-21	31-Dec-21	31-Dec-21
RAINTREE & MARIAN CT PS ELIMINATION	31-Dec-21	31-Dec-21	31-Dec-21



Approved 2009 IOAP
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Remaining Work
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Data Date:30-Jun-16

Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

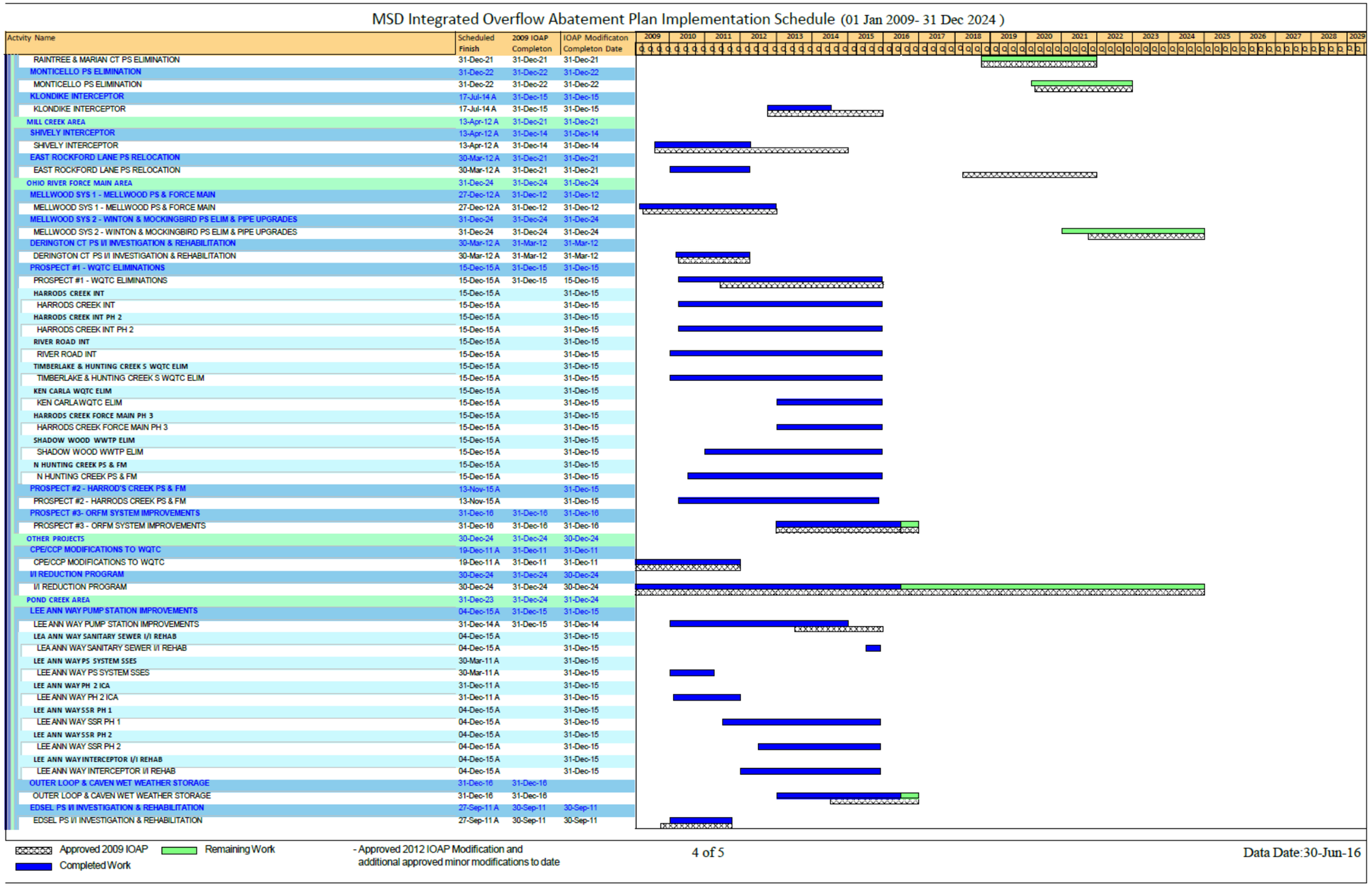
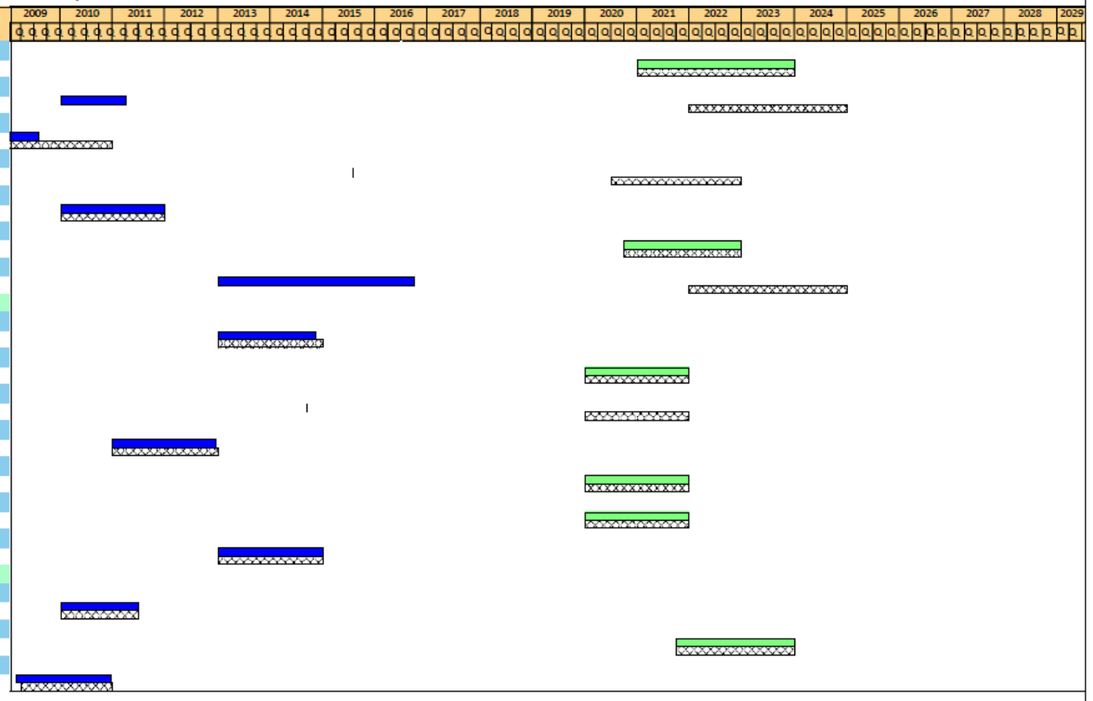


Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009- 31 Dec 2024)

Actvity Name	Scheduled Finish	2009 IOAP Completon	IOAP Modificaton Completon Date
CINDERELLA PS ELIMINATION	31-Dec-23	31-Dec-23	31-Dec-23
CINDERELLA PS ELIMINATION	31-Dec-23	31-Dec-23	31-Dec-23
GOVERNMENT CENTER PS ELIMINATION	01-Apr-11 A	31-Dec-24	31-Dec-24
GOVERNMENT CENTER PS ELIMINATION	01-Apr-11 A	31-Dec-24	31-Dec-24
AVANTI PS ELIMINATION	28-Jul-09 A	31-Dec-10	31-Dec-10
AVANTI PS ELIMINATION	28-Jul-09 A	31-Dec-10	31-Dec-10
CHARLESWOOD INTERCEPTOR EXTENSION	01-Aug-15 A	31-Dec-22	31-Dec-22
CHARLESWOOD INTERCEPTOR EXTENSION	01-Aug-15 A	31-Dec-22	31-Dec-22
LANTANA PS I/I INVESTIGATION & REHABILITATION	29-Dec-11 A	31-Dec-11	29-Dec-11
LANTANA PS I/I INVESTIGATION & REHABILITATION	29-Dec-11 A	31-Dec-11	29-Dec-11
LEVEN PS ELIMINATION	31-Dec-22	31-Dec-22	31-Dec-22
LEVEN PS ELIMINATION	31-Dec-22	31-Dec-22	31-Dec-22
CAVEN AVENUE WW STORAGE	26-Sep-16 A	31-Dec-24	31-Dec-16
CAVEN AVENUE PS ELIMINATION	26-Sep-16 A	31-Dec-24	31-Dec-16
SMALL WWTP AREA	31-Dec-21	31-Dec-21	31-Dec-21
RIDING RIDGE PS IMPROVEMENTS	15-Nov-14 A	31-Dec-14	31-Dec-14
RIDING RIDGE PS IMPROVEMENTS	15-Nov-14 A	31-Dec-14	31-Dec-14
LUCAS LN PS INLINE STORAGE	31-Dec-21	31-Dec-21	31-Dec-21
LUCAS LN PS INLINE STORAGE	31-Dec-21	31-Dec-21	31-Dec-21
ST. RENE RD PS ELIMINATION	09-Sep-14 A	31-Dec-21	31-Dec-21
ST. RENE RD PS ELIMINATION	09-Sep-14 A	31-Dec-21	31-Dec-21
LAKE FOREST PS IMPROVEMENTS	18-Dec-12 A	31-Dec-12	31-Dec-12
LAKE FOREST PS IMPROVEMENTS	18-Dec-12 A	31-Dec-12	31-Dec-12
GUNPOWDER PS INLINE STORAGE	31-Dec-21	31-Dec-21	31-Dec-21
GUNPOWDER PS INLINE STORAGE	31-Dec-21	31-Dec-21	31-Dec-21
FOX HARBOR INLINE STORAGE	31-Dec-21	31-Dec-21	31-Dec-21
FOX HARBOR INLINE STORAGE	31-Dec-21	31-Dec-21	31-Dec-21
FAIRWAY VIEW PS IMPROVEMENTS	30-Dec-14 A	31-Dec-14	31-Dec-14
FAIRWAY VIEW PS IMPROVEMENTS	30-Dec-14 A	31-Dec-14	31-Dec-14
SOUTHEASTERN DIVERSION AREA	31-Dec-23	31-Dec-23	31-Dec-23
PARKVIEW ESTATES I/I INVESTIGATION & REHABILITATION	28-Jun-11 A	30-Jun-11	30-Jun-11
PARKVIEW ESTATES I/I INVESTIGATION & REHABILITATION	28-Jun-11 A	30-Jun-11	30-Jun-11
SUTHERLAND INTERCEPTOR	31-Dec-23	31-Dec-23	31-Dec-23
SUTHERLAND INTERCEPTOR	31-Dec-23	31-Dec-23	31-Dec-23
BEARGRASS INTERCEPTOR REHABILITATION PH 2	14-Dec-10 A	31-Dec-10	31-Dec-10
BEARGRASS INTERCEPTOR REHABILITATION PH 2	14-Dec-10 A	31-Dec-10	31-Dec-10



Approved 2009 IOAP
Remaining Work
Completed Work
- Approved 2012 IOAP Modification and additional approved minor modifications to date

5 of 5

Data Date:30-Jun-16

SECTION 4: PROGRAM ACTIVITIES FOR PUBLIC OUTREACH, EDUCATION, NOTIFICATION AND PARTICIPATION

4.1. PUBLIC NOTIFICATION PROGRAM

MSD has developed a program aimed at notifying the community of the objectives of Project WIN and how to lessen the risks associated with coming into contact with sewage overflows.

4.2. PUBLIC EDUCATION PROGRAMS

A public education program aimed at disseminating information to the public on MSD's primary business functions with emphasis on wastewater, stormwater and flood protection has been developed and implemented. Efforts continued to utilize various media outlets, including television, radio, magazines and newspapers to serve as a conduit for circulating information to the public.

Additionally, MSD is in the process of creating water quality sampling videos and partnering with educational organizations to assist with watershed videos. These efforts will be finalized by March 31, 2017, and ultimately be made available to the public.

During the reporting period, MetroTV aired the programs listed in Table 4.1.

Table 4.1. Metro TV Broadcasts

DATE	PROGRAM TITLE	ORIGINAL MEETING DATE
October 2, 2016	Portland CSO Basin: Conceptual Design Meeting	January 26, 2016
October 9, 2016	Lexington & Payne CSO Basin: Conceptual Design Meeting	April 26, 2016
October 9, 2016	Portland CSO Basin: Conceptual Design Meeting	January 26, 2016
October 9, 2016	Story & Main CSO Basin: Conceptual Design Meeting	February 10, 2016
October 10, 2016	Lexington & Payne CSO Basin: Conceptual Design Meeting	April 26, 2016
October 15, 2016	Lexington & Payne CSO Basin: Conceptual Design Meeting	April 26, 2016
October 15, 2016	Story & Main CSO Basin: Conceptual Design Meeting	February 10, 2016
October 16, 2016	Lexington & Payne CSO Basin: Conceptual Design Meeting	April 26, 2016
October 16, 2016	Story & Main CSO Basin: Conceptual Design Meeting	February 10, 2016
October 17, 2016 (2 Broadcasts)	Lexington & Payne CSO Basin: Conceptual Design Meeting	April 26, 2016
October 17, 2016	Story & Main CSO Basin: Conceptual Design Meeting	February 10, 2016
October 19, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
October 21, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
October 22, 2016 (2 Broadcasts)	Story & Main CSO Basin: Update Meeting	October 11, 2016

Table 4.1. Metro TV Broadcasts

DATE	PROGRAM TITLE	ORIGINAL MEETING DATE
October 23, 2016 (2 Broadcasts)	Story & Main CSO Basin: Update Meeting	October 11, 2016
October 28, 2016 (2 Broadcasts)	Story & Main CSO Basin: Update Meeting	October 11, 2016
October 29, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
October 30, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
October 31, 2016 (2 Broadcasts)	Story & Main CSO Basin: Update Meeting	October 11, 2016
November 1, 2016	Lexington & Payne CSO Basin: Update Meeting	October 18, 2016
November 1, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
November 2, 2016	Lexington & Payne CSO Basin: Update Meeting	October 18, 2016
November 2, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
November 3, 2016	Lexington & Payne CSO Basin: Update Meeting	October 18, 2016
November 3, 2016 (2 Broadcasts)	Story & Main CSO Basin: Update Meeting	October 11, 2016
November 4, 2016	Lexington & Payne CSO Basin: Update Meeting	October 18, 2016
November 5, 2016	Lexington & Payne CSO Basin: Update Meeting	October 18, 2016
November 5, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
November 6, 2016	Lexington & Payne CSO Basin: Update Meeting	October 18, 2016
November 7, 2016	Lexington & Payne CSO Basin: Update Meeting	October 18, 2016
November 11, 2016	Lexington & Payne CSO Basin: Update Meeting	October 18, 2016
November 11, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
November 12, 2016	Lexington & Payne CSO Basin: Conceptual Design Meeting	April 26, 2016
November 13, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
November 14, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
November 17, 2016	Lexington & Payne CSO Basin: Update Meeting	October 18, 2016
November 19, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
November 20, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
December 4, 2016	Lexington & Payne CSO Basin: Update Meeting	October 18, 2016
December 4, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
December 5, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
December 7, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
December 10, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016
December 11, 2016 (2 Broadcasts)	I-64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
December 17, 2016	Lexington & Payne CSO Basin: Update Meeting	October 18, 2016
December 18, 2016	I-64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016

Table 4.1. Metro TV Broadcasts

DATE	PROGRAM TITLE	ORIGINAL MEETING DATE
December 19, 2016	I-64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
December 19, 2016	Southwestern Parkway CSO Basin: Public Meeting	November 29, 2016
December 20, 2016 (2 Broadcasts)	Southwestern Parkway CSO Basin: Public Meeting	November 29, 2016
December 21, 2016	Southwestern Parkway CSO Basin: Construction Meeting	November 29, 2016
December 22, 2016	I-64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
December 22, 2016	Southwestern Parkway CSO Basin: Construction Meeting	November 29, 2016
December 23, 2016	I-64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
December 23, 2016	Southwestern Parkway CSO Basin: Construction Meeting	November 29, 2016
December 24, 2016	I-64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
December 24, 2016	Lexington & Payne CSO Basin: Update Meeting	October 18, 2016
December 24, 2016	Southwestern Parkway CSO Basin: Construction Meeting	November 29, 2016
December 30, 2016	I-64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
December 30, 2016	Southwestern Parkway CSO Basin: Construction Meeting	November 29, 2016
December 31, 2016	Story & Main CSO Basin: Update Meeting	October 11, 2016

4.3. PUBLIC OUTREACH PROGRAMS

MSD has developed a public education program aimed at expanding the public's knowledge of MSD's primary business functions of wastewater, stormwater and flood protection, with an emphasis on Project WIN Program elements.

4.3.1 IOAP PROJECT AND PROGRAM MEETINGS

MSD facilitates meetings for the Wet Weather Team (WWT) and the public to review regulatory commitments, update progress on projects and initiatives, and to gather public input on efforts.

MSD has developed a partnership with Louisville Metro for providing project information and soliciting feedback from stakeholders using a Structured Public Involvement approach. Structured Public Involvement is meant to facilitate relevant input on the design process as MSD prepares to design and construct CSO basins. The current IOAP outreach activities and public meetings are using this process to elicit qualitative and quantitative information and enhance engagement with customers. The Structured Public Involvement approach assures anonymity for each participant using transceivers to compile data which can then be correlated on a customer-specific basis. The Structured Public Involvement approach includes implementing a four-meeting process that leads stakeholders through the project Design Stages: Orientation, Concept Design, Advanced Design, and then a Pardon Our Dust meeting upon construction. Presentations at neighborhood meetings additionally supplement the four meeting process. Online surveys are also made available to allow individuals not in attendance to provide similar project-specific input. Creating this secondary online opportunity has been successful and generated responses that otherwise would not have been accounted for at the public meetings. Additional information regarding the Structured Public Involvement

Process and meetings held during this reporting period may be found at the Project WIN Public Input Website, available at **http://www.msdprojectwin.org/Public-Input.aspx**.

During the reporting period, MSD facilitated and planned for the meetings shown in Table 4.2. Meetings planned for the upcoming reporting period are listed in Table 4.3.

Table 4.2. IOAP Project and Program Meetings – Current Reporting Period

DATE	EVENT
October 11, 2016	Story & Main CSO Basin: Update Meeting
October 18, 2016	Lexington & Payne CSO Basin: Update Meeting
October 25, 2016	CSO190 Green Infrastructure Phase 2: Construction Meeting
November 1, 2016	Southwestern Parkway CSO Basin: Stakeholder Meeting
November 15, 2016	I-64 & Grinstead CSO Basin: Advanced Design Meeting
November 29, 2016	Southwestern Parkway CSO Basin: Construction Meeting
December 13, 2016	Wet Weather Stakeholder Team Meeting

Table 4.3. Anticipated IOAP Project and Program Meetings – Upcoming Reporting Period

DATE	EVENT
March 2017	Wet Weather Stakeholder Team Meeting

SECTION 5: CAPACITY MANAGEMENT OPERATIONS AND MAINTENANCE REPORT

Per Paragraph 24.c. of the Amended Consent Decree, the Capacity Management Operations and Maintenance (CMOM) Self Assessment Report was submitted to EPA and KDEP on February 10, 2006. MSD received a letter of approval on August 22, 2006. The approved CMOM document can be viewed on the MSD Project WIN website, available at **www.msdprojectwin.org**.

The primary objectives of CMOM are as follows:

- **Capacity** – Ensuring that adequate wet and dry weather capacity is maintained in existing and new infrastructure.
- **Management** – Implementing programs in support of operations and maintenance activities required to ensure KPDES permit compliance and promote public health by remedying design, construction and operational deficiencies; training staff; and performing activities in a safe manner.
- **Operations** – Implementing written standard operating procedures to operate system components as designed to meet permit requirements.
- **Maintenance** – Implementing systematic, comprehensive asset maintenance and rehabilitation programs to prevent overflows, maximize system reliability, and ensure system sustainability.

Although the program implementation deadlines from the CMOM Self Assessment Report were previously met, MSD continued to enhance the activities. Highlights of the CMOM program implementation over this reporting period are outlined below.

5.1. MANAGEMENT PROGRAMS

M-E-9 Infrastructure Rehabilitation

Refer to the CMOM activity schedule provided in Section 5.4.

M-E-10 System Capacity Assurance Program

Included in the goals of the CMOM Self-Assessment Report, the System Capacity Assurance Plan (SCAP) is the basis for applying capacity decision criteria to support watershed community values. It provides a programmatic approach for confirming available capacity within MSD's sanitary sewer system, creating capacity credits through system improvement and rehabilitation, identifying hydraulic constrictions, and proposing capacity improvements that support interim and long-term performance objectives. SCAP revisions, including credit and balance projections and discussion of approach for multi-family residential unit populations, were discussed with EPA and KDEP and submitted electronically for review on July 21, 2014. The final SCAP revision was submitted for approval on December 9, 2014, and approval was received February 5, 2015. A copy of the approved SCAP can be found on the Project WIN website, available at **www.msdprojectwin.org**.

A current copy of the SCAP Credit Balance is included as Appendix B.

5.2. OPERATIONS PROGRAMS

O-A-1 Pump Station Operations Programs (Routine Operating Programs)

O-A-2 Pump Station Operations Programs (Emergency Operating Programs)

Refer to the CMOM activity schedule provided in Section 5.4.

5.3. COMPREHENSIVE PERFORMANCE EVALUATIONS AND COMPOSITE CORRECTION PLANS (CPE/CCP)

Per requirements of MSD's 2009 Amended Consent Decree, MSD implemented a Comprehensive Performance Evaluation (CPE) and Composite Correction Plan (CCP) program for the District's WQTCs. Although the IOAP CPE assessments that defined specific WQTC improvements were completed by December 31, 2011, MSD will continue to implement CPE/CCP activities as part of the District's CMOM Program. This section lists activities per WQTC as they occur during the reporting period.

5.3.1 HITE CREEK WATER QUALITY TREATMENT CENTER

The hydraulic improvements at Hite Creek WQTC are complete, and the capacity is currently 6 MGD as per design.

The design project to expand the capacity of the Creek WQTC from 6 MGD to 9 MGD is underway and will continue during the next reporting period. Six dewatering equipment vendors participated in a pilot project; one vendor was selected to provide the dewatering equipment. The project scope is being amended to add provisions for an anoxic zone to allow the reduction of total nitrogen and will also achieve some biological phosphorus removal.

Refer to the CMOM activity schedule provided in Section 5.4 for CPE/CCP-related capital projects.

5.3.2 FLOYDS FORK WATER QUALITY TREATMENT CENTER

During this reporting period, there is no activity to report for the Floyds Fork WQTC.

Refer to the CMOM activity schedule provided in Section 5.4 for CPE/CCP-related capital projects.

5.3.3 DEREK R. GUTHRIE WATER QUALITY TREATMENT CENTER

During this reporting period, construction continued for the Secondary Clarifiers 1, 2 and 3 collection mechanisms replacement project. Grout has been removed from clarifier 3; for all clarifiers, new mechanisms are being installed, and new grout will be installed appropriately. This project is anticipated to be completed during the next reporting period. Repairs to the power system of the wet weather pump station have been completed and the wet weather pumps will be tested for compliance with specifications during the next reporting period.

Return Activated Sludge (RAS) construction drawings were submitted to KDEP for approval to move forward with construction concurrent to proceeding through the completion of the draft Facility Plan update. MSD anticipates submitting the Facility Plan to the applicable clearinghouse agencies and holding a public hearing in February 2017. Construction for the removal and upgrade of RAS Pumps 1 and 4, including the

replacement of variable frequency drives on pumps 1 through 4, is anticipated to be publicly bid during the next reporting period.

Refer to the CMOM activity schedule provided in Section 5.4 for CPE/CCP-related capital projects.

5.3.4 CEDAR CREEK WATER QUALITY TREATMENT CENTER

During this reporting period, construction continued for the Cedar Creek WQTC Influent Pump Station Gate Repair and UV Gate Replacement Project. The project is expected to be completed by February 28, 2017.

The design of the Cedar Creek WQTC Influent Pump Station Motor Controls Upgrade Project has been completed and is anticipated to be publicly bid during the next reporting period.

Refer to the CMOM activity schedule provided in Section 5.4 for CPE/CCP-related capital projects.

5.3.5 PROSPECT AREA WATER QUALITY TREATMENT CENTER UPDATES

An elimination plan for the five WQTCs serving Prospect (Timberlake, Hunting Creek North, Hunting Creek South, Ken Carla, and Shadow Wood) was submitted to EPA/KDEP on March 31, 2009. Approval of this plan was received on September 24, 2009 and work is now complete. See Section 3.2.3 for an update on the design and construction of the projects that make up the elimination plan for the Prospect Area WQTCs. A certification letter dated December 15, 2015, was submitted finalizing the completion of the project.

5.3.6 JEFFERSONTOWN WATER QUALITY TREATMENT CENTER

A certification letter dated December 23, 2015, was submitted finalizing the completion of the Jeffersontown WQTC Elimination Project.

5.3.7 OTHER WATER QUALITY TREATMENT CENTERS

All non-regional WQTCs have been eliminated as of May 27, 2016.

