

# **Louisville and Jefferson County Wet Weather Consent Decree Quarterly Report #55**



**Reporting Period:**

April 1, 2019 through June 30, 2019

**Submitted To:**

Kentucky Department of Environmental Protection  
United States Environmental Protection Agency  
United States Department of Justice

**Submitted By:**

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## **TABLE OF CONTENTS**

<b>INTRODUCTION .....</b>	<b>1</b>
<b>SECTION 1: PROGRAM ACTIVITIES FOR NINE MINIMUM CONTROLS (NMC).....</b>	<b>3</b>
1.1.Nine Minimum Controls Program Background .....	3
1.2.NMC 2: Maximization of Storage in the Collection System .....	3
1.3.NMC 4: Maximization of Flow at the Morris Forman Water Quality Treatment Center .....	5
1.4.NMC Activity Schedule.....	7
<b>SECTION 2: PROGRAM ACTIVITIES FOR SEWER OVERFLOW RESPONSE PROTOCOL (SORP) .....</b>	<b>17</b>
2.1.Program Background .....	17
2.2.Overflow Management and Field Documentation.....	17
2.3.Staff Training and Communication.....	18
<b>SECTION 3: PROGRAM ACTIVITIES FOR DISCHARGE ABATEMENT PLANS (DAP) .....</b>	<b>19</b>
3.1.Integrated Overflow Abatement Plan (IOAP).....	19
3.2.Sanitary Sewer Discharge Plan (SSDP).....	19
3.2.1. Updated Sanitary Sewer Overflow Plan (SSOP) Implementation .....	19
3.2.2. Interim Sanitary Sewer Discharge Plan (ISSDP).....	20
3.2.3. Final Sanitary Sewer Discharge Plan (SSDP) .....	20
3.3.CSO Long Term Control Plan (LTCP) .....	20
3.3.1. Interim CSO Long Term Control Plan (LTCP) .....	20
3.3.2. Final CSO Long Term Control Plan (LTCP).....	20
3.3.3. Green Infrastructure Program Update .....	21
3.4.Discharge Abatement Plan Project Status.....	21
3.4.1. Sanitary Sewer Discharge Plan (SSDP).....	21
3.4.2. Combined Sewer Overflow Long Term Control Plan (LTCP) .....	21
3.4.3. Activity Progress Chart.....	22
<b>SECTION 4: PROGRAM ACTIVITIES FOR PUBLIC OUTREACH, EDUCATION, NOTIFICATION AND PARTICIPATION .....</b>	<b>33</b>
4.1.Public Notification Program.....	33
4.2.Public Education Programs.....	33
4.3.Public Outreach Programs.....	34
4.3.1. IOAP Project and Program Meetings.....	34
<b>SECTION 5: CAPACITY MANAGEMENT OPERATIONS AND MAINTENANCE (CMOM) REPORT .....</b>	<b>35</b>
5.1.Management Programs.....	35

## **TABLE OF CONTENTS**

5.2. Operations Programs .....	36
5.3. Comprehensive Performance Evaluations and Composite Correction Plans (CPE/CCP) .....	36
5.3.1. Hite Creek Water Quality Treatment Center .....	36
5.3.2. Floyds Fork Water Quality Treatment Center .....	36
5.3.3. Derek R. Guthrie Water Quality Treatment Center .....	36
5.3.4. Cedar Creek Water Quality Treatment Center .....	36
5.3.5. Prospect Area Water Quality Treatment Center Updates .....	37
5.3.6. Jeffersontown Water Quality Treatment Center .....	37
5.3.7. Other Water Quality Treatment Centers .....	37
5.4. CMOM Activity Schedule .....	37
<b>SECTION 6: PROJECT WATERWAY IMPROVEMENTS NOW (WIN) PERFORMANCE OVERVIEW.....</b>	<b>43</b>
6.1. Combined Sewer Overflow Reduction and Sanitary Sewer Overflow Abatement Activities .....	43
6.1.1. Sanitary Sewer Overflow Elimination Activities .....	43
6.1.2. Combined Sewer Overflow Reduction and Control Activities .....	43
6.2. Systemwide Performance .....	43
6.2.1. Rainfall .....	43
6.3. Water Quality Treatment Center Performance .....	44
6.3.1. Bypasses .....	44
6.3.2. Jeffersontown Water Quality Treatment Center .....	44
6.3.3. Phosphorus Monitoring at the Prospect WQTCs .....	44
6.4. Combined Sewer Overflow Performance .....	44
6.4.1. Authorized Discharges – Wet Weather CSOs .....	44
6.4.2. Unauthorized Discharges – Dry Weather CSOs .....	44
6.4.3. CSO Flow Monitoring Quality Improvement .....	46
6.5. Collection System Overflow Performance .....	50
6.5.1. Unauthorized Discharges to Waters of US .....	50
6.5.2. Overflows to the Exterior .....	50
6.5.3. Overflows to Interior .....	50
6.6. Gravity Line Preventive Maintenance (GLPM) .....	50
<b>APPENDICES .....</b>	<b>52</b>



## **TABLES**

Table 1.1. Morris Forman WQTC Permit Compliance .....	6
Table 2.1. Rain Event Inspection Routes.....	17
Table 2.2. Hauled Volumes in Gallons.....	18
Table 3.1. Green Program Projects – Current Reporting Period .....	21
Table 4.1. Metro TV Broadcasts .....	33
Table 6.1 Bypass Events – Current Reporting Period .....	44
Table 6.2. Bypass Summary – Current Reporting Period.....	45
Table 6.3. Unauthorized Discharges – Dry Weather CSOs.....	45
Table 6.4. Dry and Wet Weather SSOs by Cause – Unauthorized Discharges to Waters of US .....	50
Table 6.5. Rolling Quarterly GLPM Performance with Targets.....	51

## **FIGURES**

Figure 1.1. Morris Forman WQTC – Plant Flows and Associated CSO Activations – April .....	11
Figure 1.2. Morris Forman WQTC – Plant Flows and Associated CSO Activations – May.....	12
Figure 1.3. Morris Forman WQTC – Plant Flows and Associated CSO Activations – June.....	13
Figure 1.4. NMC Quarterly Commitments Schedule.....	14
Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule.....	23
Figure 5.1. CMOM Quarterly Commitments Schedule .....	38
Figure 6.1. Daily Average Rainfall by Month.....	43
Figure 6.2. CSO Flow Monitoring Quality Improvement Status – Phase 1.....	48
Figure 6.3. CSO Flow Monitoring Quality Improvement Status – Phase 2.....	49

## **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 FLOW MONITORING QUALITY IMPROVEMENT**

### **APPENDIX G CSO108 SEMI-ANNUAL REPORT**

## **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 fifty-fifth Quarterly Report submitted in accordance with Paragraph 29 of the Amended Consent Decree. This report covers the time period from April 1, 2019, through June 30, 2019. The structure for this report is outlined as follows:

**Section 1: Program Activities for Nine Minimum Controls (NMC)** – 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 (SORP)** – 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 (DAP)** – 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 (CMOM) 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 for continued compliance with the Amended Consent Decree.

**Section 6: Project Waterway Improvements Now (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.

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## **SECTION 1: PROGRAM ACTIVITIES FOR NINE MINIMUM CONTROLS (NMC)**

### **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 Waterway Improvements Now (WIN) website, available at [www.msprojectwin.org](http://www.msprojectwin.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 the Real Time Control (RTC) system. During this reporting period, approximately 736 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 Table 1.2 at the end of this section for a detailed report.

The following identifies on-going activities; those completed during the current period; and those anticipated to be completed during the next period:

#### RTC Integration

- MSD and the RTC consultant continue to implement the wet weather standard operating procedures (SOPs) 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, MSD and the RTC consultant continue to monitor and evaluate the performance of the RTC system against operational objectives and issue updates to configurations and site tuning as necessary to improve performance of the recently integrated facilities and Csoft 4.
- MSD and the RTC consultant completed development of the RTC programming guidance for the Nightingale PS (NGPS) facility and completed the build of the Csoft model for NGPS and Clifton Heights CSO Basin.
- MSD and the RTC consultant integrated the NGPS facility, the Clifton Heights CSO Basin, and the upgraded Ashland in-line storage facility into the RTC system.
- MSD has reviewed the draft Portland CSO Basin RTC SOP, continued development of a filling and dewatering strategy chapter for inclusion in the RTC SOP manual, and began updating the site-by-site quick reference guide of expected site behaviors under the various RTC operating modes for use by operations personnel monitoring the system.
- MSD has continued development of programming for local automatic operation of the Southwestern Parkway CSO Basin and the Portland CSO Basin.

- During the next reporting period, MSD will continue implementing RTC SOPs and validating operations of the Southwestern PS (SWPS), Southwestern Sluice Gates (SWSG), Southwestern Outfall Retention (SWOR1 and SWOR2), and the Bells Lane Wet Weather Treatment Facility in preparation for commissioning these sites into RTC in the coming months. MSD will continue developing the RTC SOP for the Portland CSO Basin and the filling and dewatering chapter of the SOP manual. MSD will begin developing a master programming guide for RTC facilities to document existing programming and parameters at each facility as a reference to ensure long-term continuity of the RTC system. MSD will continue programming at the Southwestern Parkway and Portland CSO Basins.

#### 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 utilized to their optimal 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 to implement hardware, software, and set-point changes as applicable on a site-by-site basis.
- MSD and the RTC consultant continue to evaluate the performance of the RTC system including server performance and data transfers. During this period, MSD worked to resolve occasional OPC server errors resulting in instances of communication failure that cause temporary Csoft unavailability and began investigating impacts for system backups that slow the network and on occasion cause system unavailability.
- MSD and the RTC consultant updated flow under the gate equation parameters written to the SWOR2 programmable logic controller (PLC) during cold startup that were affecting calculations and causing oscillation of the gates and dam.
- MSD and the RTC consultant updated the Csoft model representation of the Middle Fork Interceptor to better reflect observed flow conditions after rain events and improvements to the Starkey PS and CSO020 model representation. Instrumentation at CSO108 was also incorporated in the RTC.
- The RTC consultant and MSD operations personnel developed flow equations to determine pumped flow rates at NGPS and Clifton Heights to serve as backup to the existing force main mag meters.
- Replaced and repaired flow meters on the Beargrass Interceptor related to Logan CSO Basin dewatering and the Middle Fork Interceptor related to dewatering of the Clifton Heights CSO Basin.
- The Ashland RTC Facility Upgrade project attained substantial completion status in June 2019 and is back in operation.
- Adjusted control parameters at SOR1 to reduce gate oscillation due to waves from inflatable gate at Main Diversion Structure and implemented downstream level set-point rule in the event of temporary communication failure with MFWQTC.
- MSD and the RTC consultant replaced the Crystal report based auto-report tool with the Hydro-web RTC dashboard for developing and reporting RTC related storage.
- MSD will continue to monitor the RTC system to ensure proper operation and further refine operations of the RTC system as performance issues are observed. MSD and the RTC consultant will continue to refine the local site tuning of the SOR1, Logan CSO Basin, Clifton Heights CSO Basin,

and NGPS facilities as needed based on performance during varying rain events. MSD will continue to improve and automate operations of the SWPS, SWSG/SWOR1, and the Bells Lane Wet Weather Treatment Facility. MSD and the RTC consultant will evaluate use of the Hydro-web dashboard and begin transferring storage data to the PI Historian.

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

#### Plant Outages

The East and West Headworks were in service during the reporting period. Channels were taken out of service due to low flow as appropriate. Channel Two and Three of the West Headworks was taken out of service the majority of the reporting period for contractor work. The Final Effluent Pump Station (FEPS) was in service 50 days of the reporting period, limiting plant flow to 205 MGD. Flows at Morris Forman WQTC were sustained between 70 and 150 MGD, with some exceptions discussed below, before allowing flow to bypass secondary treatment during the reporting period. Flows are shown in Figures 1.1 through 1.3.

#### Morris Forman WQTC Projects

- Morris Forman WQTC High Yard Modifications – Project reached final completion during the last reporting period. Guarantee work is ongoing. Final closeout is expected in the next reporting period.
- Morris Forman WQTC Headworks Replacement – This project modified the existing preliminary treatment processes. This project reached final completion during the last reporting period.
- Morris Forman WQTC Oxygen Generation Plants 1 and 2 Replacement – Final completion was achieved during the last reporting period.
- MCC Replacement for Batteries A & B Clarifiers – Preliminary engineering report was completed in the third quarter of FY19. Design is currently on hold.
- Morris Forman WQTC Truck Unloading Station - Design is completed and construction is planned for the second quarter of FY20.
- Morris Forman WQTC Primary Sludge Line Replacement Project – This project will replace two old sludge lines between the primary sludge pump station building and the digesters. The project was advertised for bid and awarded during this reporting period. Construction is expected to start in the next reporting period.
- Morris Forman WQTC Cake Pump, Phase II – This project will add a larger cake pump to the existing screw and pump conveyance systems for additional cake solids conveyance to the cake truck load out for offsite disposal. The project will also provide modifications to the East Cake Truck Bay to allow this second truck bay to be available for cake solids load out for offsite disposal. The project will add a third means for cake solids transfer to the load out bay and allow two trucks to be loaded from the West and East truck bay areas. The design phase was completed during this reporting period. The project was advertised for bid during this reporting period and the construction contract is expected to be awarded in the next reporting period.

Morris Forman WQTC Performance

Figures 1.1 through 1.3 located at the end of this section illustrate performance in maximizing flow during wet weather to 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 flows 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 Ohio River backwater effects 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. 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.

On multiple occasions shown in Figures 1.1, 1.2, and 1.3, secondary effluent flow fell slightly below 120 MGD when FEPS was in service. MSD is investigating options for more reliable plant telemetry to reduce these occurrences.

Morris Forman effluent compliance for the previous three months is summarized in Table 1.1, where a “√” indicates compliance and an “X” indicates noncompliance. MSD continues to employ additional solids processing methods, including dewatered cake and an outside vendor to assist with solids handling in addition to purchasing additional liquid oxygen in an effort to meet permit requirements.

**Table 1.1. Morris Forman WQTC Permit Compliance**

PARAMETER	APRIL	MAY	JUNE
Ammonia Nitrogen, 30 Day Secondary Effluent	√	√	√
Ammonia Nitrogen, 7 Day Secondary Effluent	√	√	√
BOD, 30 Day Secondary Effluent	X	X	X
BOD, 7 Day Secondary Effluent	X	X	X
BOD, Percent Removal	X	X	√
Chlorine, Residual	√	√	√
Dissolved Oxygen	√	X	√
Fecal Coliform, 30 Day Geomean	√	√	√
Fecal Coliform, 7 Day Geomean	√	√	√
pH	√	√	√
TSS, 30 Day Secondary Effluent	X	X	X
TSS, 7 Day Effluent	X	X	X
TSS, Percent Removal	X	X	X



#### **1.4. NMC ACTIVITY SCHEDULE**

NMC capital project milestones for the current reporting period as well as a look-ahead for the upcoming reporting period are provided in Figure 1.4.

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Table 1.2. Wet Weather Storage in the Morris Forman Sewer System via the RTC System

Event Number	Wet Weather Event			Rainfall			CSO Saved Volume (MG)										High River Levels	Comments	
	Start Date	End Date	Duration	Average*	Max**		SWPS SG Chamber (14.5)	SWOR2 (4.1)	Brady Lake and Executive Inn Storage (13.4)	SOR1 (20.6)	Ashland (1.0)	Ohio River Interceptor (4.1)	Sneads Branch (2.5)	Logan (17)	NGPS (7.7)	Clifton Heights (7.0)			Total (43.1)
				TRFD (in)	TRFD (in)	Rain Gauge													
2019-021	4/5/19 0:40	4/5/19 11:15	10:35:00	0.12	0.21	TR14	0.00	0.55	0.20	0.00	0.00	1.85	0.00	0.00	-	-	2.60	0	Small storm cells homogeneously distributed over the service area. The SWSG site was controlled manually. No storage at Ashland during facility upgrades to gates and check valves.
2019-022	4/7/19 6:25	4/8/19 11:40	29:15:00	0.31	0.69	TR04	12.00	3.55	4.40	5.05	0.00	3.95	1.30	9.95	-	-	40.20	0	Small back-to-back storm cells homogeneously distributed over the service area. No storage at Ashland during facility upgrades to gates and check valves. The SWSG site was controlled manually.
2019-024	4/12/19 6:30	4/12/19 14:40	8:10:00	0.05	0.16	TR05	0.00	0.40	0.35	0.00	0.00	1.35	0.10	0.30	-	-	2.50	0	Small storm cells homogeneously distributed over the service area. The SWSG site was controlled manually. No storage at Ashland during facility upgrades to gates and check valves.
2019-025	4/13/19 22:30	4/15/19 4:50	30:20:00	0.73	1.32	TR14	12.80	3.65	7.90	3.95	0.00	3.15	2.05	16.50	-	-	50.00	0	Moderate back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually. No storage at Ashland during facility upgrades to gates and check valves.
2019-026	4/18/19 21:30	4/22/19 13:00	87:30:00	2.20	4.09	TR05	16.75	4.75	13.70	11.35	0.00	7.25	2.00	15.40	-	-	71.20	0	Moderate back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually. No storage at Ashland during facility upgrades to gates and check valves.
2019-027	4/22/19 13:00	4/23/19 15:30	26:30:00	0.00	0.02	TR11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0	Analyzed as part of rainfall event #2019-026.
2019-028	4/25/19 16:50	4/26/19 20:50	28:00:00	0.68	0.87	TR13	12.65	3.85	6.90	13.30	0.00	4.90	1.30	16.75	-	-	59.65	0	Large back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually. No storage at ashland during facility upgrades to gates and check valves.
2019-029	5/1/19 19:45	5/5/19 6:20	82:35:00	1.74	2.41	TR14	17.10	4.85	9.95	18.30	0.00	3.95	1.65	18.05	-	-	73.85	0	Large back-to-back storm cells heterogeneously distributed over the service area. The SWSG site was controlled manually. No storage at ashland during facility upgrades to gates and check valves.
2019-031	5/5/19 18:15	5/6/19 17:55	23:40:00	0.01	0.02	TR07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0	Analyzed as part of rainfall event #2019-029.
2019-032	5/11/19 19:50	5/12/19 20:15	24:25:00	0.27	0.33	TR11	0.70	0.50	0.35	0.00	0.00	1.45	0.05	0.20	-	-	3.25	0	Small storm cells homogeneously distributed over the service area. No storage at ashland during facility upgrades to gates and check valves. The SWSG site was controlled manually.
2019-034	5/19/19 13:40	5/20/19 8:35	18:55:00	0.35	0.47	TR13	4.85	1.60	2.20	2.20	0.00	2.90	0.40	3.10	-	-	17.25	0	Moderate back-to-back storm cells homogeneously distributed over the service area. No storage at ashland during facility upgrades to gates and check valves. The SWSG site was controlled manually.
2019-036	5/23/19 10:05	5/24/19 3:50	17:45:00	0.07	0.16	TR14	0.00	0.00	0.05	0.00	0.00	1.95	0.05	0.85	-	-	2.90	0	Small back-to-back storm cells heterogeneously distributed over the service area. No storage at ashland during facility upgrades to gates and check valves. The SWSG site was controlled manually.
2019-037	5/26/19 14:25	5/27/19 3:30	13:05:00	0.53	0.78	TR05	2.25	1.40	2.35	9.25	0.00	3.45	0.30	6.10	-	-	25.10	0	Moderate storm cells homogeneously distributed over the service area. The SWSG site was controlled manually. No storage at Ashland during facility upgrades to gates and check valves.

Table 1.2. Wet Weather Storage in the Morris Forman Sewer System via the RTC System

Event Number	Wet Weather Event			Rainfall			CSO Saved Volume (MG)										High River Levels	Comments	
	Start Date	End Date	Duration	Average*	Max**		SWPS SG Chamber (14.5)	SWOR2 (4.1)	Brady Lake and Executive Inn Storage (13.4)	SOR1 (20.6)	Ashland (1.0)	Ohio River Interceptor (4.1)	Sneads Branch (2.5)	Logan (17)	NGPS (7.7)	Clifton Heights (7.0)			Total (43.1)
				TRFD (in)	TRFD (in)	Rain Gauge													
2019-039	5/29/19 9:50	5/31/19 1:25	39:35:00	1.16	1.75	TR14	11.15	2.45	4.45	15.90	0.00	4.10	0.65	11.50	-	-	50.20	0	Large back-to-back storm cells homogeneously distributed over the service area. No storage at Ashland during facility upgrades to gates and check valves. The SWSG site was controlled manually.
2019-040	6/5/19 3:20	6/7/19 14:10	58:50:00	0.81	0.96	TR14	8.75	2.60	4.35	14.45	0.00	3.15	0.70	6.25	2.90	-	43.15	0	Large back-to-back storm cells homogeneously distributed over the service area. The NGPS site was added to the RTC system. No storage at Ashland during facility upgrades to gates and check valves. The SWSG site was controlled manually.
2019-041	6/7/19 21:25	6/11/19 15:40	90:15:00	2.11	2.86	TR12	13.05	3.70	7.00	27.10	0.00	5.55	1.50	16.90	5.30	-	80.10	0	Very Large back-to-back storm cells heterogeneously distributed over the service area. The SWSG site was controlled manually. No storage at Ashland during facility upgrades to gates and check valves.
2019-044	6/16/19 6:05	6/21/19 19:40	133:35:00	2.94	3.63	TR05	13.00	3.65	8.80	14.35	0.90	2.95	1.90	19.45	1.75	6.35	73.10	0	Very Large back-to-back storm cells heterogeneously distributed over the service area. The Clifton Heights site was added to the RTC system. The SWSG site was controlled manually.
2019-045	6/21/19 19:40	6/23/19 16:35	44:55:00	0.88	1.29	TR04	32.00	9.05	16.55	34.45	2.20	7.60	2.20	28.60	1.45	7.25	141.35	0	Large back-to-back storm cells heterogeneously distributed over the service area. The SWSG site was controlled manually.
2019-046	6/23/19 16:35	6/27/19 15:45	95:10:00	1.07	1.55	TR14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	Analyzed as part of rainfall event #2019-045.
<b>TOTAL</b>							157.05	46.55	89.50	169.65	3.10	59.50	16.15	169.90	11.40	13.60	736.40		

\* Average total rainfall depth based on rain gauge TR04, TR05, TR11, TR12, TR13, TR14 and TR15.  
 \*\* Maximum total rainfall depth measurement and measurement location during the wet weather event.  
 \*\*\* MDS is always controlled manually by operators.