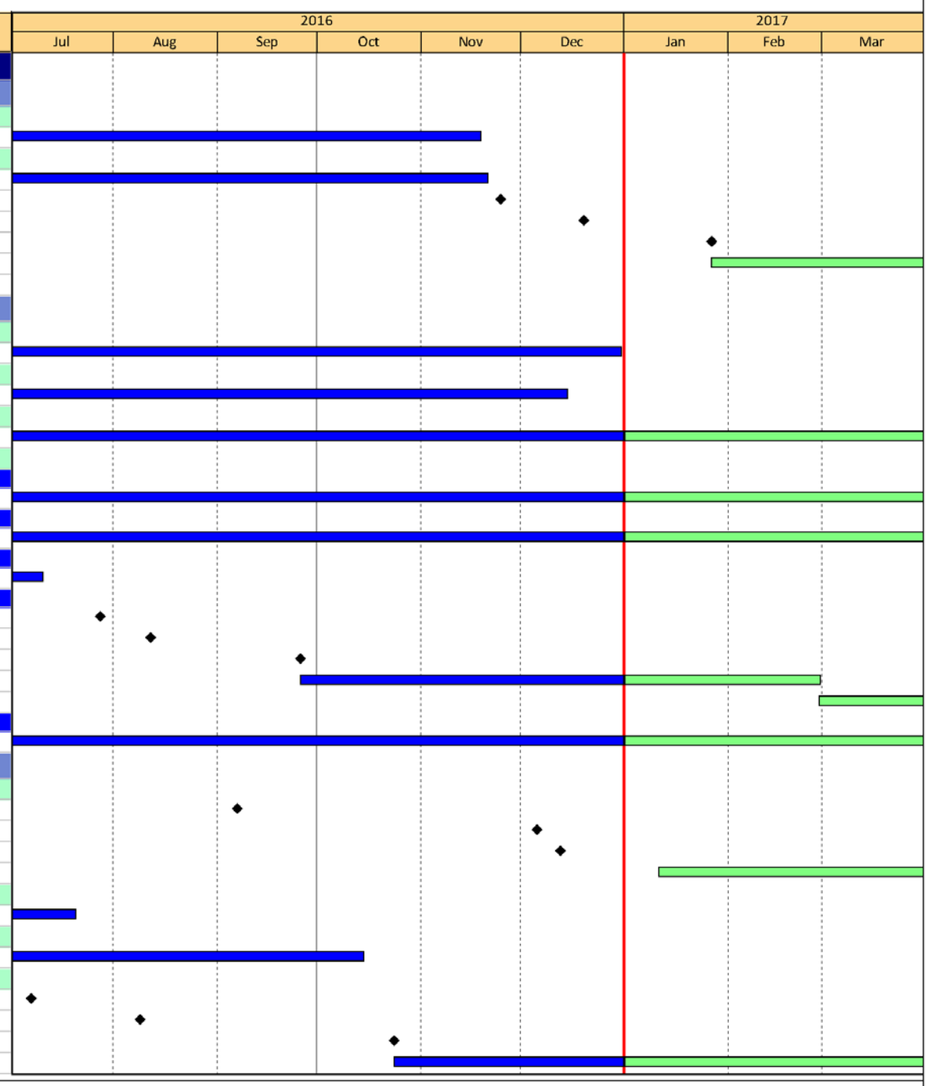
5.4. CMOM ACTIVITY SCHEDULE

CMOM capital project milestones for the current reporting period as well as a look-ahead for the upcoming reporting period are provided in the following schedule.

Figure 5.1. CMOM Quarterly Commitments Schedule

MSD CMOM FY16 Quarterly Commitments Schedule (01July 2016 - 01 April 2017) Date: 23-Jan-17

Activity ID	Activity Name	Physical % Complete	Start	Finish
CMOM FY ANNUAL REPORT COMMITMENTS FINAL			10-Jul-15 A	25-Jun-18
M-E-9 Infrastructure Rehabilitation			19-Nov-15 A	25-Jun-18
Melco Basin Tree Removal (F14171)			19-Nov-15 A	19-Nov-16 A
A6860	Warranty	100%	19-Nov-15 A	19-Nov-16 A
SWOR2 Generator (H16357)			21-Apr-16 A	25-Jun-18
A6930	Design	100%	21-Apr-16 A	21-Nov-16 A
A6950	Ad	100%	25-Nov-16 A	
A6960	Bid Open	100%	20-Dec-16 A	
A6970	Award	0%	27-Jan-17*	
A6980	Construction	0%	27-Jan-17*	25-Jun-17
A6990	Warranty	0%	25-Jun-17*	25-Jun-18
Pump Station Operations Programs			10-Jul-15 A	28-Feb-18
Lea Ann Way West Quads 1 & 2 (H15125)			31-Dec-15 A	31-Dec-16 A
A6830	Warranty	100%	31-Dec-15 A	31-Dec-16 A
34th Street Flood Pump Station Gate 71 Replacement (F15008)			15-Dec-15 A	15-Dec-16 A
A6840	Warranty	100%	15-Dec-15 A	15-Dec-16 A
Sneads Branch Pump Replacement (H16076)			21-Apr-16 A	21-Apr-17
A6920	Design	75%	21-Apr-16 A	21-Apr-17
O-A-2 Emergency Operation Programs			10-Jul-15 A	28-Feb-18
4th Street FPS Gate and Switch Gear Replacement Project (F12095)			06-Jun-16 A	31-Dec-17
A5190	Construction	30%	06-Jun-16 A	31-Dec-17
Melco Basin Crane (F14170)			21-Jun-16 A	17-Jun-17
A6390	Warranty	30%	21-Jun-16 A	17-Jun-17
Rosa Terrace Pump Station Improvement			10-Jul-15 A	10-Jul-16 A
A6460	Warranty	100%	10-Jul-15 A	10-Jul-16 A
CMF Generator (H16376)			28-Jul-16 A	28-Feb-18
A6880	Ad	100%	28-Jul-16 A	
A6890	Bid Open	100%	12-Aug-16 A	
A6900	Award	100%	26-Sep-16 A	
A7010	Construction	60%	26-Sep-16 A	28-Feb-17
A7020	Warranty	0%	28-Feb-17	28-Feb-18
Ashland Ave Gate Structure (F16003)			21-Apr-16 A	30-Jun-17
A6910	Design	10%	21-Apr-16 A	30-Jun-17
CPE/CPE Treatment Plant Activities			20-Jul-15 A	10-Sep-17
West County Water Quality Treatment Center Gate 145 Electrical Service & Actuator (F14164)			07-Sep-16 A	10-Sep-17
A6580	Ad	100%	07-Sep-16 A	
A6590	Bid Open	100%	06-Dec-16 A	
A6600	Award	100%	13-Dec-16 A	
A6610	Construction	0%	11-Jan-17*	10-Sep-17
SWOR 2 Improvements			20-Jul-15 A	20-Jul-16 A
A6850	Warranty	100%	20-Jul-15 A	20-Jul-16 A
Boggess Property Rehab (H12159)			15-Oct-15 A	15-Oct-16 A
A6710	Warranty	100%	15-Oct-15 A	15-Oct-16 A
South Pope Lick PS			07-Jul-16 A	21-Jul-17
A6750	Ad	100%	07-Jul-16 A	
A6760	Bid Open	100%	09-Aug-16 A	
A6770	Award	100%	24-Oct-16 A	
A6780	Construction	10%	24-Oct-16 A	21-Jul-17



1 of 1 Date Date: 01-Jan-17

SECTION 6: PROJECT WIN PERFORMANCE OVERVIEW

6.1. COMBINED SEWER OVERFLOW REDUCTION AND SANITARY SEWER OVERFLOW ABATEMENT ACTIVITIES

The following sections outline the activities performed during the reporting period to reduce or control CSOs and eliminate SSOs.

6.1.1 COMBINED SEWER OVERFLOW REDUCTION AND CONTROL ACTIVITIES

MSD completed one IOAP CSO LTCP project during the reporting period that reduced or eliminated permitted CSOs, as detailed in Table 6.1.

Table 6.1. Combined Sewer Overflow Reduction and Control Activities – Current Reporting Period

PROJECT	CERTIFIED COMPLETION DATE	ASSOCIATED CSOs	LEVEL OF CONTROL (TYPICAL YEAR)
Story Avenue & Spring Street Green Infrastructure	December 20, 2016	CSO130	8

6.1.2 SANITARY SEWER OVERFLOW ELIMINATION ACTIVITIES

MSD completed one IOAP SSDP project during the reporting period that abated SSOs, as detailed in Table 6.2.

Table 6.2. Sanitary Sewer Overflow Elimination Activities – Current Reporting Period

PROJECT	CERTIFIED COMPLETION DATE	ASSOCIATED SSOs	LEVEL OF CONTROL
Prospect #3 – ORFM System Improvements	December 19, 2016	22436, 40870, 40871, 40872, 40879, 40880, 42675, 42680, 46621, 46623, 65623, 65633, 65635, 89646, 89791, MSD0123-PS, MSD0183-PS, MSD0186-PS, MSD0192-PS, MSD0193-PS, MSD0292, MSD1044-PS, MSD1063-PS	2.25-in 3-hour cloudburst

6.2. SYSTEMWIDE PERFORMANCE

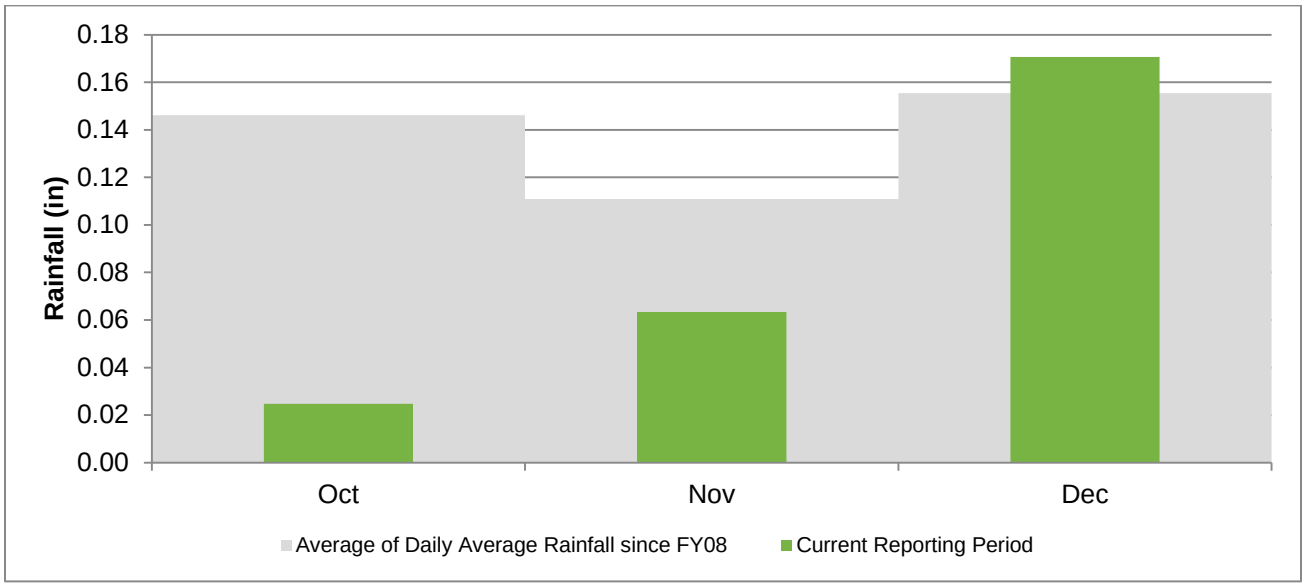
6.2.1 RAINFALL

The number and the volume of wet weather overflows are directly related to the amount of rain that has fallen during the reporting period. Figure 6.1 shows the Jefferson County daily average rainfall amounts for each month of the last quarter, compared with the average of the daily average rainfall since FY08. Data was pulled from MSD's Rain Gauge Network.

Weather Event Summary

For most of the reporting period, precipitation could be characterized as drought conditions with rainfalls significantly below average for the months of October and November.

Figure 6.1. Daily Average Rainfall by Month



6.3. WATER QUALITY TREATMENT CENTER PERFORMANCE

6.3.1 BYPASSES

Table 6.3 summarizes the bypass events that occurred during this reporting period, and details are included in Appendix A-2 . Each quarter, an assessment of bypasses is conducted to determine the root cause of the bypass, the failure category, corrective actions to be taken, possible programmatic solutions, and corrective action completion date, included in Table 6.4.

Table 6.3. Bypass Events – Current Reporting Period

TYPE OF BYPASS	DATE	ID	FACILITY NAME
RAIN EVENT DISCHARGE	November 28, 2016 8:15: PM	MSD0278	MORRIS FORMAN
RAIN EVENT DISCHARGE	December 17, 2016 6:27: PM	MSD0278	MORRIS FORMAN

6.3.2 JEFFERSONTOWN WATER QUALITY TREATMENT CENTER

A letter dated December 23, 2015, certified the elimination of the Jeffersontown WQTC. Inspections were conducted upstream of what was previously the Jeffersontown WQTC Headworks two times during the reporting period. No overflows were reported as a result of these inspections. Refer to Section 2.2 for SSO Route information.

6.3.3 PHOSPHORUS MONITORING AT THE PROSPECT WQTCS

All Prospect Treatment Plants have been eliminated per the Amended Consent Decree. All plants were offline as of September 2015.

Table 6.4. Bypass Summary – Current Reporting Period

DATE	WQTC	WORK ORDER	FAILURE CODE	BYPASS DESCRIPTION	FAILURE RESOLUTION
CAPACITY (CAP)					
N/A	N/A	N/A	N/A	N/A	N/A
HUMAN ERROR (OPN)					
N/A	N/A	N/A	N/A	N/A	N/A
FACILITY FAILURE (MECHANICAL-MCH, ELECTRICAL-ELE, STRUCTURAL-STR)					
NOVEMBER 28, 2016	MORRIS FORMAN	2649740	MCH	WEST HEADWORKS WAS IN SERVICE DURING A STORM EVENT. THIS WAS THE FIRST SUBSTANTIAL RAIN IN A FEW WEEKS. AN ENORMOUS AMOUNT OF LEAVES WERE INTRODUCED TO WEST HEADWORKS WITH THE STORM FLOW. THIS CAUSED THE BAR SCREENS TO BLIND THUS REDUCING THE AMOUNT OF FLOW INTO WEST HEADWORKS. IN ADDITION, CHANNEL 3 HAD A MECHANICAL FAILURE OF THE BAR SCREEN DRIVE DURING THE STORM SURGE.	EAST HEADWORKS WAS PLACED INTO SERVICE AND WEST HEADWORKS WAS TAKEN OUT OF SERVICE. MSD OPERATIONS STAFF CLEARED BAR SCREENS AND RESTRICTED FLOW TO EAST HEADWORKS. MSD CONDUCTING AN INVESTIGATION OF BAR SCREEN FUNCTIONALITY TO PREVENT REOCCURRENCE.
DECEMBER 17, 2016	MORRIS FORMAN	2657831	ELE	CONTRACTORS WORKING IN THE EAST HEADWORKS REMOVED THE ROOF TO GAIN ACCESS TO EQUIPMENT. A TEMPORARY ROOF HAD BEEN INSTALLED BUT HIGH WINDS DURING A STORM CAUSED THE ROOF TO FAIL. RAIN ENTERED THE MCC ROOM CAUSING AN ELECTRICAL SHORT WHICH KILLED POWER TO THE ENTIRE EAST HEADWORKS.	MSD OPERATIONS RESTRICTED PLANT FLOW AND WEST HEADWORKS WAS PUT INTO SERVICE. CONTRACTOR AND MSD REPAIRED TEMPORARY ROOF WITH A MORE SUBSTANTIAL STRUCTURE. POWER RESTORED TO EAST HEADWORKS. A PERMANENT SOLUTION WILL BE IN PLACE IN FY18.
EXTERNAL POWER FAILURES (LGE RELATED-PWR)					
N/A	N/A	N/A	N/A	N/A	N/A
UTILITY DAMAGE					
N/A	N/A	N/A	N/A	N/A	N/A

6.4. COMBINED SEWER OVERFLOW PERFORMANCE

6.4.1 AUTHORIZED DISCHARGES – WET WEATHER CSOS

The observed CSO data for the reporting period for each monitored overflow has been tabulated, along with rainfall information from the nearest rain gauge, to facilitate review of the overflows that occurred, and is included as Appendix B.

6.4.2 UNAUTHORIZED DISCHARGES – DRY WEATHER CSOS

MSD recorded information related to dry weather overflows from permitted combined sewer overflow outfalls. This information is entered and maintained in Hansen utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. A detailed report of these overflows will be included in the Annual Report for the period of July 1, 2016, through June 30, 2017. There were no dry weather overflows reported at a CSO during the reporting period, as shown in Appendix A-1 .

6.4.3 CSO FLOW MONITORING QUALITY IMPROVEMENT

During the July 2016 – September 2016 reporting period, MSD identified a potential for inaccurate volume reporting at some CSOs. This was identified by comparing measured overflow volumes against modeled overflow volumes for similar storms. It was determined that several CSO flow monitors are affected by backwater levels from the receiving streams causing a discrepancy actual overflow volume, along with other potential variables at some locations. MSD notified EPA and KDEP of data discrepancies on September 29, 2016.

An effort is currently underway to review and revise reporting procedures at 33 CSO locations where potentially significant discrepancies were noted between modeling and monitoring. This initial effort will be completed by the end of FY17, and the remaining CSOs will be reviewed thereafter. Until the review is complete, CSO flow monitoring data will continue to be included as an appendix to each quarterly report, will be listed as “Draft”, and will include the statement “CSO data monitoring procedures are currently being revised”. MSD will provide status updates in the quarterly reports on progress to evaluate data accuracy, revise monitoring data records, update monitoring procedures, and implement recommendations. CSO flow monitoring data reported quarterly will include updated volumes based on completion of the review and update of the reporting standards for each CSO. Any revised volumes for previous reporting periods up to and including FY16 will be included as an appendix to the FY17 Consent Decree Annual Report.

As of the end of reporting period, the following activities have occurred:

- CSO015 / CSO191: A draft SOP is under development, and draft revised historical calculated volumes have been developed reflecting the updated calculation procedure. The revised SOP will be finalized and implemented in the upcoming reporting period. The procedure will account for
- CSO016: No changes to the historical data will be made. A draft SOP for revised calculation and documentation of overflows will be finalized and implemented in the upcoming reporting period.
- CSO020: A draft SOP revision for calculation of overflows at CSO020 has been developed, and draft revised historical calculated volumes have been developed reflecting the updated calculation procedure. The revised SOP will be finalized and implemented in the upcoming reporting period.

- CSO210: No changes to the historical data will be made. A draft SOP for revised calculation of overflows will be finalized and implemented in the upcoming reporting period.
- CSO211: A draft SOP is under development, and draft revised historical calculated volumes have been developed reflecting the updated calculation procedure. The revised SOP will be finalized and implemented in the upcoming reporting period.
- The following CSOs are anticipated to be reviewed during the upcoming reporting period and a status update will be provided in the next quarterly report: CSO018, CSO036, CSO105, CSO106, CSO108, CSO109, CSO110, CSO125, CSO126, CSO127, CSO130, CSO140, CSO166, CSO189, CSO206. Additionally, the reporting of stored volumes at SWOR2 will also be reviewed.

6.5. COLLECTION SYSTEM OVERFLOW PERFORMANCE

6.5.1 UNAUTHORIZED DISCHARGES TO WATERS OF US

MSD recorded information related to overflows reaching Waters of the United States (WUS) for the reporting period. This information is entered and maintained in Hansen utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. Details of these overflows are included in Appendix A-3 . During this quarter, 25 unauthorized discharges to WUS have been reported, summarized in Table 6.5.

Table 6.5. Dry and Wet Weather SSOs by Cause – Unauthorized Discharges to Waters of US

PROBLEM	DRY WEATHER	WET WEATHER
LACK OF SYSTEM CAPACITY	0	18
MECHANICAL FAILURE	0	2
STRUCTURAL FAILURE	2	1
UTILITY DAMAGED MSD ASSET	2	0

6.5.2 OVERFLOWS TO THE EXTERIOR

MSD recorded information related to overflows to the ground that did not reach Waters of the United States for the reporting period. This information is entered and maintained in Hansen utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. These overflows will be included in the Annual Report for the period of July 1, 2016, through June 30, 2017.

6.5.3 OVERFLOWS TO INTERIOR

MSD recorded information related to overflows to building interiors for the reporting period. This information is entered and maintained in Hansen utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. These overflows, that are the result of an issue in the main line, will be included in the Annual Report for the period of July 1, 2016, through June 30, 2017.

6.6. GRAVITY LINE PREVENTIVE MAINTENANCE (GLPM)

Each quarter, data and statistics relating to the cleaning, inspection and maintenance of sewer assets performed under the Gravity Line Preventive Maintenance are reported. Data for the current and previous three reporting periods are shown in Table 6.6. Targets have been developed for planned maintenance only.

Table 6.6. Rolling Quarterly GLPM Performance – By Activity

ACTIVITY	ACTIVITY TYPE	AREA	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	TOTAL	TARGET/ QTR	% OF ANNUAL TARGET
Catch Basins Cleaned	PM	Combined System	7,176	3,358	3,610	**3,921**	18,065	4,460	22%
		Separate System	402	1,524	1,212	**1,070**	4,208	1,144	23%
	UM	Combined System	165	234	404	**359**	1,162	-	-
		Separate System	80	90	71	**59**	300	-	-
CSO Inspections	PM	Combined System	1,273	1,267	1,279	**1,289**	5,108	1,272	25%
CSO Debris Removal WO	UM		126	178	165	**143**	612	-	-
Sewer Main Chemical Root Treatment (LF)	UM	Combined System	22,377	22,393	0	**60,912**	105,682	-	-
		Separate System	144,079	79,071	0	**60,069**	283,219	-	-
Sewer Main Flushing and Cleaning (LF)	UM	Combined System	4,127	295	2,725	**2,490**	9,637	-	-
		Separate System	32,663	95,459	25,680	**52,496**	206,297	-	-
Sewer Main Inspections (LF)	PM	County Wide	277,461	194,515	90,162	**486,473**	1,048,610	396,000	31%
Sewer Main Root Cutting (LF)	UM	Combined System	1,541	0	250	**0**	1,791	-	-
		Separate System	21,345	7,808	7,200	**7,098**	43,451	-	-

APPENDICES

Appendix A	Discharge Work Orders
Appendix A-1	Discharge Work Orders – Dry Weather CSOs
Appendix A-2	Discharge Work Orders – Bypass
Appendix A-3	Discharge Work Orders – Unauthorized Discharges
Appendix B	CSO Flow Monitoring Data
Appendix C	Acronyms
Appendix D	SCAP Balance
Appendix E	IOAP Project Crosswalk
Appendix F	CSO 108 Semi-Annual Report

Appendix A-1 Discharge Work Orders – Dry Weather CSOs

Appendix A-1 Discharge Work Orders – Dry Weather CSOs

ASSOCIATED WASTEWATER TREATMENT PLANT NAME	ASSOCIATED TREATMENT PLANT KPDES #	OVERFLOW LOCATION	OVERFLOW START DATE & TIME	OVERFLOW STOP DATE & TIME	VOLUME OF OVERFLOW (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	FACILITY DISCHARGES TO	RECEIVING STREAM	CAUSE OF OVERFLOW	DUE TO	WEATHER	WO #	CLEANUP EFFORTS BY MSD	REPAIR EFFORTS BY MSD

No Dry Weather CSOs Occurred During the Reporting Period

Appendix A-2 Discharge Work Orders – Bypass

Appendix A-2 Discharge Work Orders – Bypass

ASSOCIATED WASTEWATER TREATMENT PLANT NAME	ASSOCIATED TREATMENT PLANT KPDES #	OVERFLOW LOCATION	OVERFLOW START DATE & TIME	OVERFLOW STOP DATE & TIME	VOLUME OF OVERFLOW (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	FACILITY DISCHARGES TO	RECEIVING STREAM	CAUSE OF OVERFLOW	DUE TO	WEATHER	WO #	CLEANUP EFFORTS BY MSD	REPAIR EFFORTS BY MSD
MORRIS FORMAN	KY0022411	4522 ALGONQUIN PKY	11/28/16 8:15 PM	11/28/2016	150,000	SEWER TREATMENT PLANT	MSD0278	STREAM	OHIO RIVER	MECHANICAL FAILURE WEST HEADWORKS.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2649740	NO CLEAN UP PERFORMED – PIPE DISCHARGING UNDERWATER, DIRECTLY INTO STREAM.	DIVERTED FLOW FROM WEST HEADWORKS.
MORRIS FORMAN	KY0022411	4522 ALGONQUIN PKY	12/17/16 6:27 PM	12/17/2016	50,000	SEWER TREATMENT PLANT	MSD0278	STREAM	OHIO RIVER	ELECTRICAL FAULT. EAST HEADWORKS ELECTRICAL ROOM DAMAGED BY STORM AND ROOF FAILURE.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2657831	NO CLEAN UP PERFORMED – PIPE DISCHARGING UNDERWATER, DIRECTLY INTO STREAM.	POWER TEMPORARILY RE-ROUTED UNTIL PERMANENT REPAIRS ARE COMPLETE.