Figure 1.1. Morris Forman WQTC – Plant Flows and Associated CSO Activations – April

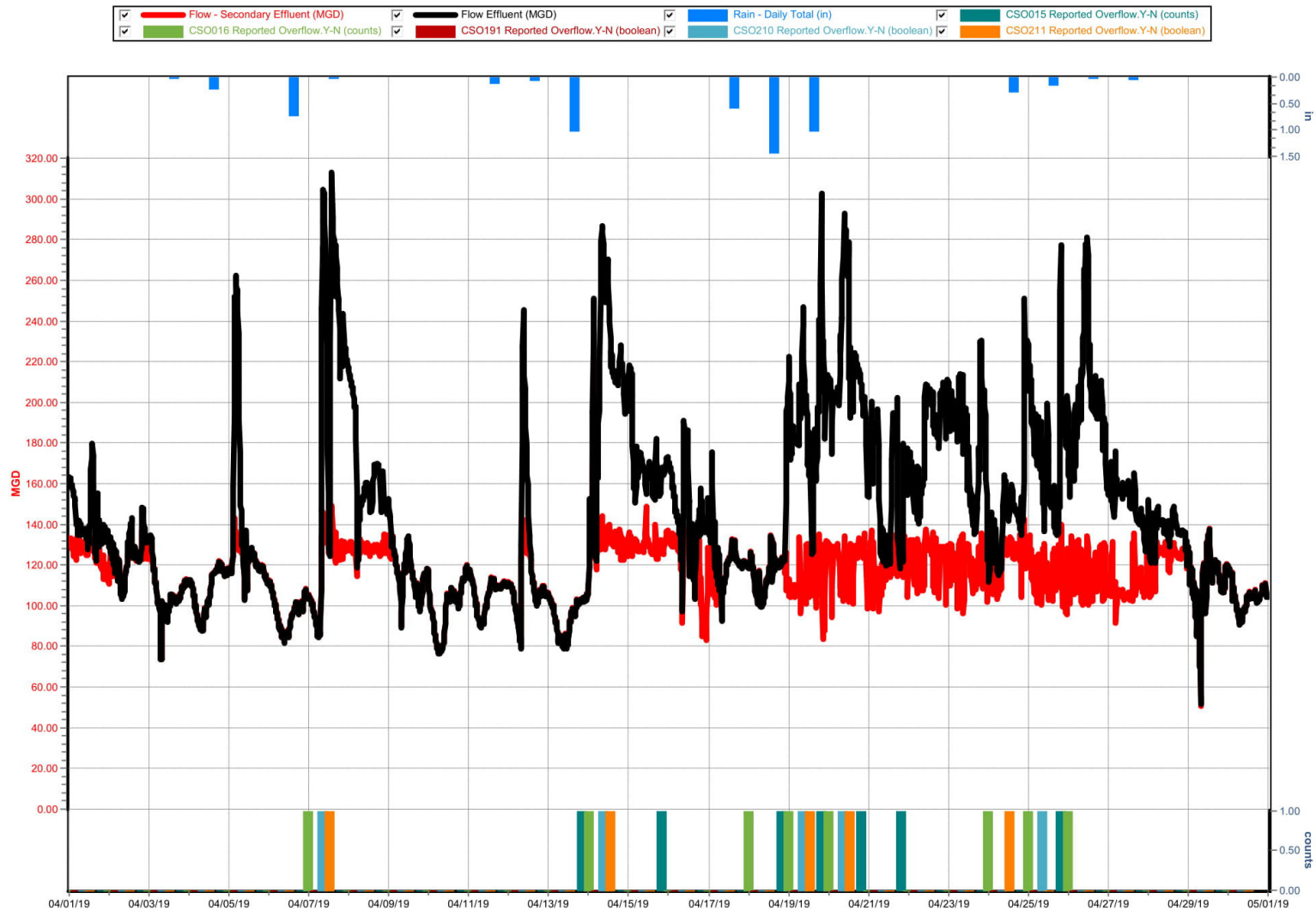


Figure 1.2. Morris Forman WQTC – Plant Flows and Associated CSO Activations – May

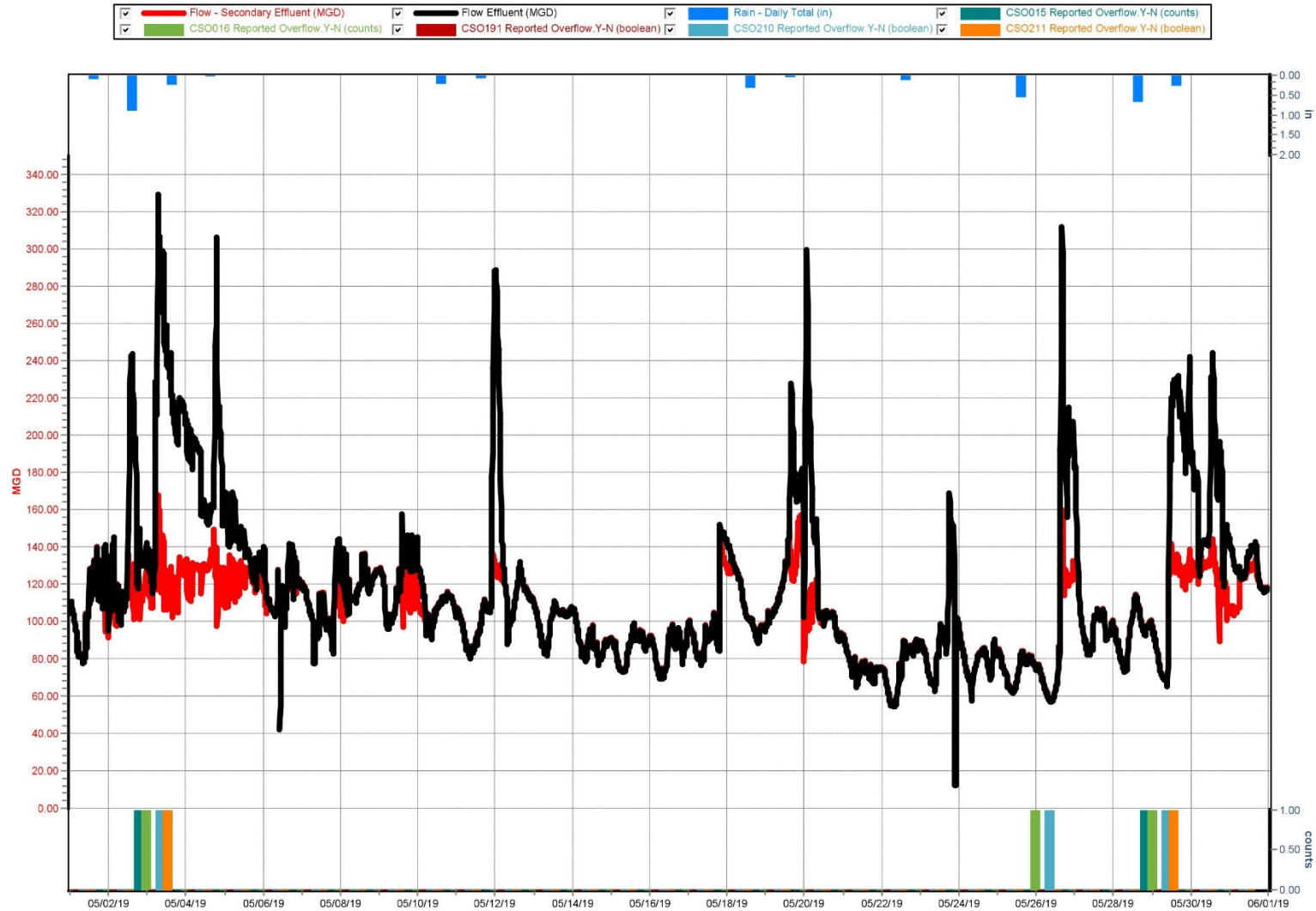


Figure 1.3. Morris Forman WQTC – Plant Flows and Associated CSO Activations – June

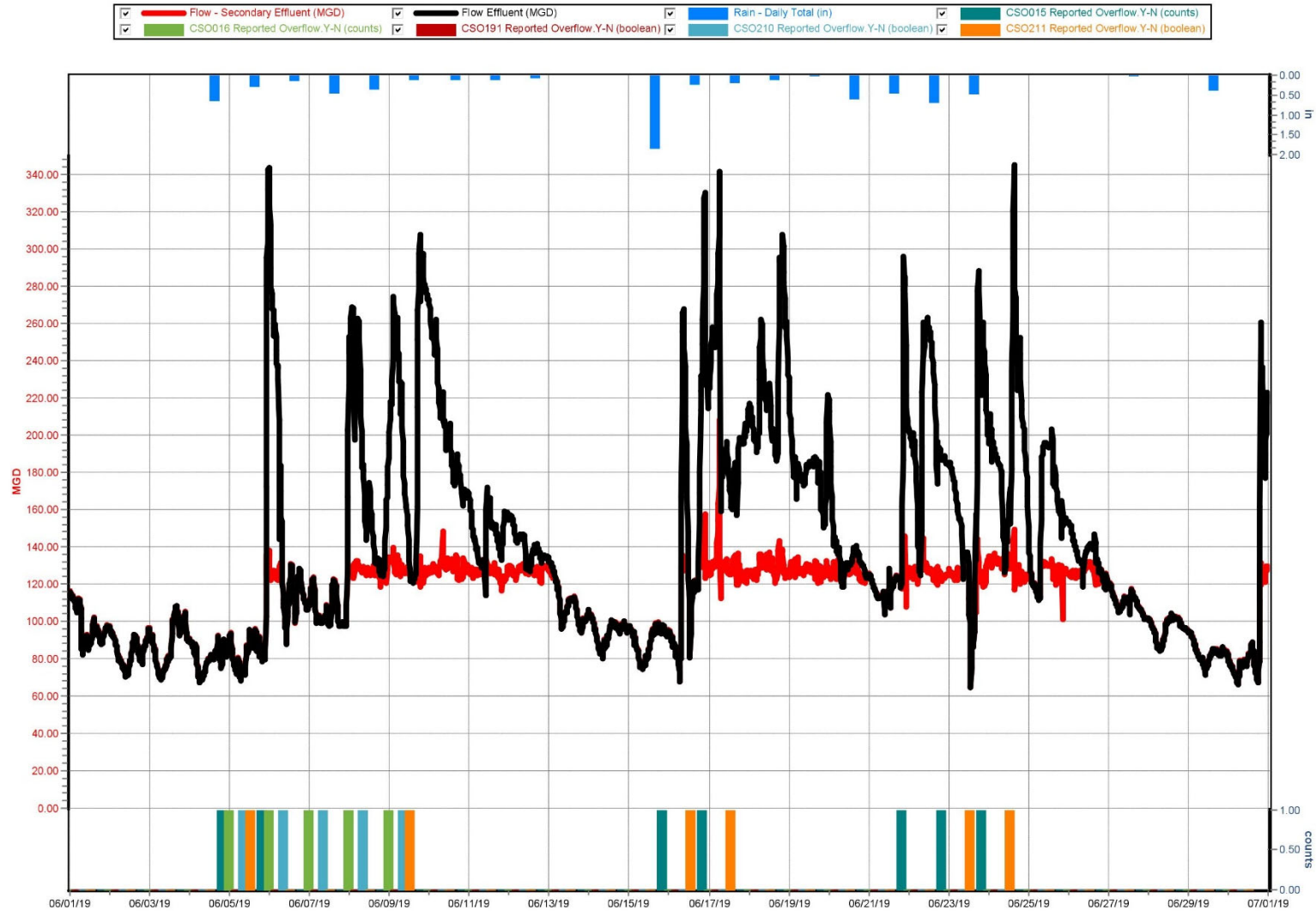




Figure 1.4. NMC Quarterly Commitments Schedule

Budget ID	Task Name	% Complete	Start	Finish	Qtr 1, 2019			Qtr 2, 2019		
					Jan	Feb	Mar	Apr	May	Jun
	<b>MSD NMC Quarterly Commitments Schedule</b>	<b>80%</b>	<b>Fri 8/15/14</b>	<b>Mon 7/12/21</b>						
D15017	MFWQTC Centrifuge Electrical Controls	100%	Wed 11/12/14	Fri 3/15/19						
D15017	CLOSEOUT	100%	Wed 12/6/17	Fri 3/15/19						
F14183	MFWQTC FEPS Generator	100%	Fri 6/5/15	Fri 3/15/19						
F14183	CLOSEOUT	100%	Fri 5/25/18	Fri 3/15/19						
F13016	MF High Yard Modification	93%	Thu 7/2/15	Thu 6/27/19						
F13016	CLOSEOUT	71%	Fri 8/31/18	Thu 6/27/19						
F09510	MF OGA Plants 1 and 2 Replacement	87%	Mon 9/14/15	Fri 9/13/19						
F09510	CLOSEOUT	45%	Sat 11/17/18	Fri 9/13/19						
F13041	Vactor Pit	99%	Sun 11/1/15	Tue 4/16/19						
F13041	CLOSEOUT	97%	Fri 11/10/17	Tue 4/16/19						
H16357	SWOR2 Generator	85%	Fri 4/1/16	Wed 8/28/19						
H16357	CLOSEOUT	78%	Fri 10/20/17	Wed 8/28/19						
F16003	Ashland RTC Facility Upgrades	89%	Fri 4/1/16	Mon 3/16/20						
F16003	CONSTRUCTION	85%	Mon 4/16/18	Mon 5/20/19						
H17005	FY18 RTC Support	100%	Fri 7/1/16	Sat 1/12/19						
H17005	CLOSEOUT	100%	Fri 7/1/16	Sat 1/12/19						
F17079	Southwestern Sluice Gate Replacement	95%	Mon 10/3/16	Thu 9/26/19						
F17079	CLOSEOUT	55%	Fri 8/31/18	Thu 9/26/19						
D17131	MFWQTC Biosolids Processing Engineering Services	51%	Mon 1/2/17	Mon 11/4/19						
D17131	Engineering Services	49%	Mon 4/24/17	Mon 11/4/19						
D17047	MF Brady Lake and Executive Inn Gate Study	88%	Fri 9/1/17	Thu 7/25/19						
D17047	CLOSEOUT	70%	Mon 6/25/18	Thu 7/25/19						
H16076	Sneads Branch Pump Replacement	15%	Thu 1/11/18	Tue 11/24/20						
H16076	DESIGN	0%	Tue 1/1/19	Mon 6/3/19						
D18122	FY19 MFWQTC Upgrade PLCs	46%	Wed 1/31/18	Mon 8/5/19						
D18122	EQUIPMENT PROCUREMENT	45%	Mon 10/1/18	Sun 6/30/19						
F14182	MFWQTC FEPS Pump Repair and Motor	73%	Wed 1/31/18	Thu 8/22/19						
F14182	EQUIPMENT AND SERVICES PROCUREMENT	73%	Tue 3/6/18	Thu 8/22/19						
D18129	MFWQTC Secondary Electrical MCC Replacement Study	100%	Wed 1/31/18	Thu 1/31/19						
D18129	DESIGN	100%	Mon 10/22/18	Fri 1/18/19						

Data Date: 03/31/19      NMC Project █      Project Progress █

Percent complete is calculated based on phase duration. Page 1



Figure 1.4. NMC Quarterly Commitments Schedule

Budget ID	Task Name	% Complete	Start	Finish	Qtr 1, 2019			Qtr 2, 2019		
					Jan	Feb	Mar	Apr	May	Jun
D18129	CLOSEOUT	100%	Sat 1/26/19	Thu 1/31/19	■					
F18322	Southwestern Gates Chamber Support Wall	61%	Thu 3/1/18	Fri 4/10/20	■	■	■	■	■	■
F18322	CONSTRUCTION	21%	Sat 12/15/18	Sat 6/15/19	■	■	■	■	■	■
D15020	MFWQTC Cake Pump Phase II	40%	Mon 3/12/18	Mon 7/12/21	■	■	■	■	■	■
D15020	DESIGN	79%	Tue 8/7/18	Wed 6/5/19	■	■	■	■	■	■
D15020	CONSTRUCTION	0%	Wed 6/19/19	Mon 9/14/20						■
H18207	FY18 CSO IOAP and Priv Prop Initiatives	86%	Sun 4/1/18	Thu 5/30/19	■	■	■	■	■	■
H18207	CLOSEOUT	86%	Wed 4/4/18	Thu 5/30/19	■	■	■	■	■	■
H18333	Bells Lane WWTF EQ Basin Modifications	92%	Wed 4/18/18	Sun 4/21/19	■	■	■	■	■	■
H18333	CLOSEOUT	69%	Thu 2/14/19	Sun 4/21/19		■	■	■	■	■
H19259	FY19 NMC No 3 Local Limits for Regional WQTCs	73%	Sun 7/1/18	Sun 6/30/19	■	■	■	■	■	■
H19259	CLOSEOUT	73%	Wed 8/1/18	Sun 6/30/19	■	■	■	■	■	■
D19044	MFWQTC Primary Sludge Pump Compressor	69%	Sun 7/1/18	Sun 6/30/19	■	■	■	■	■	■
D19044	EQUIPMENT PROCUREMENT	69%	Fri 11/16/18	Fri 5/31/19	■	■	■	■	■	■
D19044	CLOSEOUT	0%	Mon 6/24/19	Sun 6/30/19						■
D19242	FY19 Hazen DRGWQTC Engineering Support	57%	Sun 7/1/18	Sun 6/30/19	■	■	■	■	■	■
D19242	CLOSEOUT	57%	Sat 12/1/18	Sun 6/30/19	■	■	■	■	■	■
D19241	FY19 HDR MFWQTC Engineering Support	63%	Sun 7/1/18	Sun 6/30/19	■	■	■	■	■	■
D19241	CLOSEOUT	62%	Fri 11/2/18	Sun 6/30/19	■	■	■	■	■	■
D19243	FY19 Jacobs MFWQTC Engineering Support	72%	Sun 7/1/18	Sun 6/30/19	■	■	■	■	■	■
D19243	CLOSEOUT	71%	Fri 8/17/18	Sun 6/30/19	■	■	■	■	■	■
H19063	FY19 NMC No 3 Support	57%	Sun 7/1/18	Sun 6/30/19	■	■	■	■	■	■
H19063	CLOSEOUT	57%	Sat 12/1/18	Sun 6/30/19	■	■	■	■	■	■
H16039	FY19 NMC RTC	57%	Sun 7/1/18	Sun 6/30/19	■	■	■	■	■	■
H16039	CLOSEOUT	57%	Sat 12/1/18	Sun 6/30/19	■	■	■	■	■	■
D19228	FY19 Strand CCWQTC Engineering Support	75%	Sun 7/1/18	Sun 6/30/19	■	■	■	■	■	■
D19228	CLOSEOUT	75%	Fri 7/6/18	Sun 6/30/19	■	■	■	■	■	■
D18127	DRGWQTC Hypo Containment	60%	Sat 12/1/18	Mon 5/11/20	■	■	■	■	■	■
D18127	DESIGN	100%	Sat 12/15/18	Mon 2/25/19	■	■	■			
D18127	CONSTRUCTION	26%	Tue 2/26/19	Sun 7/14/19			■	■	■	■

Data Date: 03/31/19      NMC Project ■      Project Progress ■

Percent complete is calculated based on phase duration. Page 2

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## **SECTION 2: PROGRAM ACTIVITIES FOR SEWER OVERFLOW RESPONSE PROTOCOL (SORP)**

### **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. Modifications were made to the document in 2016 to reflect the elimination of the Jeffersontown WQTC, and were approved on July 21, 2017. 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.msprojectwin.org](http://www.msprojectwin.org). The following activities were performed during this reporting period.

### **2.2. OVERFLOW MANAGEMENT AND FIELD DOCUMENTATION**

MSD monitored approximately 143 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, 69 unauthorized discharges were identified through route reconnaissance. Inspection routes were run during rain events, as described in Table 2.1.

The West County route is monitored via telemetry. During this reporting period, MSD determined that the inspection work orders should no longer be created to document this monitoring. However, discharge work orders will be created as required based on telemetry observations.

MSD Operations staff hauled 140,000 gallons due to capacity-related issues during this reporting period. Hauling was also initiated due to other issues as indicated in Table 2.2.

**Table 2.1. Rain Event Inspection Routes**

<b>DATE</b>	<b>ENGINEERING</b>	<b>HIKES POINT</b>	<b>JTOWN</b>	<b>JTOWN &amp; FERN CREEK</b>	<b>MIDDLE FORK &amp; MUDDY FORK</b>
April 19, 2019	-	X	X	X	X
May 3, 2019	X	X	X	X	X
May 29, 2019	-	X	X	X	X
June 9, 2019	-	X	X	X	X
June 18, 2019	-	X	X	X	X

**Table 2.2. Hauled Volumes in Gallons**

<b>PROBLEM</b>	<b>APR</b>	<b>MAY</b>	<b>JUN</b>
LACK OF SYSTEM CAPACITY	60,000	16,800	63,200
STRUCTURAL FAILURE	3,000	0	12,000
MECHANICAL FAILURE	15,000	0	0

### **2.3. STAFF TRAINING AND COMMUNICATION**

MSD continued training through the online training delivery system, which allows more flexibility for employees to complete training at convenient times during the quarter and to integrate SORP training with new employee and contractor orientation.

Three modules were delivered under Assessment, Mitigation & Documentation:

- Assessment & Minimum Documentation
- Mitigation
- Q54 Updates (updates related to progress under the IOAP and projects under the CMOM and NMC programs)

The content was delivered to 260 staff in Operations and Engineering.

Third quarter training also utilizes the online format, and includes four modules under Public Notification & Overflow Cleanup:

- Public Notification: Event-Based Activities
- Public Notification: Programmatic Activities
- Overflow Cleanup
- Q55 Updates (updates related to progress under the IOAP and projects under the CMOM and NMC programs)

These modules will be reviewed and updated as needed for delivery during the next reporting period. An update module provides continued updates related to progress under the IOAP and projects under the CMOM and NMC programs and will also be updated for delivery.

## **SECTION 3: PROGRAM ACTIVITIES FOR DISCHARGE ABATEMENT PLANS (DAP)**

### **3.1. INTEGRATED OVERFLOW ABATEMENT PLAN (IOAP)**

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 a Federal 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 (SSDP)**

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 (SSOP) 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 (ISSDP)**

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 document can be viewed on the MSD Project WIN website, available at [www.msprojectwin.org](http://www.msprojectwin.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 (SSDP)**

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 a Federal 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 approved document can be viewed on the MSD Project WIN website, available at [www.msprojectwin.org](http://www.msprojectwin.org).

## **3.3. CSO LONG TERM CONTROL PLAN (LTCP)**

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 (LTCP)**

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.msprojectwin.org](http://www.msprojectwin.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 (LTCP)**

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. The approved document can be viewed on the MSD Project WIN website, available at [www.msprojectwin.org](http://www.msprojectwin.org).

### **3.3.3. GREEN INFRASTRUCTURE PROGRAM UPDATE**

The intent of the Green Infrastructure Program is to provide additional overflow volume reduction benefits to complement LTCP projects. Projects are selected for incentive by providing high value for residual average annual overflow volume (AAOV) reduction based on the latest modeling results.

Green Infrastructure Program projects approved by the MSD Board are included in Table 3.1, including status during the current reporting period. While all projects listed in the table have been approved for construction, projects may not be completed due to individual project circumstances.

**Table 3.1. Green Program Projects – Current Reporting Period**

<b>PROJECT NAME</b>	<b>SEWERSHED</b>	<b>EST. AAOV REDUCTION (GAL)</b>	<b>INCENTIVE VALUE</b>	<b>STATUS</b>
1301 W. Main St.	CSO050	135,000	\$60,375	Design
Advance Distribution	CSO015	1,343,000	\$100,000	Construction
Brown Forman Distillery	CSO015	2,910,000	\$1,248,964	Pending
Brown Forman Shipping #3 Lot	CSO105	261,000	\$117,474	Design
CMF Parking Lot	CSO015	670,594	\$230,650	Design
JCTC Advanced Manufacturing Facility	CSO118	31,902	\$27,425	Construction
Paristown Pointe	CSO084	160,000	\$433,368	Construction
Passport Healthcare Campus	CSO105	645,780	\$351,780	Construction
Spalding Athletic Fields	CSO178	750,321	\$254,826	Construction
UofL Brook St. Phase II	CSO211	338,000	\$150,465	Construction
Urban Government Center Separation	CSO084	387,335	\$245,853	Design
West Market Phase II	CSO189 CSO019	395,000	\$185,030	Construction

## **3.4. DISCHARGE ABATEMENT PLAN PROJECT STATUS**

### **3.4.1. SANITARY SEWER DISCHARGE PLAN (SSDP)**

Per the current approved schedule, no SSDP projects were completed during the reporting period. Per the current approved schedule, no SSDP projects are anticipated to be completed or certified during the next reporting period.