Appendix A-3 Discharge Work Orders – Unauthorized Discharges

Appendix A-3 Discharge Work Orders – Unauthorized Discharges

ASSOCIATED WASTEWATER TREATMENT PLANT NAME	ASSOCIATED TREATMENT PLANT KPDES #	OVERFLOW LOCATION	OVERFLOW START DATE & TIME	OVERFLOW STOP DATE & TIME	VOLUME OF OVERFLOW (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	FACILITY DISCHARGES TO	RECEIVING STREAM	CAUSE OF OVERFLOW	DUE TO	WEATHER	WO #	CLEANUP EFFORTS BY MSD	REPAIR EFFORTS BY MSD
DEREK R. GUTHRIE	KY0078956	3706 NOBEL CT	12/13/16 8:20 AM	12/13/2016	1,000	SEWER MAIN	06940D-AG	GROUND	MILL CREEK	FORCE MAIN BREAK.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2655257	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA.	SHUT OFF PUMPS, B&H HAULED STATION WHILE CHEROKEE CONSTRUCTION MADE REPAIRS TO FORCE MAIN.
DEREK R. GUTHRIE	KY0078956	5007 LEA ANN WAY	12/18/16 2:30 AM	12/18/2016	10,000	SEWER MANHOLE	84926	STREAM	NORTHERN DITCH	LACK OF SYSTEM CAPACITY DURING RAIN EVENT, ONE PUMP OUT OF SERVICE FOR LEA ANN WAY SYSTEM IMPROVEMENTS.	MECHANICAL FAILURE	DISREV RAIN EVENT DISCHARGE	2657902	MSD TO CLEAN AND SANITIZE IMPACTED AREA.	PUMPED OUT OF MANHOLE WITH ONE 6" DISCHARGE PUMP TO PREVENT BASEMENT FLOODING IN SURROUNDING NEIGHBORHOODS.
FLOYDS FORK	KY0102784	14307 WAKEFIELD PL	12/12/16 8:35 PM	12/12/2016	2,200	SEWER MAIN	80351C-AG	CATCH BASIN	CHENOWETH RUN	FORCE MAIN BREAK.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2655123	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA.	CONTRACTOR REPAIRED THE FORCE MAIN.
HITE CREEK	KY0022420	7106 COVERED COVE WAY	11/19/16 1:50 PM	11/19/2016	25	SEWER MAIN	66847H-CO	DITCH	HUNTING CREEK	CONTRACTOR DAMAGED FORCE MAIN.	UTILITY DAMAGED MSD ASSET	DISDW DRY WEATHER DISCHARGE	2647186	CONTRACTOR CLEANED AND SANITIZED THE AREA.	REFERRED TO AREA SUPERVISOR FOR REPAIRS.
HITE CREEK	KY0022420	7104 COVERED COVE WAY	11/19/16 2:30 PM	11/19/2016	800	SEWER MAIN	68562-AG	DITCH	HUNTING CREEK	CONTRACTOR HIT SEWAGE FORCE MAIN WHILE EXCAVATING.	UTILITY DAMAGED MSD ASSET	DISDW DRY WEATHER DISCHARGE	2647172	CONTRACTOR CLEANED AND SANITIZED THE AREA.	SHUT OFF PUMPS, HAUL STATION WHILE REPAIRS MADE.
HITE CREEK	KY0022420	9810 U S HIGHWAY 42	12/18/16 1:38 AM	12/18/2016	3,150	SEWER MANHOLE	116490	DITCH	HUNTING CREEK	MOTOR FAILURE ON ONE PUMP, THE OTHER STOPPED UP WITH DEBRIS.	MECHANICAL FAILURE	DISREV RAIN EVENT DISCHARGE	2657894	NO CLEAN UP PERFORMED - PIPE DISCHARGING UNDERWATER, DIRECTLY INTO STREAM.	PULLED GOOD PUMP AND REMOVED DEBRIS.
MORRIS FORMAN	KY0022411	6126 SPRINGHOUSE FARM LN	12/12/16 2:30 PM	12/12/2016	1,240	SEWER MAIN	113063	STREAM	GOOSE CREEK	DRAINAGE UNDERMINED SANITARY SEWER LINE, RESULTING IN COLLAPSE AND OVERFLOW.	STRUCTURAL FAILURE	DISREV RAIN EVENT DISCHARGE	2655074	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA.	CONTRACTOR TO REPAIR THE LINE.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	12/17/16 11:07 AM	12/18/2016	1,833,191	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657856	NO CLEAN UP PERFORMED – PIPE DISCHARGING UNDERWATER, DIRECTLY INTO STREAM.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1726 FRASER DR	12/17/16 10:15 PM	12/18/2016	10,500	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657926	WO# 2657943	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	12/18/16 1:20 AM	12/18/2016	48,000	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657872	WO# 2657946	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2002 MILLVALE RD	12/18/16 1:30 AM	12/18/2016	12,000	SEWER MANHOLE	45829	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657873	WO# 2657947	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1013 ALTA CIR	12/18/16 1:32 AM	12/18/2016	10,000	SEWER MANHOLE	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657874	WO# 2657948	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1700 SULGRAVE RD	12/18/16 1:33 AM	12/18/2016	1,000	SEWER MANHOLE	72289	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657880	WO# 2657953	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	12/18/16 1:35 AM	12/18/2016	1,000	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657876	WO# 2657949	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1012 ALTA CIR	12/18/16 1:38 AM	12/18/2016	1,000	SEWER MANHOLE	27005	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657877	WO# 2657950	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1604 CHEROKEE RD	12/18/16 1:39 AM	12/18/2016	1,000	SEWER MANHOLE	72288	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657879	WO# 2657951	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1012 ALTA CIR	12/18/16 1:48 AM	12/18/2016	1,000	SEWER MANHOLE	40559	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657881	WO# 2657954	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1700 SULGRAVE RD	12/18/16 1:55 AM	12/18/2016	1,000	SEWER MANHOLE	15195	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657882	WO# 2657955	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	12/18/16 2:20 AM	12/18/2016	9,000	SEWER MANHOLE	08717	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657884	WO# 2657960	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	12/18/16 2:20 AM	12/18/2016	1,000	SEWER MANHOLE	66349	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657883	WO# 2657956	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	202 OXMOOR LN	12/18/16 2:23 AM	12/18/2016	10,500	SEWER MANHOLE	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657925	WO# 2657961	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3500 ST EDWARDS DR	12/18/16 2:30 AM	12/18/2016	11,250	SEWER MANHOLE	28249	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657930	WO# 2657965	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7900 SHELBYVILLE RD	12/18/16 2:36 AM	12/18/2016	12,000	SEWER MANHOLE	02935	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657927	WO# 2657962	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7900 SHELBYVILLE RD	12/18/16 2:42 AM	12/18/2016	63,000	SEWER MANHOLE	02933	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657928	WO# 2657963	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7913 SHELBYVILLE RD	12/18/16 2:58 AM	12/18/2016	63,000	SEWER MANHOLE	84155	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2657929	WO# 2657964	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.

Appendix B CSO Flow Monitoring Data

CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Minutes)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency	Period	Standard
CSO015	9/28/16 2:00 PM	9/28/16 7:00 PM	15,276,756.22	300	0.36	42,435,433.95	0.63	0.21	3	Atlas
CSO015	9/30/16 3:45 AM	9/30/16 6:15 AM	15,540,826.15	150	0.65	23,908,963.31	1.26	0.30	3	Atlas
CSO015	9/30/16 3:45 PM	9/30/16 7:00 PM	2,458,622.71	195	0.65	3,782,496.48	1.37	0.30	3	Atlas
CSO015 Count			3							
CSO015 Total			33,276,205.08							
CSO016	9/28/16 2:30 PM	9/28/16 7:30 PM	4,746,552.53	300	0.38	12,490,927.72	0.66	0.21	3	Atlas
CSO016	9/30/16 2:45 AM	9/30/16 8:45 AM	6,696,654.74	360	0.71	9,431,908.08	1.30	0.31	3	Atlas
CSO016	10/1/16 7:45 PM	10/1/16 7:45 PM	160,195.67	0	0.01	16,019,567.19	1.37			
CSO016 Count			3							
CSO016 Total			11,603,402.95							
CSO019	9/28/16 11:00 AM	9/28/16 4:00 PM	146,385.90	300	0.45	325,302.01	0.68	0.24	3	Atlas
CSO019	9/29/16 9:00 AM	9/29/16 1:00 PM	45,539.51	240	0.58	78,516.39	0.84	0.23	3	Atlas
CSO019	9/30/16 12:00 AM	9/30/16 9:45 AM	543,796.25	585	0.58	937,579.74	1.25	0.23	3	Atlas
CSO019	10/20/16 9:00 AM	10/20/16 6:30 PM	823,077.12	570	0.66	1,247,086.54	0.56	0.28	3	Atlas
CSO019	11/8/16 7:45 PM	11/8/16 8:45 PM	2,039.83	60	0.13	15,691.03	0.15	0.06	12	Atlas
CSO019	11/10/16 1:00 PM	11/10/16 1:00 PM	62,370.04	0	Discharge		0.14			
CSO019	11/19/16 1:30 AM	11/19/16 1:45 AM	3,312.84	15	0.1	33,128.44	0.09			
CSO019	11/23/16 5:30 PM	11/23/16 10:30 PM	17,339.48	300	0.32	54,185.87	0.42	0.12	24	Atlas
CSO019	11/28/16 1:00 PM	11/29/16 5:45 AM	432,824.02	1005	0.76	569,505.29	1.08	0.33	12	Atlas
CSO019	12/4/16 5:30 PM	12/4/16 8:15 PM	8,769.25	165	0.06	146,154.17	0.83	0.03	12	Atlas
CSO019	12/6/16 4:15 AM	12/6/16 9:15 PM	568,626.68	1020	0.8	710,783.34	0.87	0.37	12	Atlas
CSO019	12/11/16 9:00 PM	12/12/16 8:45 AM	19,257.77	705	0.36	53,493.81	1.29	0.16	12	Atlas
CSO019	12/17/16 12:45 AM	12/18/16 2:30 PM	10,186,210.62	2265	2.89	3,524,640.35	3.27	2.68	12	Cloudburst
CSO019	12/23/16 9:45 PM	12/24/16 10:15 PM	735,670.73	1470	0.28	2,627,395.45	3.16	0.13	6	Atlas
CSO019	12/26/16 8:00 AM	12/27/16 11:30 AM	453,194.07	1650	0.4	1,132,985.18	0.68	0.20	1	Atlas
CSO019	12/28/16 7:00 PM	12/28/16 10:45 PM	14,194.08	225	0.03	473,136.15	0.71	0.02	3	Atlas
CSO019 Count			16							
CSO019 Total			14,062,608.20							
CSO020	9/30/16 3:00 AM	9/30/16 4:00 AM	192,991.96	60	0.58	332,744.75	1.27	0.31	3	Atlas
CSO020 Count			1							
CSO020 Total			192,991.96							
CSO027	10/20/16 9:15 AM	10/20/16 10:00 AM	12,829.15	45	0.69	18,592.96	0.32	0.26	24	Atlas
CSO027 Count			1							
CSO027 Total			12,829.15							
CSO028	9/28/16 12:30 PM	9/28/16 3:30 PM	19,649.54	180	0.38	51,709.32	0.64	0.21	6	Atlas
CSO028	9/30/16 12:15 AM	9/30/16 5:00 AM	41,568.71	285	0.68	61,130.46	1.31	0.35	3	Atlas
CSO028	12/17/16 6:30 PM	12/21/16 12:45 PM	10,583,958.77	5415	2.81	3,766,533.37	3.16	2.53	12	Cloudburst
CSO028 Count			3							
CSO028 Total			10,645,177.02							
CSO029	9/30/16 1:45 AM	9/30/16 1:45 AM	4,107.48	0	0.68	6,040.41	1.16	0.35	3	Atlas
CSO029	10/20/16 9:00 AM	10/20/16 9:15 AM	16,774.22	15	0.69	24,310.46	0.25	0.26	24	Atlas
CSO029	12/17/16 6:45 PM	12/18/16 1:15 AM	183,191.76	390	2.81	65,192.80	3.16	2.53	12	Cloudburst
CSO029 Count			3							
CSO029 Total			204,073.45							
CSO034	12/17/16 6:30 PM	12/17/16 7:15 PM	22,326.63	45	2.81	7,945.42	1.41	2.53	12	Cloudburst
CSO034 Count			1							
CSO034 Total			22,326.63							
CSO035	10/20/16 9:15 AM	10/20/16 9:30 AM	149,128.30	15	0.6	248,547.16	0.16	0.23	24	Atlas
CSO035	12/17/16 6:30 PM	12/18/16 12:30 AM	1,029,157.07	360	2.78	370,200.38	2.96	2.39	12	Cloudburst
CSO035 Count			2							
CSO035 Total			1,178,285.37							
CSO036	12/6/16 10:00 AM	12/7/16 12:15 AM	82,734.05	855	0.9	91,926.73	0.93	0.41	12	Atlas
CSO036	12/11/16 11:00 PM	12/12/16 8:00 PM	332,859.82	1260	0.32	1,040,186.95	1.25	0.14	12	Atlas
CSO036	12/17/16 3:00 AM	12/19/16 4:15 PM	21,848,001.64	3675	2.78	7,858,993.40	3.11	2.39	12	Cloudburst

CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Minutes)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency	Period	Standard
CSO036 Count			3							
CSO036 Total			22,263,595.52							
CSO051	9/28/16 12:15 PM	9/28/16 12:15 PM	109.77	0	0.62	177.05	0.70	0.33	6	Atlas
CSO051	10/20/16 9:15 AM	10/20/16 10:30 AM	3,035.31	75	0.54	5,620.95	0.27	0.23	3	Atlas
CSO051	12/6/16 9:15 AM	12/6/16 9:30 AM	109.88	15	0.93	118.15	0.70	0.43	12	Atlas
CSO051	12/17/16 4:45 PM	12/18/16 1:15 AM	159,199.31	510	3.36	47,380.75	3.72	4.95	12	Cloudburst
CSO051 Count			4							
CSO051 Total			162,454.27							
CSO052	9/30/16 1:30 AM	10/1/16 3:15 AM	121,932.96	1545	0.52	234,486.45	1.36	0.28	3	Atlas
CSO052 Count			1							
CSO052 Total			121,932.96							
CSO053	9/28/16 12:45 PM	9/28/16 12:45 PM	448.94	0	0.48	935.29	0.66	0.26	6	Atlas
CSO053	12/17/16 6:30 PM	12/18/16 1:15 AM	7,352.03	405	3.07	2,394.80	3.40	3.65	12	Cloudburst
CSO053 Count			2							
CSO053 Total			7,800.97							
CSO055	9/30/16 2:45 AM	9/30/16 3:30 AM	3,234.53	45	0.52	6,220.25	1.29	0.28	3	Atlas
CSO055	10/20/16 9:15 AM	10/20/16 10:00 AM	15,985.84	45	0.67	23,859.47	0.34	0.28	3	Atlas
CSO055	11/8/16 7:45 PM	11/8/16 7:45 PM	1,932.99	0	0.16	12,081.19	0.16	0.07	12	Atlas
CSO055	11/28/16 7:30 PM	11/28/16 9:45 PM	7,409.56	135	0.7	10,585.09	1.04	0.30	12	Atlas
CSO055	12/6/16 7:45 AM	12/6/16 1:30 PM	22,293.69	345	0.95	23,467.04	1.00	0.44	12	Atlas
CSO055	12/17/16 4:45 PM	12/18/16 11:15 AM	736,272.31	1110	3.07	239,828.11	3.40	3.65	12	Cloudburst
CSO055	12/24/16 1:15 AM	12/24/16 2:15 AM	12,535.81	60	0.29	43,226.94	3.28	0.13	12	Atlas
CSO055	12/26/16 5:00 PM	12/26/16 11:45 PM	25,082.29	405	0.4	62,705.73	0.69	0.20	6	Atlas
CSO055 Count			8							
CSO055 Total			824,747.03							
CSO057 Count			0							
CSO057 Total			0.00							
CSO058	9/28/16 12:00 PM	9/28/16 2:00 PM	1,136.85	120	0.41	2,772.82	0.68	0.22	6	Atlas
CSO058	9/29/16 9:00 AM	9/29/16 9:15 AM	385.51	15	0.07	5,507.29	0.74	0.04	1	Atlas
CSO058	9/30/16 12:00 AM	9/30/16 2:30 AM	1,133.19	150	0.62	1,827.72	1.28	0.33	3	Atlas
CSO058	10/20/16 9:15 AM	10/20/16 11:15 AM	1,842.41	120	0.57	3,232.29	0.38	0.23	3	Atlas
CSO058	10/28/16 4:00 PM	10/28/16 4:00 PM	78.63	0	0.71		0.00			
CSO058	11/8/16 7:45 PM	11/8/16 7:45 PM	230.84	0	0.19	1,214.97	0.22	0.09	12	Atlas
CSO058	11/23/16 2:45 PM	11/24/16 3:00 PM	1,477,591.98	1455	0.31	4,766,425.74	0.44	0.13	6	Atlas
CSO058	11/27/16 1:30 PM	11/28/16 9:45 PM	3,199,617.70	1935	0.78	4,102,073.97	0.98			
CSO058	12/6/16 4:15 AM	12/6/16 11:45 AM	5,803.74	450	0.9	6,448.60	0.87	0.41	12	Atlas
CSO058	12/11/16 9:30 PM	12/11/16 9:30 PM	93.60	0	0.33	283.65	1.14	0.15	12	Atlas
CSO058	12/17/16 3:45 PM	12/18/16 1:30 AM	21,099.33	585	2.68	7,872.89	3.02	1.86	12	Cloudburst
CSO058	12/23/16 10:15 PM	12/24/16 12:45 AM	975.01	150	0.25	3,900.04	2.91	0.11	6	Atlas
CSO058	12/26/16 5:00 PM	12/26/16 9:45 PM	489.01	285	0.36	1,358.36	0.59	0.18	6	Atlas
CSO058 Count			13							
CSO058 Total			4,710,477.80							
CSO082	12/17/16 6:30 PM	12/18/16 4:00 AM	1,325,126.60	570	2.61	507,711.34	2.95	1.70	12	Cloudburst
CSO082 Count			1							
CSO082 Total			1,325,126.60							
CSO083	10/20/16 9:15 AM	10/20/16 9:15 AM	1,372.78	0	0.53	2,590.15	0.09	0.20	24	Atlas
CSO083	12/17/16 6:30 PM	12/17/16 7:00 PM	60,484.92	30	2.6	23,263.43	1.21	1.77	12	Cloudburst
CSO083 Count			2							
CSO083 Total			61,857.70							
CSO084	9/28/16 1:00 PM	9/28/16 1:00 PM	660.85	0	0.35	1,888.15	0.46	0.19	6	Atlas
CSO084	9/30/16 1:30 AM	9/30/16 2:15 AM	3,349.09	45	0.68	4,925.14	1.14	0.35	3	Atlas
CSO084	10/20/16 9:30 AM	10/20/16 10:15 AM	1,750.24	45	0.53	3,302.34	0.21	0.20	24	Atlas
CSO084	11/8/16 7:45 PM	11/8/16 8:00 PM	2,621.59	15	0.2	13,107.97	0.23	0.10	1	Atlas
CSO084	12/6/16 9:15 AM	12/6/16 9:45 AM	4,883.06	30	0.86	5,677.98	0.61	0.39	12	Atlas

CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Minutes)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency	Period	Standard
CSO084	12/17/16 4:30 PM	12/18/16 1:15 AM	24,353.22	525	2.6	9,366.62	2.90	1.77	12	Cloudburst
CSO084 Count			6							
CSO084 Total			37,618.06							
CSO088	12/17/16 6:45 PM	12/18/16 2:45 AM	126,105.35	480	2.75	45,856.49	3.03	2.05	12	Cloudburst
CSO088 Count			1							
CSO088 Total			126,105.35							
CSO093	12/17/16 7:15 PM	12/17/16 7:15 PM	6,669.05	0	2.66	2,507.16	1.34	1.86	12	Cloudburst
CSO093 Count			1							
CSO093 Total			6,669.05							
CSO097	9/28/16 1:45 PM	9/28/16 4:15 PM	72,859.04	150	0.42	173,473.91	0.70	0.23	6	Atlas
CSO097	9/30/16 2:30 AM	9/30/16 4:45 AM	61,081.54	135	0.69	88,523.97	1.34	0.35	3	Atlas
CSO097 Count			2							
CSO097 Total			133,940.58							
CSO104	9/30/16 12:45 AM	9/30/16 4:45 AM	12,738.19	240	0.64	19,903.42	1.61	0.34	3	Atlas
CSO104	11/29/16 4:30 AM	11/29/16 11:30 AM	27,001.54	420	0.79	34,179.17	1.19	0.35	12	Atlas
CSO104	12/6/16 2:15 PM	12/7/16 8:45 AM	563,780.49	1110	0.87	648,023.55	0.93	0.40	12	Atlas
CSO104	12/17/16 6:30 PM	12/18/16 12:30 AM	220,968.48	360	3.53	62,597.30	3.78	6.35	12	Cloudburst
CSO104 Count			4							
CSO104 Total			824,488.70							
CSO105	9/28/16 8:30 AM	9/28/16 3:15 PM	616,994.18	405	0.5	1,233,988.36	0.84	0.27	6	Atlas
CSO105	9/29/16 9:30 AM	9/29/16 10:15 AM	6,437.07	45	0.21	30,652.73	1.06	0.17	1	Atlas
CSO105	9/30/16 12:15 AM	9/30/16 4:30 AM	1,617,295.87	255	0.64	2,527,024.79	1.61	0.34	3	Atlas
CSO105	10/20/16 9:00 AM	10/20/16 4:15 PM	2,223,610.82	435	0.67	3,318,822.12	0.54	0.33	3	Atlas
CSO105	11/8/16 7:30 PM	11/8/16 8:15 PM	6,670.23	45	0.14	47,644.50	0.16	0.06	12	Atlas
CSO105	11/19/16 1:15 AM	11/19/16 1:15 AM	7,027.97	0	0.12	58,566.41	0.10			
CSO105	11/23/16 5:30 PM	11/23/16 8:45 PM	4,860.67	195	0.4	12,151.67	0.52	0.16	6	Atlas
CSO105	11/28/16 12:45 PM	11/28/16 11:00 PM	1,889,481.58	615	0.79	2,391,748.83	1.19	0.35	12	Atlas
CSO105	12/6/16 4:15 AM	12/6/16 2:00 PM	2,983,573.47	585	0.87	3,429,394.79	0.93	0.40	12	Atlas
CSO105	12/11/16 9:00 PM	12/12/16 2:15 AM	28,845.37	315	0.36	80,126.04	1.37	0.17	12	Atlas
CSO105	12/17/16 1:15 AM	12/17/16 6:30 AM	18,121.67	315	3.53	5,133.62	0.51	6.35	12	Cloudburst
CSO105	12/17/16 3:00 PM	12/18/16 4:30 AM	33,426,281.24	810	3.53	9,469,201.48	3.90	6.35	12	Cloudburst
CSO105	12/23/16 9:45 PM	12/24/16 6:00 AM	617,113.10	495	0.24	2,571,304.58	3.76	0.11	12	Atlas
CSO105	12/26/16 7:30 AM	12/26/16 8:15 AM	939.44	45	0.34	2,763.05	0.27	0.16	6	Atlas
CSO105	12/26/16 5:00 PM	12/26/16 10:15 PM	15,187.04	315	0.34	44,667.77	0.57	0.16	6	Atlas
CSO105	12/28/16 6:30 PM	12/28/16 7:30 PM	6,834.85	60	0.04	170,871.36	0.62	0.03	3	Atlas
CSO105	12/31/16 5:15 PM	12/31/16 5:45 PM	528.17	30	0.07	7,545.24	0.47	0.03	6	Atlas
CSO105 Count			17							
CSO105 Total			43,469,802.73							
CSO108	12/17/16 7:30 PM	12/20/16 10:15 AM	10,798,262.65	3765	2.71	3,984,598.76	3.04	2.40	6	Cloudburst
CSO108 Count			1							
CSO108 Total			10,798,262.65							
CSO109	12/17/16 6:45 PM	12/18/16 5:15 AM	7,535,366.96	630	2.78	2,710,563.65	3.09	2.52	6	Cloudburst
CSO109 Count			1							
CSO109 Total			7,535,366.96							
CSO110	9/28/16 1:00 PM	9/28/16 2:45 PM	221.30	105	0.45	491.78	0.82	0.25	6	Atlas
CSO110	9/30/16 1:45 AM	9/30/16 3:15 AM	392.80	90	0.7	561.15	1.46	0.35	3	Atlas
CSO110	10/20/16 10:15 AM	10/20/16 4:45 PM	223.09	390	0.51	437.44	0.39	0.20	3	Atlas
CSO110	11/23/16 9:15 PM	11/23/16 9:45 PM	16.88	30	0.21	80.39	0.43	0.11	6	Atlas
CSO110	11/28/16 5:30 PM	11/28/16 10:45 PM	734.03	315	0.78	941.07	1.05	0.34	12	Atlas
CSO110	12/6/16 5:30 AM	12/6/16 1:30 PM	977.58	480	0.96	1,018.32	0.99	0.44	12	Atlas
CSO110	12/11/16 10:00 PM	12/11/16 11:00 PM	50.68	60	0.3	168.94	1.24	0.14	12	Atlas
CSO110	12/17/16 7:00 PM	12/18/16 7:15 AM	3,941.66	735	2.59	1,521.88	2.89			
CSO110	12/23/16 11:00 PM	12/24/16 2:15 AM	280.72	195	0.16	1,754.52	2.73	0.07	12	Atlas
CSO110	12/26/16 8:45 PM	12/26/16 11:15 PM	150.93	150	0.25	603.71	0.40	0.12	6	Atlas

CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Minutes)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency	Period	Standard
CSO110 Count			10							
CSO110 Total			6,989.69							
CSO111	12/17/16 8:30 PM	12/18/16 1:30 AM	9,963.11	300	2.59	3,846.76	2.88			
CSO111 Count			1							
CSO111 Total			9,963.11							
CSO118	9/28/16 8:30 AM	9/28/16 2:15 PM	313,143.88	345	0.35	894,696.80	0.53	0.19	6	Atlas
CSO118	9/29/16 9:15 AM	9/29/16 9:15 AM	331.06	0	0.06	5,517.71	0.60	0.04	1	Atlas
CSO118	9/29/16 11:45 PM	9/30/16 3:00 AM	899,462.67	195	0.68	1,322,739.22	1.17	0.35	3	Atlas
CSO118	9/30/16 12:30 PM	9/30/16 12:30 PM	363.25	0	0.68	534.19	1.25	0.35	3	Atlas
CSO118	10/20/16 9:15 AM	10/20/16 4:45 PM	981,177.99	450	0.53	1,851,279.23	0.42	0.20	24	Atlas
CSO118	11/8/16 7:45 PM	11/8/16 8:30 PM	241,289.44	45	0.2	1,206,447.20	0.23	0.10	1	Atlas
CSO118	11/19/16 1:15 AM	11/19/16 3:00 AM	283.49	105	0.13	2,180.69	0.13			
CSO118	11/23/16 5:30 PM	11/23/16 9:30 PM	23,415.19	240	0.26	90,058.41	0.39	0.11	6	Atlas
CSO118	11/28/16 1:00 PM	11/28/16 10:15 PM	567,832.10	555	0.66	860,351.66	0.92	0.29	12	Atlas
CSO118	12/6/16 4:15 AM	12/6/16 12:45 PM	1,360,972.45	510	0.86	1,582,526.11	0.90	0.39	12	Atlas
CSO118	12/10/16 3:00 AM	12/10/16 4:00 AM	251,418.48	60	Discharge		0.93			
CSO118	12/11/16 8:00 PM	12/11/16 10:15 PM	941.45	135	0.31	3,036.93	1.11	0.14	12	Atlas
CSO118	12/17/16 1:15 AM	12/17/16 2:30 AM	592.26	75	2.6	227.79	0.38	1.77	12	Cloudburst
CSO118	12/17/16 3:45 PM	12/18/16 6:45 AM	12,702,462.11	900	2.6	4,885,562.35	2.91	1.77	12	Cloudburst
CSO118	12/23/16 9:30 PM	12/24/16 1:45 AM	131,523.34	255	0.19	692,228.11	2.79	0.09	6	Atlas
CSO118	12/26/16 5:15 PM	12/26/16 10:45 PM	6,928.08	330	0.28	24,743.15	0.47	0.14	6	Atlas
CSO118	12/31/16 5:00 PM	12/31/16 5:45 PM	623.66	45	0.07	8,909.37	0.38	0.03	12	Atlas
CSO118 Count			17							
CSO118 Total			17,482,760.89							
CSO119	9/28/16 12:30 PM	9/28/16 1:00 PM	34,068.27	30	0.35	97,337.91	0.46	0.19	6	Atlas
CSO119	9/30/16 1:15 AM	9/30/16 2:30 AM	103,207.65	75	0.68	151,775.96	1.16	0.35	3	Atlas
CSO119	10/20/16 9:00 AM	10/20/16 11:00 AM	123,026.39	120	0.53	232,125.27	0.29	0.20	24	Atlas
CSO119	11/8/16 7:30 PM	11/8/16 8:00 PM	24,531.93	30	0.2	122,659.66	0.23	0.10	1	Atlas
CSO119	11/28/16 5:30 PM	11/28/16 9:30 PM	22,296.60	240	0.66	33,782.72	0.91	0.29	12	Atlas
CSO119	12/6/16 5:30 AM	12/6/16 12:00 PM	78,456.23	390	0.86	91,228.17	0.88	0.39	12	Atlas
CSO119	12/17/16 4:15 PM	12/18/16 1:30 AM	983,525.55	555	2.6	378,279.06	2.90	1.77	12	Cloudburst
CSO119 Count			7							
CSO119 Total			1,369,112.61							
CSO120	9/28/16 1:00 PM	9/28/16 1:00 PM	27.45	0	0.38	72.23	0.53	0.21	6	Atlas
CSO120	9/30/16 12:00 AM	9/30/16 2:15 AM	73,920.92	135	0.68	108,707.23	1.22	0.37	3	Atlas
CSO120	10/20/16 9:15 AM	10/20/16 10:00 AM	101,808.68	45	0.58	175,532.21	0.26	0.26	3	Atlas
CSO120	11/8/16 7:45 PM	11/8/16 8:00 PM	34,161.17	15	0.16	213,507.29	0.18	0.07	12	Atlas
CSO120	12/6/16 5:30 AM	12/6/16 9:30 AM	22,816.06	240	0.86	26,530.30	0.58	0.39	12	Atlas
CSO120	12/17/16 4:30 PM	12/18/16 2:00 AM	840,377.25	570	2.61	321,983.62	2.94	1.70	12	Cloudburst
CSO120	12/24/16 1:00 AM	12/24/16 1:00 AM	15,968.38	0	0.23	69,427.72	2.75	0.11	12	Atlas
CSO120 Count			7							
CSO120 Total			1,089,079.90							
CSO121	10/20/16 9:15 AM	10/20/16 10:00 AM	40,150.58	45	0.58	69,225.13	0.26	0.26	3	Atlas
CSO121	11/8/16 7:45 PM	11/8/16 8:00 PM	4,440.58	15	0.16	27,753.65	0.18	0.07	12	Atlas
CSO121	11/19/16 2:00 AM	11/19/16 2:00 AM	6.20	0	0.12	51.65	0.09			
CSO121	11/28/16 5:45 PM	11/28/16 9:30 PM	231.83	225	0.7	331.19	0.98	0.30	12	Atlas
CSO121	12/6/16 3:45 AM	12/6/16 9:30 AM	6,029.88	345	0.86	7,011.48	0.58	0.39	12	Atlas
CSO121	12/17/16 6:30 PM	12/18/16 1:30 AM	274,821.82	420	2.61	105,295.72	2.94	1.70	12	Cloudburst
CSO121 Count			6							
CSO121 Total			325,680.89							
CSO125	9/28/16 1:00 PM	9/28/16 1:15 PM	100,747.15	15	0.37	272,289.60	0.51	0.20	6	Atlas
CSO125	9/30/16 1:30 AM	9/30/16 2:45 AM	280,653.22	75	0.59	475,683.43	1.16	0.31	3	Atlas
CSO125	10/20/16 9:30 AM	10/20/16 11:30 AM	188,005.75	120	0.69	272,472.10	0.46	0.28	3	Atlas
CSO125	11/23/16 8:30 PM	11/23/16 8:30 PM	7,894.03	0	0.24	32,891.80	0.41	0.10	6	Atlas

CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Minutes)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency	Period	Standard
CSO125	11/28/16 6:00 PM	11/28/16 10:00 PM	88,686.51	240	0.9	98,540.57	1.14	0.40	12	Atlas
CSO125	12/6/16 5:45 AM	12/6/16 12:30 PM	249,352.88	405	0.82	304,088.88	0.87	0.38	12	Atlas
CSO125	12/11/16 5:30 AM	12/11/16 11:30 AM	2,296,668.60	360	Discharge		0.91			
CSO125	12/17/16 6:45 PM	12/20/16 8:45 AM	83,460,097.54	3720	2.67	31,258,463.50	2.94	1.93	12	Cloudburst
CSO125	12/24/16 1:15 AM	12/24/16 1:15 AM	9,321.56	0	0.19	49,060.86	2.81	0.09	6	Atlas
CSO125 Count			9							
CSO125 Total			86,681,427.25							
CSO127	9/28/16 8:45 AM	9/28/16 2:30 PM	92,212.90	345	0.36	256,146.95	0.57	0.19	6	Atlas
CSO127	9/29/16 9:15 AM	9/29/16 9:30 AM	5,371.67	15	0.07	76,738.10	0.64	0.04	1	Atlas
CSO127	9/30/16 12:30 AM	9/30/16 3:00 AM	137,316.86	150	0.59	232,740.45	1.15	0.31	3	Atlas
CSO127	10/20/16 9:30 AM	10/20/16 5:00 PM	218,694.39	450	0.71	308,020.26	0.58	0.27	24	Atlas
CSO127	11/8/16 8:00 PM	11/8/16 8:30 PM	10,396.81	30	0.17	61,157.72	0.20	0.09	1	Atlas
CSO127	11/19/16 3:00 AM	11/19/16 3:30 AM	28,671.27	30	0.18	159,284.84	0.18			
CSO127	11/23/16 8:15 PM	11/23/16 9:30 PM	61,646.16	75	0.24	256,859.02	0.42	0.10	6	Atlas
CSO127	11/28/16 4:45 PM	11/28/16 10:15 PM	267,236.36	330	0.93	287,350.92	1.16	0.41	12	Atlas
CSO127	12/6/16 4:30 AM	12/6/16 12:45 PM	434,838.22	495	0.89	488,582.27	0.95	0.41	12	Atlas
CSO127	12/11/16 9:45 PM	12/11/16 10:15 PM	44,526.21	30	0.28	159,022.19	1.14	0.12	12	Atlas
CSO127	12/17/16 4:30 PM	12/18/16 5:00 AM	1,520,742.49	750	2.88	528,035.59	3.15	2.92	6	Cloudburst
CSO127	12/23/16 10:30 PM	12/24/16 1:30 AM	170,122.41	180	0.17	1,000,720.08	3.03	0.08	6	Atlas
CSO127	12/26/16 8:30 PM	12/26/16 10:45 PM	53,525.78	135	0.27	198,243.64	0.44	0.14	6	Atlas
CSO127 Count			13							
CSO127 Total			3,045,301.55							
CSO130	9/28/16 12:30 PM	9/28/16 1:15 PM	3,737.30	45	0.49	7,627.15	0.66	0.26	6	Atlas
CSO130	9/29/16 9:15 AM	9/29/16 9:15 AM	426.21	0	0.07	6,088.69	0.79	0.04	1	Atlas
CSO130	9/30/16 1:30 AM	9/30/16 2:45 AM	7,962.34	75	0.64	12,441.16	1.36	0.34	3	Atlas
CSO130	12/17/16 6:30 PM	12/17/16 7:15 PM	9,197.83	45	2.75	3,344.67	1.42	2.05	12	Cloudburst
CSO130 Count			4							
CSO130 Total			21,323.69							
CSO131	10/20/16 9:00 AM	10/20/16 9:00 AM	10,681.83	0	0.58	18,416.95	0.24	0.28	3	Atlas
CSO131	12/17/16 6:15 PM	12/17/16 7:00 PM	121,171.85	45	2.75	44,062.49	1.38	2.05	12	Cloudburst
CSO131 Count			2							
CSO131 Total			131,853.68							
CSO132	9/28/16 12:30 PM	9/28/16 1:15 PM	77,415.14	45	0.38	203,724.06	0.55	0.20	6	Atlas
CSO132	9/30/16 12:00 AM	9/30/16 2:45 AM	225,794.67	165	0.64	352,804.17	1.25	0.35	3	Atlas
CSO132	10/20/16 9:30 AM	10/20/16 11:30 AM	266,843.88	120	0.52	513,161.30	0.37	0.23	3	Atlas
CSO132	11/28/16 5:30 PM	11/28/16 10:15 PM	714,206.98	285	0.72	991,954.15	0.98	0.32	12	Atlas
CSO132	12/6/16 5:30 AM	12/6/16 12:45 PM	820,506.58	435	0.78	1,051,931.52	0.82	0.36	12	Atlas
CSO132	12/17/16 4:30 PM	12/18/16 6:00 AM	648,339.05	810	2.71	239,239.50	2.97	1.95	12	Cloudburst
CSO132	12/23/16 11:00 PM	12/24/16 1:15 AM	196,836.31	135	0.21	937,315.77	2.86	0.10	6	Atlas
CSO132	12/26/16 9:00 PM	12/26/16 9:00 PM	2,552.47	0	0.22	11,602.13	0.40	0.11	6	Atlas
CSO132 Count			8							
CSO132 Total			2,952,495.09							
CSO140	10/20/16 10:00 AM	10/20/16 10:00 AM	7,926.30	0	0.54	14,678.34	0.24	0.23	3	Atlas
CSO140	12/17/16 6:45 PM	12/18/16 12:30 AM	897,187.76	345	2.66	337,288.63	2.83	1.86	12	Cloudburst
CSO140 Count			2							
CSO140 Total			905,114.06							
CSO142	10/20/16 9:15 AM	10/20/16 9:15 AM	15,406.63	0	0.54	28,530.79	0.07	0.21	24	Atlas
CSO142	12/17/16 6:45 PM	12/18/16 12:30 AM	86,737.55	345	2.52	34,419.66	2.67	1.58	12	Cloudburst
CSO142 Count			2							
CSO142 Total			102,144.18							
CSO144	12/17/16 7:15 PM	12/17/16 7:15 PM	1,867.17	0	2.58	723.71	1.29	1.72	12	Cloudburst
CSO144 Count			1							
CSO144 Total			1,867.17							
CSO148	9/28/16 12:45 PM	9/28/16 12:45 PM	4,604.25	0	0.42	10,962.50	0.61	0.23	6	Atlas

CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Minutes)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency	Period	Standard
CSO148	9/30/16 1:30 AM	9/30/16 2:15 AM	5,000.16	45	0.69	7,246.60	1.30	0.35	3	Atlas
CSO148	10/20/16 10:00 AM	10/20/16 10:00 AM	3,787.44	0	0.55	6,886.25	0.20	0.23	3	Atlas
CSO148	11/8/16 8:00 PM	11/8/16 8:00 PM	191.31	0	0.18	1,062.85	0.23	0.09	1	Atlas
CSO148	12/6/16 9:15 AM	12/6/16 11:30 AM	1,346.27	135	0.98	1,373.75	0.93	0.45	12	Atlas
CSO148	12/17/16 6:30 PM	12/18/16 1:15 AM	197,301.01	405	2.52	78,294.05	2.76	1.56	12	Cloudburst
CSO148	**Count**		6							
CSO148	**Total**		212,230.44							
CSO150	9/30/16 2:30 AM	9/30/16 3:30 AM	49,429.24	60	0.52	95,056.23	1.29	0.28	3	Atlas
CSO150	10/20/16 11:30 AM	10/20/16 11:30 AM	1,052.16	0	0.67	1,570.38	0.48	0.28	3	Atlas
CSO150	11/28/16 7:15 PM	11/28/16 10:00 PM	34,040.44	165	0.7	48,629.20	1.04	0.30	12	Atlas
CSO150	12/6/16 7:30 AM	12/6/16 12:45 PM	195,564.61	315	0.95	205,857.48	1.00	0.44	12	Atlas
CSO150	12/17/16 6:15 PM	12/18/16 3:45 AM	594,164.12	570	3.07	193,538.80	3.40	3.65	12	Cloudburst
CSO150	12/24/16 1:00 AM	12/24/16 2:00 AM	14,858.95	60	0.29	51,237.75	3.27	0.13	12	Atlas
CSO150	**Count**		6							
CSO150	**Total**		889,109.51							
CSO151	9/28/16 8:45 AM	9/28/16 3:15 PM	346,407.95	390	0.33	1,049,721.05	0.57	0.17	6	Atlas
CSO151	9/29/16 9:30 AM	9/29/16 10:00 AM	12,507.76	30	0.08	156,347.01	0.64	0.05	3	Atlas
CSO151	9/30/16 12:30 AM	9/30/16 4:00 AM	687,358.57	210	0.7	981,940.81	1.24	0.37	3	Atlas
CSO151	10/20/16 10:15 AM	10/20/16 5:30 PM	394,710.82	435	0.51	773,942.78	0.39	0.20	24	Atlas
CSO151	11/8/16 8:30 PM	11/8/16 9:00 PM	26,611.54	30	0.22	120,961.55	0.25	0.11	1	Atlas
CSO151	11/19/16 1:45 AM	11/19/16 3:45 AM	34,467.96	120	0.15	229,786.40	0.15			
CSO151	11/23/16 8:15 PM	11/23/16 10:15 PM	101,678.81	120	0.25	406,715.24	0.40	0.10	6	Atlas
CSO151	11/28/16 2:15 PM	11/28/16 11:15 PM	554,294.60	540	0.79	701,638.73	1.04	0.35	12	Atlas
CSO151	12/6/16 4:30 AM	12/6/16 2:00 PM	786,722.73	570	0.91	864,530.47	0.94	0.42	12	Atlas
CSO151	12/11/16 9:30 PM	12/11/16 11:45 PM	135,480.79	135	0.26	521,079.97	1.16	0.11	12	Atlas
CSO151	12/17/16 4:30 PM	12/18/16 11:00 PM	3,794,437.58	1830	2.64	1,437,286.96	2.90	1.91	12	Cloudburst
CSO151	12/23/16 10:15 PM	12/24/16 3:00 AM	342,426.56	285	0.16	2,140,166.00	2.79	0.07	12	Atlas
CSO151	12/26/16 8:30 PM	12/27/16 12:00 AM	212,857.66	210	0.24	886,906.92	0.40	0.11	6	Atlas
CSO151	**Count**		13							
CSO151	**Total**		7,429,963.33							
CSO152	9/28/16 12:45 PM	9/28/16 2:45 PM	107,367,454.00	120	0.36	298,242,927.78	0.61	0.19	6	Atlas
CSO152	9/29/16 9:45 AM	9/29/16 9:45 AM	3,452,804.25	0	0.07	49,325,775.00	0.68	0.05	1	Atlas
CSO152	9/30/16 12:30 AM	9/30/16 3:15 AM	186,368,168.00	165	0.71	262,490,377.46	1.27	0.37	3	Atlas
CSO152	10/20/16 9:30 AM	10/20/16 5:00 PM	67,186,664.60	450	0.55	122,157,572.00	0.44	0.21	24	Atlas
CSO152	11/8/16 8:00 PM	11/8/16 8:30 PM	61,623,425.00	30	0.19	324,333,815.79	0.22	0.09	12	Atlas
CSO152	11/19/16 3:00 AM	11/19/16 3:30 AM	13,151,817.00	30	0.16	82,198,856.25	0.16	0.10	3	Atlas
CSO152	11/23/16 8:15 PM	11/23/16 9:45 PM	42,236,005.00	90	0.25	168,944,020.00	0.41	0.10	6	Atlas
CSO152	11/28/16 4:45 PM	11/28/16 10:30 PM	299,897,163.40	345	0.72	416,523,838.06	0.97	0.32	12	Atlas
CSO152	12/6/16 4:30 AM	12/6/16 1:00 PM	484,796,232.50	510	0.9	538,662,480.56	0.94	0.41	12	Atlas
CSO152	12/11/16 9:45 PM	12/11/16 10:45 PM	26,723,588.40	60	0.28	95,441,387.14	1.14	0.12	12	Atlas
CSO152	12/17/16 4:30 PM	12/18/16 2:45 AM	549,419,352.00	615	2.55	215,458,569.41	2.83			
CSO152	12/23/16 10:45 PM	12/24/16 1:45 AM	110,466,435.00	180	0.17	649,802,558.82	2.71	0.08	12	Atlas
CSO152	12/26/16 8:45 PM	12/26/16 11:00 PM	17,590,922.00	135	0.23	76,482,269.57	0.40	0.11	6	Atlas
CSO152	**Count**		13							
CSO152	**Total**		1,970,280,031.15							
CSO153	9/28/16 12:30 PM	9/28/16 2:00 PM	35,337.77	90	0.38	92,994.12	0.58	0.21	6	Atlas
CSO153	9/30/16 12:00 AM	9/30/16 2:45 AM	94,427.96	165	0.68	138,864.65	1.24	0.37	3	Atlas
CSO153	10/20/16 9:15 AM	10/20/16 11:15 AM	238,844.59	120	0.58	411,801.02	0.43	0.26	3	Atlas
CSO153	11/8/16 7:45 PM	11/8/16 8:00 PM	28,716.69	15	0.16	179,479.29	0.18	0.07	12	Atlas
CSO153	11/19/16 2:45 AM	11/19/16 2:45 AM	3,462.68	0	0.12	28,855.64	0.12			
CSO153	11/23/16 9:00 PM	11/23/16 9:00 PM	6,547.13	0	0.29	22,576.29	0.41	0.12	6	Atlas
CSO153	11/28/16 4:45 PM	11/28/16 10:00 PM	74,215.53	315	0.7	106,022.19	0.98	0.30	12	Atlas
CSO153	12/6/16 5:30 AM	12/6/16 12:30 PM	140,296.24	420	0.86	163,135.16	0.89	0.39	12	Atlas
CSO153	12/17/16 4:30 PM	12/18/16 1:15 AM	1,769,372.63	525	2.61	677,920.55	2.94	1.70	12	Cloudburst

CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Minutes)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency	Period	Standard
CSO153	12/23/16 11:00 PM	12/24/16 1:15 AM	20,584.36	135	0.23	89,497.24	2.79	0.11	12	Atlas
CSO153	12/26/16 8:45 PM	12/26/16 8:45 PM	5,889.44	0	0.27	21,812.73	0.46	0.14	6	Atlas
CSO153 Count			11							
CSO153 Total			2,417,695.01							
CSO154	12/17/16 6:45 PM	12/18/16 10:15 AM	4,194,047.28	930	2.71	1,547,618.92	2.97	1.95	12	Cloudburst
CSO154 Count			1							
CSO154 Total			4,194,047.28							
CSO155	9/28/16 12:15 PM	9/28/16 12:15 PM	277.15	0	0.62	447.01	0.70	0.33	6	Atlas
CSO155	9/30/16 1:30 AM	9/30/16 2:15 AM	1,782.76	45	0.42	4,244.67	1.29	0.23	3	Atlas
CSO155	10/20/16 10:30 AM	10/20/16 10:30 AM	179.06	0	0.54	331.60	0.27	0.23	3	Atlas
CSO155	12/17/16 4:45 PM	12/18/16 12:15 AM	62,452.20	450	3.36	18,586.97	3.55	4.95	12	Cloudburst
CSO155	12/26/16 8:15 PM	12/26/16 8:15 PM	210.74	0	0.39	540.36	0.62	0.19	6	Atlas
CSO155 Count			5							
CSO155 Total			64,901.91							
CSO160	9/28/16 12:30 PM	9/28/16 12:30 PM	434.83	0	0.43	1,011.24	0.60	0.23	6	Atlas
CSO160	10/20/16 9:30 AM	10/20/16 9:45 AM	430.68	15	0.54	797.55	0.23	0.21	3	Atlas
CSO160	11/8/16 7:45 PM	11/8/16 7:45 PM	292.16	0	0.2	1,460.78	0.23	0.09	12	Atlas
CSO160	12/17/16 6:30 PM	12/17/16 7:15 PM	6,253.75	45	2.75	2,274.09	1.35	2.00	12	Cloudburst
CSO160 Count			4							
CSO160 Total			7,411.42							
CSO161	9/28/16 12:15 PM	9/28/16 12:15 PM	899.28	0	0.43	2,091.35	0.57	0.23	6	Atlas
CSO161	9/30/16 1:15 AM	9/30/16 2:00 AM	2,876.50	45	0.61	4,715.57	1.25	0.31	3	Atlas
CSO161	10/20/16 9:00 AM	10/20/16 9:00 AM	3,435.55	0	0.54	6,362.13	0.15	0.21	3	Atlas
CSO161	11/8/16 7:30 PM	11/8/16 7:45 PM	1,179.46	15	0.2	5,897.29	0.23	0.09	12	Atlas
CSO161	12/6/16 9:00 AM	12/6/16 12:00 PM	5,075.13	180	0.91	5,577.06	0.93	0.42	12	Atlas
CSO161	12/17/16 6:15 PM	12/17/16 9:15 PM	14,613.66	180	2.75	5,314.06	1.90	2.00	12	Cloudburst
CSO161	12/23/16 10:45 PM	12/24/16 12:45 AM	1,124.88	120	0.25	4,499.50	2.97	0.11	6	Atlas
CSO161	12/26/16 8:15 PM	12/26/16 8:15 PM	859.83	0	0.39	2,204.70	0.59	0.19	6	Atlas
CSO161 Count			8							
CSO161 Total			30,064.29							
CSO167	9/28/16 12:30 PM	9/28/16 1:00 PM	9,245.48	30	0.38	24,330.21	0.54	0.20	6	Atlas
CSO167	9/29/16 11:45 PM	9/30/16 2:30 AM	99,722.63	165	0.64	155,816.61	1.24	0.35	3	Atlas
CSO167	10/20/16 9:15 AM	10/20/16 11:30 AM	151,060.84	135	0.52	290,501.62	0.37	0.23	3	Atlas
CSO167	11/28/16 5:45 PM	11/28/16 10:00 PM	40,596.65	255	0.72	56,384.23	0.98	0.32	12	Atlas
CSO167	12/6/16 5:30 AM	12/6/16 12:30 PM	77,714.89	420	0.78	99,634.47	0.82	0.36	12	Atlas
CSO167	12/17/16 4:30 PM	12/18/16 3:00 AM	1,558,345.60	630	2.71	575,035.28	2.97	1.95	12	Cloudburst
CSO167	12/23/16 11:00 PM	12/24/16 1:00 AM	5,442.38	120	0.21	25,916.07	2.86	0.10	6	Atlas
CSO167 Count			7							
CSO167 Total			1,942,128.46							
CSO174	10/20/16 10:15 AM	10/20/16 4:45 PM	56,452.48	390	0.54	104,541.63	0.43	0.21	24	Atlas
CSO174	12/6/16 9:30 AM	12/6/16 9:30 AM	10,636.07	0	0.86	12,367.53	0.60	0.39	12	Atlas
CSO174	12/17/16 6:45 PM	12/18/16 1:30 AM	2,794,969.61	405	2.52	1,109,114.93	2.81	1.58	12	Cloudburst
CSO174 Count			3							
CSO174 Total			2,862,058.17							
CSO179	12/17/16 7:15 PM	12/17/16 7:30 PM	84,805.26	15	2.52	33,652.88	1.25	1.58	12	Cloudburst
CSO179 Count			1							
CSO179 Total			84,805.26							
CSO180	9/28/16 12:45 PM	9/28/16 12:45 PM	747.92	0	0.34	2,199.75	0.54	0.18	6	Atlas
CSO180	10/20/16 9:15 AM	10/20/16 10:00 AM	11,699.15	45	0.54	21,665.08	0.20	0.21	24	Atlas
CSO180	11/8/16 7:45 PM	11/8/16 7:45 PM	5,632.90	0	0.19	29,646.82	0.23	0.09	12	Atlas
CSO180	12/17/16 4:15 PM	12/18/16 1:15 AM	296,792.37	540	2.52	117,774.75	2.81	1.58	12	Cloudburst
CSO180 Count			4							
CSO180 Total			314,872.33							
CSO181	10/20/16 9:30 AM	10/20/16 9:30 AM	75,673.66	0	0.6	126,122.76	0.16	0.23	24	Atlas

CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Minutes)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency	Period	Standard
CSO181	12/17/16 6:45 PM	12/17/16 9:15 PM	85,018,231.30	150	2.78	30,582,097.59	1.95	2.39	12	Cloudburst
CSO181 Count			2							
CSO181 Total			85,093,904.96							
CSO182	9/28/16 12:45 PM	9/28/16 2:30 PM	29,078.84	105	0.41	70,924.01	0.74	0.22	6	Atlas
CSO182	9/29/16 9:45 AM	9/29/16 10:00 AM	11,159.84	15	0.07	159,426.34	0.81	0.05	1	Atlas
CSO182	9/30/16 12:45 AM	9/30/16 3:15 AM	58,924.73	150	0.76	77,532.54	1.42	0.38	3	Atlas
CSO182	11/8/16 8:00 PM	11/8/16 8:30 PM	13,000.82	30	0.19	68,425.39	0.22	0.09	12	Atlas
CSO182	11/19/16 2:45 AM	11/19/16 3:15 AM	15,323.27	30	0.16	95,770.44	0.16			
CSO182	11/23/16 8:15 PM	11/23/16 9:30 PM	19,106.37	75	0.28	68,237.05	0.44	0.11	6	Atlas
CSO182	11/28/16 2:15 PM	11/28/16 10:15 PM	90,528.69	480	0.72	125,734.29	1.00	0.32	12	Atlas
CSO182	12/6/16 4:30 AM	12/6/16 1:00 PM	215,241.07	510	0.9	239,156.75	0.94	0.41	12	Atlas
CSO182	12/11/16 9:30 PM	12/11/16 10:30 PM	16,553.16	60	0.31	53,397.28	1.17	0.14	12	Atlas
CSO182	12/17/16 4:45 PM	12/18/16 3:30 AM	31,667.99	645	2.56	12,370.31	2.87			
CSO182	12/23/16 10:45 PM	12/24/16 1:45 AM	35,010.35	180	0.16	218,814.66	2.72	0.07	12	Atlas
CSO182	12/26/16 8:15 PM	12/26/16 11:00 PM	16,231.99	165	0.26	62,430.73	0.42	0.13	6	Atlas
CSO182 Count			12							
CSO182 Total			551,827.13							
CSO185	10/20/16 10:00 AM	10/20/16 4:45 PM	4,617.73	405	0.54	8,551.35	0.40	0.21	6	Atlas
CSO185	12/17/16 6:45 PM	12/18/16 1:15 AM	89,561.60	390	2.36	37,949.83	2.68			
CSO185 Count			2							
CSO185 Total			94,179.33							
CSO186	12/17/16 7:15 PM	12/17/16 7:15 PM	29,133.08	0	2.52	11,560.75	1.21	1.58	12	Cloudburst
CSO186 Count			1							
CSO186 Total			29,133.08							
CSO187	12/17/16 6:15 PM	12/17/16 7:00 PM	13,232.19	45	2.52	5,250.87	1.19	1.58	12	Cloudburst
CSO187 Count			1							
CSO187 Total			13,232.19							
CSO189	9/28/16 1:15 PM	9/28/16 2:45 PM	27,768.31	90	0.5	55,536.63	0.84	0.27	6	Atlas
CSO189	9/30/16 1:00 AM	9/30/16 3:45 AM	2,040,717.08	165	0.64	3,188,620.43	1.61	0.34	3	Atlas
CSO189	10/20/16 10:30 AM	10/20/16 12:15 PM	1,671,855.44	105	0.67	2,495,306.63	0.53	0.33	3	Atlas
CSO189	11/28/16 6:00 PM	11/28/16 10:30 PM	1,381,391.26	270	0.79	1,748,596.53	1.19	0.35	12	Atlas
CSO189	12/6/16 7:00 AM	12/8/16 3:15 PM	83,539.07	3375	0.87	96,021.92	0.93	0.40	12	Atlas
CSO189	12/17/16 4:45 PM	12/19/16 12:15 PM	20,646,688.67	2610	3.53	5,848,920.30	3.90	6.35	12	Cloudburst
CSO189	12/24/16 12:00 AM	12/24/16 2:15 AM	208,885.98	135	0.24	870,358.26	3.71	0.11	12	Atlas
CSO189	12/28/16 6:15 PM	1/4/17 12:00 AM	35,898.96	8985	0.04	897,473.97	0.71	0.03	3	Atlas
CSO189 Count			8							
CSO189 Total			26,096,744.78							
CSO190	9/28/16 12:15 PM	9/28/16 2:15 PM	47,927.08	120	0.62	77,301.75	0.85	0.33	6	Atlas
CSO190	9/29/16 9:15 AM	9/29/16 9:30 AM	4,152.02	15	0.09	46,133.56	0.94	0.05	3	Atlas
CSO190	9/30/16 12:15 AM	9/30/16 2:45 AM	180,654.97	150	0.42	430,130.88	1.32	0.23	3	Atlas
CSO190	10/20/16 7:00 AM	10/20/16 4:30 PM	138,390.64	570	0.54	256,278.96	0.42	0.23	3	Atlas
CSO190	11/8/16 7:45 PM	11/8/16 8:00 PM	8,775.06	15	0.15	58,500.41	0.16	0.07	12	Atlas
CSO190	11/19/16 1:00 AM	11/19/16 1:00 AM	7.79	0	0.12	64.93	0.07			
CSO190	11/23/16 5:00 PM	11/23/16 9:15 PM	3,464.35	255	0.31	11,175.34	0.43	0.13	6	Atlas
CSO190	11/28/16 4:30 PM	11/28/16 7:45 PM	28,458.49	195	0.77	36,959.08	0.97	0.33	12	Atlas
CSO190	12/4/16 11:45 PM	12/4/16 11:45 PM	1.00	0	0.04	25.00	0.82	0.02	3	Atlas
CSO190	12/6/16 4:00 AM	12/6/16 12:30 PM	97,719.98	510	0.93	105,075.25	0.98	0.43	12	Atlas
CSO190	12/9/16 6:30 AM	12/9/16 6:30 AM	1,295.29	0	0.03	43,176.39	1.00	0.02	3	Atlas
CSO190	12/17/16 3:45 PM	12/18/16 12:15 PM	3,672,252.86	1230	3.36	1,092,932.40	3.72	4.95	12	Cloudburst
CSO190	12/23/16 10:45 PM	12/24/16 3:00 AM	21,314.31	255	0.29	73,497.63	3.63	0.13	12	Atlas
CSO190	12/26/16 11:30 AM	12/26/16 8:45 PM	19,623.70	555	0.39	50,317.18	0.64	0.19	6	Atlas
CSO190 Count			14							
CSO190 Total			4,224,037.56							
CSO195 Count			0							

CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Minutes)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency	Period	Standard
CSO195 Total			0.00							
CSO196	10/20/16 9:15 AM	10/20/16 9:15 AM	11,047.97	0	0.55	20,087.22	0.11	0.21	24	Atlas
CSO196	12/17/16 6:30 PM	12/18/16 12:30 AM	58,988.43	360	2.61	22,600.93	2.77	1.81	12	Cloudburst
CSO196 Count			2							
CSO196 Total			70,036.40							
CSO197	12/6/16 9:00 AM	12/6/16 9:00 AM	41.15	0	0.93	44.24	0.60	0.43	12	Atlas
CSO197	12/17/16 6:30 PM	12/18/16 1:15 AM	212,130.66	405	2.61	81,276.12	2.93	1.81	12	Cloudburst
CSO197 Count			2							
CSO197 Total			212,171.81							
CSO198	9/28/16 12:15 PM	9/28/16 2:15 PM	38,754.03	120	0.39	99,369.31	0.67	0.21	3	Atlas
CSO198	9/29/16 9:30 AM	9/29/16 9:45 AM	4,037.50	15	0.07	57,678.58	0.74	0.06	1	Atlas
CSO198	9/30/16 12:00 AM	9/30/16 3:00 AM	61,655.08	180	0.7	88,078.68	1.30	0.35	3	Atlas
CSO198	10/20/16 9:00 AM	10/20/16 4:30 PM	57,600.12	450	0.55	104,727.49	0.42	0.21	24	Atlas
CSO198	11/8/16 7:45 PM	11/8/16 8:15 PM	11,454.69	30	0.19	60,287.83	0.22	0.09	12	Atlas
CSO198	11/23/16 8:00 PM	11/23/16 9:15 PM	11,571.08	75	0.34	34,032.60	0.52	0.14	6	Atlas
CSO198	11/28/16 1:45 PM	11/28/16 10:15 PM	73,655.84	510	0.66	111,599.75	1.00	0.29	12	Atlas
CSO198	12/6/16 4:15 AM	12/6/16 12:45 PM	129,958.33	510	0.93	139,740.14	0.97	0.43	12	Atlas
CSO198	12/11/16 9:30 PM	12/11/16 10:30 PM	8,469.51	60	0.32	26,467.22	1.17	0.14	12	Atlas
CSO198	12/17/16 4:15 PM	12/18/16 2:00 AM	439,054.19	585	2.61	168,220.00	2.93	1.81	12	Cloudburst
CSO198	12/23/16 10:15 PM	12/24/16 1:45 AM	42,867.18	210	0.19	225,616.73	2.78	0.09	6	Atlas
CSO198	12/26/16 8:15 PM	12/26/16 10:15 PM	13,179.68	120	0.3	43,932.26	0.48	0.15	6	Atlas
CSO198 Count			12							
CSO198 Total			892,257.21							
CSO200	10/20/16 9:15 AM	10/20/16 9:15 AM	419.66	0	0.55	763.01	0.11	0.21	24	Atlas
CSO200	12/17/16 6:30 PM	12/18/16 1:00 AM	26,028.84	390	2.61	9,972.74	2.93	1.81	12	Cloudburst
CSO200 Count			2							
CSO200 Total			26,448.50							
CSO202	10/20/16 9:15 AM	10/20/16 9:15 AM	4,172.09	0	0.55	7,585.63	0.11	0.21	24	Atlas
CSO202	12/17/16 6:30 PM	12/19/16 2:15 AM	124,745.85	1905	2.61	47,795.34	2.93	1.81	12	Cloudburst
CSO202 Count			2							
CSO202 Total			128,917.94							
CSO203	10/20/16 9:15 AM	10/20/16 9:15 AM	889.66	0	0.55	1,617.56	0.11	0.21	24	Atlas
CSO203	12/17/16 6:30 PM	12/18/16 12:15 PM	81,753.21	1065	2.61	31,323.07	2.93	1.81	12	Cloudburst
CSO203 Count			2							
CSO203 Total			82,642.87							
CSO210	9/28/16 2:45 PM	9/28/16 8:00 PM	30,170.39	315	0.38	79,395.75	0.66	0.21	3	Atlas
CSO210	9/30/16 3:00 AM	9/30/16 9:15 AM	114,418.87	375	0.71	161,153.34	1.30	0.31	3	Atlas
CSO210 Count			2							
CSO210 Total			144,589.26							
Grand Count			335							
Grand Total			2,386,122,702.05							

Appendix C Acronyms

Appendix C Acronyms

ACD	Amended Consent Decree
BOD	Biological Oxygen Demand
CCP	Composite Correction Plan
CMF	Central Maintenance Facility
CMOM	Capacity Management Operations and Maintenance
CPE	Comprehensive Performance Evaluations
CSO	Combined Sewer Overflow
CSOFT	Software Name
CSS	Combined Sewer System
DWO	Dry Weather Overflow
EPA	Environmental Protection Agency
FEPS	Final Effluent Pump Station
FY	Fiscal Year
GLPM	Gravity Line Preventive Maintenance
HMI	Human Machine Interface
ICM	Integrated Catchment Model
ID	Identification
IOAP	Integrated Overflow Abatement Plan
ISSDP	Interim Sanitary Sewer Discharge Plan
KDEP	Kentucky Department of Environmental Protection
KPDES	Kentucky Pollutant Discharge Elimination System
LGE	Louisville Gas and Electric
LTCP	Long Term Control Plan
MG	Million Gallons
MGD	Million Gallons per Day
MSD	Metropolitan Sewer District (Louisville and Jefferson County)
NMC	Nine Minimum Controls
OPC	OLE for Process Controls
ORFM	Ohio River Force Main
PLC	Programmable Logic Controller
PM	Preventive Maintenance
PS	Pump Station
RAS	Return Activated Sludge
RTC	Real Time Control
SCAP	System Capacity Assurance Plan
SOP	Standard Operating Procedure
SORP	Sewer Overflow Response Protocol
SSDP	Sanitary Sewer Discharge Plan
SSO	Sanitary Sewer Overflow

Appendix C Acronyms

SSOP	Sanitary Sewer Overflow Plan
SWOR1	Southwestern Outfall relief – Phase 1
SWOR2	Southwestern Outfall Relief – Phase 2
SWSG	Southwest Sluice Gate
TSS	Total Suspended Solids
TV	Television
WIN	Waterway Improvements Now
WQTC	Water Quality Treatment Center
WUS	Waters of the United States
WWT	Wet Weather Team

Appendix D SCAP Balance

msd
Safe, clean waterways

Capacity Credit Balance Sheet per Credit Basin

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
CCREEK						
235533	CEDAR CK IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	6,521	6,521
236380	FAIRMOUNT ROAD MH REHAB	SCAPCREDIT		6/5/09	10,734	17,255
362688	CCRK IFP ACTIVITY NOV08-MAY12	SCAPCREDIT		5/1/12	2,161	19,416
362689	CCRK IFP ACTIVITY JUN12-AUG12	SCAPCREDIT		8/31/12	2,047	21,463
SC1005519	CONTRACTED WORK FY12 - CEDAR	SCAPCREDIT		9/10/12	21,321	42,784
320989	LITTLE CEDAR CREEK I/I REHABIL	SCAPCREDIT		9/27/12	652,907	695,691
263934	ST JAMES CROSSINGS	LAT EXT	9,000	11/30/12	-19,575	676,116
196927	SONIC SPRINGS	LAT EXT	3,600	12/5/12	-7,830	668,286
SC1005524	CONTRACTED WORK FY13 - CEDAR	SCAPCREDIT		8/19/13	425	668,711
14SC1000	FY13 IFP ACTIVITY FIRST HALF - CEDAR	SCAPCREDIT		12/31/13	2,048	670,759
13LE1155	RAISING CANE'S CEDARLOOK DRIVE	LAT EXT	1,175	5/23/14	-2,556	668,203
239030	POPLAR LAKES PH 1	LAT EXT	18,000	1/26/15	-39,150	629,053
13LE1003	Bardstown Woods Sec 6	LAT EXT	5,200	5/26/15	-11,310	617,743
LE916330	Altawood Development	LAT EXT	1,600	9/14/15	-3,480	614,263
SC1003694	CONTRACTED WORK FY16 - CEDAR	SCAPCREDIT		9/25/15	328	614,591
SC1006188	CONTRACTED WORK FY15 - CEDAR	SCAPCREDIT		9/25/15	1	614,592
LE915727	BARDSTOWN WOODS SEC 7	LAT EXT	4,400	5/25/16	-9,570	605,022
SC1006171	CONTRACTED WORK FY14 - CEDAR	SCAPCREDIT		10/26/16	45,900	650,922
FFORK						
235557	FLOYDSFRK IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	14,540	14,540
362638	FY09 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/08	1	14,541
362647	FY09 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/09	4	14,545
362651	FY10 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/09	524	15,069

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
230379	SHAKES RUN SECTION 4	LAT EXT	3,770	1/5/10	-8,200	6,869
362655	FY10 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/10	81	6,950
362661	FY11 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/10	14,155	21,105
362669	FY11 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/11	22,707	43,812
242480	CLAIBOURNE CROSSINGS PHASE 2	LAT EXT	0	10/17/11	0	43,812
359320	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	4,000	47,812
362674	FY12 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/11	2	47,814
362678	FY12 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/12	331	48,145
332823	SINGLE FAMILY HOME	LAT EXT	400	7/13/12	-870	47,275
315945	BROOKFIELD SEC 3	LAT EXT	12,800	10/26/12	-27,840	19,435
361689	LAKE FOREST REHAB PH1	SCAPCREDIT		12/18/12	174,769	194,204
362683	FY13 IFP ACTIVITY FIRST HALF - FFORK	SCAPCREDIT		12/31/12	3	194,207
331397	BROOKFIELD SEC 2A	LAT EXT	14,400	5/8/13	-31,320	162,887
13SC1000	FY14 STARVIEW REHABILITATION	SCAPCREDIT		6/30/13	14,183	177,070
13LE1062	SPEEDWAY #9451	LAT EXT	540	2/18/15	-1,175	175,896
SC1003809	BERRYTOWN WQTC I/I REMEDIATION	SCAPCREDIT		6/30/15	116,834	292,730
SC1003723	MIDDLETOWN SSR P2S2 I/I REMEDIATION	SCAPCREDIT		11/6/15	102	292,832
LE941673	Locust Creek Section 8B	LAT EXT	2,000	1/7/16	-4,350	288,482
SC1003331	CONTRACTED WORK FY16 - FLOYDS	SCAPCREDIT		7/7/16	35	288,517
LE932677	Shakes Run Sec 9	LAT EXT	12,000	9/20/16	-26,100	262,417
LE945783	Urton Woods, Section 2B	LAT EXT	17,200	1/4/17	-37,410	225,007
HCREEK						
SC1006307	CONTRACTED WORK FY06 - HITE CREEK	SCAPCREDIT		5/15/06	656	656
235561	HITE CK IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	6,404	7,060
362641	FY09 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/08	2	7,062

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
SC1006214	CONTRACTED WORK FY09 - HITE CREEK	SCAPCREDIT		6/1/09	328	7,390
362648	FY09 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/09	8	7,398
362652	FY10 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/09	8	7,406
362657	FY10 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/10	329	7,735
320906	FLOYDSBURG ROAD I/I REHABILITA	SCAPCREDIT		12/17/10	28,437	36,172
362662	FY11 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/10	3	36,175
362670	FY11 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/11	5	36,180
SC1011058	Meadow Stream Pump Station & Force Main	SCAPCREDIT		9/7/11	2,304,000	2,340,180
246638	CHAPMAN COURT S/S	LAT EXT	800	9/28/11	-1,740	2,338,440
362675	FY12 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/11	332	2,338,772
362679	FY12 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/12	5,002	2,343,774
290181	CAMDEN WOOD APARTMENTS	LAT EXT	12,400	8/31/12	-26,970	2,316,804
304536	MAGNOLIA SPRINGS EAST PRIV P/S	LAT EXT	9,500	12/1/12	-20,663	2,296,142
335610	ROCK SPRINGS FARM SEC 4B	LAT EXT	6,400	12/7/12	-13,920	2,282,222
362684	FY13 IFP ACTIVITY FIRST HALF - HCREEK	SCAPCREDIT		12/31/12	3	2,282,225
SC1005530	CONTRACTED WORK FY13 - HITE CREEK	SCAPCREDIT		4/11/13	1,442	2,283,667
SC1006178	CONTRACTED WORK FY14 - HITE CREEK	SCAPCREDIT		1/27/15	77,660	2,361,327
SC983697	MEADOWSTREAM REHABILITATION -	SCAPCREDIT		3/13/15	448,447	2,809,774
LE943178	Rock Springs Farm Section 5A	LAT EXT	6,800	9/13/16	-14,790	2,794,984
SC1006192	CONTRACTED WORK FY15 - HITE CREEK	SCAPCREDIT		10/26/16	1	2,794,985
JTOWN						
235563	J-TOWN IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	6,203	6,203
359323	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		12/31/08	4,000	10,203
254871	LAKESIDE BAPT CHURCH PRIV PS	LAT EXT	2,500	8/10/10	-5,438	4,766
340213	JEFFERSONTOWN ENG REHAB	SCAPCREDIT		8/11/11	997,448	1,002,214

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
359324	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	4,000	1,006,214
337261	SINGLE FAMILY 2909 PELHAM CT	LAT EXT	400	5/28/13	-870	1,005,344
13LE1010	SWOPE HR & TRAINING BLDG	LAT EXT	400	6/28/13	-870	1,004,474
13LE1092	BALE EQUIPMENT	LAT EXT	450	10/25/13	-979	1,003,495
14SC1002	FY13 IFP ACTIVITY FIRST HALF -	SCAPCREDIT		12/31/13	3,458	1,006,953
13LE1098	UNIPAK	LAT EXT	720	2/27/14	-1,566	1,005,387
LE924043	Bluegrass Indoor Carting	LAT EXT	400	5/1/14	-870	1,004,517
13LE1067	PARK COMMUNITY	LAT EXT	2,220	12/31/14	-4,829	999,688
14LE1149	Grand Lakes Section 3	LAT EXT	5,600	2/1/16	-12,180	987,508
LE924049	Blankenbaker Road S/S	LAT EXT	9,010	3/10/16	-19,597	967,912
326360	WATTERSON TRAIL CENTER	LAT EXT	2,745	5/4/16	-5,970	961,941
LE930127	Vantage Point Sec 3B	LAT EXT	7,200	6/21/16	-15,660	946,281
14LE1148	Grand Lakes Section 2	LAT EXT	4,400	11/8/16	-9,570	936,711
MCREEK						
359380	CALENDAR 2005 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/05	12,000	12,000
359381	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/07	24,000	36,000
235568	MILL CK IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	51,530	87,530
359382	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/08	16,000	103,530
362642	FY09 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/08	93	103,623
362649	FY09 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/09	1,507	105,130
236614	DEVEROES	LAT EXT	960	9/9/09	-2,088	103,042
362653	FY10 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/09	25,272	128,314
359383	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	32,000	160,314
253586	KINGSFORD RETAIL CENTER	LAT EXT	480	1/6/10	-1,044	159,270
238421	6840 DIXIE HWY OUTLOT	LAT EXT	2,100	4/28/10	-4,568	154,703

Capacity Credit Balance Sheet per Credit Basin

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
362658	FY10 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/10	6,213	160,916
259408	FAMILY DOLLAR 5105 DIXIE	LAT EXT	1,200	7/2/10	-2,610	158,306
264294	SAINT PETER THE APOSTLE CATHOL	LAT EXT	2,000	7/23/10	-4,350	153,956
276215	FAMILY DOLLAR - KRISTIN WAY	LAT EXT	400	10/12/10	-870	153,086
362664	FY11 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/10	22,740	175,826
359384	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/10	4,000	179,826
359325	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	8,000	187,826
320916	SONNE AVE PS REHABILITATION -	SCAPCREDIT		6/30/11	120,800	308,626
362671	FY11 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/11	11,615	320,241
299399	FAMILY DOLLAR - GREENWOOD RD	LAT EXT	800	10/4/11	-1,740	318,501
309018	PRP PERFORMING ARTS ADDITION	LAT EXT	1,134	11/9/11	-2,466	316,034
359385	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	12,000	328,034
362676	FY12 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/11	3,245	331,279
359326	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	12,000	343,279
318096	CRACKER BARREL OLD COUNTRY	LAT EXT	6,000	1/19/12	-13,050	330,229
SC1005678	CONTRACTED WORK FY12 - MILL CREEK	SCAPCREDIT		3/16/12	22	330,251
262545	DIXIE MANOR SHOPPING CENTER	LAT EXT	965	5/21/12	-2,099	328,152
300374	FORT KNOX FEDERAL CREDIT UNION	LAT EXT	400	6/26/12	-870	327,282
362680	FY12 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/12	2,807	330,089
361693	FY12 MILL CREEK REHAB	SCAPCREDIT		6/30/12	81,675	411,764
231800	PIONEER MOBILE HOME PARK	LAT EXT	11,200	7/24/12	-24,360	387,404
237457	WAVERLY HILLS	LAT EXT	400	9/18/12	-870	386,534
341883	NHK SPRING PRECISION	LAT EXT	17,800	10/19/12	-38,715	347,819
334997	BEECHLAND BAPTIST CHURCH	LAT EXT	2,715	12/5/12	-5,905	341,914
359327	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	148,000	489,914
362685	FY13 IFP ACTIVITY FIRST HALF - MCREEK	SCAPCREDIT		12/31/12	3,458	493,372