### **3.4.2. COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN (LTCP)**

Per the current approved schedule, no CSO LTCP projects were completed during the current reporting period. Per the current approved schedule, no CSO LTCP projects are anticipated to be completed or certified during the next reporting period.

**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. A crosswalk of projects and associated overflows is provided in Appendix E.



Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

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

Activity Name	% Complete	Anticipated Finish	Actual Finish	2009 IOAP Completion	IOAP Modifications*	IOAP Project ID	Original Project Name	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>MSD IOAP ANNUAL SCHEDULE</b>																							
<b>LONG TERM CONTROL PLAN</b>	100%	Fri 1/1/21	Wed 7/1/09	Thu 12/31/20	Thu 12/31/20																		
<b>GREEN DEMONSTRATION PROJECTS</b>	85%	Thu 12/31/20	NA	Thu 12/31/20	Thu 12/31/20																		
Green Infrastructure Demonstration Projects	100%	Mon 12/19/11	Mon 12/19/11	Sat 12/31/11	Sat 12/31/11																		
Green Infrastructure Program	82%	Thu 12/31/20	NA	Thu 12/31/20	Thu 12/31/20																		
Waterway Protection Tunnel	75%	Thu 12/31/20	NA	Thu 12/31/20	Thu 12/31/20	L_OR_MF_155_M_09B_B_B_4 L_OR_MF_020_S_09B_B_A_8 L_OR_MF_083_M_09B_B_A_8 L_MI_MF_127_M_09B_B_A_8	13TH STREET AND ROWAN STREET STORAGE BASIN, STORY AVENUE AND MAIN STREET STORAGE BASIN, LEXINGTON ROAD AND PAYNE STREET STORAGE BASIN, I-64 AND GRINSTEAD CSO BASIN																
CSO058 In-Line Storage and Green Infrastructure	100%	Tue 12/23/14	Thu 12/18/14	Wed 12/31/14	Wed 12/31/14																		
CSO123 Downspout Disconnection	100%	Sun 12/30/12	Sun 12/30/12	Mon 12/31/12	Mon 12/31/12																		
CSO140 In-Line Storage & Green Infrastructure Controls	100%	Wed 12/23/15	Wed 12/23/15	Thu 12/31/15	Thu 12/31/15																		
CSO206 Sewer Separation	100%	Thu 12/12/13	Thu 12/12/13	Tue 12/31/13	Mon 12/30/13																		
Clifton Heights Storage Basin	100%	Sat 12/1/18	Sat 12/1/18	Mon 12/31/18	Mon 12/31/18																		
Bells Lane Wet Weather Treatment Facility	100%	Mon 7/24/17	Mon 7/24/17	Wed 12/31/14	Sat 9/30/17																		
Portland CSO Basin	92%	Wed 9/25/19	NA	Tue 12/31/19	Tue 12/31/19																		
Southwestern Parkway Storage Basin	100%	Fri 3/29/19	Fri 3/29/19	Mon 12/31/18	Sun 6/30/19																		

Approved 2009 IOAP [Pattern] IOAP Modifications [Pattern] Remaining Work [Pattern] Completed Work [Pattern]

Includes 2014 approval of 2012 IOAP Modification as well as all minor mod letter approvals to date.

Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

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

Activity Name	% Complete	Anticipated Finish	Actual Finish	2009 IOAP Completion	IOAP Modifications*	IOAP Project ID	Original Project Name	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>Central Relief Drain CSO In-Line Storage, Green Infrastructure &amp; Distributed Storage</b>	100%	Fri 11/30/18	Fri 11/30/18	NA	Mon 12/31/18																		
Central Relief Drain CSO In-Line Storage, Green Infrastructure & Distributed Storage	100%	Fri 11/30/18	Fri 11/30/18	NA	Mon 12/31/18	L_OR_MF_155_M_09B_B_4																	
<b>CSO160 In-Line Storage &amp; Green Infrastructure Controls</b>	100%	Thu 12/10/15	Thu 12/10/15	Thu 12/31/15	Thu 12/31/15																		
CSO160 In-Line Storage & Green Infrastructure Controls	100%	Thu 12/10/15	Thu 12/10/15	Thu 12/31/15	Thu 12/31/15	L_OR_MF_160_S_08_A_A_0	CSO160 SEWER SEPARATION																
<b>Adams Street Sewer Separation</b>	100%	Wed 11/28/12	Wed 11/28/12	Mon 12/31/12	Mon 12/31/12																		
Adams Street Sewer Separation	100%	Wed 11/28/12	Wed 11/28/12	Mon 12/31/12	Mon 12/31/12	L_OR_MF_172_S_09B_B_A_0	ADAMS STREET STORAGE BASIN																
<b>CSO190 Green Infrastructure Solution</b>	100%	Sun 12/31/17	Fri 12/29/17	Sun 12/31/17	Sun 12/31/17																		
CSO190 Green Infrastructure Solution	100%	Sun 12/31/17	Fri 12/29/17	Sun 12/31/17	Sun 12/31/17	L_OR_MF_190_S_09B_B_A_8	18TH AND NORTHWESTERN PKY. STORAGE BASIN																
<b>Southern Outfall In-Line Storage at 43rd St (SOR1) &amp; Morris Forman WQTC Headworks</b>	100%	Fri 11/30/18	Fri 11/30/18	Mon 12/31/18	Mon 12/31/18																		
Southern Outfall In-Line Storage at 43rd St (SOR 1)	100%	Fri 11/30/18	Fri 11/30/18	Mon 12/31/18	Mon 12/31/18																		
Southern Outfall In-Line Storage at 43rd St (SOR 1)	100%	Fri 11/30/18	Fri 11/30/18	Mon 12/31/18	Mon 12/31/18	L_OR_MF_211_M_13_B_A_8																	
<b>Morris Forman WQTC Headworks</b>	100%	Fri 11/30/18	Fri 11/30/18	Mon 12/31/18	Mon 12/31/18																		
Morris Forman WQTC Headworks	100%	Fri 11/30/18	Fri 11/30/18	Mon 12/31/18	Mon 12/31/18																		
Morris Forman WQTC Headworks	100%	Fri 11/30/18	Fri 11/30/18	Mon 12/31/18	Mon 12/31/18																		
<b>MF Main Diversion Structure</b>	100%	Wed 11/28/18	Wed 11/28/18	Mon 12/31/18	Mon 12/31/18																		
MF Main Diversion Structure	100%	Wed 11/28/18	Wed 11/28/18	Mon 12/31/18	Mon 12/31/18																		
<b>Nightingale Pump Station Replacement &amp; Storage</b>	100%	Thu 6/29/17	Thu 6/29/17	Sat 12/31/16	Fri 6/30/17																		
Nightingale Pump Station Replacement & Storage	100%	Thu 6/29/17	Thu 6/29/17	Sat 12/31/16	Fri 6/30/17	L_SO_MF_018_S_03_A_A	NIGHTINGALE PUMP STATION REPLACEMENT																
<b>Logan and Breckenridge Street Storage Basin</b>	100%	Wed 10/18/17	Wed 12/20/17	Sun 12/31/17	Sun 12/31/17																		
Logan and Breckenridge Street Storage Basin	100%	Wed 10/18/17	Wed 12/20/17	Sun 12/31/17	Sun 12/31/17	L_SO_MF_092_M_09B_B_D_8	CALVARY CREEKSIDE BASIN																
<b>CSO093 Structural Modifications &amp; Green Infrastructure</b>	100%	Wed 12/23/15	Wed 12/23/15	Thu 12/31/15	Thu 12/31/15																		
CSO093 Structural Modifications & Green Infrastructure	100%	Wed 12/23/15	Wed 12/23/15	Thu 12/31/15	Thu 12/31/15	L_SO_MF_093_S_08_A_A_0	CSO093 SEWER SEPARATION																
<b>CSO108 Dam Modifications</b>	100%	Thu 12/30/10	Thu 12/30/10	Fri 12/31/10	Fri 12/31/10																		
CSO108 Dam Modifications	100%	Thu 12/30/10	Thu 12/30/10	Fri 12/31/10	Fri 12/31/10	L_SO_MF_108_S_09A_B_A_4																	
<b>Story Avenue and Spring Street Green Infrastructure</b>	100%	Tue 12/20/16	Tue 12/20/16	Sat 12/31/16	Sat 12/31/16																		
Story Avenue and Spring Street Green Infrastructure	100%	Tue 12/20/16	Tue 12/20/16	Sat 12/31/16	Sat 12/31/16	L_SO_MF_130_S_09B_B_A_8	STORY AVENUE AND SPRING STREET STORAGE BASIN																

Approved 2009 IOAP ██████████ IOAP Modifications ██████████ Remaining Work ██████████ Completed Work ██████████

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Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

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

Activity Name	% Complete	Anticipated Finish	Actual Finish	2009 IOAP Completion	IOAP Modifications*	IOAP Project ID	Original Project Name	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>FLOOD PUMP STATION PROJECTS</b>	<b>100%</b>	<b>Wed 12/31/14</b>	<b>Thu 12/18/14</b>	<b>Wed 12/31/14</b>	<b>Wed 12/31/14</b>																		
<b>27th Street Flood Pump Station DWO Elimination</b>	<b>100%</b>	<b>Fri 6/28/13</b>	<b>Fri 6/28/13</b>	<b>Sun 6/30/13</b>	<b>Sun 6/30/13</b>																		
27th Street Flood Pump Station DWO Elimination	100%	Fri 6/28/13	Fri 6/28/13	Sun 6/30/13	Sun 6/30/13	L_OR_MF_019_S_03_A_A																	
<b>34th Street Flood Pump Station DWO Elimination</b>	<b>100%</b>	<b>Mon 6/11/12</b>	<b>Mon 6/11/12</b>	<b>Mon 12/31/12</b>	<b>Mon 12/31/12</b>																		
34th Street Flood Pump Station DWO Elimination	100%	Mon 6/11/12	Mon 6/11/12	Mon 12/31/12	Mon 12/31/12	L_OR_MF_019_S_03_A_B																	
<b>4th Street Flood Pump Station DWO Elimination</b>	<b>100%</b>	<b>Fri 6/15/12</b>	<b>Fri 6/15/12</b>	<b>Mon 12/31/12</b>	<b>Mon 12/31/12</b>																		
4th Street Flood Pump Station DWO Elimination	100%	Fri 6/15/12	Fri 6/15/12	Mon 12/31/12	Mon 12/31/12	L_OR_MF_022_M_03_A_A																	
<b>Shawnee Flood Pump Station DWO Elimination</b>	<b>100%</b>	<b>Tue 6/18/13</b>	<b>Tue 6/18/13</b>	<b>Sun 6/30/13</b>	<b>Sun 6/30/13</b>																		
Shawnee Flood Pump Station DWO Elimination	100%	Tue 6/18/13	Tue 6/18/13	Sun 6/30/13	Sun 6/30/13	L_OR_MF_189_M_03_A_A																	
<b>17th Street Flood Pump Station DWO Elimination</b>	<b>100%</b>	<b>Thu 12/18/14</b>	<b>Thu 12/18/14</b>	<b>Wed 12/31/14</b>	<b>Wed 12/31/14</b>																		
17th Street Flood Pump Station DWO Elimination	100%	Thu 12/18/14	Thu 12/18/14	Wed 12/31/14	Wed 12/31/14	L_OR_MF_190_S_03_A_A																	
<b>SANITARY SEWER DISCHARGE PLAN</b>	<b>62%</b>	<b>Tue 12/31/24</b>	<b>NA</b>	<b>Tue 12/31/24</b>	<b>Tue 12/31/24</b>																		
<b>BEARGRASS CREEK MIDDLE FORK AREA</b>	<b>66%</b>	<b>Tue 12/31/24</b>	<b>NA</b>	<b>Tue 12/31/24</b>	<b>Tue 12/31/24</b>																		
<b>Goose Creek PS Improvements and Wet Weather Storage</b>	<b>58%</b>	<b>Tue 12/31/24</b>	<b>NA</b>	<b>Tue 12/31/24</b>	<b>Tue 12/31/24</b>																		
Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale PS and	100%	Thu 6/29/17	Tue 7/25/17	Tue 12/31/24	Tue 12/31/24	S_MI_MF_NB04_M_03_B																	
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	0%	Sat 4/29/23	NA	Tue 12/31/24	Tue 12/31/24	S_MI_MF_NB04_M_03_B																	
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	0%	Sat 4/29/23	NA	Tue 12/31/24	Tue 12/31/24	S_MI_MF_NB04_M_03_B																	
<b>Anchor Estates Pump Station Elimination</b>	<b>100%</b>	<b>Fri 4/15/16</b>	<b>Fri 4/15/16</b>	<b>Sat 12/31/16</b>	<b>Sat 12/31/16</b>																		
Anchor Estates PS Elimination 2 - Anchor Estates #1 and #2 PS Elimination	100%	Fri 4/15/16	Fri 4/15/16	Sat 12/31/16	Sat 12/31/16	S_MI_MF_NB06_M_01_A_A - 1																	
Anchor Estates PS Elimination 2 - Anchor Estates #1 and #2 PS Elimination	100%	Fri 4/15/16	Fri 4/15/16	Sat 12/31/16	Sat 12/31/16	S_MI_MF_NB06_M_01_A_A - 1																	
<b>Anchor Estates PS Elimination 1 - Vannah PS Elimination</b>	<b>100%</b>	<b>Sat 10/15/11</b>	<b>Sat 10/15/11</b>	<b>Tue 12/31/13</b>	<b>Tue 12/31/13</b>																		
Anchor Estates PS Elimination 1 - Vannah PS Elimination	100%	Sat 10/15/11	Sat 10/15/11	Tue 12/31/13	Tue 12/31/13	S_MI_MF_NB06_M_01_A_A - 2																	
<b>Hurstbourne I/I Investigation &amp; Rehabilitation</b>	<b>100%</b>	<b>Tue 12/27/11</b>	<b>Tue 12/27/11</b>	<b>Sat 12/31/11</b>	<b>Sat 12/31/11</b>																		

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Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

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

Activity Name	% Complete	Anticipated Finish	Actual Finish	2009 IOAP Completion	IOAP Modifications*	IOAP Project ID	Original Project Name	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Hurstbourne I/I Investigation & Rehabilitation	100%	Tue 12/27/11	Tue 12/27/11	Sat 12/31/11	Sat 12/31/11	S_MI_MF_NB07_S_07_C		██████████															
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion	50%	Sun 12/31/23	NA	Sun 12/31/23	Tue 12/31/13																		
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1 - Buechel Basin	100%	Fri 12/27/13	Fri 12/27/13	Tue 12/31/13	Tue 12/31/13			██████████															
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1 - Buechel Basin	100%	Fri 12/27/13	Fri 12/27/13	Tue 12/31/13	Tue 12/31/13	S_MISF_MF_NB01_M_01_C_A1		██████████															
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	3%	Sun 12/31/23	NA	Sun 12/31/23	Sun 12/31/23																		
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	3%	Sun 12/31/23	NA	Sun 12/31/23	Sun 12/31/23	S_MISF_MF_NB01_M_01_C_A1															██████████		
<b>CEDAR CREEK AREA</b>	<b>52%</b>	<b>Tue 12/31/24</b>	<b>NA</b>	<b>Tue 12/31/24</b>	<b>Tue 12/31/24</b>																		
Little Cedar Creek Interceptor Improvements	0%	Mon 6/26/23	NA	Tue 12/31/24	Tue 12/31/24																		
Little Cedar Creek Interceptor Improvements	0%	Mon 6/26/23	NA	Tue 12/31/24	Tue 12/31/24	S_CC_CC_67997_M_01_C																██████████	
Idlewood Inline Storage	0%	Sat 3/4/23	NA	Sun 12/31/23	Sun 12/31/23																		
Idlewood Inline Storage	0%	Sat 3/4/23	NA	Sun 12/31/23	Sun 12/31/23	S_CC_CC_70158_M_09A_C																██████████	
Bardstown Rd. PS Improvements	0%	Sun 6/6/21	NA	Fri 12/31/21	Fri 12/31/21																		
Bardstown Rd. PS Improvements	0%	Sun 6/6/21	NA	Fri 12/31/21	Fri 12/31/21	S_CC_CC_MSD1025_S_03_B																██████████	
Running Fox PS Elimination	100%	Wed 3/10/10	Wed 3/10/10	Fri 12/31/10	Fri 12/31/10			██████████															
Running Fox PS Elimination	100%	Wed 3/10/10	Wed 3/10/10	Fri 12/31/10	Fri 12/31/10	S_CC_CC_MSD1080_S_01_C		██████████															
Fairmount Road Pump Station	100%	Wed 3/30/16	Thu 3/31/16	Sun 12/31/23	Sun 12/31/23																		
Fairmount Rd PS Improvements	100%	Tue 4/24/12	Tue 4/24/12	Sun 12/31/23	Sun 12/31/23																		
Fairmount Rd PS Improvements	100%	Tue 4/24/12	Tue 4/24/12	Sun 12/31/23	Sun 12/31/23	S_FF_CC_81316_M_03_C_A		██████████															
Fairmount PS Offline Storage Basin	100%	Thu 3/31/16	Thu 3/31/16	Sun 12/31/23	Thu 3/31/16																		
Fairmount PS Offline Storage Basin	100%	Thu 3/31/16	Thu 3/31/16	Sun 12/31/23	Thu 3/31/16	S_FF_CC_81316_M_03_C_A																██████████	
<b>COMBINED SEWER SYSTEM AREA</b>	<b>100%</b>	<b>Fri 12/15/23</b>	<b>Fri 12/15/17</b>	<b>Thu 6/30/11</b>	<b>Thu 6/30/11</b>																		

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Activity Name	% Complete	Anticipated Finish	Actual Finish	2009 IOAP Completion	IOAP Modifications*	IOAP Project ID	Original Project Name	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>Hazelwood PS I/I Investigation &amp; Rehabilitation</b>	100%	Thu 6/30/11	Thu 6/30/11	Thu 6/30/11	Thu 6/30/11																		
Hazelwood PS I/I Investigation & Rehabilitation	100%	Thu 6/30/11	Thu 6/30/11	Thu 6/30/11	Thu 6/30/11	S_MC_MF_55665_S_07_C																	
<b>Sonne Pump Station I/I Investigation &amp; Rehabilitation</b>	100%	Thu 6/30/11	Thu 6/30/11	Thu 6/30/11	Thu 6/30/11																		
Sonne Pump Station I/I Investigation & Rehabilitation	100%	Thu 6/30/11	Thu 6/30/11	Thu 6/30/11	Thu 6/30/11	S_OR_MF_42007_S_07_C																	
<b>Camp Taylor</b>	100%	Fri 12/15/23	Fri 12/15/17	Sun 12/31/17	Sun 12/31/17																		
<b>Camp Taylor Phase 1 - SSES</b>	100%	Fri 7/8/11	Fri 7/8/11	Sat 12/31/11	Tue 12/31/13																		
Camp Taylor Phase 1 - SSES	100%	Fri 7/8/11	Fri 7/8/11	Sat 12/31/11	Tue 12/31/13	S_SF_MF_30917_M_09_A	CAMP TAYLOR SYSTEM IMPROVEMENTS PHASE 1 - SSES																
<b>Camp Taylor Phase 2 - Sewer Replacement and Rehabilitation</b>	100%	Fri 12/20/13	Fri 12/20/13	Tue 12/31/13	Sun 12/31/17																		
Camp Taylor Phase 2 - Sewer Replacement and Rehabilitation	100%	Fri 12/20/13	Fri 12/20/13	Tue 12/31/13	Sun 12/31/17	S_SF_MF_30917_M_09_A	CAMP TAYLOR SYSTEM IMPROVEMENTS PHASE 2 - SEWER REPLACEMENT AND REHABILITATION																
<b>Camp Taylor Phase 3 - Sewer Replacement and Rehabilitation</b>	100%	Sun 12/31/17	Fri 12/15/17	Sun 12/31/17	Sun 12/31/17																		
Camp Taylor Phase 3 - Sewer Replacement and Rehabilitation	100%	Fri 12/15/17	Fri 12/15/17	Sun 12/31/17	Sun 12/31/17	S_SF_MF_30917_M_09_A	CAMP TAYLOR SYSTEM IMPROVEMENTS 3 - SEWER REPLACEMENT & SEWER REHABILITATION																
<b>FLOYDS FORK AREA</b>	100%	Thu 3/4/10	Thu 3/4/10	Fri 12/31/21	Thu 4/1/10																		
<b>Woodland Hill PS Diversion</b>	100%	Thu 3/4/10	Thu 3/4/10	Thu 6/30/11	Thu 4/1/10																		
Woodland Hill PS Diversion	100%	Thu 3/4/10	Thu 3/4/10	Thu 6/30/11	Thu 4/1/10	S_FF_FF_NB01_S_01_C_A																	
<b>Ashburton PS Improvements &amp; Diversion</b>	100%	Wed 12/30/09	Wed 12/30/09	Fri 12/31/21	Fri 1/22/10																		
Ashburton PS Improvements & Diversion	100%	Wed 12/30/09	Wed 12/30/09	Fri 12/31/21	Fri 1/22/10	S_FF_FF_NB03_M_01_C_A																	
<b>HITE CREEK AREA</b>	62%	Tue 11/26/24	NA	Tue 12/31/24	Tue 12/31/24																		
<b>Meadow Stream Pump Station &amp; Force Main Upgrade</b>	100%	Tue 12/18/12	Tue 12/18/12	Sat 12/31/16	Sat 12/31/16																		
Meadow Stream Pump Station & Force Main Upgrade	100%	Tue 12/18/12	Tue 12/18/12	Sat 12/31/16	Sat 12/31/16	S_HC_HC_MSD1082_S_09A_C	MEADOW STREAM PUMP STATION IN-LINE STORAGE																
<b>Kavanaugh Rd. PS Improvements</b>	0%	Sat 3/2/24	NA	Tue 12/31/24	Tue 12/31/24																		
Kavanaugh Rd. PS Improvements	0%	Sat 3/2/24	NA	Tue 12/31/24	Tue 12/31/24	S_HC_HC_MSD1085_S_03_A																	
<b>Floydsburg Rd. I/I Investigation &amp; Rehabilitation</b>	100%	Fri 12/17/10	Fri 12/17/10	Fri 12/31/10	Fri 12/31/10																		
Floydsburg Rd. I/I Investigation & Rehabilitation	100%	Fri 12/17/10	Fri 12/17/10	Fri 12/31/10	Fri 12/31/10	S_HC_HC_MSD1086_M_07_C_A																	
<b>INTERIM SSP PROJECTS</b>	100%	Tue 11/27/12	Tue 11/27/12	Tue 11/27/12	Tue 11/27/12																		