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
359386	CALENDAR 2012 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/12	4,000	497,372
343763	SOUTHEAST CHRISTIAN CHURCH SW	LAT EXT	6,000	1/18/13	-13,050	484,322
224875	ASHBY GREEN APARTMENT HOMES	LAT EXT	36,400	3/20/13	-79,170	405,152
265944	RIVERPORT PHASE 4A - MICHELIN	LAT EXT	400	6/6/13	-870	404,282
314887	DAYTON FREIGHT	LAT EXT	1,200	9/10/13	-2,610	401,672
13LE1014	LOUISVILLE FREE PUBLIC LIBRARY	LAT EXT	8,200	9/26/13	-17,835	383,837
357140	FAMILY DOLLAR CANE RUN ROAD	LAT EXT	832	10/3/13	-1,810	382,027
13LE1171	SINGLE FAMILY HOME 3700 ROMANIA DR	LAT EXT	400	1/29/14	-870	381,157
SC1005536	ROSA TERRACE I/I REHABILITATION FY13	SCAPCREDIT		3/10/15	156,635	537,792
SC1003690	CONTRACTED WORK FY15 - MILL CREEK	SCAPCREDIT		7/31/15	58	537,850
LE937142	ZAXBYS DIXIE HWY	LAT EXT	924	8/10/15	-2,010	535,841
LE944727	Britz Deer Hollow Lane	LAT EXT	800	7/28/16	-1,740	534,101
MFORK						
359400	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/07	84,000	84,000
359328	CALENDAR 2007 SUMP PUMP CREDIT	SCAPCREDIT		12/31/07	20,000	104,000
235566	MID FORK IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	43,779	147,779
359329	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		12/31/08	8,000	155,779
236517	ANCHOR ESTATES MH REHAB	SCAPCREDIT		1/16/09	15,552	171,331
217235	SINKING FORK ICA PHASE I REHAB	SCAPCREDIT		3/30/09	437,967	609,298
235376	MIDDLE FORK INT REHAB PH1	SCAPCREDIT		5/15/09	487,744	1,097,042
179246	SHADY GLEN OF LYNDON PERSONAL	LAT EXT	-500	5/26/09	1,088	1,098,130
250572	1316 WITAWANGA AVE	LAT EXT	400	11/4/09	-870	1,097,260
359331	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	24,000	1,121,260
359401	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	4,000	1,125,260
197432	ALMOST HOME KENNELS - ALL PET	LAT EXT	3,700	3/16/10	-8,048	1,117,212

Capacity Credit Balance Sheet per Credit Basin

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
260064	OXMOOR GOLF FRONT 9	LAT EXT	400	4/15/10	-870	1,116,342
260065	OXMOOR GOLF BACK 9	LAT EXT	400	4/15/10	-870	1,115,472
229834	THE BROOK HOS- DUPONT ADDITION	LAT EXT	1,763	4/27/10	-3,835	1,111,637
265723	Z-XPRESS CAR WASH	LAT EXT	5,449	7/2/10	-11,852	1,099,786
255793	HERR LANE APARTMENTS - 4 PLEX	LAT EXT	1,200	7/14/10	-2,610	1,097,176
255792	HERR LANE APARTMENTS - 8 PLEX	LAT EXT	2,400	7/14/10	-5,220	1,091,956
274303	FARM CREDIT SERVICES	LAT EXT	525	9/9/10	-1,142	1,090,814
278015	METROPOLITAN UROLOGY	LAT EXT	400	12/15/10	-870	1,089,944
359402	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/10	8,000	1,097,944
359333	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	12,000	1,109,944
285637	SHELBYHURST OFFICE BUILDING 1	LAT EXT	6,600	1/20/11	-14,355	1,095,589
313465	DORSEY POINTE/CODOMINIUMS 8-13	LAT EXT	2,400	1/27/11	-5,220	1,090,369
291263	BROWNS LANE BUILDING	LAT EXT	400	4/14/11	-870	1,089,499
293400	FOUR PLEX APARTMENTS	LAT EXT	1,200	6/14/11	-2,610	1,086,889
330019	FY11 ANCHOR ESTATES REHAB	SCAPCREDIT		8/11/11	1,359	1,088,248
310046	EL NAPEL - MCMAHAN CENTER	LAT EXT	3,100	10/31/11	-6,743	1,081,506
314591	CHOCOLATE MARTINI BAR/REST	LAT EXT	3,275	11/29/11	-7,123	1,074,382
320983	HURSTBOURNE I/I INVESTIGATION	SCAPCREDIT		12/27/11	1,408,279	2,482,661
359335	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	16,000	2,498,661
321228	SINGLE FAMILY UNIT	LAT EXT	400	2/15/12	-870	2,497,791
SC1005671	CONTRACTED WORK FY12 - MIDDLE	SCAPCREDIT		3/16/12	7,305	2,505,096
321647	SINGLE FAMILY	LAT EXT	400	3/27/12	-870	2,504,226
328074	SINGLE FAMILY-703 FOUNTAIN AVE	LAT EXT	400	6/22/12	-870	2,503,356
193195	CEDAR LAKE LODGE WASHBURN	LAT EXT	1,900	8/20/12	-4,133	2,499,224
320923	ST MATTHEWS I/I REHABILITATION	SCAPCREDIT		8/23/12	20,841	2,520,065
337796	CHAMPPS	LAT EXT	635	9/5/12	-1,381	2,518,684

Capacity Credit Balance Sheet per Credit Basin

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
347126	ADVANCE PRODUCTION SYSTEMS	LAT EXT	400	12/28/12	-870	2,517,814
359336	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	92,000	2,609,814
339367	BAPTIST RADIATION ONCOLOGY	LAT EXT	1,500	1/4/13	-3,263	2,606,551
340778	PANDA RESTAURANT	LAT EXT	1,725	1/16/13	-3,752	2,602,799
349044	BLAIRWOOD POOL ADDITION	LAT EXT	400	1/29/13	-870	2,601,929
328659	SINGLE FAMILY HOME - 6911 AMBR	LAT EXT	400	2/4/13	-870	2,601,059
352805	POOL HOUSE 9213 REIGATE COURT	LAT EXT	200	2/20/13	-435	2,600,624
14LE1001	MIRANDA LAGRANGE RD	LAT EXT	400	3/19/13	-870	2,599,754
350246	SINGLE FAMILY - 218 BLISS AVE	LAT EXT	400	3/20/13	-870	2,598,884
349974	SINGLE FAMILY 205 N WATTERSON	LAT EXT	400	3/26/13	-870	2,598,014
342433	SHELBYHURST 700 OFFICE BLDG	LAT EXT	7,500	4/15/13	-16,313	2,581,702
350340	JARED THE GALLERY OF JEWELRY	LAT EXT	770	4/16/13	-1,675	2,580,027
SC1005532	CONTRACTED WORK FY13 - MIDDLE	SCAPCREDIT		5/30/13	6,480	2,586,507
13LE1009	Single family 11716 Wetherby Ave	LAT EXT	400	6/7/13	-870	2,585,637
13LE1001	Single Family 835 Fountain Ave	LAT EXT	400	8/28/13	-870	2,584,767
355162	PROPOSED RESTAURANT	LAT EXT	7,540	9/10/13	-16,400	2,568,368
13LE1045	SINGLE FAMILY 8325 WHIPPS MILL RD	LAT EXT	400	9/30/13	-870	2,567,498
319292	WATERMARK ON HURSTBOURNE	LAT EXT	71,600	10/22/13	-155,730	2,411,768
331542	DENTAL/MEDICAL OFFICE BLDG	LAT EXT	400	10/28/13	-870	2,410,898
13LE1128	SINGLE FAMILY HOME 1327 ETAWAH AVE	LAT EXT	400	11/5/13	-870	2,410,028
13LE1144	SINGLE FAMILY 1329 ETAWAH AVE	LAT EXT	400	11/5/13	-870	2,409,158
13LE1165	SINGLE FAMILY 8504 LORE LANE	LAT EXT	400	11/25/13	-870	2,408,288
13LE1146	CITY OF ST MATTHEWS COMMUNITY CTR	LAT EXT	1,500	11/26/13	-3,263	2,405,025
13LE1099	NICKLIES - ST MATTHEWS	LAT EXT	1,920	12/11/13	-4,176	2,400,849
353963	DORSEY COMMONS TRACTS 1,2,3	LAT EXT	4,335	12/18/13	-9,429	2,391,421
14SC1003	FY13 IFP ACTIVITY FIRST HALF - MIDDLE	SCAPCREDIT		12/31/13	3,230	2,394,651

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
352026	MCMAHAN PLAZA PHASE II BLDG B	LAT EXT	766	12/31/13	-1,666	2,392,984
13LE1117	THE VININGS	LAT EXT	850	4/10/14	-1,849	2,391,136
14LE1021	KODA KENTUCKY ORGAN DONOR	LAT EXT	400	6/18/14	-870	2,390,266
14LE1128	WALDORF SCHOOL OF LOUISVILLE	LAT EXT	400	6/30/14	-870	2,389,396
SC1006201	GOOSE CREEK PLANTATION I/I	SCAPCREDIT		2/10/15	163,919	2,553,315
SC1006179	CONTRACTED WORK FY14 - MIDDLE	SCAPCREDIT		2/11/15	15,043	2,568,358
LE939199	Westport Road Apartments	LAT EXT	62,800	6/8/16	-136,590	2,431,768
LE971405	Lyndon Lane Office Condos	LAT EXT	2,652	8/30/16	-5,768	2,426,000
SC1003387	CONTRACTED WORK FY16 - MIDDLE	SCAPCREDIT		10/18/16	91,264	2,517,264
SC1006194	CONTRACTED WORK FY15 - MIDDLE	SCAPCREDIT		10/24/16	3	2,517,267
LE938563	The Paddock at Sawyer Park	LAT EXT	99,800	12/20/16	-217,065	2,300,202
NDITCH						
359404	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/07	28,000	28,000
235569	N.DITCH IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	11,147	39,147
236363	NORTHERN DITCH INT REHAB PH1	SCAPCREDIT		11/25/08	108,760	147,907
359339	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	4,000	151,907
234678	THE LIGHTHOUSE PROMISE COMPLEX	LAT EXT	2,825	3/5/10	-6,144	145,763
284728	SUBWAY - NEW CUT RD	LAT EXT	1,314	12/21/10	-2,858	142,905
359340	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	4,000	146,905
320908	PARKVIEW ESTATES REHABILITATIO	SCAPCREDIT		6/28/11	36	146,941
312810	WILLOW PLACE APT COMMUNITY CEN	LAT EXT	400	11/11/11	-870	146,071
359341	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	24,000	170,071
359405	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	12,000	182,071
315723	JCPS EARLY CHILDHOOD DEVELOP	LAT EXT	6,000	1/26/12	-13,050	169,021
312057	DOLLAR GENERAL - MEDALLION CT	LAT EXT	400	3/21/12	-870	168,151

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
312659	KROGER L-350 FUEL STATION	LAT EXT	400	8/20/12	-870	167,281
359343	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	24,000	191,281
13LE1147	CARLON ROOFING	LAT EXT	992	12/5/13	-2,158	189,123
13LE1126	JENNINGS CROSSING TRACT 3	LAT EXT	2,100	12/12/13	-4,568	184,556
14SC1004	FY13 IFP ACTIVITY FIRST HALF -	SCAPCREDIT		12/31/13	329	184,885
SC1006180	CONTRACTED WORK FY14 - NORTHERN	SCAPCREDIT		10/21/14	5	184,890
LE947316	Heimbrock I	LAT EXT	400	8/14/15	-870	184,020
LE947318	Heimbrock II	LAT EXT	400	8/14/15	-870	183,150
ORFM						
359433	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/07	56,000	56,000
359344	CALENDAR 2007 SUMP PUMP CREDIT	SCAPCREDIT		12/31/07	4,000	60,000
235572	ORFM IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	19,826	79,826
362643	FY09 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/08	2	79,828
362650	FY09 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/09	3,836	83,664
362654	FY10 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/09	7,322	90,986
263548	SINGLE FAMILY CONNECTION	LAT EXT	400	5/18/10	-870	90,116
213488	NORTHEAST CHRISTIAN CHURCH	LAT EXT	10,000	6/28/10	-21,750	68,366
362660	FY10 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/10	6,630	74,996
362665	FY11 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/10	165	75,161
362672	FY11 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/11	4,124	79,285
280837	SPRINGHURST TOWNE CTR LOT C	LAT EXT	400	9/20/11	-870	78,415
320920	SHADOW WOOD I/I REHABILITATION	SCAPCREDIT		9/30/11	14,279	92,694
311412	SPRINGHURST CHEVROLET	LAT EXT	855	10/14/11	-1,860	90,834
359345	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	16,000	106,834
359434	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	16,000	122,834

Capacity Credit Balance Sheet per Credit Basin

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
362677	FY12 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/11	7,258	130,092
320921	DERINGTON COURT I/I REHABILITA	SCAPCREDIT		3/1/12	56,208	186,300
187028	GLENVIEW PARK SUBD SECTION 1	LAT EXT	4,400	3/5/12	-9,570	176,730
213450	GLENVIEW PARK SUB, SEC 2	LAT EXT	5,600	3/5/12	-12,180	164,550
322455	FIRST LADY NAILS	LAT EXT	400	3/12/12	-870	163,680
362681	FY12 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/12	18,220	181,900
292239	SPRINGHURST RESTAURANT/ RETAIL	LAT EXT	3,440	7/5/12	-7,482	174,418
323821	TIRE DISCOUNTERS WESTPORT RD	LAT EXT	400	12/11/12	-870	173,548
363238	FY13 PROSPECT MANHOLE REHAB	SCAPCREDIT		12/18/12	72,703	246,251
341319	RAISING CANES RETAIL CENTER	LAT EXT	1,225	12/18/12	-2,664	243,587
359346	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	24,000	267,587
363235	FY13 MUDDY FORK MH REHAB	SCAPCREDIT		12/31/12	41,653	309,240
362686	FY13 IFP ACTIVITY FIRST HALF - ORFM	SCAPCREDIT		12/31/12	1,148	310,388
360262	SINGLE FAMILY 3419 HILLVALE RD	LAT EXT	400	5/13/13	-870	309,518
343729	RETAIL & RESTAURANT	LAT EXT	3,500	6/21/13	-7,613	301,906
334154	GLENVIEW PARK SUBD SEC 4	LAT EXT	3,600	11/7/13	-7,830	294,076
13LE1024	Overlook at Beech Spring Farm Sec 4	LAT EXT	5,600	12/31/13	-12,180	281,896
199896	SPRINGDALE OFFICE BUILDING	LAT EXT	4,210	3/11/14	-9,157	272,739
225863	SPRING FARM LAKES SEC 1	LAT EXT	4,800	5/16/14	-10,440	262,299
177756	SUMMIT GARDENS PHASE 1	LAT EXT	32,000	9/22/14	-69,600	192,699
14LE1121	Riverside Sewer Extension	LAT EXT	1,200	11/10/14	-2,610	190,089
SC1006181	CONTRACTED WORK FY14 - ORFM	SCAPCREDIT		12/31/14	1,654	191,743
13LE1071	SPRING FARM LAKE SEC 2	LAT EXT	6,000	1/16/15	-13,050	178,693
352634	BAUER PROPERTY	LAT EXT	2,920	2/12/15	-6,351	172,342
SC983704	PROSPECT I&I REHABILITATION - FY13	SCAPCREDIT		7/12/15	1,034,758	1,207,100
SC1003730	RIVER ROAD I/I REMEDIATION	SCAPCREDIT		8/5/15	120,418	1,327,518

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
LE929244	Summit Gardens Phase 2	LAT EXT	18,000	10/21/15	-39,150	1,288,368
SC1006195	CONTRACTED WORK FY15 - ORFM	SCAPCREDIT		11/19/15	1	1,288,369
LE938166	Spring Farm Lake Section 3	LAT EXT	3,200	12/14/15	-6,960	1,281,409
SC1003696	CONTRACTED WORK FY16 - ORFM	SCAPCREDIT		8/10/16	17,566	1,298,975
SC1003728	PROSPECT I&I REHABILITATION - FY16	SCAPCREDIT		10/6/16	199,036	1,498,011
LE923204	Indian Springs Hotel	LAT EXT	13,000	11/16/16	-28,275	1,469,736
PCREEK						
235574	POND CRK IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	71,782	71,782
359347	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		12/31/08	4,000	75,782
359438	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/08	4,000	79,782
359439	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	12,000	91,782
359348	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	4,000	95,782
192513	BANNON CROSSINGS SECTION 3A-1	LAT EXT	800	2/17/10	-1,740	94,042
261115	EMERGENCY RESTORATION	LAT EXT	400	4/27/10	-870	93,172
276977	DADISMAN BUILDERS-POPLAR TREE	LAT EXT	400	10/13/10	-870	92,302
266833	THORNTONS @ PRESTON HWY	LAT EXT	400	12/1/10	-870	91,432
280751	NOTTINGTON HILLS SEC 1	LAT EXT	4,400	12/29/10	-9,570	81,862
359350	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	12,000	93,862
187739	GLENGARRY INDUSTRIAL PARK	LAT EXT	4,300	1/13/11	-9,353	84,510
277777	TIRE DISCOUNTERS - BOERSTE WAY	LAT EXT	2,960	3/21/11	-6,438	78,072
304408	UPS SUPPLY CHAIN SOLUTIONS #7	LAT EXT	2,250	9/14/11	-4,894	73,178
320918	EDSEL I/I REHABILITATION - FY1	SCAPCREDIT		9/27/11	106,700	179,878
313444	PLANET FITNESS - JEFF BLVD	LAT EXT	1,600	11/4/11	-3,480	176,398
312391	LONGHORN STEAKHOUSE RESTAURANT	LAT EXT	4,840	11/29/11	-10,527	165,871
320919	LANTANA I/I REHABILITATION - F	SCAPCREDIT		12/29/11	5,000	170,871

Capacity Credit Balance Sheet per Credit Basin

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
359351	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	20,000	190,871
310845	ZAXBY'S RESTAURANT	LAT EXT	3,750	2/28/12	-8,156	182,715
255044	ISA-RECYCLING CENTER	LAT EXT	400	3/13/12	-870	181,845
312814	MILLER TRANSPORTATION	LAT EXT	1,800	3/19/12	-3,915	177,930
324554	NORTONS TEMPORARY OFFICE	LAT EXT	900	4/16/12	-1,958	175,972
234102	ETHOS AT VALLEY FARM SR LIVING	LAT EXT	7,050	6/19/12	-15,334	160,638
322367	SHEPHERDS CARE MEMORY HOME	LAT EXT	2,000	6/21/12	-4,350	156,288
307332	LOUISVILLE INDUSTRIAL BLDG B	LAT EXT	2,520	8/6/12	-5,481	150,807
SC1005684	CONTRACTED WORK FY12 - POND	SCAPCREDIT		8/10/12	3,812	154,619
279860	BANNON CROSSINGS SEC 3B-2	LAT EXT	9,600	8/10/12	-20,880	133,739
312053	DOLLAR GENERAL - CLEARWATER FA	LAT EXT	400	8/13/12	-870	132,869
343455	SINGLE FAMILY 1812 GREYLING DR	LAT EXT	400	10/12/12	-870	131,999
243109	OVERBROOK APARTMENTS	LAT EXT	41,200	11/9/12	-89,610	42,389
359354	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	56,000	98,389
329624	COPART	LAT EXT	400	2/20/13	-870	97,519
346082	ZAXBYS	LAT EXT	2,065	5/2/13	-4,491	93,028
320924	LEA ANN WAY INTERCEPTOR I&I RE	SCAPCREDIT		6/30/13	1,017,423	1,110,451
335385	HARRISON LOW PRESSURE S/S	LAT EXT	1,600	7/2/13	-3,480	1,106,971
SC1005534	PICADILLY I/I REHABILITATION FY13	SCAPCREDIT		7/12/13	187,564	1,294,535
320940	4 RESIDENCE SFU 7821 MANSLICK	LAT EXT	400	8/16/13	-870	1,293,665
SC1005538	CONTRACTED WORK FY13 - POND	SCAPCREDIT		8/27/13	18,958	1,312,623
361336	RENAISSANCE SOUTH BUSINESS	LAT EXT	540	9/6/13	-1,175	1,311,448
324886	PNC BANK	LAT EXT	400	9/6/13	-870	1,310,578
13LE1083	SINGLE FAMILY HOME 5402 (H) E	LAT EXT	400	9/26/13	-870	1,309,708
SC1005319	FEGENBUSH I/I REHABILITATION FY13	SCAPCREDIT		11/12/13	226,201	1,535,909
353125	PEGASUS TRANSPORTATION	LAT EXT	250	12/9/13	-544	1,535,366

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
341439	PRESTON GARDENS APTS	LAT EXT	22,200	12/10/13	-48,285	1,487,081
308206	APPLEGATE FARMS	LAT EXT	57,200	12/10/13	-124,410	1,362,671
14SC1005	FY13 IFP ACTIVITY FIRST HALF - POND	SCAPCREDIT		12/31/13	21,344	1,384,015
13LE1179	TIMBERBEND SUBDIVISION SEC 5B	LAT EXT	6,400	2/14/14	-13,920	1,370,095
13LE1035	RENAISSANCE SOUTH BUSINESS PARK	LAT EXT	5,415	4/10/14	-11,778	1,358,317
13LE1115	VERIZON-OUTER LOOP	LAT EXT	400	4/22/14	-870	1,357,447
348014	ASHTON PARK TOWN HOMES	LAT EXT	9,000	4/24/14	-19,575	1,337,872
280180	LOUISVILLE INDUSTRIAL CTR F	LAT EXT	2,480	5/16/14	-5,394	1,332,478
14LE1085	Williams Properties - Self Storage Facility	LAT EXT	400	5/28/14	-870	1,331,608
13LE1034	6300 GEIL LANE WAREHOUSE	LAT EXT	720	6/9/14	-1,566	1,330,042
284215	HURSTBOURNE POINTE APTS	LAT EXT	9,600	7/7/14	-20,880	1,309,162
344230	AUSTIN PARK APARTMENTS PH6	LAT EXT	27,600	8/25/14	-60,030	1,249,132
13LE1105	JEFFERSON COMMONS	LAT EXT	17,075	11/13/14	-37,138	1,211,994
SC1005323	FERN CREEK I/I REHABILITATION FY13	SCAPCREDIT		11/18/14	551,108	1,763,102
13LE1017	APEX ON PRESTON APT HOMES(Formally	LAT EXT	84,400	1/13/15	-183,570	1,579,532
SC1005541	STONY BROOK I/I REHABILITATION FY13	SCAPCREDIT		3/10/15	345,397	1,924,929
SC995942	CAVEN AVE I/I REMEDIATION - FY13	SCAPCREDIT		3/11/15	225,645	2,150,574
354207	COOPER FARMS SEC 11B	LAT EXT	12,400	4/29/15	-26,970	2,123,604
354209	COOPER FARMS SEC 11A	LAT EXT	13,200	4/29/15	-28,710	2,094,894
LE948692	Jim's Express Wash	LAT EXT	10,500	7/28/15	-22,838	2,072,056
LE951121	Allgeier Site	LAT EXT	400	8/7/15	-870	2,071,186
13LE1086	WOODS OF PENN RUN OFFSITE SS	LAT EXT	1,000	8/25/15	-2,175	2,069,011
13LE1140	JEFFERSON POST APARTMENTS	LAT EXT	28,800	10/2/15	-62,640	2,006,371
14LE1116	CATALPA SPRINGS	LAT EXT	2,800	12/30/15	-6,090	2,000,281
SC939830	Lea Ann Way West Quad 1 & 2 Rehabilitation	SCAPCREDIT		12/31/15	445,911	2,446,192
358356	WOODS OF PENN RUN Section 1	LAT EXT	18,800	2/12/16	-40,890	2,405,302

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
SC1003699	CONTRACTED WORK FY16 - POND	SCAPCREDIT		5/17/16	36,063	2,441,365
LE936598	Jefferson Commerce Center Tract 1A	LAT EXT	5,250	6/6/16	-11,419	2,429,947
LE918484	AUSTIN PARK SS PHASE 8	LAT EXT	16,800	6/21/16	-36,540	2,393,407
14LE1170	Austin Park Phase 7 & 8	LAT EXT	26,400	6/21/16	-57,420	2,335,987
SC1003087	HILLRIDGE I/I REMEDIATION	SCAPCREDIT		8/5/16	308,184	2,644,171
SC1003292	LEA ANN WAY WEST (LAWW) QUAD 3 I/I	SCAPCREDIT		8/31/16	311,526	2,955,697
SC1006197	CONTRACTED WORK FY15 - POND	SCAPCREDIT		10/24/16	310	2,956,007
SC1006182	CONTRACTED WORK FY14 - POND	SCAPCREDIT		10/26/16	8,390	2,964,397
SC1005639	SILVER HEIGHTS SEWER REHAB	SCAPCREDIT		10/31/16	284,936	3,249,333
SC1005631	LEA ANN WAY WEST (LAWW) QUAD 4 I/I	SCAPCREDIT		10/31/16	692,905	3,942,238
SEDIV						
359355	CALENDAR 2007 SUMP PUMP CREDIT	SCAPCREDIT		12/31/07	8,000	8,000
359440	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/07	128,000	136,000
235575	SE DIV IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	71,472	207,472
236214	GOLDSMITH BUECHB ICA PHI REHAB	SCAPCREDIT		12/22/08	314,808	522,280
236296	BEARGRASS INT REHAB PH1 SEDIV	SCAPCREDIT		12/22/08	122,688	644,968
359441	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/08	16,000	660,968
359356	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		12/31/08	4,000	664,968
229854	TINY HANDS DAYCARE	LAT EXT	1,225	10/20/09	-2,664	662,304
359357	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	12,000	674,304
359443	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	8,000	682,304
235291	SULLIVAN COLLEGE OF TECHNOLOGY	LAT EXT	900	2/11/10	-1,958	680,346
238328	LOUISVILLE COLLEGIATE SPORTS	LAT EXT	400	3/1/10	-870	679,476
241759	FRISCHS BIG BOY RESTAURANT	LAT EXT	2,400	3/5/10	-5,220	674,256
257275	LOUISVILLE JUNIOR ACADEMY	LAT EXT	520	4/16/10	-1,131	673,125