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Activity Name	% Complete	Anticipated Finish	Actual Finish	2009 IOAP Completion	IOAP Modifications*	IOAP Project ID	Original Project Name	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>Beechwood Village Sanitary Sewer Replacement</b>	100%	Wed 9/29/10	Wed 9/29/10	Wed 4/27/11	Wed 4/27/11																		
Beechwood Village Sanitary Sewer Replacement	100%	Wed 9/29/10	Wed 9/29/10	Wed 4/27/11	Wed 4/27/11			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Sinking Fork Relief Sewer</b>	100%	Mon 11/30/09	Mon 11/30/09	Thu 12/30/10	Wed 12/23/09																		
Sinking Fork Relief Sewer	100%	Mon 11/30/09	Mon 11/30/09	Thu 12/30/10	Wed 12/23/09			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Derek R. Guthrie Water Quality Treatment Center</b>	100%	Tue 11/27/12	Tue 11/27/12	Tue 11/27/12	Tue 11/27/12																		
Derek R. Guthrie Water Quality Treatment Center	100%	Tue 11/27/12	Tue 11/27/12	Tue 11/27/12	Tue 11/27/12			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Hikes Lane Interceptor and Highgate Springs PS</b>	100%	Fri 11/2/12	Fri 11/2/12	Tue 11/27/12	Tue 11/27/12																		
Hikes Lane Interceptor and Highgate Springs PS	100%	Fri 11/2/12	Fri 11/2/12	Tue 11/27/12	Tue 11/27/12			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Northern Ditch Diversion Interceptor</b>	100%	Wed 2/16/11	Wed 2/16/11	Sun 7/31/11	Sun 7/31/11																		
Northern Ditch Diversion Interceptor	100%	Wed 2/16/11	Wed 2/16/11	Sun 7/31/11	Sun 7/31/11			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Southeastern Diversion Structure and Interceptor</b>	100%	Mon 12/19/11	Mon 12/19/11	Sat 5/12/12	Sat 5/12/12																		
Southeastern Diversion Structure and Interceptor	100%	Mon 12/19/11	Mon 12/19/11	Sat 5/12/12	Sat 5/12/12			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>JEFFERSONTOWN AREA</b>	57%	Sat 12/31/22	NA	Sat 12/31/22	Sat 12/31/22																		
<b>Jeffersontown WQTC Elimination</b>	100%	Wed 12/23/15	Wed 12/23/15	Thu 12/31/15	Thu 12/31/15																		
Jeffersontown WQTC Elimination	100%	Wed 12/23/15	Wed 12/23/15	Thu 12/31/15	Thu 12/31/15	S_JT_JT_NB01_M_01_C_A		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Elimination of Chenoweth Hills WQTC, Chenoweth Run PS, and Chippewa PS</b>	100%	Mon 9/22/14	Mon 9/22/14	Thu 12/31/15	Thu 12/31/15																		
Elimination of Chenoweth Hills WQTC, Chenoweth Run PS, and Chippewa PS	100%	Mon 9/22/14	Mon 9/22/14	Thu 12/31/15	Thu 12/31/15	S_JT_JT_NB01A_M_03_C	CHENOWETH HILLS WATER QUALITY TREATMENT CENTER ELIMINATION AND PS IMPROVEMENTS PROJECT	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Dell Rd and Charlane Pkwy Interceptor Improvements</b>	0%	Sun 12/26/21	NA	Sat 12/31/22	Sat 12/31/22																		
Dell Rd and Charlane Pkwy Interceptor Improvements	0%	Sun 12/26/21	NA	Sat 12/31/22	Sat 12/31/22	S_JT_JT_NB02_M_01_C																	
<b>Raintree and Marian Ct 1</b>	13%	Wed 6/30/21	NA	Fri 12/31/21	Fri 12/31/21																		
Raintree and Marian Ct 1 - PS Elimination	27%	Fri 1/31/20	NA	Fri 12/31/21	Fri 12/31/21																		
Raintree and Marian Ct 1 - PS Elimination	27%	Fri 1/31/20	NA	Fri 12/31/21	Fri 12/31/21	S_JT_JT_NB03_M_01_C																	
<b>Raintree and Marian Ct 2 - Pipe Upgrades</b>	0%	Tue 10/5/21	NA	Fri 12/31/21	Fri 12/31/21																		
Raintree and Marian Ct 2 - Pipe Upgrades	0%	Tue 10/5/21	NA	Fri 12/31/21	Fri 12/31/21	S_JT_JT_NB03_M_01_C																	
<b>Monticello PS Elimination</b>	0%	Fri 5/6/22	NA	Sat 12/31/22	Sat 12/31/22																		
Monticello PS Elimination	0%	Fri 5/6/22	NA	Sat 12/31/22	Sat 12/31/22	S_JT_JT_NB04_M_01_A																	

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<b>MILL CREEK AREA</b>	<b>100%</b>	<b>Fri 4/13/12</b>	<b>Fri 4/13/12</b>	<b>Fri 12/31/21</b>	<b>Fri 12/31/21</b>																		
Shively Interceptor	100%	Fri 4/13/12	Fri 4/13/12	Wed 12/31/14	Wed 12/31/14																		
Shively Interceptor	100%	Fri 4/13/12	Fri 4/13/12	Wed 12/31/14	Wed 12/31/14	S_MC_WC_NB01_M_01_A																	
East Rockford PS Relocation	100%	Fri 3/30/12	Fri 3/30/12	Fri 12/31/21	Fri 12/31/21																		
East Rockford PS Relocation	100%	Fri 3/30/12	Fri 3/30/12	Fri 12/31/21	Fri 12/31/21	S_MC_WC_NB02_S_03_C																	
<b>OHIO RIVER FORCE MAIN AREA</b>	<b>84%</b>	<b>Thu 10/3/24</b>	<b>NA</b>	<b>Tue 12/31/24</b>	<b>Tue 12/31/24</b>																		
Mellwood System Improvements & PS Elimination	49%	Wed 12/19/12	NA	Tue 12/31/24	Tue 12/31/24																		
Mellwood System Improvements & PS Elimination - Mellwood PS and FM	100%	Wed 12/19/12	Wed 12/19/12	Mon 12/31/12	Mon 12/31/12																		
Mellwood System Improvements & PS Elimination - Mellwood PS and FM	100%	Wed 12/19/12	Wed 12/19/12	Mon 12/31/12	Mon 12/31/12	S_OR_MF_NB01_M_01_B																	
Mellwood System Improvements & PS Elimination - Winton and Mockingbird	0%	Tue 5/21/24	NA	Tue 12/31/24	Tue 12/31/24																		
Mellwood System Improvements & PS Elimination - Winton and Mockingbird	0%	Tue 5/21/24	NA	Tue 12/31/24	Tue 12/31/24	S_OR_MF_NB01_M_01_B																	
Derington Ct. PS I/I Investigation & Rehabilitation	100%	Fri 3/30/12	Fri 3/30/12	Sat 3/31/12	Sat 3/31/12																		
Derington Ct. PS I/I Investigation & Rehabilitation	100%	Fri 3/30/12	Fri 3/30/12	Sat 3/31/12	Sat 3/31/12	S_OR_MF_NB03_S_07_C																	
Prospect WQTC Eliminations, Harrods Creek PS and ORFM System Improvements	100%	Mon 12/19/16	Mon 12/19/16	Sat 12/31/16	Sat 12/31/16																		
Prospect #1 - WQTC Eliminations	100%	Tue 12/15/15	Tue 12/15/15	Thu 12/31/15	Thu 12/31/15																		
Prospect #1 - WQTC Eliminations	100%	Tue 12/15/15	Tue 12/15/15	Thu 12/31/15	Thu 12/31/15	S_OR_MF_NB04_M_03_B_B																	
Prospect #2 - Harrods Creek PS and FM	100%	Tue 12/15/15	Tue 12/15/15	Thu 12/31/15	Thu 12/31/15																		
Prospect #2 - Harrods Creek PS and FM	100%	Tue 12/15/15	Tue 12/15/15	Thu 12/31/15	Thu 12/31/15	S_OR_MF_NB04_M_03_B_B																	
Prospect #3 - ORFM System Improvements	100%	Mon 12/19/16	Mon 12/19/16	Sat 12/31/16	Sat 12/31/16																		
Prospect #3 - ORFM System Improvements	100%	Mon 12/19/16	Mon 12/19/16	Sat 12/31/16	Sat 12/31/16	S_OR_MF_NB04_M_03_B_B																	
<b>OTHER PROJECTS</b>	<b>69%</b>	<b>Tue 12/31/24</b>	<b>NA</b>	<b>Tue 12/31/24</b>	<b>Mon 12/30/24</b>																		
CPE_CCP Modifications To WQTC	100%	Mon 12/19/11	Mon 12/19/11	Sat 12/31/11	Sat 12/31/11																		
CPE_CCP Modifications To WQTC	100%	Mon 12/19/11	Mon 12/19/11	Sat 12/31/11	Sat 12/31/11																		
I/I Reduction Program	63%	Tue 12/31/24	NA	Tue 12/31/24	Tue 12/31/24																		
I/I Reduction Program	63%	Tue 12/31/24	NA	Tue 12/31/24	Tue 12/31/24																		
<b>POND CREEK AREA</b>	<b>93%</b>	<b>Thu 6/30/22</b>	<b>NA</b>	<b>Tue 12/31/24</b>	<b>Tue 12/31/24</b>																		
Lea Ann Way System Improvements	100%	Fri 12/4/15	Fri 12/4/15	Thu 12/31/15	Thu 12/31/15																		
Lea Ann Way System Improvements	100%	Fri 12/4/15	Fri 12/4/15	Thu 12/31/15	Thu 12/31/15	S_PO_WC_PC08_M_01_C																	

Approved 2009 IOAP ██████████ IOAP Modifications ██████████ Remaining Work ██████████ Completed Work ██████████

Includes 2014 approval of 2012 IOAP Modification as well as all minor mod letter approvals to date.



Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

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

Activity Name	% Complete	Anticipated Finish	Actual Finish	2009 IOAP Completion	IOAP Modifications*	IOAP Project ID	Original Project Name	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>Edsel PS I/I Investigation &amp; Rehabilitation</b>	100%	Tue 9/27/11	Tue 9/27/11	Sat 12/31/11	Fri 9/30/11																		
Edsel PS I/I Investigation & Rehabilitation	100%	Tue 9/27/11	Tue 9/27/11	Sat 12/31/11	Fri 9/30/11	S_PO_WC_PC11_M_07_C																	
<b>Cinderella PS Elimination</b>	0%	Fri 7/29/22	NA	Sun 12/31/23	Sun 12/31/23																		
Cinderella PS Elimination	0%	Fri 7/29/22	NA	Sun 12/31/23	Sun 12/31/23	S_PO_WC_PC04_M_01_C																	
<b>Government Center PS Elimination</b>	100%	Fri 4/1/11	Fri 4/1/11	Tue 12/31/24	Tue 12/31/24																		
Government Center PS Elimination	100%	Fri 4/1/11	Fri 4/1/11	Tue 12/31/24	Tue 12/31/24	S_PO_WC_PC06_M_01_C																	
<b>Avanti PS Elimination</b>	100%	Fri 7/10/09	Fri 7/10/09	Fri 12/31/10	Fri 12/31/10																		
Avanti PS Elimination	100%	Fri 7/10/09	Fri 7/10/09	Fri 12/31/10	Fri 12/31/10	S_PO_WC_PC07_M_01_A																	
<b>Charleswood Interceptor Extension</b>	100%	Wed 8/5/15	Wed 8/5/15	Sat 12/31/22	Sat 12/31/22																		
Charleswood Interceptor Extension	100%	Wed 8/5/15	Wed 8/5/15	Sat 12/31/22	Sat 12/31/22	S_PO_WC_PC03_M_01_C																	
<b>Lantana PS #1 I/I Investigation and Rehabilitation</b>	100%	Thu 12/29/11	Thu 12/29/11	Sat 12/31/11	Thu 12/29/11																		
Lantana PS #1 I/I Investigation and Rehabilitation	100%	Thu 12/29/11	Thu 12/29/11	Sat 12/31/11	Thu 12/29/11	S_PO_WC_PC05_M_07_C																	
<b>Leven PS Elimination</b>	0%	Wed 6/29/22	NA	Sat 12/31/22	Sat 12/31/22																		
Leven PS Elimination	0%	Wed 6/29/22	NA	Sat 12/31/22	Sat 12/31/22	S_PO_WC_PC10_M_01_C																	
<b>Caven Ave Pump Station Elimination</b>	100%	Mon 8/1/16	Mon 8/1/16	Tue 12/31/24	Sat 12/31/16																		
Caven Ave Pump Station Elimination	100%	Mon 8/1/16	Mon 8/1/16	Tue 12/31/24	Sat 12/31/16	S_PO_WC_PC09_M_09B_C																	
<b>SMALL WWTP AREA</b>	37%	Fri 12/31/21	NA	Fri 12/31/21	Fri 12/31/21																		
<b>Riding Ridge PS Improvements</b>	100%	Sat 11/15/14	Sat 11/15/14	Wed 12/31/14	Wed 12/31/14																		
Riding Ridge PS Improvements	100%	Sat 11/15/14	Sat 11/15/14	Wed 12/31/14	Wed 12/31/14	S_HC_HN_NB01_S_03_C_A																	
<b>Lucas Lane PS Inline Storage</b>	0%	Tue 7/27/21	NA	Fri 12/31/21	Fri 12/31/21																		
Lucas Lane PS Inline Storage	0%	Tue 7/27/21	NA	Fri 12/31/21	Fri 12/31/21	S_FF_BT_NB01_S_09A_C_A																	
<b>St. Rene Rd. PS Elimination</b>	100%	Fri 9/19/14	Fri 9/19/14	Fri 12/31/21	Fri 12/31/21																		
St. Rene Rd. PS Elimination	100%	Fri 9/19/14	Fri 9/19/14	Fri 12/31/21	Fri 12/31/21	S_FF_CH_NB01_S_09A_C_A	ST. RENE RD PS INLINE STORAGE																
<b>Lake Forest PS SSO Investigation</b>	100%	Tue 12/18/12	Tue 12/18/12	Mon 12/31/12	Mon 12/31/12																		
Lake Forest PS SSO Investigation	100%	Tue 12/18/12	Tue 12/18/12	Mon 12/31/12	Mon 12/31/12	S_FF_LF_NB01_S_13_C_A																	
<b>Gunpowder PS Inline Storage</b>	0%	Tue 5/25/21	NA	Fri 12/31/21	Fri 12/31/21																		
Gunpowder PS Inline Storage	0%	Tue 5/25/21	NA	Fri 12/31/21	Fri 12/31/21	S_HC_HN_NB02_S_09A_C_B																	
<b>Fox Harbor Inline Storage</b>	0%	Wed 7/28/21	NA	Fri 12/31/21	Fri 12/31/21																		
Fox Harbor Inline Storage	0%	Wed 7/28/21	NA	Fri 12/31/21	Fri 12/31/21	S_HC_HN_NB03_S_09A_A_A																	
<b>Fairway View PS Improvements</b>	100%	Tue 12/30/14	Tue 12/30/14	Wed 12/31/14	Wed 12/31/14																		
Fairway View PS Improvements	100%	Tue 12/30/14	Tue 12/30/14	Wed 12/31/14	Wed 12/31/14	S_HC_HS_NB01_S_03_C_A																	

Approved 2009 IOAP ██████████ IOAP Modifications ██████████ Remaining Work ██████████ Completed Work ██████████

Includes 2014 approval of 2012 IOAP Modification as well as all minor mod letter approvals to date.



Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

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

Activity Name	% Complete	Anticipated Finish	Actual Finish	2009 IOAP Completion	IOAP Modifications*	IOAP Project ID	Original Project Name	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>SOUTHEASTERN DIVERSION AREA</b>	<b>75%</b>	<b>Mon 11/27/23</b>	<b>NA</b>	<b>Sun 12/31/23</b>	<b>Sun 12/31/23</b>																		
Parkview Estates I/I Investigation & Rehabilitation	100%	Tue 6/28/11	Tue 6/28/11	Sat 12/31/11	Sat 12/31/11																		
Parkview Estates I/I Investigation & Rehabilitation	100%	Tue 6/28/11	Tue 6/28/11	Sat 12/31/11	Sat 12/31/11	S_SD_MF_NB03_S_07_C																	
Klondike Interceptor	100%	Thu 12/5/13	Thu 12/5/13	Thu 12/31/15	Thu 12/31/15																		
Klondike Interceptor	100%	Thu 12/5/13	Thu 12/5/13	Thu 12/31/15	Thu 12/31/15	S_SD_MF_NB04_S_01_B_A																	
Sutherland Interceptor	0%	Thu 1/5/23	NA	Sun 12/31/23	Sun 12/31/23																		
Sutherland Interceptor	0%	Thu 1/5/23	NA	Sun 12/31/23	Sun 12/31/23	S_SD_MF_NB05_M_01_A																	
Beargrass Interceptor Rehab Ph. 2	100%	Tue 12/14/10	Tue 12/14/10	Fri 12/31/10	Fri 12/31/10																		
Beargrass Interceptor Rehab Ph. 2	100%	Tue 12/14/10	Tue 12/14/10	Fri 12/31/10	Fri 12/31/10	S_SD_MF_NB06_S_13_C																	

Approved 2009 IOAP [Pattern] IOAP Modifications [Pattern] Remaining Work [Pattern] Completed Work [Pattern]

Includes 2014 approval of 2012 IOAP Modification as well as all minor mod letter approvals to date.

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## **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 ways to reduce the risks of 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 to utilize various media outlets, including television, radio, magazines and newspapers, bill inserts, social media, and MSD websites, is anticipated to change over the course of the upcoming year to improve reach and impact of messaging. MSD plans to move from a single full-page print ad in the Courier Journal each year, estimated to reach 102,700, to multiple quarter-page print ads and digital news site ads, increasing the reach to an estimated 806,000. MSD also plans to begin year-round digital ads with Project WIN messages, estimated to reach 1.6 million.

MSD included Consent Decree compliance, wastewater facility upgrades, and aging infrastructure as key topics in its Critical Repair & Reinvestment Plan. Public education about this initiative continue to include posts on MSD’s website and social media accounts.

MSD continues its One Water education effort. This partnership with Louisville Water enables MSD to reach a wider audience through use of classroom educators and educational tours. The “River to River” education curriculum was continued during the reporting period. This program is being taken into classrooms county-wide to share information on Louisville’s water cycle. School groups have also had opportunities to tour the Floyds Fork WQTC.

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

**Table 4.1. Metro TV Broadcasts**

<b>DATE</b>	<b>PROGRAM TITLE</b>	<b>ORIGINAL MEETING DATE</b>
4/1/2019	Portland CSO Basin: Conceptual Design Meeting	6/14/2016
4/5/2019	Ohio River Tunnel: Advanced Design Meeting	7/19/2017
4/5/2019	Ohio River Tunnel: Advanced Design Meeting	7/19/2017
4/13/2019	Ohio River Tunnel: Advanced Design Meeting	7/19/2017
4/19/2019	Portland CSO Basin: Conceptual Design Meeting	6/14/2016
4/27/2019	Southwestern Parkway CSO Basin: Construction Meeting	4/18/2017
4/28/2019	Southwestern Parkway CSO Basin: Construction Meeting	4/18/2017
4/29/2019	Southwestern Parkway CSO Basin: Construction Meeting	4/18/2017

**Table 4.1. Metro TV Broadcasts**

<b>DATE</b>	<b>PROGRAM TITLE</b>	<b>ORIGINAL MEETING DATE</b>
5/6/2019	Ohio River Tunnel: Advanced Design Meeting	7/19/2017
5/20/2019	Portland CSO Basin: Conceptual Design Meeting	6/14/2016
6/2/2019	Ohio River Tunnel: Advanced Design Meeting	7/19/2017
6/13/2019	Southwestern Parkway CSO Basin: Construction Meeting	4/18/2017

### **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 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. 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.msprojectwin.org/Public-Input.aspx>.

MSD held no meetings during the current reporting period. During the upcoming reporting period, MSD has no meetings planned.

## **SECTION 5: CAPACITY MANAGEMENT OPERATIONS AND MAINTENANCE (CMOM) 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.msprojectwin.org](http://www.msprojectwin.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 continues 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 Sewer 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.msprojectwin.org](http://www.msprojectwin.org).

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

## **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.

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

### **5.3.1. HITE CREEK WATER QUALITY TREATMENT CENTER**

The Hite Creek WQTC Expansion project will expand the capacity of the Hite Creek WQTC from 6 MGD to 9 MGD and provide regional dewatering of solids. The project was bid during this reporting period (June 11, 2019) and the construction contract is expected to be awarded in the next reporting period.

### **5.3.2. FLOYDS FORK WATER QUALITY TREATMENT CENTER**

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

### **5.3.3. DEREK R. GUTHRIE WATER QUALITY TREATMENT CENTER**

The DRG Return Activated Sludge (RAS) 1 and 4 Pump Replacement project provides for the replacement and upsizing of RAS pumps 1 and 4 and replacement of all four pump variable frequency drives (VFDs) in the expanded and renovated electrical room. The project was completed in this reporting period.

The DRG Clarifier Grout Repair and Gate Replacement project will provide new gates and automated actuators for the influent and the Return Activated Sludge (RAS) lines for Clarifiers 1 - 6. Also, defective grout will be removed or replaced as needed for Clarifiers 7 – 12 and the aeration basin isolation gate will be replaced. Design was completed and the project advertised for bid. The construction contract is expected to be awarded in the next reporting period.

The DRG WQTC Hypochlorite Containment project will repair leaks in the containment structure of the Sodium Hypochlorite Building and separate the feed system into two isolated systems. The project was awarded and construction began in this reporting period.

### **5.3.4. CEDAR CREEK WATER QUALITY TREATMENT CENTER**

During this reporting period, there is no activity to report for the Cedar Creek WQTC.

**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. 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 owned or operated by MSD 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 Figure 5.1.

Figure 5.1. CMOM Quarterly Commitments Schedule

Budget ID	Task Name	% Complete	Start	Finish	Qtr 1, 2019			Qtr 2, 2019		
					Jan	Feb	Mar	Apr	May	Jun
	<b>MSD CMOM Quarterly Commitments Schedule</b>	<b>72%</b>	<b>Sun 3/29/09</b>	<b>Thu 11/18/21</b>						
H16356	South Pope Lick Pump Station Repair	100%	Mon 7/27/15	Fri 1/4/19						
H16356	CLOSEOUT	100%	Tue 12/5/17	Fri 1/4/19						
H14126	HCWQTC Expansion	55%	Mon 11/2/15	Thu 11/18/21						
H14126	CONSTRUCTION	4%	Fri 3/8/19	Fri 1/22/21						
F14156	DRGWQTC RAS 1 and 4 Pump Replacement	99%	Fri 1/1/16	Wed 1/1/20						
F14156	CONSTRUCTION	100%	Sat 4/1/17	Wed 3/6/19						
F14156	CLOSEOUT	0%	Sun 5/5/19	Wed 1/1/20						
D17153	HCWQTC Bioscrubber Installation	100%	Fri 1/1/16	Mon 1/28/19						
D17153	CLOSEOUT	100%	Mon 7/2/18	Mon 1/28/19						
D16272	CCWQTC Influent PS MCC Upgrades	30%	Thu 2/4/16	Fri 9/11/20						
D16272	CONSTRUCTION	8%	Mon 6/11/18	Thu 9/26/19						
E15033	Shively PS Generator Replacement	81%	Fri 4/1/16	Fri 5/1/20						
E15033	CONSTRUCTION	73%	Mon 11/27/17	Sat 7/6/19						
A16073	Mud Lane Interceptor	50%	Mon 3/20/17	Thu 4/22/21						
A16073	DESIGN	90%	Fri 8/4/17	Tue 4/30/19						
A16073	EASEMENTS/LAND ACQUISITION	65%	Sun 2/3/19	Tue 4/30/19						
G14061	FY18 Excess Cost	78%	Fri 9/1/17	Sun 6/30/19						
G14061	CLOSEOUT	78%	Fri 9/1/17	Sun 6/30/19						
H18217	FY18 Consent Decree Operating Program Support	100%	Wed 11/1/17	Thu 1/31/19						
H18217	CLOSEOUT	100%	Wed 11/1/17	Thu 1/31/19						
D18285	ORFM Odor and Corrosion Control	53%	Mon 1/1/18	Thu 4/1/21						
D18285	DESIGN	89%	Thu 3/8/18	Sun 5/19/19						
D18285	CONSTRUCTION	0%	Tue 5/28/19	Thu 6/4/20						
F14005	FY18_19 Sewer Cleaning and TV Gline	84%	Mon 1/1/18	Sun 6/30/19						
F14005	CLOSEOUT	83%	Mon 1/1/18	Sun 6/30/19						
D18292	DRGWQTC Clarifier Grout Repair and RAS Gate Replacement	47%	Wed 1/31/18	Mon 7/26/21						
D18292	DESIGN	99%	Wed 5/23/18	Mon 4/1/19						
D18290	DRGWQTC Carbon Odor Control	99%	Wed 1/31/18	Mon 4/15/19						
D18290	CONSTRUCTION	100%	Tue 9/11/18	Mon 2/18/19						
D18290	CLOSEOUT	0%	Tue 4/9/19	Mon 4/15/19						

Data Date: 03/31/19

CMOM Project  Project Progress 

Percent complete is calculated based on phase duration.



Figure 5.1. CMOM Quarterly Commitments Schedule

Budget ID	Task Name	% Complete	Start	Finish	Qtr 1, 2019			Qtr 2, 2019		
					Jan	Feb	Mar	Apr	May	Jun
H18332	Botanical Garden Biofilter Upgrades	75%	Thu 3/1/18	Thu 7/25/19						
H18332	CLOSEOUT	62%	Fri 9/28/18	Thu 7/25/19						
A18353	Ohio River Interceptor Structural Rehabilitation	83%	Tue 3/6/18	Mon 10/14/19						
A18353	CLOSEOUT	0%	Thu 3/21/19	Mon 10/14/19						
A18324	Oreland Mill Pump Station Elimination	88%	Fri 4/6/18	Wed 2/26/20						
A18324	CONSTRUCTION	89%	Mon 5/21/18	Thu 5/2/19						
G18326	Catalpa Farms PS Odor Control Evaluation	100%	Thu 5/3/18	Fri 3/8/19						
G18326	CLOSEOUT	100%	Fri 5/11/18	Fri 3/8/19						
H19224	FY19 Regulatory Compliance and Asset Management Re	100%	Sun 7/1/18	Fri 2/1/19						
H19224	CLOSEOUT	100%	Fri 7/6/18	Fri 2/1/19						
D19227	MFWQTC Primary Sludge Line Replacement	59%	Sun 7/1/18	Mon 8/24/20						
D19227	DESIGN	100%	Sun 7/1/18	Fri 3/15/19						
D19227	CONSTRUCTION	3%	Mon 3/25/19	Sun 10/27/19						
D19243	FY19 Jacobs MFWQTC Engineering Support	72%	Sun 7/1/18	Sun 6/30/19						
D19243	CLOSEOUT	71%	Fri 8/17/18	Sun 6/30/19						
E18466	FY19 CMOM Collection System Pump Rehab and Replacement	75%	Sun 7/1/18	Sun 6/30/19						
E18466	CLOSEOUT	75%	Sun 7/1/18	Sun 6/30/19						
D19248	CCWQTC Solids Study	95%	Sun 7/1/18	Sat 4/6/19						
D19248	STUDY	100%	Mon 11/19/18	Thu 2/28/19						
D19248	CLOSEOUT	0%	Mon 4/1/19	Sat 4/6/19						
H19056	CMOM Telog 3G to 4G Conversion	40%	Sun 7/1/18	Tue 12/31/19						
H19056	CLOSEOUT	40%	Sun 9/30/18	Tue 12/31/19						
D19038	CCWQTC Hydraulics Study	100%	Sun 7/1/18	Fri 3/29/19						
D19038	STUDY	100%	Mon 11/19/18	Fri 2/22/19						
D19038	CLOSEOUT	100%	Mon 3/25/19	Fri 3/29/19						
H19083	FY19 CMOM Grinder RR	42%	Sun 7/1/18	Sun 6/30/19						
H19083	INITIATION & PROCUREMENT	100%	Sun 7/1/18	Wed 2/6/19						
H19083	CLOSEOUT	39%	Fri 2/1/19	Sun 6/30/19						
H19054	FY19 CMOM I and C Implementation	57%	Sun 7/1/18	Sun 6/30/19						
H19054	CLOSEOUT	57%	Sat 12/1/18	Sun 6/30/19						
H16010	FY19 CMOM PS-Generator Upgrades	50%	Sun 7/1/18	Sun 6/30/19						

Data Date: 03/31/19      CMOM Project █      Project Progress █

Percent complete is calculated based on phase duration. Page 2

Figure 5.1. CMOM Quarterly Commitments Schedule

Budget ID	Task Name	% Complete	Start	Finish	Qtr 1, 2019			Qtr 2, 2019		
					Jan	Feb	Mar	Apr	May	Jun
H16010	INITIATION & PROCUREMENT	100%	Sun 7/1/18	Tue 1/1/19						
H16010	CLOSEOUT	50%	Tue 1/1/19	Sun 6/30/19						
H16012	FY19 CMOM SCAP, AAM and FOG	63%	Sun 7/1/18	Sun 6/30/19						
H16012	CLOSEOUT	62%	Thu 11/1/18	Sun 6/30/19						
H16041	FY19 CMOM SSES-ICA	50%	Sun 7/1/18	Sun 6/30/19						
H16041	INITIATION & PROCUREMENT	99%	Sun 7/1/18	Tue 1/1/19						
H16041	CLOSEOUT	50%	Tue 1/1/19	Sun 6/30/19						
A19061	FY19 Construction Inspection	75%	Sun 7/1/18	Sun 6/30/19						
A19061	CLOSEOUT	75%	Sun 7/1/18	Sun 6/30/19						
G16032	FY19 Development Team Support	57%	Sun 7/1/18	Sun 6/30/19						
G16032	CLOSEOUT	57%	Sat 12/1/18	Sun 6/30/19						
H16036	FY19 I and I Reduction Program	62%	Sun 7/1/18	Sun 6/30/19						
H16036	INITIATION & PROCUREMENT	99%	Sun 7/1/18	Tue 1/1/19						
H16036	CLOSEOUT	62%	Thu 11/1/18	Sun 6/30/19						
H18171	FY19 Information Governance Architecture	2%	Sun 7/1/18	Sun 6/30/19						
H18171	INITIATION & PROCUREMENT	99%	Sun 7/1/18	Mon 4/1/19						
H18171	CLOSEOUT	0%	Mon 4/1/19	Sun 6/30/19						
H16040	FY19 PMP	75%	Sun 7/1/18	Sun 6/30/19						
H16040	CLOSEOUT	75%	Sun 7/1/18	Sun 6/30/19						
G19001	FY19 Renewal and Replacement	67%	Sun 7/1/18	Sun 6/30/19						
G19001	CLOSEOUT	67%	Sun 7/1/18	Sun 6/30/19						
E18445	FY19 Systems Automation	50%	Sun 7/1/18	Sun 6/30/19						
E18445	INITIATION & PROCUREMENT	100%	Sun 7/1/18	Tue 1/1/19						
E18445	CLOSEOUT	50%	Tue 1/1/19	Sun 6/30/19						
H19225	FY19 Telog Support	72%	Sun 7/1/18	Sun 6/30/19						
H19225	CLOSEOUT	71%	Fri 8/17/18	Sun 6/30/19						
D19042	FY19 WQTC Odor Improvements	61%	Sun 7/1/18	Sun 6/30/19						
D19042	CLOSEOUT	61%	Sat 11/10/18	Sun 6/30/19						
E19204	FY19 Operations RR	57%	Sun 7/1/18	Sun 6/30/19						
E19204	CLOSEOUT	57%	Sat 12/1/18	Sun 6/30/19						
D19223	DRGWQTC WWPS Finite Element Analysis Phase 2	70%	Mon 7/2/18	Sun 6/30/19						
D19223	CLOSEOUT	69%	Wed 9/12/18	Sun 6/30/19						

Data Date: 03/31/19      CMOM Project       Project Progress

Percent complete is calculated based on phase duration. Page 3

**Figure 5.1. CMOM Quarterly Commitments Schedule**

Budget ID	Task Name	% Complete	Start	Finish	Qtr 1, 2019			Qtr 2, 2019		
					Jan	Feb	Mar	Apr	May	Jun
D19237	MFWQTC Arc Flash Update	88%	Mon 7/2/18	Tue 5/28/19						
D19237	STUDY UPDATE AND FIELD WORK	89%	Wed 9/26/18	Mon 4/22/19						
D19237	CLOSEOUT	0%	Wed 5/22/19	Tue 5/28/19						
F19234	Breakwater PS Electrical Modifications	100%	Wed 8/1/18	Wed 2/6/19						
F19234	CLOSEOUT	100%	Thu 1/31/19	Wed 2/6/19						
D19268	CCWQTC Safety Items	100%	Mon 10/1/18	Fri 1/4/19						
D19268	CLOSEOUT	100%	Fri 1/4/19	Fri 1/4/19						
D19286	SWPS Gas Monitoring	2%	Fri 2/1/19	Mon 8/31/20						
D19286	INITIATION & PROCUREMENT	100%	Fri 2/1/19	Thu 2/7/19						
D19286	DESIGN	0%	Mon 4/1/19	Fri 5/17/19						
D19286	CONSTRUCTION	0%	Mon 6/3/19	Sun 11/3/19						
D19285	Bells Lane Phase II	10%	Fri 3/1/19	Mon 12/30/19						
D19285	INITIATION & PROCUREMENT	100%	Fri 3/1/19	Fri 3/1/19						
D19285	CLOSEOUT	10%	Fri 3/1/19	Mon 12/30/19						

Data Date: 03/31/19

CMOM Project Project Progress

Percent complete is calculated based on phase duration.

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## SECTION 6: PROJECT WATERWAY IMPROVEMENTS NOW (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. SANITARY SEWER OVERFLOW ELIMINATION ACTIVITIES

Refer to Section 3.4.1 for Final SSDP project updates.

#### 6.1.2. COMBINED SEWER OVERFLOW REDUCTION AND CONTROL ACTIVITIES

Refer to Section 3.4.2 for CSO LTCP project updates.

### 6.2. SYSTEMWIDE PERFORMANCE

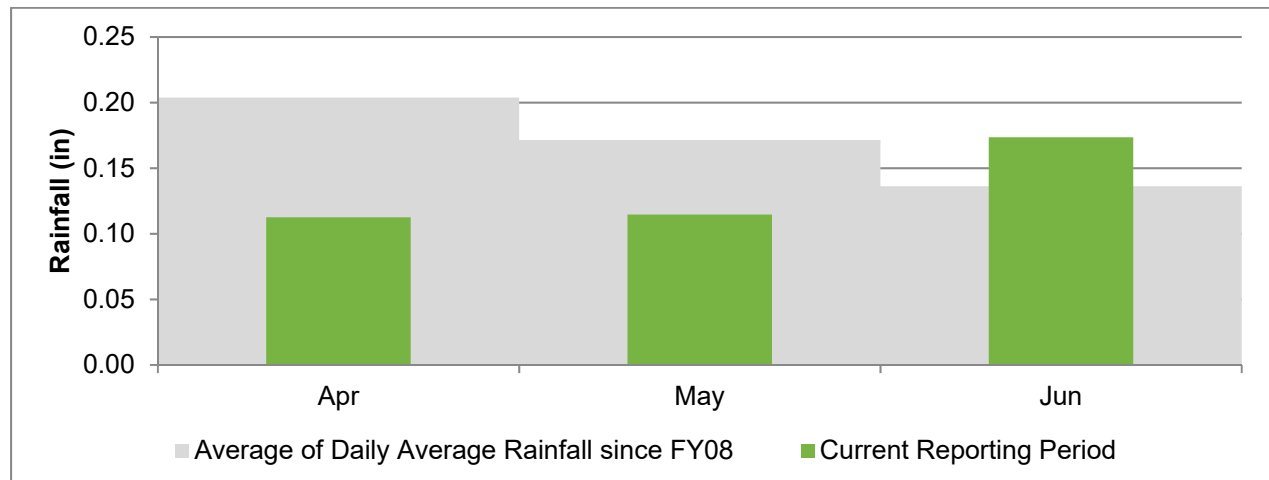
#### 6.2.1. RAINFALL

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 service area 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

Daily average rainfall was below average for April and May, and above average for June when compared with the previous fiscal year average for these months.

Figure 6.1. Daily Average Rainfall by Month



## **6.3. WATER QUALITY TREATMENT CENTER PERFORMANCE**

### **6.3.1. BYPASSES**

Table 6.1 summarizes the bypass event that occurred during this reporting period, and details are included in Appendix A-2. Each quarter, an assessment of bypasses is conducted to determine root cause of the bypass, the failure category, corrective actions to be taken, possible programmatic solutions, and corrective action completion date, included in Table 6.2.

**Table 6.1 Bypass Events – Current Reporting Period**

<b>TYPE OF BYPASS</b>	<b>DATE</b>	<b>ID</b>	<b>FACILITY NAME</b>
RAIN EVENT DISCHARGE	6/17/2019	MSD0289	CEDAR CREEK

### **6.3.2. JEFFERSONTOWN WATER QUALITY TREATMENT CENTER**

A letter dated December 23, 2015, certified the elimination of Jeffersontown WQTC. Inspections were conducted upstream of what was previously Jeffersontown WQTC Headworks during the reporting period. There were no overflows 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**

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. A certification letter dated December 15, 2015, was submitted finalizing the completion of the project.

## **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. This data 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 current reporting period. There was one dry weather overflow reported at a CSO during the reporting period, as shown in Table 6.3 and detailed in Appendix A-1 .

**Table 6.2. Bypass Summary – Current Reporting Period**

DATE	WQTC	WORK ORDER	FAILURE CODE	BYPASS DESCRIPTION	FAILURE RESOLUTION
FACILITY FAILURE (MECHANICAL-MCH, ELECTRICAL-ELE, STRUCTURAL-STR)					
6/17/2019	CEDAR CREEK	3119657	MCH	THIS PLANT EXPERIENCED A BYPASS OF THE SAND FILTERS DUE TO HEAVY RAIN. THE PLANT EFFLUENT FLOW AT THE TIME OF BYPASS WAS 21 MGD. THE SAND FILTER BYPASS GATE WAS OPENED, BUT NOT FAR ENOUGH TO RELIEVE FLOW GOING TO THE FILTERS. APPROXIMATELY 300 GALLONS OF TREATED, BUT NOT DISINFECTED, WASTEWATER BYPASSED.	OPEN THE SAND FILTER BYPASS GATE MORE DURING HEAVY FLOW.

**Table 6.3. Unauthorized Discharges – Dry Weather CSOs**

START DATE	CSO	PROBLEM	CAUSE	VOLUME (GAL)
06/25/2019	CSO019	ELECTRICAL PROBLEMS AT MSD	INTERIOR BUILDING POWER FAIL AT 34 <sup>TH</sup> STREET PUMP STATION.	9,000

### **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.

A workgroup was established to review CSO flow monitoring and resolve potential over-reporting of overflow volumes. Initial findings indicated that potentially significant discrepancies between modeling and monitoring data existed at 33 of MSD's 98 CSO locations. This set of 33 CSOs was the highest priority to review, correct data, document SOPs, and implement changes. For these CSO locations, MSD performed site visits including elevation surveys, performed detailed analysis, investigated equipment configurations, and investigated PLC programming or monitoring program logic. This has led to the development of an SOP for each CSO that describes the existing monitoring equipment, configuration, and flow calculation in use as of December 31, 2016, and evaluates the effectiveness of the existing setup. If a more effective arrangement was recommended, MSD added the proposed arrangement to the SOP for implementation and determined if historical data could be updated. In cases where the historical data could be updated, MSD has developed revised volumes for reporting. Locations for which revised volumes have been developed are detailed in Appendix F. In some cases, historical volumes could not be recalculated based on the available data. For instance, CSOs influenced by river or creek elevation for which there was no available historic level data could not be recalculated for historical volumes but will be calculated or measured according to the revised SOPs as they are implemented.

To date, SOPs have been drafted and historical volume data corrections (where possible) have been made for all of the 33 initial CSO locations. These changes have also been made for two additional CSO locations included in the review due to interaction with priority CSOs. Multiple SOPs require programming or equipment changes in order to implement the final SOPs. During the upcoming reporting period, MSD will continue working to procure and replace equipment as required and update the programming at the PLC or with monitoring program logic, as summarized in Figure 6.2 and detailed in Appendix F, to support ongoing implementation of the SOPs.

The remaining 65 active CSO locations are being reviewed during the current fiscal year. MSD has also identified two inactive sites with historic data that will be reviewed. MSD has developed a schedule for review of these sites and has begun site visits, calculation review, and SOP development. Status for these remaining CSOs is summarized in Figure 6.3 and detailed in Appendix F.

During the course of review, MSD has made determinations about CSO monitoring configurations and SOPs that impact other CSOs that were previously listed as completed. MSD views this process as an ongoing review for continuous improvement, and continues to update status to reflect the latest and most appropriate determination.

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". As changes are made to flow meter locations and or flow meter calculation algorithms, 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

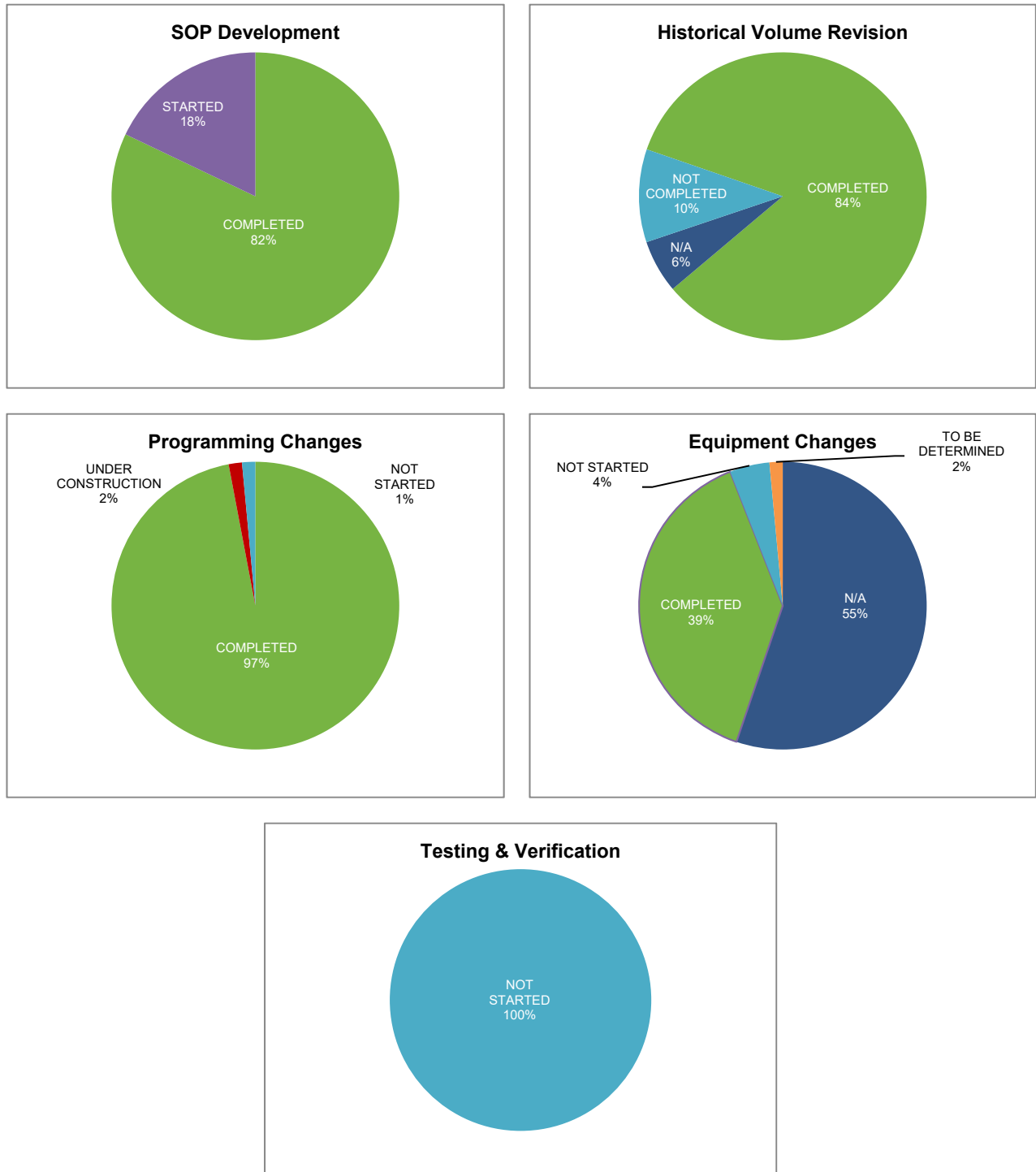


monitoring data reported quarterly will include updated volumes based on completion of the review and update of the reporting standards for each CSO. Revised volumes for previous reporting periods up to and including FY18 for the 33 CSO locations initially reviewed were included as an appendix to the FY18 Consent Decree Annual Report. Any subsequently developed revised volumes for previous reporting periods up to and including FY20 will be included as an appendix to the FY19 or FY20 Consent Decree Annual Report as applicable.

**Figure 6.2. CSO Flow Monitoring Quality Improvement Status – Phase 1**



**Figure 6.3. CSO Flow Monitoring Quality Improvement Status – Phase 2**



<sup>1</sup>Draft SOPs are completed and under review.

## **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, 103 unauthorized discharges to WUS were reported, summarized in Table 6.4.

**Table 6.4. Dry and Wet Weather SSOs by Cause – Unauthorized Discharges to Waters of US**

<b>PROBLEM</b>	<b>DRY WEATHER</b>	<b>WET WEATHER</b>
LACK OF SYSTEM CAPACITY	0	97
OBSTRUCTION-NOT GREASE/ROOTS	1	0
ROOTS	1	0
STRUCTURAL FAILURE	2	1
UTILITY DAMAGED MSD ASSET	1	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 reporting period.

### **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 reporting period.

## **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 6.5.

Targets have been developed for planned maintenance (PM) only, which includes any activities that are routinely scheduled to maintain asset condition and decrease its likelihood of failure. Unscheduled maintenance (UM) activities include those activities performed as a reaction to correct asset deficiencies.