Capacity Credit Balance Sheet per Credit Basin

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
320993	BEARGRASS CREEK PHASE II - FY1	SCAPCREDIT		12/14/10	10,368	683,493
359358	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	4,000	687,493
359444	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/10	24,000	711,493
286513	GARDINER POINT RESIDENCE HALL	LAT EXT	10,800	2/16/11	-23,490	688,003
276378	TIRE DISCOUNTERS - BARDSTOWN	LAT EXT	1,500	5/6/11	-3,263	684,741
287888	BEVERAGE WAREHOUSE	LAT EXT	1,180	5/30/11	-2,567	682,174
296295	KEN TOWERY -3800 S HURSTBOURNE	LAT EXT	400	7/1/11	-870	681,304
359445	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	8,000	689,304
359359	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	64,000	753,304
307018	HOOK PROPERTY FAMILY DOLLAR	LAT EXT	400	8/10/12	-870	752,434
359361	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	68,000	820,434
359446	CALENDAR 2012 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/12	4,000	824,434
187741	BROOKSTONE SENIOR APARTMENTS	LAT EXT	16,800	3/11/13	-36,540	787,894
232601	RAINTREE/MARIAN CT P/S ELIM	LAT EXT	105,800	6/14/13	-230,115	557,779
SC1005539	CONTRACTED WORK FY13 - SOUTHEAST	SCAPCREDIT		9/18/13	25,344	583,123
330437	COLLEGIATE ATHLETIC FIELD	LAT EXT	800	11/26/13	-1,740	581,383
14SC1006	FY13 IFP ACTIVITY FIRST HALF - SE	SCAPCREDIT		12/31/13	20,623	602,006
SC1006185	CONTRACTED WORK FY14 - SOUTHEAST	SCAPCREDIT		2/11/15	187,478	789,484
SC1006199	CONTRACTED WORK FY15 - SOUTHEAST	SCAPCREDIT		10/20/15	1	789,485
LE919560	Todd's Place Express Car Wash	LAT EXT	4,830	12/22/15	-10,505	778,980
SC1003718	SOUTHEAST DIVERSION AREA G (SEDG)	SCAPCREDIT		2/16/16	75,998	854,978
SC1003704	CONTRACTED WORK FY16 - SOUTHEAST	SCAPCREDIT		5/24/16	66	855,044
LE943171	Costco Wholesale and Fuel Facility	LAT EXT	8,000	7/28/16	-17,400	837,644

Appendix E IOAP Project Crosswalk

Project Name	PROGRAM	ASSET ID	PROJECT ID
Beechwood Village Sanitary Sewer Replacement	ISSDP	21153	BVSSR
Beechwood Village Sanitary Sewer Replacement	ISSDP	21101	BVSSR
Beechwood Village Sanitary Sewer Replacement	ISSDP	21156	BVSSR
Beechwood Village Sanitary Sewer Replacement	ISSDP	21061	BVSSR
Derek R. Guthrie WQTC Wet Weather Facility	ISSDP	MSD0277	DRGWQTC
Derek R. Guthrie WQTC Wet Weather Facility	ISSDP	32688	DRGWQTC
Derek R. Guthrie WQTC Wet Weather Facility	ISSDP	59169	DRGWQTC
Derek R. Guthrie WQTC Wet Weather Facility	ISSDP	22307	DRGWQTC
Derek R. Guthrie WQTC Wet Weather Facility	ISSDP	22385	DRGWQTC
Derek R. Guthrie WQTC Wet Weather Facility	ISSDP	22370	DRGWQTC
Derek R. Guthrie WQTC Wet Weather Facility	ISSDP	32682	DRGWQTC
Hikes Lane Interceptor and Highgate Springs	ISSDP	18370	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18434	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	30681	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	MSD0012-PS	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	49673	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	49236	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18483	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	49224	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18134	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18471	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18318-W	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18505	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18595	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	73111	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	49672	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	17571	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18302	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18297	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18299	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	30680	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	48886	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	48888	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	48885	HLIHSPS
Northern Ditch Diversion Interceptor	ISSDP	MSD0271	NDDI
Little Cedar Creek Interceptor Improvements	IOAP	67997	S_CC_CC_67997_M_01_C
Little Cedar Creek Interceptor Improvements	IOAP	89197	S_CC_CC_67997_M_01_C
Little Cedar Creek Interceptor Improvements	IOAP	89196	S_CC_CC_67997_M_01_C
Little Cedar Creek Interceptor Improvements	IOAP	86423	S_CC_CC_67997_M_01_C

Project Name	PROGRAM	ASSET ID	PROJECT ID
Little Cedar Creek Interceptor Improvements	IOAP	89195	S_CC_CC_67997_M_01_C
Little Cedar Creek Interceptor Improvements	IOAP	86424	S_CC_CC_67997_M_01_C
Idlewood Inline Storage	IOAP	63094	S_CC_CC_70158_M_09A_C
Idlewood Inline Storage	IOAP	63095	S_CC_CC_70158_M_09A_C
Idlewood Inline Storage	IOAP	70158	S_CC_CC_70158_M_09A_C
Idlewood Inline Storage	IOAP	28984	S_CC_CC_70158_M_09A_C
Idlewood Inline Storage	IOAP	28998	S_CC_CC_70158_M_09A_C
Bardstown Rd. PS Improvements	IOAP	88545	S_CC_CC_MSD1025_S_03_B
Running Fox PS Elimination	IOAP	MSD1080-LS	S_CC_CC_MSD1080_S_01_C
Lucas Lane PS Inline Storage	IOAP	MSD0199-LS	S_FF_BT_NB01_S_09A_C_A
Fairmount Road Pump Station Off-Line Storage	IOAP	81316	S_FF_CC_81316_M_03_C_A
Fairmount Road Pump Station Off-Line Storage	IOAP	97362	S_FF_CC_81316_M_03_C_A
St. Rene Rd. PS Inline Storage	IOAP	94187	S_FF_CH_NB01_S_09A_C_A
Woodland Hills PS Diversion	IOAP	33003	S_FF_FF_NB01_S_01_C_A
Eden Care PS SSO Investigation	IOAP	MSD1105-PS	S_FF_FF_NB02_S_13_C
Ashburton PS Improvements & Diversion	IOAP	MSD0165-PS	S_FF_FF_NB03_M_01_C_A
Lake Forest PS SSO Investigation	IOAP	MSD1169-LS	S_FF_LF_NB01_S_13_C_A
Meadow Stream Pump Station & Force Main Upgrade	IOAP	MSD1082-PS	S_HC_HC_MSD1082_S_09A_C
Meadow Stream Pump Station & Force Main Upgrade	IOAP	91087	S_HC_HC_MSD1082_S_09A_C
Kavanaugh Rd. PS Improvements	IOAP	MSD1085-PS	S_HC_HC_MSD1085_S_03_A
Floydsburg Rd. I/I Investigation & Rehabilitation	IOAP	108958	S_HC_HC_MSD1086_M_07_C_A
Floydsburg Rd. I/I Investigation & Rehabilitation	IOAP	108956	S_HC_HC_MSD1086_M_07_C_A
Floydsburg Rd. I/I Investigation & Rehabilitation	IOAP	MSD1086-PS	S_HC_HC_MSD1086_M_07_C_A
Floydsburg Rd. I/I Investigation & Rehabilitation	IOAP	90776	S_HC_HC_MSD1086_M_07_C_A
Floydsburg Rd. I/I Investigation & Rehabilitation	IOAP	108957	S_HC_HC_MSD1086_M_07_C_A
Floydsburg Rd. I/I Investigation & Rehabilitation	IOAP	108953	S_HC_HC_MSD1086_M_07_C_A
Riding Ridge PS Improvements	IOAP	MSD1060-LS	S_HC_HN_NB01_S_03_C_A
Gunpowder PS Inline Storage	IOAP	MSD1055-LS	S_HC_HN_NB02_S_09A_C_B
Fox Harbor Inline Storage	IOAP	62769	S_HC_HN_NB03_S_09A_A_A
Fairway View PS Improvements	IOAP	MSD1065-PS	S_HC_HS_NB01_S_03_C_A
Jeffersontown WQTC Elimination	IOAP	28391	S_JT_JT_NB01_M_01_C_A
Jeffersontown WQTC Elimination	IOAP	64505	S_JT_JT_NB01_M_01_C_A
Jeffersontown WQTC Elimination	IOAP	28392	S_JT_JT_NB01_M_01_C_A
Jeffersontown WQTC Elimination	IOAP	28395	S_JT_JT_NB01_M_01_C_A
Jeffersontown WQTC Elimination	IOAP	IS028-SI	S_JT_JT_NB01_M_01_C_A
Jeffersontown WQTC Elimination	IOAP	31733	S_JT_JT_NB01_M_01_C_A
Jeffersontown WQTC Elimination	IOAP	28551	S_JT_JT_NB01_M_01_C_A
Jeffersontown WQTC Elimination	IOAP	MSD0255	S_JT_JT_NB01_M_01_C_A

Project Name	PROGRAM	ASSET ID	PROJECT ID
Jeffersontown WQTC Elimination	IOAP	28173	S_JT_JT_NB01_M_01_C_A
Chenoweth Hills WQTC Elimination & PS Improvements	IOAP	92061	S_JT_JT_NB01A_M_03_C
Chenoweth Hills WQTC Elimination & PS Improvements	IOAP	86052	S_JT_JT_NB01A_M_03_C
Chenoweth Hills WQTC Elimination & PS Improvements	IOAP	MSD0263	S_JT_JT_NB01A_M_03_C
Chenoweth Hills WQTC Elimination & PS Improvements	IOAP	MSD1043-PS	S_JT_JT_NB01A_M_03_C
Chenoweth Hills WQTC Elimination & PS Improvements	IOAP	MSD0196-PS	S_JT_JT_NB01A_M_03_C
Chenoweth Hills WQTC Elimination & PS Improvements	IOAP	64096	S_JT_JT_NB01A_M_03_C
Chenoweth Hills WQTC Elimination & PS Improvements	IOAP	MSD0263A-PS	S_JT_JT_NB01A_M_03_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28415	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	98564	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28250	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	99649	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28416	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28340	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	104289	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28414	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28417	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28413	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28249	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28336	S_JT_JT_NB02_M_01_C
Raintree and Marian Ct 1 - PS Elimination	IOAP	28395A	S_JT_JT_NB03_M_01_C
Raintree and Marian Ct 1 - PS Elimination	IOAP	28719	S_JT_JT_NB03_M_01_C
Raintree and Marian Ct 1 - PS Elimination	IOAP	28729-W	S_JT_JT_NB03_M_01_C
Raintree and Marian Ct 1 - PS Elimination	IOAP	MSD0149-PS	S_JT_JT_NB03_M_01_C
Raintree and Marian Ct 2 - Pipe Upgrades	IOAP	MSD0149-PS	S_JT_JT_NB03_M_01_C
Raintree and Marian Ct 2 - Pipe Upgrades	IOAP	28395A	S_JT_JT_NB03_M_01_C
Raintree and Marian Ct 2 - Pipe Upgrades	IOAP	28719	S_JT_JT_NB03_M_01_C
Raintree and Marian Ct 2 - Pipe Upgrades	IOAP	28729-W	S_JT_JT_NB03_M_01_C
Monticello PS Elimination	IOAP	27969	S_JT_JT_NB04_M_01_A
Monticello PS Elimination	IOAP	MSD0151-PS	S_JT_JT_NB04_M_01_A
Hazelwood PS I/I Investigation & Rehabilitation	IOAP	55667	S_MC_MF_55665_S_07_C
Hazelwood PS I/I Investigation & Rehabilitation	IOAP	55665	S_MC_MF_55665_S_07_C
Shively Interceptor	IOAP	MSD0047-PS	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	4498	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	MSD0049-PS	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	4542	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	81814-W	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	MSD0016-PS	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	MSD0044-PS	S_MC_WC_NB01_M_01_A

Project Name	PROGRAM	ASSET ID	PROJECT ID
Shively Interceptor	IOAP	MSD0048-PS	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	MSD0050-PS	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	MSD0043-PS	S_MC_WC_NB01_M_01_A
East Rockford PS Relocation	IOAP	04699-W	S_MC_WC_NB02_S_03_C
Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale Wet Weather Storage	IOAP	MSD0040-PS	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale Wet Weather Storage	IOAP	117721	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	62420	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	91629	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	46891	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	MSD1024-PS	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	62418	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	43472	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	91630	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	105936	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	21628-W	S_MI_MF_NB04_M_03_B
Anchor Estates- Anchor Ests PS 1 & 2 PS Eliminations	IOAP	0057-W	S_MI_MF_NB06_M_01_A_A - 1
Anchor Estates PS Elimination 2 - Anchor Estates #1 and #2 PS Elimination	IOAP	1106	S_MI_MF_NB06_M_01_A_A - 1
Anchor Estates PS Elimination 2 - Anchor Estates #1 and #2 PS Elimination	IOAP	MSD0057-LS	S_MI_MF_NB06_M_01_A_A - 1
Anchor Estates PS Elimination 2 - Anchor Estates #1 and #2 PS Elimination	IOAP	817	S_MI_MF_NB06_M_01_A_A - 1
Anchor Estates PS Elimination 2 - Anchor Estates #1 and #2 PS Elimination	IOAP	00056-W	S_MI_MF_NB06_M_01_A_A - 1
Anchor Estates PS Elimination 2 - Anchor Estates #1 and #2 PS Elimination	IOAP	746	S_MI_MF_NB06_M_01_A_A - 1
Anchor Estates PS Elimination 1 - Vannah PS Elimination	IOAP	MSD0057-LS	S_MI_MF_NB06_M_01_A_A - 2
Anchor Estates PS Elimination 1 - Vannah PS Elimination	IOAP	00056-W	S_MI_MF_NB06_M_01_A_A - 2
Anchor Estates PS Elimination 1 - Vannah PS Elimination	IOAP	817	S_MI_MF_NB06_M_01_A_A - 2
Anchor Estates PS Elimination 1 - Vannah PS Elimination	IOAP	0057-W	S_MI_MF_NB06_M_01_A_A - 2
Anchor Estates PS Elimination 1 - Vannah PS Elimination	IOAP	746	S_MI_MF_NB06_M_01_A_A - 2
Anchor Estates PS Elimination 1 - Vannah PS Elimination	IOAP	1106	S_MI_MF_NB06_M_01_A_A - 2
Hurstbourne I/I Investigation & Rehabilitation	IOAP	67535	S_MI_MF_NB07_S_07_C
Hurstbourne I/I Investigation & Rehabilitation	IOAP	47650	S_MI_MF_NB07_S_07_C
Hurstbourne I/I Investigation & Rehabilitation	IOAP	47656	S_MI_MF_NB07_S_07_C
Hurstbourne I/I Investigation & Rehabilitation	IOAP	1793	S_MI_MF_NB07_S_07_C
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	47583	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	47604	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	47603	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	2933	S_MISF_MF_NB01_M_01_C_A1

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Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	2935	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	8537	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	72289	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	30376	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	45796	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	115183	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	84155	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	23211	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	40559	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	51160	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	51180	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	47582	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	47034	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	72288	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	115184	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	115185	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	08935-SM	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	45835	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	51161	S_MISF_MF_NB01_M_01_C_A1

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Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	IS021A-SI	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	23212	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	47593	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	27005	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	15194	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	2932	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	27007	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	90700	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	47583	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	115184	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	45796	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	47582	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	72289	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	40559	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	23211	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	27007	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	08935-SM	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	15194	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	IS021A-SI	S_MISF_MF_NB01_M_01_C_A1

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Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	51180	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	2933	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	51161	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	51160	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	47604	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	115185	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	23212	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	47603	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	27005	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	2935	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	8537	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	90700	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	2932	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	47034	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	72288	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	47593	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	30376	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	84155	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	115183	S_MISF_MF_NB01_M_01_C_A1

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Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	IOAP	45835	S_MISF_MF_NB01_M_01_C_A1
Sonne PS I/I Investigation & Rehabilitation	IOAP	MSD0042-PS	S_OR_MF_42007_S_07_C
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	41374	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	MSD0007-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	MSD0024-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	26752	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	MSD0023-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	MSD0010-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	24472	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	MSD0006-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	24152-W	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	MSD0007-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	24472	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	41374	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	26752	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	MSD0023-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	MSD0024-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	24152-W	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	MSD0010-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	MSD0006-PS	S_OR_MF_NB01_M_01_B
Leland Road SSO Investigation	IOAP	96020	S_OR_MF_NB02_S_13_C
Derington Ct. PS I/I Investigation & Rehabilitation	IOAP	MSD0095-PS	S_OR_MF_NB03_S_07_C
Derington Ct. PS I/I Investigation & Rehabilitation	IOAP	20155	S_OR_MF_NB03_S_07_C
Prospect #1 - WQTC Eliminations	IOAP	MSD0192-PS	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	MSD1063-PS	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	MSD0123-PS	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	MSD0193-PS	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	40870	S_OR_MF_NB04_M_03_B_B

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Prospect #1 - WQTC Eliminations	IOAP	MSD1044-PS	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	MSD0183-PS	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	22436	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	40872	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	40871	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	65635	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	42680	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	89791	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	89646	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	40879	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	42675	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	40880	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	MSD0186-PS	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	65633	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	65623	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	40870	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	89791	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	65623	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	MSD0123-PS	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	MSD1044-PS	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	89646	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	40879	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	40880	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	MSD0186-PS	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	MSD1063-PS	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	MSD0192-PS	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	MSD0183-PS	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	65633	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	22436	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	42675	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	40872	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	65635	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	MSD0193-PS	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	40871	S_OR_MF_NB04_M_03_B_B
Prospect #2 - Harrods Creek PS and FM	IOAP	42680	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	40871	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	65635	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	22436	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	89646	S_OR_MF_NB04_M_03_B_B

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Prospect #3 - ORFM System Improvements	IOAP	40879	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	40880	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	MSD0193-PS	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	MSD0183-PS	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	MSD1063-PS	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	MSD0192-PS	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	42675	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	40872	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	65633	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	MSD1044-PS	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	MSD0186-PS	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	MSD0123-PS	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	40870	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	65623	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	42680	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvements	IOAP	89791	S_OR_MF_NB04_M_03_B_B
Charleswood Interceptor Extension	IOAP	25480	S_PO_WC_PC03_M_01_C
Charleswood Interceptor Extension	IOAP	25479	S_PO_WC_PC03_M_01_C
Charleswood Interceptor Extension	IOAP	25477	S_PO_WC_PC03_M_01_C
Charleswood Interceptor Extension	IOAP	MSD0130-PS	S_PO_WC_PC03_M_01_C
Cinderella PS Elimination	IOAP	MSD1013-PS	S_PO_WC_PC04_M_01_C
Cinderella PS Elimination	IOAP	60679	S_PO_WC_PC04_M_01_C
Cinderella PS Elimination	IOAP	35309	S_PO_WC_PC04_M_01_C
Lantana PS #1 I/I Investigation and Rehabilitation	IOAP	25484	S_PO_WC_PC05_M_07_C
Lantana PS #1 I/I Investigation and Rehabilitation	IOAP	MSD0101-PS	S_PO_WC_PC05_M_07_C
Lantana PS #1 I/I Investigation and Rehabilitation	IOAP	93719	S_PO_WC_PC05_M_07_C
Government Center PS Elimination	IOAP	94541	S_PO_WC_PC06_M_01_C
Government Center PS Elimination	IOAP	MSD0180-PS	S_PO_WC_PC06_M_01_C
Government Center PS Elimination	IOAP	94542	S_PO_WC_PC06_M_01_C
Avanti PS Elimination	IOAP	21229-W	S_PO_WC_PC07_M_01_A
Lea Ann Way System Improvements	IOAP	MSD1200-PS	S_PO_WC_PC08_M_01_C
Lea Ann Way System Improvements	IOAP	29933	S_PO_WC_PC08_M_01_C
Lea Ann Way System Improvements	IOAP	31074	S_PO_WC_PC08_M_01_C
Lea Ann Way System Improvements	IOAP	31073	S_PO_WC_PC08_M_01_C
Lea Ann Way System Improvements	IOAP	57874	S_PO_WC_PC08_M_01_C
Lea Ann Way System Improvements	IOAP	29948	S_PO_WC_PC08_M_01_C
Lea Ann Way System Improvements	IOAP	MSD1010-PS	S_PO_WC_PC08_M_01_C
Caven Ave Pump Station Elimination	IOAP	70212	S_PO_WC_PC09_M_09B_C
Caven Ave Pump Station Elimination	IOAP	61667	S_PO_WC_PC09_M_09B_C

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Caven Ave Pump Station Elimination	IOAP	MSD0133-PS	S_PO_WC_PC09_M_09B_C
Caven Ave Pump Station Elimination	IOAP	17724	S_PO_WC_PC09_M_09B_C
Caven Ave Pump Station Elimination	IOAP	61687	S_PO_WC_PC09_M_09B_C
Caven Ave Pump Station Elimination	IOAP	27116	S_PO_WC_PC09_M_09B_C
Leven PS Elimination	IOAP	36419	S_PO_WC_PC10_M_01_C
Edsel PS I/I Investigation & Rehabilitation	IOAP	MSD1048-PS	S_PO_WC_PC11_M_07_C
Edsel PS I/I Investigation & Rehabilitation	IOAP	94009	S_PO_WC_PC11_M_07_C
Edsel PS I/I Investigation & Rehabilitation	IOAP	92098	S_PO_WC_PC11_M_07_C
Edsel PS I/I Investigation & Rehabilitation	IOAP	92099	S_PO_WC_PC11_M_07_C
Parkview Estates I/I Investigation & Rehabilitation	IOAP	47250	S_SD_MF_NB03_S_07_C
Klondike Interceptor	IOAP	26651	S_SD_MF_NB04_S_01_B_A
Klondike Interceptor	IOAP	26650	S_SD_MF_NB04_S_01_B_A
Klondike Interceptor	IOAP	20644	S_SD_MF_NB04_S_01_B_A
Klondike Interceptor	IOAP	66232	S_SD_MF_NB04_S_01_B_A
Klondike Interceptor	IOAP	49513	S_SD_MF_NB04_S_01_B_A
Klondike Interceptor	IOAP	25676	S_SD_MF_NB04_S_01_B_A
Sutherland Interceptor	IOAP	16649	S_SD_MF_NB05_M_01_A
Beargrass Interceptor Rehab Ph. 2	IOAP	51594	S_SD_MF_NB06_S_13_C
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	13946	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	44396	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	66349	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	51301	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	36763	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	8717	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	44397	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	13931	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	99259	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	104223	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	13943	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	104231	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	44397	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	104223	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	104231	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	13946	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	13931	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	66349	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	51301	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	99259	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	36763	S_SF_MF_30917_M_09_A

Project Name	PROGRAM	ASSET ID	PROJECT ID
Camp Taylor System Improvements Phase 1 - SSES	IOAP	13943	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	44396	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	8717	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	13943	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	13931	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	66349	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	8717	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	13946	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	99259	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	51301	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	36763	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	104223	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	104231	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	44397	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	44396	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	44397	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	51301	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	99259	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	13943	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	8717	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	13946	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	13931	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	44396	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	104223	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	36763	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	66349	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	104231	S_SF_MF_30917_M_09_A
Southeastern Diversion Structure and Interceptor	ISSDP	72571-X	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	30704	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	30702	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	63779	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	8426	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	8427	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	8431	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	49647	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	8430	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	18654	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	30701	SDSI
Sinking Fork Relief Sewer	ISSDP	21103	SFRS

Project Name	PROGRAM	ASSET ID	PROJECT ID
Sinking Fork Relief Sewer	ISSDP	63319	SFRS
Sinking Fork Relief Sewer	ISSDP	25012	SFRS

Appendix F CSO 108 Semi-Annual Report

msd
Safe, clean waterways

700 West Liberty Street | Louisville, KY 40203-1911
Phone: 502.540.6000 | LouisvilleMSD.org

December 22, 2016

Joyce Bender
Nature Preserves and Natural Areas Branch Manager
Kentucky State Nature Preserve Commission
801 Schenkel Lane
Frankfort, KY 40601

Subject: CSO 108 Semi-Annual Report #17

Dear Ms. Bender

As required in Paragraph #10 of the document titled "Memorandum of Understanding by and between the Kentucky State Nature Preserve Commission and the Louisville and Jefferson County Metropolitan Sewer District", MSD submits to you the MOU Semi-Annual Report #17. This report summarizes activities at the CSO 108 CDS Site during the reporting period of July 1, 2016 to December 31, 2016.

Should you have any questions or comments, please feel free to contact me via email at julie.potempa@louisvillemsd.org or phone at (502) 540-6112.