**Table 6.5. Rolling Quarterly GLPM Performance with Targets**

ACTIVITY	ACTIVITY TYPE	AREA	Jul-Sep 18	Oct-Dec 18	Jan-Mar 19	Apr-Jun 19	Total	Target/ qtr	% of Annual Target
Catch Basins Cleaned	PM	Combine System	4,540	5,961	4,532	4,063	20,523	4,460	25%
		Separate System	1,401	157	0	1,899	3,898	1,144	0%
	UM	Combined System	386	175	239	294	1,068	-	-
		Separate System	92	45	94	129	332	-	-
CSO Inspections	PM	Combined System	1,248	1,285	1,256	1,261	5,052	1,272	25%
CSO Debris Removal WO	UM		199	159	166	226	694	-	-
Sewer Main Chemical Root Treatment (LF)	UM	Combined System	0	19,175	0	858	19,714	-	-
		Separate System	0	93,006	27,280	10,875	125,087	-	-
Sewer Main Flushing and Cleaning (LF)	UM	Combined System	4,989	3,370	3,591	2,587	12,125	-	-
		Separate System	26,848	12,070	40,709	36,222	99,669	-	-
Sewer Main Inspections MSD Crews (LF)	PM	County Wide	10,881	10,427	12,593	16,466	33,901	198,000	2%
Sewer Main Inspections Contractor (LF)	PM	County Wide	32,947	34,004	82,097	186,100	149,048	198,000	10%
Total Sewer Main Inspections (LF)	PM	County Wide	43,828	44,431	0	202,566	182,949	396,000	6%
Sewer Main Root Cutting (LF)	UM	Combined System	468	1,741	3,547	307	7,035	-	-
		Separate System	12,977	13,099	14,167	15,524	56,663	-	-

## **APPENDICES**

<b>Appendix A</b>	<b>Discharge Work Orders</b>
<b>Appendix A-1</b>	<b>Discharge Work Orders – Dry Weather CSOs</b>
<b>Appendix A-2</b>	<b>Discharge Work Orders – Bypass</b>
<b>Appendix A-3</b>	<b>Discharge Work Orders – Unauthorized Discharges</b>
<b>Appendix B</b>	<b>CSO Flow Monitoring Data</b>
<b>Appendix C</b>	<b>Acronyms</b>
<b>Appendix D</b>	<b>SCAP Balance</b>
<b>Appendix E</b>	<b>IOAP Project Crosswalk</b>
<b>Appendix F</b>	<b>CSO Flow Monitoring Quality Improvement</b>
<b>Appendix G</b>	<b>CSO108 Semi-Annual Report</b>

**Appendix A-1      Discharge Work Orders – Dry Weather CSOs**

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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
MORRIS FORMAN	816 N 34TH ST	KY0022411	6/28/2019 7:00	12:00:00 AM	0	SEWER MANHOLE	CS0019	STREAM	OHIO RIVER	INTERIOR BUILDING POWER FAIL AT 34 <sup>TH</sup> STREET PUMP STATION.	MECHANICAL FAILURE	DISDW DRY WEATHER DISCHARGE	3127540	NO CLEAN UP REQUIRED	MSD PERSONNEL RESTORED POWER AND STARTED PUMPS

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**Appendix A-2      Discharge Work Orders – Bypass**

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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
CEDAR CREEK	8405 CEDAR CREEK RD	KY0098540	6/17/2019 7:10	6/17/2019 7:13	300	SEWER TREATMENT PLANT	MSD0289	GROUND	CEDAR CREEK	HEAVY RAIN	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	3119657	NO DEBRIS	OPENED SAND FILTER BYPASS GATE

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**Appendix A-3      Discharge Work Orders – Unauthorized Discharges**

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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	10517 SUNLIGHT LN	KY0078956	4/3/2019 10:10	4/3/2019 10:15	1,000	SEWER MAIN	82288-V	STREAM	POND CREEK	STRUCTURAL FAILURE (FORCE MAIN BREAK).	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	3081275	MSD PERSONNEL CLEANED AND SANITIZED IMPACTED AREA.	SHUT OFF PUMPS TO STOP DISCHARGE. HAULOD STATION WHILE REPAIRS MADE TO FORCE MAIN (REPAIR WORK ORDER 3081279) (HAULOP WORK ORDER 3081385).
MORRIS FORMAN	1726 FRASER DR	KY0022411	4/14/2019 3:30	4/14/2019 15:00	21,672	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3084205	NO CLEANUP REQUIRED. DISCHARGING PIPE IS SUBMERGED.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	1201 OLD CANNONS LN	KY0022411	4/14/2019 5:55	4/14/2019 19:30	882,000	SEWER MANHOLE	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3084207	NO CLEANUP REQUIRED. DISCHARGING PIPE IS SUBMERGED.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	1001 BRECKENRIDGE LN	KY0022411	4/19/2019 20:43	4/21/2019 23:30	1,661,000	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086557	NOT REQUIRED. PIPE DISCHARGES UNDERGROUND DIRECTLY INTO THE CREEK.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	3317 BROWNSBORO RD	KY0022411	4/19/2019 20:45	4/22/2019 22:00	16,848,000	SEWER MANHOLE	26752	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086559	NOT REQUIRED. PIPE DISCHARGES DIRECTLY INTO THE CREEK.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	1201 OLD CANNONS LN	KY0022411	4/19/2019 20:45	4/22/2019 22:00	1,684,800	SEWER MANHOLE	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086558	NOT REQUIRED. PIPE DISCHARGES DIRECTLY INTO THE CREEK.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	1726 FRASER DR	KY0022411	4/19/2019 22:30	4/20/2019 23:15	76,000	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086563	NOT REQUIRED. PIPE DISCHARGES DIRECTLY INTO THE CREEK.	LOCATION INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	9317 LANTANA DR	KY0078956	4/20/2019 0:35	4/20/2019 13:37	19,550	SEWER LIFT STATION	MSD0101-PS	DITCH	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086537	NO CLEAN UP PERFORMED.	SITE FOUNDED DURING RAIN EVENT. RECON WILL BE MONITORED.
DEREK R. GUTHRIE	8800 ADMIRAL DR	KY0078956	4/20/2019 1:00	4/20/2019 16:30	139,500	SEWER LIFT STATION	MSD1051-PS	STREAM	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086542	CLEANUP NOT POSSIBLE DUE TO MAGNITUDE OF STORM.	SITE FOUND DURING RAIN EVENT. RECON WILL BE MONITORED.
MORRIS FORMAN	8021 CHRISTIAN CT	KY0022411	4/20/2019 1:33	4/21/2019 9:00	22,500	SEWER MANHOLE	47593	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086620	WO#3086809	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	1804 ROUND RIDGE RD	KY0022411	4/20/2019 3:30	4/22/2019 12:33	342,000	SEWER MANHOLE	65623	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086633	NO PUBLIC ACCESS TO DISCHARGE SITE.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	4801 CASSIA CT	KY0022411	4/20/2019 3:30	4/22/2019 12:22	312,000	SEWER MANHOLE	46623	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086630	WO#3087210	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	3302 TROUT CREEK DR	KY0022411	4/20/2019 3:40	4/21/2019 17:20	169,500	SEWER MANHOLE	23211	STREAM	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086662	WO#2086833	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	2107 LITTLE CREEK CT	KY0022411	4/20/2019 3:40	4/21/2019 17:25	113,250	SEWER SERVICE LINE	46602107	GROUND	BROOKLAWN TRIBUTARY	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086659	WO#3086836	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	3305 INDIAN CREEK CT	KY0022411	4/20/2019 3:45	4/21/2019 17:30	226,500	SEWER MANHOLE	51160	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086661	WO#3086832	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	7713 WESTPORT RD	KY0022411	4/20/2019 3:50	4/22/2019 11:51	392,000	SEWER MANHOLE	105936	GROUND	GOOSE CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086627	SITE HAS BEEN CLEANED, RAKED AND SANITIZED.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	201 BULLITT LN	KY0022411	4/20/2019 4:00	4/21/2019 8:57	261,000	SEWER MANHOLE	47582	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086608	WO#3086807	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	202 OXMOOR LN	KY0022411	4/20/2019 4:00	4/22/2019 11:00	990,000	SEWER MANHOLE	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086607	WO#3086806	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	7900 SHELBYVILLE RD	KY0022411	4/20/2019 4:10	4/21/2019 9:00	348,000	SEWER MANHOLE	02933	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086613	WO#3086804	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	7900 SHELBYVILLE RD	KY0022411	4/20/2019 4:14	4/21/2019 20:30	24,000	SEWER MANHOLE	02935	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086612	WO#3086805	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	8021 CHRISTIAN CT	KY0022411	4/20/2019 4:20	4/21/2019 9:00	855,000	SEWER MANHOLE	90700	CATCH BASIN	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086616	WO#3086808	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	7913 SHELBYVILLE RD	KY0022411	4/20/2019 4:30	4/21/2019 9:15	261,000	SEWER MANHOLE	84155	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086622	WO#3086810	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	1132 ROSTREVOR CIR	KY0022411	4/20/2019 4:55	4/22/2019 10:02	371,000	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086564	WO#3087202	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	1011 ALTA CIR	KY0022411	4/20/2019 5:00	4/22/2019 10:04	1,060,000	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086604	WO#3087204	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	1700 SULGRAVE RD	KY0022411	4/20/2019 5:05	4/21/2019 8:30	165,000	SEWER MANHOLE	72289	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086606	WO#3087078	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	4315 PRUITT CT	KY0022411	4/20/2019 5:10	4/21/2019 17:00	215,000	SEWER MANHOLE	08426	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086648	CLEAN UP NOT REQUIRED.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	4332 PRUITT CT	KY0022411	4/20/2019 5:25	4/21/2019 17:10	53,625	SEWER SERVICE LINE	085100290046A	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086658	WO#3086839	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	4339 PRUITT CT	KY0022411	4/20/2019 5:25	4/21/2019 17:00	107,250	SEWER MANHOLE	08431	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086650	WO#3086831	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	4341 PRUITT CT	KY0022411	4/20/2019 5:25	4/21/2019 17:10	214,500	SEWER MANHOLE	08430	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086652	CLEANUP NOT REQUIRED.	LOCATION INCLUDED IN IOAP.
DEREK R. GUTHRIE	9114 CINDERELLA LN	KY0078956	4/20/2019 5:50	4/20/2019 18:00	91,250	SEWER MANHOLE	60679	DITCH	FISHPOOL CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086556	WATER HAS NOT RECEDED.	SITE FOUND DURING RAIN EVENT RECON. WILL BE MONITORED.
MORRIS FORMAN	4319 PRUITT CT	KY0022411	4/20/2019 6:00	4/21/2019 17:00	52,500	SEWER SERVICE LINE	85076	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086655	WO#3086838	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	4317 PRUITT CT	KY0022411	4/20/2019 6:03	4/21/2019 17:00	52,425	SEWER SERVICE LINE	85075	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086654	WO#3086837	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	3406 DELL RD	KY0022411	4/20/2019 7:50	4/21/2019 8:05	72,750	SEWER MANHOLE	28415	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086636	WO#3086820	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	3400 DELL RD	KY0022411	4/20/2019 7:55	4/21/2019 8:45	35,225	SEWER MANHOLE	28414	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086646	WO#3086828	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	2216 FAIRLAND AVE	KY0022411	4/20/2019 8:00	4/20/2019 23:40	70,500	SEWER MANHOLE	49445	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086663	WO#3086834	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	3402 CHARLANE PKY	KY0022411	4/20/2019 8:00	4/21/2019 8:12	36,300	SEWER MANHOLE	28453	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086637	WO#3086821	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	3406 CHARLANE PKY	KY0022411	4/20/2019 8:05	4/21/2019 8:17	36,300	SEWER MANHOLE	28451	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086639	WO#3086822	LOCATION INCLUDED IN IOAP.

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
MORRIS FORMAN	9808 TAYLORSVILLE RD	KY0022411	4/20/2019 8:07	4/21/2019 8:22	36,375	SEWER MANHOLE	28450	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086641	WO#3086823	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	3500 ST EDWARDS DR	KY0022411	4/20/2019 8:10	4/20/2019 16:10	12,000	SEWER MANHOLE	28249	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086642	WO#3086824	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	9707 WILLOWWOOD WAY	KY0022411	4/20/2019 8:15	4/21/2019 8:30	36,375	SEWER MANHOLE	28336	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086643	WO#3086825	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	3620 CHARLANE PKY	KY0022411	4/20/2019 8:17	4/21/2019 8:32	36,375	SEWER MANHOLE	28340	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086645	WO#3086825	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	2219 RICHLAND AVE	KY0022411	4/20/2019 8:30	4/20/2019 23:40	113,750	SEWER MANHOLE	49446	STREAM	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086664	WO#3086835	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	9514 TAYLORSVILLE RD	KY0022411	4/20/2019 8:30	4/20/2019 15:52	11,050	SEWER MANHOLE	28711	DITCH	BEATTY BROOK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086647	WO#3086829	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	37 ARROWHEAD RD	KY0022411	4/20/2019 10:00	4/20/2019 21:35	17,250	SEWER MANHOLE	89791	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086692	WO#3086814	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	24 SOUTHWIND RD	KY0022411	4/20/2019 10:00	4/20/2019 21:35	17,250	SEWER MANHOLE	89790	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086693	WO#3086815	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	4019 LELAND RD	KY0022411	4/20/2019 10:15	4/20/2019 21:45	34,500	SEWER MANHOLE	96019	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086694	WO#3086816	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	9 MUIRFIELD PL	KY0022411	4/20/2019 11:30	4/20/2019 20:50	27,000	SEWER MANHOLE	01793	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086689	WO#3086812	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	8117 COPPERCREEK DR	KY0022411	4/20/2019 11:35	4/20/2019 21:00	42,750	SEWER MANHOLE	65070	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086690	WO#3086813	LOCATION INCLUDED IN THE IOAP.
CEDAR CREEK	8809 CEDAR CREEK RD	KY0098540	4/20/2019 11:53	4/22/2019 12:46	36,200	SEWER MANHOLE	98024	GROUND	CEDAR CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086656	MSD CLEANED AND SANITIZED AREA.	CLEAN UP WILL BE PERFORMED AFTER DISCHARGE STOPS.
MORRIS FORMAN	1108 DUPONT CIR	KY0022411	4/20/2019 12:05	4/20/2019 22:00	15,000	SEWER MANHOLE	43726	GROUND	WEICHER CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086666	WO#3086811	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	3928 DUTCHMANS LN	KY0022411	4/20/2019 12:05	4/20/2019 22:00	30,000	SEWER SERVICE LINE	Z18284029	GROUND	WEICHER CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086674	MSD CLEANED IMPACTED AREA.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	5901 DUTCHMANS LN	KY0022411	4/20/2019 13:05	4/20/2019 22:00	13,500	SEWER MANHOLE	74512	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086696	WO#3086818	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	974 BRECKENRIDGE LN	KY0022411	4/20/2019 13:10	4/20/2019 21:45	12,750	SEWER MANHOLE	74520	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086695	WO#3086817	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	2408 GRAY FOX RD	KY0022411	4/20/2019 13:35	4/22/2019 10:00	534,000	SEWER MANHOLE	27012	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086697	WO#3087209	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	1910 CHARBON PL	KY0022411	4/21/2019 12:15	4/21/2019 23:50	11,500	SEWER MANHOLE	117953	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3086786	NO CLEAN UP PERFORMED.	SITE FOUND DURING RAIN EVENT RECON. WILL BE MONITORED.
MORRIS FORMAN	1001 BRECKENRIDGE LN	KY0022411	4/25/2019 19:40	4/26/2019 8:47	570	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3089961	CLEAN UP IS NOT REQUIRED. PIPE IS SUBMERGED.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	1201 OLD CANNONS LN	KY0022411	4/25/2019 19:45	4/27/2019 1:15	1,680,000	SEWER MANHOLE	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3089976	NO CLEAN UP PERFORMED. NO PUBLIC ACCESS TO THE DISCHARGE SITE.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	2408 GRAY FOX RD	KY0022411	4/25/2019 20:50	4/27/2019 6:30	100,500	SEWER MANHOLE	27012	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3089972	WO#3093773	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	1011 ALTA CIR	KY0022411	4/25/2019 20:55	4/26/2019 12:00	135,000	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3089973	WO#3090199	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	1726 FRASER DR	KY0022411	4/26/2019 17:30	4/26/2019 17:45	570	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3089921	NO CLEANUP REQUIRED. DISCHARGING PIPE IS SUBMERGED.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	1001 BRECKENRIDGE LN	KY0022411	5/3/2019 7:15	5/6/2019 13:53	244,587	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100611	NO CLEANUP REQUIRED. MANHOLE IS DISCHARGING DIRECTLY INTO CREEK.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	1201 OLD CANNONS LN	KY0022411	5/3/2019 8:15	5/3/2019 22:45	2,964,000	SEWER MANHOLE	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100612	NO CLEANUP REQUIRED. MANHOLE IS DISCHARGING DIRECTLY INTO CREEK.	LOCATION INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	9317 LANTANA DR	KY0078956	5/3/2019 8:40	5/3/2019 11:45	925	SEWER MANHOLE	25484	STREAM	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100375	AREA DISINFECTED WITH LIME.	LOCATION FOUND IN THE IOAP.
MORRIS FORMAN	2408 GRAY FOX RD	KY0022411	5/3/2019 8:56	5/3/2019 17:02	97,200	SEWER MANHOLE	27012	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100621	WO#3090373	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	1011 ALTA CIR	KY0022411	5/3/2019 8:59	5/3/2019 17:35	75,750	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100623	WO#3090199	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	1700 SULGRAVE RD	KY0022411	5/3/2019 9:09	5/3/2019 17:40	51,100	SEWER MANHOLE	72289	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100626	WO#3100847	LOCATION INCLUDED IN THE IOAP.
FLOYDS FORK	815 TUCKER STATION RD	KY0102784	5/3/2019 9:10	5/3/2019 10:55	2,625	SEWER MANHOLE	33003	STREAM	POPE LICK	LACK OF CAPACITY. HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100429	WO#3100528	A SOLUTION FOR THIS IS INCLUDED IN THE IOAP.
MORRIS FORMAN	3406 DELL RD	KY0022411	5/3/2019 9:42	5/3/2019 20:45	16,575	SEWER MANHOLE	28415	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100638	WO#3100638	LOCATION INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	8800 ADMIRAL DR	KY0078956	5/3/2019 9:47	5/3/2019 12:00	13,300	SEWER MANHOLE	93705	STREAM	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100439	AREA DISINFECTED WITH LIME.	LOCATION FOUND IN THE IOAP.
MORRIS FORMAN	3402 CHARLANE PKY	KY0022411	5/3/2019 9:58	5/4/2019 10:01	34,825	SEWER MANHOLE	28453	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100639	WO#3100854	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	201 BULLITT LN	KY0022411	5/3/2019 10:06	5/3/2019 18:20	49,000	SEWER MANHOLE	47582	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100636	WO#3100852	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	202 OXMOOR LN	KY0022411	5/3/2019 10:06	5/3/2019 18:15	97,800	SEWER MANHOLE	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100629	WO#3100850	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	3406 CHARLANE PKY	KY0022411	5/3/2019 10:10	5/3/2019 20:50	16,000	SEWER MANHOLE	28451	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100641	WO#3100855	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	3500 ST EDWARDS DR	KY0022411	5/3/2019 10:15	5/3/2019 13:54	5,475	SEWER MANHOLE	28249	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100643	WO#3100856	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	4315 PRUITT CT	KY0022411	5/3/2019 10:21	5/3/2019 13:56	11,300	SEWER MANHOLE	08426	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100648	CLEAN UP NOT REQUIRED. NO VISIBLE SIGNS OF DEBRIS ON OR AROUND MANHOLE.	LOCATION INCLUDED IN THE IOAP.