Sincerely,

Julie Potempa
Project Administrator

INTRODUCTION

The Louisville and Jefferson County Metropolitan Sewer District (MSD) has entered into a Memorandum of Understanding (MOU) with the Kentucky State Nature Preserve Commission (Commission). The MOU was signed by MSD on July 30, 2008, and by the Commission on September 17, 2008. This MOU is effective for the period starting September 1, 2008, and ending on September 1, 2018.

This is the 17th Semi-Annual Report submitted in accordance with Paragraph 10 of the MOU. This report covers the time period of July 1, 2016 to December 31, 2016.

This Semi-Annual Report will address only those requirements considered ongoing. The initial Semi-Annual Report, MOU Semi-Annual Report #1, was comprehensive and included a response to each requirement addressed within the MOU. Please refer to the initial Semi-Annual Report should you need additional information not found within this document.

Work and activities undertaken by MSD and relating to the MOU are outlined in the paragraphs below:

Paragraph #10 of the MOU:

MSD shall be diligent of this ten year period in more timely supplying the Commission with semi-annual reports on the efficacy of the CDS unit, water quality monitoring data, and any other such pertinent information. Said reports shall be provided to the Commission by June 30 and December 31 of each year.

- MSD Response: This document is the 17th semi-annual report to the Commission since the completion of the Project.
    - Cleaning and Inspection Activities:

      The CSO 108 CDS Unit is inspected weekly and cleaned on an as-needed basis. Between the dates of July 1, 2016, and December 31, 2016, MSD cleaned the CDS Unit bar racks six times. The information, shown in Table 1, is generated from work orders initiated whenever the CDS Unit is inspected and needs to be cleaned. Cleaning consists of either washing debris off of the bar racks or hauling the solids and floatables from the site. Both operations result in removing debris that would otherwise overflow into Beargrass Creek. When cleaning the bar racks, the debris is

reintroduced into the sewer system, and as a result, is difficult to accurately estimate the amount removed during the maintenance process. The Crystal Report often indicates the quantity removed as "unknown".

TABLE 1: CSO 108 CDS Unit Debris Removal

ACTCO	UNITID	QTY	COMMENTS	COMPDTTM
Debris	CSO 108	Unknown	Cleaned heavy debris off rack bars	07/05/16
Debris	CSO 108	Unknown	Cleaned medium debris off rack bars	07/26/16
Debris	CSO 108	Unknown	Cleaned medium debris off rack bars	10/25/16
Debris	CSO 108	Unknown	Cleaned medium debris off rack bars	11/29/16
Debris	CSO 108	Unknown	Cleaned medium debris off rack bars	12/13/16
Debris	CSO 108	Unknown	Cleaned heavy debris off rack bars	12/19/16

- Maintenance Activities:

  In addition to the weekly inspections, MSD has initiated a preventative maintenance program to insure that the CDS Unit and respective pumps are performing optimally. During these quarterly preventative maintenance activities MSD staff also cleans the CDS Unit and rack bars, washing the debris into the interceptor. The CDS Unit's pumps are removed from the facility twice yearly to more closely inspect and to perform any needed maintenance.

- Captured Flow

The CDS system was placed along the Trevillian Way Twin Trunk Sewer to capture solids and floatables from a 485 acre drainage area. The unit uses a vortex action created by the hydraulic energy of incoming flow to separate solids and floatable from the flow. The treated flow is then discharged through the outlet pipe to Beargrass Creek and the debris that is captured is pumped to the Morris Forman Water Quality Treatment Center (MFWQTC).

In an effort to estimate the volume of debris captured by the CDS Unit and kept within the sewer system, a study of the efficiency of the unit was performed in the early 2002. The results of the study indicated that the concentration of solids kept within the sewer system was approximately 1ml/l. Using pump run times and knowing the efficiency of the pumps, MSD was able to determine a volume of solids captured by the CDS technology. MSD estimates that the CDS Unit captured 42.24 tons of solids during the reporting period. Attachment "B" lists the pump run times and calculations MSD used to determine the amount of debris captured by the CDS Unit and sent to the MFWQTC for treatment.

ATTACHMENT "A"

PHOTOS
OF AREA ADJACENT TO
CSO 108 AND THE CDS UNIT
(dated December 21, 2016)

December 22, 2016

Figures 1 and 2 – Entrance to CDS Unit

December 22, 2016

Figures 3 and 4 – Area Adjacent to CDS Unit

December 22, 2016

Figures 5 and 6 – Area Adjacent to Creek

ATTACHMENT "B"

CDS UNIT
PUMP RUN TIMES

December 22, 2016

CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
29-Jun-16	0.0371	4,957.38	37,083.77	37.08
30-Jun-16	0.0371	4,953.92	37,057.89	37.06
01-Jul-16	0.0435	5,816.35	43,509.31	43.51
02-Jul-16	0.0371	4,953.92	37,057.89	37.06
03-Jul-16	0.0371	4,953.92	37,057.89	37.06
04-Jul-16	0.0371	4,953.92	37,057.89	37.06
05-Jul-16	0.0371	4,953.92	37,057.89	37.06
06-Jul-16	0.0571	7,637.56	57,132.90	57.13
07-Jul-16	0.0533	7,122.74	53,281.80	53.28
08-Jul-16	0.0371	4,953.92	37,057.89	37.06
09-Jul-16	0.0371	4,953.92	37,057.89	37.06
10-Jul-16	0.0371	4,953.92	37,057.89	37.06
11-Jul-16	0.0371	4,953.92	37,057.89	37.06
12-Jul-16	0.0371	4,957.38	37,083.77	37.08
13-Jul-16	0.0371	4,953.92	37,057.89	37.06
14-Jul-16	0.0371	4,953.92	37,057.89	37.06
15-Jul-16	0.0371	4,953.92	37,057.89	37.06
16-Jul-16	0.0371	4,953.92	37,057.89	37.06
17-Jul-16	0.0371	4,957.38	37,083.77	37.08
18-Jul-16	0.0371	4,953.92	37,057.89	37.06
19-Jul-16	0.0371	4,953.92	37,057.89	37.06
20-Jul-16	0.0371	4,953.92	37,057.89	37.06
21-Jul-16	0.0371	4,953.92	37,057.89	37.06
22-Jul-16	0.0371	4,953.92	37,057.89	37.06
23-Jul-16	0.0371	4,953.92	37,057.89	37.06
24-Jul-16	0.0371	4,957.38	37,083.77	37.08
25-Jul-16	0.0371	4,953.92	37,057.89	37.06
26-Jul-16	0.0416	5,565.81	41,635.16	41.64
27-Jul-16	0.0371	4,957.38	37,083.77	37.08
28-Jul-16	0.0371	4,953.92	37,057.89	37.06
29-Jul-16	0.0772	10,322.29	77,216.10	77.22
30-Jul-16	0.0417	5,576.13	41,712.33	41.71
31-Jul-16	0.0506	6,769.54	50,639.66	50.64
01-Aug-16	0.0371	4,953.92	37,057.89	37.06
02-Aug-16	0.0371	4,953.92	37,057.89	37.06
03-Aug-16	0.0890	11,896.01	88,988.36	88.99
04-Aug-16	0.0546	7,304.77	54,643.51	54.64
05-Aug-16	0.0409	5,468.63	40,908.18	40.91
06-Aug-16	0.0371	4,953.92	37,057.89	37.06
07-Aug-16	0.0371	4,953.92	37,057.89	37.06
08-Aug-16	0.0404	5,399.14	40,388.35	40.39
09-Aug-16	0.0371	4,953.92	37,057.89	37.06
10-Aug-16	0.0371	4,953.92	37,057.89	37.06
11-Aug-16	0.0371	4,953.92	37,057.89	37.06
12-Aug-16	0.0371	4,953.92	37,057.89	37.06
13-Aug-16	0.0371	4,953.92	37,057.89	37.06

CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
14-Aug-16	0.0371	4,953.92	37,057.89	37.06
15-Aug-16	0.0371	4,953.92	37,057.89	37.06
16-Aug-16	0.0401	5,358.26	40,082.55	40.08
17-Aug-16	0.0526	7,031.29	52,597.73	52.60
18-Aug-16	0.0377	5,040.48	37,705.41	37.71
19-Aug-16	0.0410	5,487.04	41,045.91	41.05
20-Aug-16	0.0404	5,395.61	40,361.99	40.36
21-Aug-16	0.0371	4,953.92	37,057.89	37.06
22-Aug-16	0.0489	6,533.50	48,873.96	48.87
23-Aug-16	0.0463	6,195.52	46,345.74	46.35
24-Aug-16	0.0412	5,514.11	41,248.41	41.25
25-Aug-16	0.0370	4,950.46	37,032.01	37.03
26-Aug-16	0.0371	4,953.92	37,057.89	37.06
27-Aug-16	0.0371	4,953.92	37,057.89	37.06
28-Aug-16	0.0398	5,326.08	39,841.87	39.84
29-Aug-16	0.0371	4,953.92	37,057.89	37.06
30-Aug-16	0.0371	4,953.92	37,057.89	37.06
31-Aug-16	0.0371	4,953.92	37,057.89	37.06
01-Sep-16	0.0371	4,957.38	37,083.77	37.08
02-Sep-16	0.0507	6,784.16	50,749.07	50.75
03-Sep-16	0.0415	5,542.96	41,464.25	41.46
04-Sep-16	0.0371	4,953.92	37,057.89	37.06
05-Sep-16	0.0371	4,953.92	37,057.89	37.06
06-Sep-16	0.0371	4,953.92	37,057.89	37.06
07-Sep-16	0.0370	4,950.46	37,032.01	37.03
08-Sep-16	0.0371	4,953.92	37,057.89	37.06
09-Sep-16	0.0371	4,953.92	37,057.89	37.06
10-Sep-16	0.0393	5,255.41	39,313.22	39.31
11-Sep-16	0.0371	4,953.92	37,057.89	37.06
12-Sep-16	0.0371	4,953.92	37,057.89	37.06
13-Sep-16	0.0371	4,953.92	37,057.89	37.06
14-Sep-16	0.0371	4,953.92	37,057.89	37.06
15-Sep-16	0.0371	4,953.92	37,057.89	37.06
16-Sep-16	0.0371	4,953.92	37,057.89	37.06
17-Sep-16	0.0416	5,554.74	41,552.36	41.55
18-Sep-16	0.0371	4,953.92	37,057.89	37.06
19-Sep-16	0.0371	4,953.92	37,057.89	37.06
20-Sep-16	0.0371	4,953.92	37,057.89	37.06
21-Sep-16	0.0371	4,953.92	37,057.89	37.06
22-Sep-16	0.0371	4,953.92	37,057.89	37.06
23-Sep-16	0.0371	4,953.92	37,057.89	37.06
24-Sep-16	0.0371	4,953.92	37,057.89	37.06
25-Sep-16	0.0415	5,546.07	41,487.51	41.49
26-Sep-16	0.0371	4,953.92	37,057.89	37.06
27-Sep-16	0.0371	4,953.92	37,057.89	37.06
28-Sep-16	0.0371	4,953.92	37,057.89	37.06

CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
29-Sep-16	0.0370	4,950.46	37,032.01	37.03
30-Sep-16	0.0371	4,953.92	37,057.89	37.06
01-Oct-16	0.0370	4,950.46	37,032.01	37.03
02-Oct-16	0.0415	5,548.00	41,501.89	41.50
03-Oct-16	0.0370	4,950.46	37,032.01	37.03
04-Oct-16	0.0371	4,953.92	37,057.89	37.06
05-Oct-16	0.0371	4,953.92	37,057.89	37.06
06-Oct-16	0.0371	4,953.92	37,057.89	37.06
07-Oct-16	0.0370	4,950.46	37,032.01	37.03
08-Oct-16	0.0414	5,530.17	41,368.56	41.37
09-Oct-16	0.0371	4,953.92	37,057.89	37.06
10-Oct-16	0.0370	4,950.46	37,032.01	37.03
11-Oct-16	0.0370	4,950.46	37,032.03	37.03
12-Oct-16	0.0371	4,953.92	37,057.89	37.06
13-Oct-16	0.0371	4,953.92	37,057.89	37.06
14-Oct-16	0.0370	4,950.46	37,032.01	37.03
15-Oct-16	0.0371	4,953.92	37,057.89	37.06
16-Oct-16	0.0371	4,953.95	37,058.15	37.06
17-Oct-16	0.0413	5,519.99	41,292.43	41.29
18-Oct-16	0.0371	4,953.92	37,057.89	37.06
19-Oct-16	0.0371	4,953.92	37,057.89	37.06
20-Oct-16	0.0371	4,953.92	37,057.89	37.06
21-Oct-16	0.0371	4,953.92	37,057.89	37.06
22-Oct-16	0.0371	4,953.92	37,057.89	37.06
23-Oct-16	0.0371	4,953.92	37,057.89	37.06
24-Oct-16	0.0370	4,950.70	37,033.81	37.03
25-Oct-16	0.0371	4,957.01	37,080.98	37.08
26-Oct-16	0.0414	5,529.28	41,361.87	41.36
27-Oct-16	0.0370	4,951.11	37,036.87	37.04
28-Oct-16	0.0370	4,950.64	37,033.40	37.03
29-Oct-16	0.0483	6,455.36	48,289.46	48.29
30-Oct-16	0.0370	4,951.04	37,036.33	37.04
31-Oct-16	0.0370	4,950.46	37,032.01	37.03
01-Nov-16	0.0370	4,950.46	37,032.01	37.03
02-Nov-16	0.0371	4,953.92	37,057.89	37.06
03-Nov-16	0.0370	4,950.46	37,032.01	37.03
04-Nov-16	0.0370	4,950.46	37,032.01	37.03
05-Nov-16	0.0371	4,953.92	37,057.89	37.06
06-Nov-16	0.0370	4,950.46	37,032.01	37.03
07-Nov-16	0.0371	4,958.74	37,093.95	37.09
08-Nov-16	0.0370	4,952.65	37,048.38	37.05
09-Nov-16	0.0371	4,953.65	37,055.87	37.06
10-Nov-16	0.0371	4,953.92	37,057.89	37.06
11-Nov-16	0.0370	4,951.01	37,036.13	37.04
12-Nov-16	0.0470	6,285.68	47,020.17	47.02
13-Nov-16	0.0372	4,968.07	37,163.77	37.16

CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
14-Nov-16	0.0372	4,977.68	37,235.61	37.24
15-Nov-16	0.0376	5,027.80	37,610.55	37.61
16-Nov-16	0.0376	5,020.90	37,558.96	37.56
17-Nov-16	0.0373	4,990.65	37,332.67	37.33
18-Nov-16	0.0372	4,968.24	37,165.05	37.17
19-Nov-16	0.0371	4,963.00	37,125.82	37.13
20-Nov-16	0.0370	4,950.61	37,033.14	37.03
21-Nov-16	0.0372	4,975.39	37,218.53	37.22
22-Nov-16	0.0380	5,076.21	37,972.72	37.97
23-Nov-16	0.0381	5,093.75	38,103.87	38.10
24-Nov-16	0.0377	5,038.79	37,692.73	37.69
25-Nov-16	0.0372	4,966.64	37,153.06	37.15
26-Nov-16	0.0371	4,953.92	37,057.89	37.06
27-Nov-16	0.0371	4,961.45	37,114.20	37.11
28-Nov-16	0.0372	4,977.38	37,233.39	37.23
29-Nov-16	0.0377	5,043.68	37,729.38	37.73
30-Nov-16	0.0371	4,956.86	37,079.92	37.08
01-Dec-16	0.0370	4,951.76	37,041.73	37.04
02-Dec-16	0.0371	4,954.60	37,063.00	37.06
03-Dec-16	0.0372	4,971.37	37,188.46	37.19
04-Dec-16	0.0376	5,029.61	37,624.08	37.62
05-Dec-16	0.0371	4,966.21	37,149.80	37.15
06-Dec-16	0.0372	4,969.43	37,173.91	37.17
07-Dec-16	0.0371	4,962.89	37,125.03	37.13
08-Dec-16	0.0417	5,577.57	41,723.10	41.72
09-Dec-16	0.0418	5,586.77	41,791.94	41.79
10-Dec-16	0.0383	5,121.03	38,307.97	38.31
11-Dec-16	0.0389	5,195.58	38,865.63	38.87
12-Dec-16	0.0385	5,151.85	38,538.52	38.54
13-Dec-16	0.0376	5,030.49	37,630.66	37.63
14-Dec-16	0.0373	4,987.21	37,306.94	37.31
15-Dec-16	0.0420	5,615.23	42,004.84	42.00
16-Dec-16	0.0386	5,155.06	38,562.54	38.56
17-Dec-16	0.0395	5,279.11	39,490.50	39.49
18-Dec-16	0.0389	5,194.09	38,854.52	38.85
19-Dec-16	0.4580	61,225.35	457,997.44	458.00
20-Dec-16	0.5835	78,005.18	583,519.34	583.52
				7,788.97

84,470.70 Pounds

42.24 **Tons**

CSO 108 CDS Facility			
Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
29-Jun-16	0.00	0.00	0.00
30-Jun-16	0.00	0.00	0.00
01-Jul-16	0.00	0.00	0.08
02-Jul-16	0.00	0.00	0.00
03-Jul-16	0.00	0.00	0.00
04-Jul-16	0.00	0.00	0.00
05-Jul-16	0.00	0.00	0.00
06-Jul-16	0.00	0.00	0.20
07-Jul-16	0.00	0.00	0.18
08-Jul-16	0.00	0.00	0.00
09-Jul-16	0.00	0.00	0.00
10-Jul-16	0.00	0.00	0.00
11-Jul-16	0.00	0.00	0.00
12-Jul-16	0.00	0.00	0.00
13-Jul-16	0.00	0.00	0.00
14-Jul-16	0.00	0.00	0.00
15-Jul-16	0.00	0.00	0.00
16-Jul-16	0.00	0.00	0.00
17-Jul-16	0.00	0.00	0.00
18-Jul-16	0.00	0.00	0.00
19-Jul-16	0.00	0.00	0.00
20-Jul-16	0.00	0.00	0.00
21-Jul-16	0.00	0.00	0.00
22-Jul-16	0.00	0.00	0.00
23-Jul-16	0.00	0.00	0.00
24-Jul-16	0.00	0.00	0.00
25-Jul-16	0.00	0.00	0.00
26-Jul-16	0.00	0.00	0.05
27-Jul-16	0.00	0.00	0.00
28-Jul-16	0.00	0.00	0.00
29-Jul-16	0.00	0.00	1.32
30-Jul-16	0.00	0.00	0.05
31-Jul-16	0.00	0.00	0.15
01-Aug-16	0.00	0.00	0.00
02-Aug-16	0.00	0.00	0.00
03-Aug-16	0.00	0.00	1.93
04-Aug-16	0.00	0.00	0.17
05-Aug-16	0.00	0.00	0.05
06-Aug-16	0.00	0.00	0.00
07-Aug-16	0.00	0.00	0.00
08-Aug-16	0.00	0.00	0.03
09-Aug-16	0.00	0.00	0.00
10-Aug-16	0.00	0.00	0.00

CSO 108 CDS Facility			
Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
11-Aug-16	0.00	0.00	0.00
12-Aug-16	0.00	0.00	0.00
13-Aug-16	0.00	0.00	0.00
14-Aug-16	0.00	0.00	0.00
15-Aug-16	0.00	0.00	0.00
16-Aug-16	0.00	0.00	0.05
17-Aug-16	0.00	0.00	0.87
18-Aug-16	0.00	0.00	0.02
19-Aug-16	0.00	0.00	0.03
20-Aug-16	0.00	0.00	0.05
21-Aug-16	0.00	0.00	0.00
22-Aug-16	0.00	0.00	0.78
23-Aug-16	0.00	0.00	0.08
24-Aug-16	0.00	0.00	0.05
25-Aug-16	0.00	0.00	0.00
26-Aug-16	0.00	0.00	0.00
27-Aug-16	0.00	0.00	0.00
28-Aug-16	0.00	0.00	0.05
29-Aug-16	0.00	0.00	0.00
30-Aug-16	0.00	0.00	0.00
31-Aug-16	0.00	0.00	0.00
01-Sep-16	0.00	0.00	0.00
02-Sep-16	0.00	0.00	0.77
03-Sep-16	0.00	0.00	0.03
04-Sep-16	0.00	0.00	0.00
05-Sep-16	0.00	0.00	0.00
06-Sep-16	0.00	0.00	0.00
07-Sep-16	0.00	0.00	0.00
08-Sep-16	0.00	0.00	0.00
09-Sep-16	0.00	0.00	0.00
10-Sep-16	0.00	0.00	0.05
11-Sep-16	0.00	0.00	0.00
12-Sep-16	0.00	0.00	0.00
13-Sep-16	0.00	0.00	0.00
14-Sep-16	0.00	0.00	0.00
15-Sep-16	0.00	0.00	0.00
16-Sep-16	0.00	0.00	0.00
17-Sep-16	0.00	0.00	0.03
18-Sep-16	0.00	0.00	0.00
19-Sep-16	0.00	0.00	0.00
20-Sep-16	0.00	0.00	0.00
21-Sep-16	0.00	0.00	0.00
22-Sep-16	0.00	0.00	0.00

CSO 108 CDS Facility			
Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
23-Sep-16	0.00	0.00	0.00
24-Sep-16	0.00	0.00	0.00
25-Sep-16	0.00	0.00	0.05
26-Sep-16	0.00	0.00	0.00
27-Sep-16	0.00	0.00	0.00
28-Sep-16	0.00	0.00	0.00
29-Sep-16	0.00	0.00	0.00
30-Sep-16	0.00	0.00	0.00
01-Oct-16	0.00	0.00	0.00
02-Oct-16	0.00	0.00	0.05
03-Oct-16	0.00	0.00	0.00
04-Oct-16	0.00	0.00	0.00
05-Oct-16	0.00	0.00	0.00
06-Oct-16	0.00	0.00	0.00
07-Oct-16	0.00	0.00	0.00
08-Oct-16	0.00	0.00	0.03
09-Oct-16	0.00	0.00	0.00
10-Oct-16	0.00	0.00	0.00
11-Oct-16	0.00	0.00	0.00
12-Oct-16	0.00	0.00	0.00
13-Oct-16	0.00	0.00	0.00
14-Oct-16	0.00	0.00	0.00
15-Oct-16	0.00	0.00	0.00
16-Oct-16	0.00	0.00	0.00
17-Oct-16	0.00	0.00	0.05
18-Oct-16	0.00	0.00	0.00
19-Oct-16	0.00	0.00	0.00
20-Oct-16	0.00	0.00	0.00
21-Oct-16	0.00	0.00	0.00
22-Oct-16	0.00	0.00	0.00
23-Oct-16	0.00	0.00	0.00
24-Oct-16	0.00	0.00	0.00
25-Oct-16	0.00	0.00	0.00
26-Oct-16	0.00	0.00	0.03
27-Oct-16	0.00	0.00	0.00
28-Oct-16	0.00	0.00	0.00
29-Oct-16	0.00	0.00	0.13
30-Oct-16	0.00	0.00	0.00
31-Oct-16	0.00	0.00	0.00
01-Nov-16	0.00	0.00	0.00
02-Nov-16	0.00	0.00	0.00
03-Nov-16	0.00	0.00	0.00
04-Nov-16	0.00	0.00	0.00

CSO 108 CDS Facility			
Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
05-Nov-16	0.00	0.00	0.00
06-Nov-16	0.00	0.00	0.00
07-Nov-16	0.00	0.00	0.00
08-Nov-16	0.00	0.00	0.00
09-Nov-16	0.00	0.00	0.00
10-Nov-16	0.00	0.00	0.00
11-Nov-16	0.00	0.00	0.00
12-Nov-16	0.00	0.00	0.12
13-Nov-16	0.00	0.00	0.00
14-Nov-16	0.00	0.00	0.00
15-Nov-16	0.00	0.00	0.00
16-Nov-16	0.00	0.00	0.00
17-Nov-16	0.00	0.00	0.00
18-Nov-16	0.00	0.00	0.00
19-Nov-16	0.00	0.00	0.00
20-Nov-16	0.00	0.00	0.00
21-Nov-16	0.00	0.00	0.00
22-Nov-16	0.00	0.00	0.00
23-Nov-16	0.00	0.00	0.00
24-Nov-16	0.00	0.00	0.00
25-Nov-16	0.00	0.00	0.00
26-Nov-16	0.00	0.00	0.00
27-Nov-16	0.00	0.00	0.00
28-Nov-16	0.00	0.00	0.00
29-Nov-16	0.00	0.00	0.00
30-Nov-16	0.00	0.00	0.00
01-Dec-16	0.00	0.00	0.00
02-Dec-16	0.00	0.00	0.00
03-Dec-16	0.00	0.00	0.00
04-Dec-16	0.00	0.00	0.00
05-Dec-16	0.00	0.00	0.00
06-Dec-16	0.00	0.00	0.00
07-Dec-16	0.00	0.00	0.00
08-Dec-16	0.00	0.00	0.03
09-Dec-16	0.00	0.00	0.05
10-Dec-16	0.00	0.00	0.00
11-Dec-16	0.00	0.00	0.00
12-Dec-16	0.00	0.00	0.00
13-Dec-16	0.00	0.00	0.00
14-Dec-16	0.00	0.00	0.00
15-Dec-16	0.00	0.00	0.03
16-Dec-16	0.00	0.00	0.00
17-Dec-16	0.00	0.00	0.00

CSO 108 CDS Facility			
Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
18-Dec-16	0.00	0.00	0.00
19-Dec-16	0.00	0.00	4.73
20-Dec-16	0.00	0.00	5.35