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
MORRIS FORMAN	9707 WILLOWWOOD WAY	KY0022411	5/3/2019 10:26	5/3/2019 20:57	31,550	SEWER MANHOLE	28336	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100646	WO#3100858	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	3620 CHARLANE PKY	KY0022411	5/3/2019 10:32	5/3/2019 21:04	15,800	SEWER MANHOLE	28340	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100644	WO#3100859	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	4341 PRUITT CT	KY0022411	5/3/2019 10:57	5/3/2019 11:58	600	SEWER MANHOLE	08430	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100650	CLEAN UP NOT REQUIRED. NO VISIBLE SIGNS OF DEBRIS ON OR AROUND MANHOLE.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	4337 PRUITT CT	KY0022411	5/3/2019 10:57	5/3/2019 11:57	600	SEWER MANHOLE	08429	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3100649	CLEAN UP NOT REQUIRED. NO VISIBLE SIGNS OF DEBRIS ON OR AROUND MANHOLE.	LOCATION INCLUDED IN THE IOAP.
FLOYDS FORK	15302 CRYSTAL SPRINGS WAY	KY0102784	5/9/2019 16:44	5/9/2019 18:18	940	SEWER MAIN	80289	STREAM	KLEMENZ CREEK	LINE BREAK OCCURRED WHILE PLUMBER TYING IN CONNECTION.	UTILITY DAMAGED MSD ASSET	DISDW DRY WEATHER DISCHARGE	3102538	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA.	PUMPS SET TO PUMP AROUND LINE BREAK. CONTRACTOR TO REPAIR DAMAGED MAIN AND STREAM BANK.
MORRIS FORMAN	10401 FOREST GARDEN LN	KY0022411	5/15/2019 20:00	5/15/2019 22:10	600	SEWER MANHOLE	92106	GROUND	MIDDLE FORK BEARGRASS CREEK	ROOTS IN MANHOLE.	ROOTS	DISDW DRY WEATHER DISCHARGE	3104340	CLEAN UP ACTIVITIES PERFORMED.	FLUSHED AND PULLED ROOTS FROM MANHOLE.
FLOYDS FORK	611 WOODLAKE DR	KY0102784	5/16/2019 18:30	5/16/2019 18:45	150	SEWER MAIN	80581B-AG	STREAM	FLOYDS FORK	STRUCTURAL FAILURE. FORCE MAIN BREAK.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	3104799	CLEAN UP ACTIVITIES WILL BE PERFORMED AFTER REPAIR IS DONE.	TURNED OFF PUMP FOR THIS FORCE MAIN.
MORRIS FORMAN	1201 OLD CANNONS LN	KY0022411	5/29/2019 15:15	5/29/2019 18:45	300,000	SEWER MANHOLE	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY. HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3113155	CLEAN UP NOT REQUIRED. MANHOLE DISCHARGES DIRECTLY INTO THE CREEK.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	329 W MAIN ST	KY0022411	5/30/2019 10:40	5/30/2019 10:50	1,000	SEWER MAIN	75126-AG	CATCH BASIN	OHIO RIVER	STRUCTURAL FAILURE AT FORCE MAIN CLEANOUT MANHOLE.	STRUCTURAL FAILURE	DISREV RAIN EVENT DISCHARGE	3113373	NOT NEEDED. DISCHARGE FLOWED DIRECTLY TO DRAIN GRATE DURING REV.	1 PUMP TAKEN OUT OF SERVICE UNTIL REPAIRS CAN BE MADE.
MORRIS FORMAN	1001 BRECKENRIDGE LN	KY0022411	6/9/2019 1:22	6/10/2019 16:21	1,037,000	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3117247	NO CLEANUP REQUIRED. MANHOLE IS DISCHARGING DIRECTLY INTO CREEK	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	1201 OLD CANNONS LN	KY0022411	6/9/2019 3:41	6/11/2019 1:45	7,100,000	SEWER MANHOLE	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3117248	NO CLEANUP REQUIRED. MANHOLE IS DISCHARGING DIRECTLY INTO CREEK	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	2408 GRAY FOX RD	KY0022411	6/9/2019 19:53	6/10/2019 10:14	105,000	SEWER MANHOLE	27012	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3117312	WO#3117973	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	202 OXMOOR LN	KY0022411	6/9/2019 20:00	6/11/2019 8:45	666,000	SEWER MANHOLE	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3117314	WO#3118213	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	1011 ALTA CIR	KY0022411	6/9/2019 20:05	6/10/2019 10:26	162,000	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3117313	WO#3117974	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	201 BULLITT LN	KY0022411	6/9/2019 20:30	6/11/2019 8:45	270,000	SEWER MANHOLE	47582	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3117315	WO#3118214	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	7900 SHELBYVILLE RD	KY0022411	6/9/2019 20:40	6/10/2019 9:30	975,000	SEWER MANHOLE	02933	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3117316	WO#3117976	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	7913 SHELBYVILLE RD	KY0022411	6/9/2019 20:50	6/10/2019 9:35	975,000	SEWER MANHOLE	84155	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3117319	WO#3117978	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	4315 PRUITT CT	KY0022411	6/9/2019 21:33	6/9/2019 23:17	2,600	SEWER MANHOLE	08426	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3117320	CLEAN UP NOT REQUIRED. NO VISIBLE SIGNS OF DEBRIS ON OR AROUND MANHOLE.	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	4341 PRUITT CT	KY0022411	6/9/2019 22:03	6/9/2019 23:17	1,800	SEWER MANHOLE	08430	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3117322	CLEAN UP NOT REQUIRED. NO VISIBLE SIGNS OF DEBRIS ON OR AROUND MANHOLE.	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	4337 PRUITT CT	KY0022411	6/9/2019 22:05	6/9/2019 23:17	1,800	SEWER MANHOLE	08429	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3117321	CLEAN UP NOT REQUIRED. NO VISIBLE SIGNS OF DEBRIS ON OR AROUND MANHOLE.	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	1201 OLD CANNONS LN	KY0022411	6/16/2019 22:30	6/19/2019 1:30	2,400,000	SEWER MANHOLE	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3119623	NO CLEANUP REQUIRED. MANHOLE IS DISCHARGING DIRECTLY INTO CREEK	LOCATION INCLUDED IN THE IOAP
DEREK R. GUTHRIE	9317 LANTANA DR	KY0078956	6/17/2019 1:50	6/17/2019 3:30	2,500	SEWER MANHOLE	25484	STREAM	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3119612	NO CLEANUP PERFORMED	SITE FOUND DURING RAIN EVENT RECON
MORRIS FORMAN	1001 BRECKENRIDGE LN	KY0022411	6/18/2019 8:13	6/18/2019 23:05	5,664	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3122417	NO CLEANUP REQUIRED. MANHOLE IS DISCHARGING DIRECTLY INTO CREEK	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	3506 CHARLANE PKY	KY0022411	6/18/2019 21:45	6/19/2019 7:30	585	SEWER MANHOLE	28250	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3122418	CLEAN UP NOT REQUIRED. NO VISIBLE SIGNS OF DEBRIS ON OR AROUND MANHOLE.	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	3402 CHARLANE PKY	KY0022411	6/18/2019 22:00	6/19/2019 7:35	575	SEWER MANHOLE	28453	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3122419	CLEAN UP NOT REQUIRED. NO SOLIDS OR DEBRIS OBSERVED.	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	1001 BRECKENRIDGE LN	KY0022411	6/24/2019 15:27	6/24/2019 18:15	1,400	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3126494	NO CLEANUP REQUIRED. DISCHARGE. PIPE IS SUBMERGED	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	1201 OLD CANNONS LN	KY0022411	6/24/2019 15:45	6/25/2019 1:30	700,000	SEWER MANHOLE	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	3126496	NO CLEANUP REQUIRED. DISCHARGE. PIPE IS SUBMERGED	LOCATION INCLUDED IN IOAP
DEREK R. GUTHRIE	10402 W MANSICK RD	KY0078956	6/25/2019 10:10	6/25/2019 12:00	200	SEWER MANHOLE	61539			STONE AND DEBRIS BUILD UP 10' UPSTREAM OF MANHOLE 61505	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	3126646	NO CLEANUP NEEDED AT THIS LOCATION	FLUSHED MAIN SEWER FROM DOWNSTREAM MANHOLE

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**Appendix B      CSO Flow Monitoring Data**

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CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO015	4/14/2019 2:30	4/14/2019 11:00	510	1.03	25,735,943	1.82	0.47	12	Atlas		26,508,021	1
	4/16/2019 7:00	4/16/2019 20:15	795	Discharge	0	1.18					343,608	
	4/19/2019 20:00	4/22/2019 20:15	4335	2.44	94,341,075	4.27	0.92	24	Atlas		230,192,222	1
	4/26/2019 2:45	4/26/2019 5:45	180	0.96	5,697,632	3.76	0.31	48	Atlas		5,469,727	1
	5/2/2019 11:45	5/2/2019 15:15	210	0.1	129,270	0.65	0.09	1	Atlas		12,927	1
	5/3/2019 5:15	5/3/2019 18:30	795	1.22	38,828,000	1.37	0.67	6	Atlas		47,370,160	1
	5/15/2019 13:15	5/15/2019 19:15	360	0.01	215,100	0.43	0.01	1	Atlas		2,151	1
	5/26/2019 18:00	5/26/2019 21:00	180	0.41	16,317	0.65	0.25	3	Atlas		6,690	1
	5/29/2019 15:00	5/29/2019 20:45	345	0.63	34,241	1.13	0.34	6	Atlas		21,572	1
	5/30/2019 15:30	5/30/2019 16:15	45	0.35	2,449	1.39	0.16	3	Atlas		857	1
	6/5/2019 9:30	6/5/2019 20:15	645	0.05	476,520	1.11	0.03	6	Atlas		23,826	1
	6/6/2019 8:00	6/6/2019 22:30	870	1.21	29,830	1.53	0.95	1	Atlas		36,094	1
	6/9/2019 10:45	6/9/2019 19:30	525	0.92	6,791	2.59	0.30	24	Atlas		6,248	1
	6/16/2019 20:30	6/16/2019 21:30	60	1.95	4,492,813	1.75	0.91	6	Atlas		8,760,986	1
	6/17/2019 9:30	6/17/2019 20:30	660	1.95	22,365	2.28	0.91	6	Atlas		43,612	1
	6/22/2019 11:00	6/23/2019 0:00	780	0.96	21,906	3.55	0.37	24	Atlas		21,030	1
	6/23/2019 16:30	6/23/2019 20:15	225	0.58	1,530,333	3.84	0.45	1	Atlas		887,593	1
6/24/2019 14:15	6/24/2019 22:00	465	0.66	1,223,295	2.67	0.39	3	Atlas		807,375	1	
<b>CSO015 Total</b>											<b>320,514,699</b>	<b>17</b>
CSO016	4/7/2019 12:00	4/7/2019 17:00	300	0.75	10,554,600	0.96	0.35	1	Atlas		7,915,950	1
	4/14/2019 1:45	4/14/2019 8:30	405	1.1	12,731,981	2.02	0.51	6	Atlas		14,005,179	1
	4/18/2019 21:45	4/19/2019 5:45	480	0.68	15,832,547	2.17	0.31	12	Atlas		10,766,132	1
	4/19/2019 18:45	4/20/2019 19:30	1485	2.53	20,600,166	4.54	0.96	24	Atlas		52,118,421	1
	4/24/2019 21:00	4/25/2019 1:15	255	1.05	4,920,076	3.87	0.34	48	Atlas		5,166,080	1
	4/25/2019 18:15	4/26/2019 5:00	645	1.05	3,543,785	4.43	0.34	48	Atlas		3,720,974	1
	5/3/2019 5:15	5/3/2019 12:15	420	1.19	8,945,736	1.41	0.64	6	Atlas		10,645,426	1
	5/26/2019 14:00	5/26/2019 21:15	435	0.45	19,224,782	0.76	0.27	3	Atlas		8,651,152	1
	5/29/2019 10:30	5/29/2019 17:30	420	0.72	10,619,168	1.23	0.39	6	Atlas		7,645,801	1
	5/30/2019 12:15	5/30/2019 12:30	15	0.32	140,438	1.52	0.14	3	Atlas		44,940	1
	6/5/2019 21:00	6/6/2019 1:30	270	0.99	4,883,747	1.35	0.70	1	Atlas		4,834,910	1
	6/7/2019 22:15	6/8/2019 5:15	420	0.52	9,763,423	1.55	0.22	6	Atlas		5,076,980	1
	6/9/2019 1:00	6/9/2019 4:15	195	0.77	3,201,382	1.91	0.25	48	Atlas		2,465,064	1
6/9/2019 15:45	6/9/2019 23:45	480	0.77	12,445,156	2.35	0.25	48	Atlas		9,582,770	1	
<b>CSO016 Total</b>											<b>142,639,779</b>	<b>14</b>
CSO018	4/20/2019 4:00	4/22/2019 1:45	2745	3.89	111,194	5.26	2.69	48	Cloudburst		432,545	1



CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
<b>CSO018 Total</b>											<b>432,545</b>	<b>1</b>
CSO019	4/7/2019 6:45	4/7/2019 17:45	660	0.76	6,805,300	0.97	0.44	1	Atlas		5,172,028	1
	4/14/2019 1:15	4/14/2019 9:45	510	1.07	5,931,748	1.95	0.50	6	Atlas		6,346,970	1
	6/30/2019 17:30	6/30/2019 18:45	75	0.15	7,915,580	0.78	0.08	6	Atlas		1,187,337	1
<b>CSO019 Total</b>											<b>12,706,335</b>	<b>3</b>
CSO022	5/3/2019 4:45	5/3/2019 5:15	30	0.88	133,953	0.61	0.48	6	Atlas		117,879	1
	6/5/2019 20:45	6/5/2019 21:00	15	0.91	505,329	0.99	0.66	1	Atlas		459,849	1
	6/9/2019 16:45	6/9/2019 17:00	15	0.39	655,977	1.87	0.19	6	Atlas		255,831	1
<b>CSO022 Total</b>											<b>833,559</b>	<b>3</b>
CSO027	6/16/2019 19:45	6/16/2019 19:45	0	2.14	956	1.74	0.97	3	Atlas		2,045	1
<b>CSO027 Total</b>											<b>2,045</b>	<b>1</b>
CSO028	5/3/2019 4:45	5/3/2019 4:45	0	0.84	495	0.51	0.45	6	Atlas		416	1
	6/9/2019 16:45	6/9/2019 16:45	0	0.53	28,709	2.05	0.27	3	Atlas		15,216	1
	6/16/2019 19:30	6/16/2019 20:45	75	2.14	10,870	1.96	0.97	3	Atlas		23,262	1
	6/18/2019 16:15	6/18/2019 16:15	0	0.24	2,467	2.71	0.09	24	Atlas		592	1
	6/21/2019 19:15	6/21/2019 19:15	0	0.8	6,813	3.25	0.53	3	Atlas		5,450	1
	6/23/2019 16:00	6/23/2019 16:00	0	0.36	23,933	4.04	0.28	1	Atlas		8,616	1
<b>CSO028 Total</b>											<b>53,552</b>	<b>6</b>
CSO029	6/16/2019 19:30	6/16/2019 20:30	60	2.14	27,914	1.87	0.97	3	Atlas		59,736	1
<b>CSO029 Total</b>											<b>59,736</b>	<b>1</b>
CSO031	5/3/2019 5:00	5/3/2019 5:00	0	0.84	876	0.57	0.45	6	Atlas		736	1
	6/9/2019 17:00	6/9/2019 17:00	0	0.53	1,851	2.07	0.27	3	Atlas		981	1
	6/16/2019 19:45	6/16/2019 21:00	75	2.14	914	1.99	0.97	3	Atlas		1,957	1
	6/21/2019 19:30	6/21/2019 19:30	0	0.8	284	3.27	0.53	3	Atlas		227	1
	6/23/2019 16:15	6/23/2019 16:15	0	0.36	4,194	3.82	0.28	1	Atlas		1,510	1
	6/24/2019 13:45	6/24/2019 13:45	0	0.4	1,248	2.38	0.25	3	Atlas		499	1
<b>CSO031 Total</b>											<b>5,910</b>	<b>6</b>
CSO034	4/24/2019 20:30	4/24/2019 20:30	0	1.09	3,572	2.82	0.35	48	Atlas		3,894	1
	5/3/2019 4:45	5/3/2019 4:45	0	0.84	40,921	0.51	0.45	6	Atlas		34,374	1
	6/5/2019 20:30	6/5/2019 21:00	30	0.8	29,313	0.91	0.58	1	Atlas		23,450	1
	6/9/2019 16:45	6/9/2019 16:45	0	0.53	92,745	2.05	0.27	3	Atlas		49,155	1
	6/16/2019 19:30	6/16/2019 20:45	75	2.14	50,668	1.96	0.97	3	Atlas		108,429	1
	6/18/2019 16:15	6/18/2019 16:15	0	0.24	152,025	2.71	0.09	24	Atlas		36,486	1



CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO034	6/21/2019 19:15	6/21/2019 19:15	0	0.8	45,008	3.25	0.53	3	Atlas		36,006	1
	6/23/2019 16:00	6/23/2019 16:00	0	0.36	78,931	4.04	0.28	1	Atlas		28,415	1
	6/24/2019 13:30	6/24/2019 13:30	0	0.4	40,900	2.34	0.25	3	Atlas		16,360	1
<b>CSO034</b>											<b>336,569</b>	<b>9</b>
<b>Total</b>												
CSO035	4/7/2019 12:00	4/7/2019 12:30	30	0.48	524,392	0.57	0.22	12	Atlas		251,708	1
	4/24/2019 20:30	4/24/2019 20:30	0	0.58	1,853	2.76	0.29	1	Atlas		1,075	1
	5/3/2019 4:45	5/3/2019 4:45	0	0.86	21,407	0.5	0.46	6	Atlas		18,410	1
	6/5/2019 20:45	6/5/2019 20:45	0	0.83	19,477	0.88	0.62	1	Atlas		16,166	1
	6/9/2019 16:30	6/9/2019 16:45	15	0.59	39,044	2.22	0.32	3	Atlas		23,036	1
	6/16/2019 19:30	6/16/2019 20:45	75	1.87	17,256	1.71	0.85	12	Atlas		32,268	1
	6/18/2019 16:15	6/18/2019 16:15	0	0.21	387,281	2.36	0.08	24	Atlas		81,329	1
	6/21/2019 19:15	6/21/2019 19:15	0	0.76	1,580	2.88	0.51	3	Atlas		1,201	1
	6/23/2019 15:45	6/23/2019 16:00	15	0.28	11,529	3.68	0.21	1	Atlas		3,228	1
	6/24/2019 13:30	6/24/2019 13:30	0	0.41	4,107	2.2	0.26	3	Atlas		1,684	1
<b>CSO035</b>											<b>430,105</b>	<b>10</b>
<b>Total</b>												
CSO036	4/7/2019 12:00	4/7/2019 12:00	0	0.48	1,219	0.55	0.22	12	Atlas		585	1
	4/24/2019 20:45	4/24/2019 20:45	0	0.58	52,383	2.8	0.29	1	Atlas		30,382	1
	4/25/2019 18:15	4/25/2019 18:15	0	0.33	4,761	3.17	0.15	12	Atlas		1,571	1
	5/3/2019 5:00	5/3/2019 5:15	15	0.86	12,623	0.61	0.46	6	Atlas		10,856	1
	6/5/2019 20:45	6/5/2019 21:15	30	0.83	137,728	0.94	0.62	1	Atlas		114,314	1
	6/9/2019 0:30	6/9/2019 0:30	0	0.28	15,382	1.77	0.14	6	Atlas		4,307	1
	6/16/2019 19:45	6/16/2019 21:15	90	1.87	65,780	1.75	0.85	12	Atlas		123,008	1
	6/18/2019 16:30	6/18/2019 16:30	0	0.21	200,071	2.36	0.08	24	Atlas		42,015	1
	6/23/2019 16:15	6/23/2019 16:15	0	0.28	195,014	3.42	0.21	1	Atlas		54,604	1
	6/24/2019 13:45	6/24/2019 14:00	15	0.41	130,024	2.26	0.26	3	Atlas		53,310	1
<b>CSO036</b>											<b>434,952</b>	<b>10</b>
<b>Total</b>												
CSO038	5/3/2019 5:00	5/3/2019 5:00	0	0.84	2,194	0.57	0.45	6	Atlas		1,843	1
	6/5/2019 20:45	6/5/2019 21:00	15	0.8	18,316	0.91	0.58	1	Atlas		14,653	1
	6/9/2019 17:00	6/9/2019 17:00	0	0.53	19,575	2.07	0.27	3	Atlas		10,375	1
<b>CSO038</b>											<b>26,871</b>	<b>3</b>
<b>Total</b>												
CSO050	4/7/2019 6:00	4/7/2019 13:45	465	0.62	524,726	0.84	0.28	12	Atlas		325,330	1
	4/12/2019 6:00	4/12/2019 6:00	0	0.1	21,550	0.71	0.06	1	Atlas		2,155	1
	4/14/2019 0:45	4/14/2019 5:15	270	0.86	706,849	1.57	0.40	6	Atlas		607,890	1
	4/14/2019 14:30	4/14/2019 14:30	0	0.03	61,100	0.99	0.03	1	Atlas		1,833	1
	4/18/2019 21:15	4/18/2019 22:45	90	2.59	12,125	1.35	0.84	48	Atlas		31,404	1
	4/19/2019 12:30	4/20/2019 9:00	1230	2.59	909,641	3.17	0.84	48	Atlas		2,355,969	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO050	4/24/2019 20:30	4/24/2019 21:00	30	1.16	186,303	3.05	0.38	24	Atlas		216,112	1
	4/25/2019 17:45	4/25/2019 18:00	15	1.16	112,305	3.56	0.38	24	Atlas		130,274	1
	4/26/2019 2:15	4/26/2019 2:15	0	1.16	1,313	3.18	0.38	24	Atlas		1,523	1
	5/2/2019 11:15	5/2/2019 11:15	0	0.22	205,950	0.8	0.19	1	Atlas		45,309	1
	5/3/2019 4:30	5/3/2019 8:00	210	1.14	665,449	1.4	0.62	6	Atlas		758,612	1
	5/4/2019 17:15	5/4/2019 17:15	0	0.23	11,417	1.6	0.12	3	Atlas		2,626	1
	6/16/2019 5:45	6/16/2019 5:45	0	0.59	117,939	0.97	0.39	3	Atlas		69,584	1
<b>CSO050 Total</b>											<b>4,548,621</b>	<b>13</b>
CSO051	4/7/2019 11:45	4/7/2019 13:45	120	0.62	13,003	0.84	0.28	12	Atlas		8,062	1
	4/14/2019 2:30	4/14/2019 5:30	180	0.86	31,195	1.58	0.40	6	Atlas		26,828	1
	4/19/2019 19:30	4/20/2019 8:15	765	2.59	66,792	3.13	0.84	48	Atlas		172,991	1
	4/24/2019 20:30	4/24/2019 20:45	15	1.16	4,851	2.98	0.38	24	Atlas		5,627	1
	4/25/2019 18:00	4/25/2019 18:00	0	1.16	5,755	3.56	0.38	24	Atlas		6,676	1
	5/2/2019 11:15	5/2/2019 11:15	0	0.22	18,555	0.8	0.19	1	Atlas		4,082	1
	5/3/2019 4:30	5/3/2019 8:45	255	1.14	62,365	1.45	0.62	6	Atlas		71,096	1
	5/26/2019 14:00	5/26/2019 15:00	60	0.87	2,000	0.94	0.53	3	Atlas		1,740	1
	5/29/2019 9:00	5/29/2019 9:00	0	0.9	6,166	1.2	0.49	6	Atlas		5,549	1
	6/5/2019 20:30	6/5/2019 21:00	30	0.95	7,049	1.08	0.70	1	Atlas		6,697	1
	6/7/2019 21:00	6/7/2019 21:00	0	0.66	2,089	1.11	0.21	48	Atlas		1,379	1
	6/9/2019 0:15	6/9/2019 0:15	0	0.66	648	1.61	0.21	48	Atlas		428	1
	6/9/2019 15:30	6/9/2019 18:00	150	0.37	58,141	1.96	0.17	6	Atlas		21,512	1
	6/16/2019 5:45	6/16/2019 5:45	0	0.59	6,620	0.97	0.39	3	Atlas		3,906	1
	6/16/2019 16:00	6/16/2019 22:45	405	2.61	39,372	3.27	2.00	12	Cloudburst		102,762	1
	6/18/2019 16:15	6/18/2019 16:30	15	0.65	37,551	3.97	0.37	1	Atlas		24,408	1
	6/21/2019 19:15	6/21/2019 19:15	0	0.41	9,673	4.25	0.27	3	Atlas		3,966	1
	6/22/2019 6:45	6/22/2019 6:45	0	0.5	4,000	4.5	0.33	3	Atlas		2,000	1
	6/23/2019 16:00	6/23/2019 16:00	0	0.31	27,365	4.41	0.23	1	Atlas		8,483	1
	6/24/2019 13:30	6/24/2019 14:45	75	0.53	17,736	2.51	0.33	3	Atlas		9,400	1
<b>CSO051 Total</b>											<b>487,592</b>	<b>20</b>
CSO052	6/5/2019 20:45	6/5/2019 20:45	0	0.95	11,061	0.97	0.70	1	Atlas		10,508	1
	6/16/2019 19:30	6/16/2019 19:30	0	2.25	1,024	2.12	1.19	12	Cloudburst		2,305	1
<b>CSO052 Total</b>											<b>12,813</b>	<b>2</b>
CSO053	4/7/2019 6:00	4/7/2019 13:45	465	0.57	145,605	0.78	0.27	3	Atlas		82,995	1
	4/12/2019 6:00	4/12/2019 6:00	0	0.09	99,300	0.66	0.06	1	Atlas		8,937	1
	4/14/2019 1:00	4/14/2019 5:30	270	0.79	153,673	1.45	0.38	6	Atlas		121,402	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO053	4/18/2019 21:15	4/18/2019 23:00	105	2.39	5,982	1.23	0.77	48	Atlas		14,297	1
	4/19/2019 18:30	4/20/2019 7:00	750	2.39	127,537	2.83	0.77	48	Atlas		304,813	1
	4/24/2019 20:30	4/25/2019 1:45	315	1.04	68,649	2.97	0.34	48	Atlas		71,395	1
	4/25/2019 18:00	4/26/2019 3:00	540	1.04	88,660	3.42	0.34	48	Atlas		92,206	1
	5/2/2019 11:30	5/2/2019 11:45	15	0.23	18,713	0.73	0.20	1	Atlas		4,304	1
	5/3/2019 3:15	5/3/2019 8:30	315	0.95	226,028	1.29	0.51	6	Atlas		214,727	1
	5/19/2019 13:15	5/19/2019 13:15	0	0.28	21,121	0.15	0.11	12	Atlas		5,914	1
	5/19/2019 23:30	5/19/2019 23:30	0	0.28	17,914	0.31	0.11	12	Atlas		5,016	1
	5/23/2019 16:00	5/23/2019 16:00	0	0.03	242,633	0.35	0.03	1	Atlas		7,279	1
	5/26/2019 13:45	5/26/2019 17:00	195	0.79	65,780	1	0.45	3	Atlas		51,966	1
	5/29/2019 9:15	5/29/2019 13:45	270	0.8	72,346	1.62	0.44	6	Atlas		57,877	1
	5/30/2019 11:00	5/30/2019 12:00	60	0.21	72,205	1.81	0.08	12	Atlas		15,163	1
	6/5/2019 20:45	6/5/2019 21:15	30	0.95	110,153	1.04	0.70	1	Atlas		104,645	1
	6/7/2019 21:15	6/8/2019 2:30	315	0.43	49,609	1.37	0.19	6	Atlas		21,332	1
	6/9/2019 0:30	6/9/2019 1:00	30	0.23	133,074	1.64	0.11	6	Atlas		30,607	1
	6/9/2019 15:45	6/9/2019 17:45	120	0.37	110,165	1.92	0.17	6	Atlas		40,761	1
	6/16/2019 6:00	6/16/2019 6:00	0	0.58	8,717	1.03	0.42	1	Atlas		5,056	1
	6/16/2019 16:15	6/17/2019 1:15	540	2.25	46,807	3.26	1.19	12	Cloudburst		105,315	1
	6/18/2019 16:30	6/18/2019 17:00	30	0.42	119,426	3.53	0.33	1	Atlas		50,159	1
	6/21/2019 19:30	6/21/2019 21:15	105	0.46	112,254	4.09	0.31	3	Atlas		51,637	1
	6/22/2019 7:00	6/22/2019 9:00	120	0.52	65,623	4.45	0.34	3	Atlas		34,124	1
	6/23/2019 16:15	6/23/2019 16:30	15	0.27	105,581	3.68	0.20	1	Atlas		28,507	1
	6/24/2019 13:00	6/24/2019 14:15	75	0.48	102,319	2.38	0.31	3	Atlas		49,113	1
	6/30/2019 17:30	6/30/2019 17:45	15	0.14	74,443	0.62	0.08	1	Atlas		10,422	1
<b>CSO053</b>											<b>1,589,969</b>	<b>27</b>
<b>Total</b>												
CSO054	4/7/2019 13:30	4/7/2019 13:45	15	0.57	23,223	0.78	0.27	3	Atlas		13,237	1
	4/14/2019 2:30	4/14/2019 5:15	165	0.79	158,080	1.44	0.38	6	Atlas		124,883	1
	4/19/2019 19:15	4/20/2019 9:00	825	2.39	414,974	2.94	0.77	48	Atlas		991,788	1
	5/3/2019 5:15	5/3/2019 8:45	210	0.95	427,255	1.28	0.51	6	Atlas		405,892	1
	5/29/2019 13:15	5/29/2019 13:15	0	0.8	676	1.59	0.44	6	Atlas		541	1
	6/9/2019 16:45	6/9/2019 18:00	75	0.37	385,492	1.95	0.17	6	Atlas		142,632	1
	6/16/2019 20:00	6/16/2019 22:45	165	2.25	158,372	2.72	1.19	12	Cloudburst		356,338	1
	6/18/2019 16:30	6/18/2019 16:45	15	0.42	65,269	3.53	0.33	1	Atlas		27,413	1
	6/24/2019 13:45	6/24/2019 14:45	60	0.48	209,144	2.38	0.31	3	Atlas		100,389	1
<b>CSO054</b>											<b>2,163,113</b>	<b>9</b>
<b>Total</b>												
CSO055	4/7/2019 6:00	4/7/2019 14:45	525	0.57	246,205	0.78	0.27	3	Atlas		140,337	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO055	4/12/2019 6:00	4/12/2019 6:00	0	0.09	1,744	0.66	0.06	1	Atlas		157	1
	4/14/2019 1:15	4/14/2019 6:15	300	0.79	471,766	1.47	0.38	6	Atlas		372,695	1
	4/18/2019 21:15	4/18/2019 21:15	0	2.39	566	1.12	0.77	48	Atlas		1,353	1
	4/19/2019 19:00	4/20/2019 17:15	1335	2.39	975,191	3.19	0.77	48	Atlas		2,330,707	1
	4/24/2019 20:30	4/24/2019 22:15	105	1.04	65,477	2.87	0.34	48	Atlas		68,096	1
	4/25/2019 18:15	4/25/2019 18:15	0	1.04	7,144	3.25	0.34	48	Atlas		7,430	1
	4/26/2019 2:30	4/26/2019 2:30	0	1.04	5,309	2.94	0.34	48	Atlas		5,521	1
	5/2/2019 11:30	5/2/2019 11:30	0	0.23	7,887	0.72	0.20	1	Atlas		1,814	1
	5/3/2019 3:15	5/3/2019 9:45	390	0.95	994,243	1.29	0.51	6	Atlas		944,531	1
	5/26/2019 13:45	5/26/2019 17:15	210	0.79	51,089	1	0.45	3	Atlas		40,360	1
	5/29/2019 9:15	5/29/2019 14:00	285	0.8	159,039	1.62	0.44	6	Atlas		127,231	1
	6/5/2019 20:45	6/5/2019 21:45	60	0.95	132,302	1.1	0.70	1	Atlas		125,687	1
	6/9/2019 0:30	6/9/2019 0:30	0	0.23	2,383	1.63	0.11	6	Atlas		548	1
	6/9/2019 17:00	6/9/2019 22:15	315	0.37	1,208,022	2.03	0.17	6	Atlas		446,968	1
	6/16/2019 6:00	6/16/2019 6:00	0	0.58	10,586	1.03	0.42	1	Atlas		6,140	1
	6/16/2019 19:45	6/17/2019 2:00	375	2.25	485,846	3.02	1.19	12	Cloudburst		1,093,153	1
	6/18/2019 16:30	6/18/2019 19:30	180	0.42	421,324	3.54	0.33	1	Atlas		176,956	1
6/21/2019 19:30	6/21/2019 21:30	120	0.46	255,276	4.09	0.31	3	Atlas		117,427	1	
6/22/2019 6:45	6/22/2019 9:45	180	0.52	113,823	4.46	0.34	3	Atlas		59,188	1	
6/23/2019 16:15	6/23/2019 17:30	75	0.27	272,233	3.68	0.20	1	Atlas		73,503	1	
6/24/2019 13:30	6/24/2019 15:45	135	0.48	615,471	2.38	0.31	3	Atlas		295,426	1	
6/30/2019 17:30	6/30/2019 17:30	0	0.14	75,229	0.62	0.08	1	Atlas		10,532	1	
<b>CSO055 Total</b>											<b>6,445,760</b>	<b>23</b>
CSO056	4/14/2019 3:15	4/14/2019 3:15	0	0.79	1,805	1.28	0.38	6	Atlas		1,426	1
	4/19/2019 19:15	4/20/2019 0:45	330	2.39	74,439	2.14	0.77	48	Atlas		177,909	1
	5/3/2019 4:45	5/3/2019 8:15	210	0.95	95,342	1.27	0.51	6	Atlas		90,575	1
	6/5/2019 20:45	6/5/2019 21:15	30	0.95	83,519	1.04	0.70	1	Atlas		79,343	1
	6/9/2019 17:00	6/9/2019 17:45	45	0.37	446,427	1.92	0.17	6	Atlas		165,178	1
	6/16/2019 19:45	6/16/2019 22:15	150	2.25	116,463	2.72	1.19	12	Cloudburst		262,041	1
	6/18/2019 16:30	6/18/2019 16:45	15	0.42	121,164	3.53	0.33	1	Atlas		50,889	1
	6/21/2019 19:30	6/21/2019 19:30	0	0.46	37,865	3.8	0.31	3	Atlas		17,418	1
	6/23/2019 16:15	6/23/2019 16:15	0	0.27	64,619	3.68	0.20	1	Atlas		17,447	1
6/24/2019 13:45	6/24/2019 14:15	30	0.48	75,421	2.38	0.31	3	Atlas		36,202	1	
<b>CSO056 Total</b>											<b>898,428</b>	<b>10</b>
CSO057	4/7/2019 11:45	4/7/2019 12:15	30	0.6	2,497	0.67	0.28	3	Atlas		1,498	1
	4/14/2019 2:00	4/14/2019 2:00	0	0.68	943	1.08	0.33	6	Atlas		641	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO057	5/23/2019 16:00	5/23/2019 17:15	75	0.07	9,000	0.32	0.04	1	Atlas		630	1
	5/26/2019 14:00	5/26/2019 14:00	0	0.55	182	0.44	0.32	3	Atlas		100	1
	6/7/2019 21:00	6/7/2019 21:00	0	0.47	164	1.1	0.20	6	Atlas		77	1
	6/9/2019 15:30	6/9/2019 16:45	75	0.48	2,756	2.01	0.23	6	Atlas		1,323	1
	6/16/2019 19:45	6/16/2019 19:45	0	1.81	93	1.52	0.83	12	Atlas		168	1
	6/18/2019 16:15	6/18/2019 16:15	0	0.15	9,760	2.49	0.12	1	Atlas		1,464	1
	6/22/2019 6:45	6/22/2019 6:45	0	0.49	994	3.49	0.33	3	Atlas		487	1
	6/24/2019 13:45	6/24/2019 13:45	0	0.37	759	2.32	0.23	3	Atlas		281	1
<b>CSO057 Total</b>											<b>6,669</b>	<b>10</b>
CSO058	6/9/2019 17:00	6/9/2019 17:00	0	0.56	310,245	2.15	0.30	3	Atlas		173,737	1
	6/16/2019 21:00	6/16/2019 21:00	0	1.79	294,038	1.76	0.82	12	Atlas		526,328	1
	6/18/2019 16:45	6/18/2019 16:45	0	0.32	1,501,797	2.54	0.16	1	Atlas		480,575	1
<b>CSO058 Total</b>										<b>1,180,640</b>	<b>3</b>	
CSO062	4/7/2019 12:30	4/7/2019 15:15	165	0.47	1,339,634	0.66	0.22	3	Atlas		629,628	1
	4/14/2019 1:30	4/14/2019 9:00	450	0.79	6,494,124	1.38	0.39	6	Atlas		5,130,358	1
	4/19/2019 19:00	4/20/2019 8:00	780	2.59	4,291,591	3.11	0.84	48	Atlas		11,115,220	1
	5/26/2019 13:30	5/26/2019 18:15	285	0.89	8,035,270	1.06	0.56	3	Atlas		7,151,390	1
	5/29/2019 10:15	5/29/2019 15:30	315	0.99	1,228,829	1.7	0.41	6	Atlas		1,216,541	1
	5/30/2019 11:30	5/30/2019 13:00	90	0.99	358,265	1.91	0.41	6	Atlas		354,682	1
	6/5/2019 21:15	6/5/2019 23:15	120	0.84	965,473	1.07	0.62	1	Atlas		810,997	1
	6/7/2019 22:30	6/7/2019 23:30	60	0.51	276,996	1.16	0.22	6	Atlas		141,268	1
	6/9/2019 1:00	6/9/2019 2:00	60	0.27	440,819	1.67	0.14	6	Atlas		119,021	1
	6/9/2019 16:45	6/9/2019 22:00	315	0.63	8,279,116	2.31	0.33	3	Atlas		5,215,843	1
	6/16/2019 20:15	6/17/2019 9:30	795	1.81	2,491,510	2.22	0.83	12	Atlas		4,509,633	1
	6/18/2019 5:45	6/18/2019 6:45	60	0.13	761,062	2.32	0.06	12	Atlas		98,938	1
	6/18/2019 16:15	6/18/2019 21:00	285	0.64	26,769,191	2.96	0.52	1	Atlas		17,132,282	1
	6/21/2019 20:00	6/21/2019 23:45	225	0.51	12,860,586	3.55	0.34	3	Atlas		6,558,899	1
6/22/2019 8:00	6/22/2019 12:15	255	0.36	16,671,156	3.77	0.23	3	Atlas		6,001,616	1	
6/23/2019 16:15	6/23/2019 19:15	180	0.36	14,047,769	3.46	0.27	1	Atlas		5,057,197	1	
6/24/2019 13:15	6/24/2019 19:45	390	0.4	28,822,678	2.5	0.25	3	Atlas		11,529,071	1	
<b>CSO062 Total</b>											<b>82,772,584</b>	<b>17</b>
CSO082	4/7/2019 13:30	4/7/2019 13:45	15	0.47	451	0.66	0.22	3	Atlas		212	1
	4/14/2019 2:00	4/14/2019 7:00	300	0.8	379,220	1.33	0.37	6	Atlas		303,376	1
	4/19/2019 19:00	4/21/2019 1:45	1845	2.57	1,479,317	3.37	0.83	48	Atlas		3,801,844	1
	4/24/2019 20:45	4/24/2019 23:30	165	0.54	594,669	2.99	0.26	1	Atlas		321,121	1
	4/25/2019 18:15	4/26/2019 6:00	705	0.31	1,850,232	3.45	0.14	12	Atlas		573,572	1
	5/3/2019 5:00	5/3/2019 9:45	285	0.88	376,252	1.08	0.48	6	Atlas		331,102	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO082	5/29/2019 13:30	5/29/2019 13:30	0	0.59	775	1.21	0.32	6	Atlas		457	1
	6/5/2019 21:00	6/5/2019 21:15	15	0.81	3,302	0.94	0.61	1	Atlas		2,675	1
	6/9/2019 16:30	6/9/2019 19:00	150	0.72	372,603	2.36	0.39	3	Atlas		268,274	1
	6/16/2019 20:45	6/17/2019 1:30	285	1.68	90,171	2.06	0.77	12	Atlas		151,487	1
	6/18/2019 16:15	6/18/2019 19:45	210	0.38	1,504,045	2.58	0.31	1	Atlas		571,537	1
	6/21/2019 20:00	6/21/2019 22:45	165	0.58	531,374	3.23	0.38	3	Atlas		308,197	1
	6/22/2019 8:00	6/22/2019 10:45	165	0.35	916,843	3.46	0.23	3	Atlas		320,895	1
	6/23/2019 16:15	6/23/2019 18:15	120	0.38	583,255	3.3	0.30	1	Atlas		221,637	1
	6/24/2019 13:30	6/24/2019 17:15	225	0.4	1,185,860	2.31	0.25	3	Atlas		474,344	1
<b>CSO082 Total</b>											<b>7,650,730</b>	<b>15</b>
CSO083	4/24/2019 20:45	4/24/2019 20:45	0	0.47	613	3.05	0.22	12	Atlas		288	1
	5/29/2019 9:00	5/29/2019 9:00	0	0.75	15,588	0.8	0.41	6	Atlas		11,691	1
	6/5/2019 21:00	6/5/2019 21:00	0	0.82	1,183	0.91	0.61	1	Atlas		970	1
	6/9/2019 16:45	6/9/2019 16:45	0	0.69	34,825	2.24	0.37	3	Atlas		24,029	1
	6/16/2019 19:45	6/16/2019 20:45	60	1.52	28,257	1.37	0.68	12	Atlas		42,950	1
	6/18/2019 16:30	6/18/2019 16:30	0	0.29	65,679	2.09	0.11	24	Atlas		19,047	1
	6/24/2019 13:30	6/24/2019 13:45	15	0.43	101,147	2.1	0.27	3	Atlas		43,493	1
<b>CSO083 Total</b>											<b>142,468</b>	<b>7</b>
CSO084	4/12/2019 6:00	4/12/2019 6:15	15	0.07	159,243	0.59	0.05	3	Atlas		11,147	1
	4/14/2019 1:15	4/14/2019 5:30	255	0.84	600,944	1.44	0.40	6	Atlas		504,793	1
	4/18/2019 21:30	4/18/2019 21:30	0	0.46	9,046	1.04	0.21	12	Atlas		4,161	1
	4/19/2019 18:30	4/20/2019 7:00	750	2.29	347,140	3.26	0.86	24	Atlas		794,951	1
	4/23/2019 18:00	4/23/2019 18:30	30	0.05	1,088,180	2.8	0.04	1	Atlas		54,409	1
	4/24/2019 20:45	4/24/2019 21:30	45	0.47	802,398	3.11	0.22	12	Atlas		377,127	1
	4/25/2019 18:15	4/25/2019 18:30	15	0.32	772,284	3.39	0.16	1	Atlas		247,131	1
	4/26/2019 2:45	4/26/2019 3:00	15	0.32	61,675	3.19	0.16	1	Atlas		19,736	1
	5/3/2019 5:00	5/3/2019 8:15	195	0.9	491,682	1.07	0.49	6	Atlas		442,514	1
	5/4/2019 17:00	5/4/2019 17:30	30	0.22	113,391	1.25	0.13	3	Atlas		24,946	1
	5/19/2019 23:30	5/19/2019 23:30	0	0.27	72,404	0.28	0.11	12	Atlas		19,549	1
	5/23/2019 16:00	5/23/2019 16:00	0	0.1	455,890	0.39	0.06	1	Atlas		45,589	1
	5/26/2019 14:00	5/26/2019 15:30	90	0.42	183,271	0.61	0.26	3	Atlas		76,974	1
	5/29/2019 9:15	5/29/2019 13:45	270	0.75	337,077	1.27	0.41	6	Atlas		252,808	1
	6/5/2019 20:45	6/5/2019 21:30	45	0.82	198,534	0.92	0.61	1	Atlas		162,798	1
	6/9/2019 0:30	6/9/2019 0:45	15	0.31	37,139	1.74	0.16	6	Atlas		11,513	1
	6/9/2019 17:00	6/9/2019 18:15	75	0.69	485,943	2.38	0.37	3	Atlas		335,301	1
	6/16/2019 19:45	6/17/2019 1:15	330	1.52	477,060	1.81	0.68	12	Atlas		725,131	1
	6/18/2019 16:30	6/18/2019 17:15	45	0.29	1,132,755	2.1	0.11	24	Atlas		328,499	1
6/21/2019 19:30	6/21/2019 20:45	75	0.58	165,207	2.72	0.39	3	Atlas		95,820	1	

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO084	6/23/2019 16:15	6/23/2019 16:45	30	0.33	694,521	2.96	0.25	1	Atlas		229,192	1
	6/24/2019 13:30	6/24/2019 14:30	60	0.43	911,202	2.11	0.27	3	Atlas		391,817	1
<b>CSO084 Total</b>											<b>5,155,906</b>	<b>22</b>
CSO092	4/7/2019 11:45	4/7/2019 11:45	0	0.49	218	0.52	0.25	3	Atlas		107	1
	4/18/2019 21:15	4/18/2019 21:15	0	3.06	119	1.3	0.99	48	Atlas		364	1
	4/23/2019 17:45	4/23/2019 18:00	15	0.34	41,265	3.4	0.30	1	Atlas		14,030	1
	5/26/2019 13:45	5/26/2019 13:45	0	0.5	1,740	0.54	0.31	3	Atlas		870	1
	6/5/2019 21:00	6/5/2019 21:00	0	0.8	288	0.91	0.58	1	Atlas		230	1
	6/16/2019 17:30	6/16/2019 20:45	195	1.43	2,953	1.38	0.65	12	Atlas		4,223	1
	6/23/2019 16:00	6/23/2019 16:00	0	0.46	2,048	3.12	0.37	1	Atlas		942	1
<b>CSO092 Total</b>											<b>20,766</b>	<b>7</b>
CSO093	5/26/2019 13:45	5/26/2019 13:45	0	0.58	533	0.53	0.36	3	Atlas		309	1
	6/9/2019 16:30	6/9/2019 16:30	0	0.68	1,896	1.92	0.37	3	Atlas		1,289	1
	6/18/2019 16:30	6/18/2019 16:30	0	0.84	3,518	2.82	0.55	1	Atlas		2,955	1
<b>CSO093 Total</b>											<b>4,553</b>	<b>3</b>
CSO097	4/7/2019 12:00	4/7/2019 13:30	90	0.61	133,559	0.81	0.31	3	Atlas		81,471	1
	4/14/2019 1:15	4/14/2019 5:15	240	1.18	220,400	1.89	0.57	6	Atlas		260,072	1
	4/19/2019 18:45	4/20/2019 10:30	945	3.64	375,080	4.6	1.92	48	Cloudburst		1,365,293	1
	4/23/2019 17:45	4/23/2019 18:30	45	0.24	940,171	3.88	0.21	1	Atlas		225,641	1
	5/3/2019 4:45	5/3/2019 8:30	225	0.95	201,757	1.33	0.51	6	Atlas		191,669	1
	5/19/2019 23:00	5/19/2019 23:45	45	0.38	124,045	0.4	0.19	1	Atlas		47,137	1
	5/26/2019 13:45	5/26/2019 16:00	135	0.43	195,400	0.67	0.25	3	Atlas		84,022	1
	5/29/2019 9:15	5/29/2019 13:45	270	0.78	52,497	1.25	0.43	6	Atlas		40,948	1
	5/30/2019 11:00	5/30/2019 11:30	30	0.21	85,738	1.42	0.11	1	Atlas		18,005	1
	6/5/2019 21:00	6/5/2019 21:30	30	0.65	61,717	0.78	0.47	1	Atlas		40,116	1
	6/7/2019 22:15	6/7/2019 22:15	0	0.63	395	1.02	0.25	6	Atlas		249	1
	6/9/2019 16:15	6/9/2019 19:00	165	0.83	787,286	2.4	0.48	3	Atlas		653,447	1
<b>CSO097 Total</b>											<b>3,008,070</b>	<b>12</b>
CSO104	4/7/2019 8:15	4/7/2019 16:30	495	0.79	158,080	1.01	0.43	3	Atlas		124,883	1
	4/14/2019 2:15	4/14/2019 8:30	375	1.02	224,754	1.95	0.49	6	Atlas		229,249	1
	4/18/2019 22:30	4/19/2019 1:30	180	1.03	57,891	2.06	0.48	6	Atlas		59,628	1
	4/19/2019 19:00	4/20/2019 13:30	1110	2.69	528,442	4.68	1.12	24	Cloudburst		1,421,510	1
	4/24/2019 21:00	4/25/2019 0:30	210	0.91	13,791	4.11	0.30	48	Atlas		12,550	1
	4/25/2019 20:15	4/26/2019 3:15	420	0.91	6,023	4.56	0.30	48	Atlas		5,481	1



CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO104	5/3/2019 5:15	5/3/2019 11:15	360	1.15	227,603	1.42	0.63	3	Atlas		261,744	1
	5/26/2019 13:45	5/26/2019 15:15	90	1.09	73,315	1.15	0.65	3	Atlas		79,913	1
	5/29/2019 12:00	5/29/2019 13:15	75	1.15	108,766	1.93	0.45	6	Atlas		125,081	1
	5/30/2019 12:15	5/30/2019 15:30	195	1.15	1,357	2.25	0.45	6	Atlas		1,560	1
	6/7/2019 22:30	6/8/2019 3:45	315	0.57	7,004	1.75	0.23	6	Atlas		3,992	1
	6/9/2019 1:30	6/9/2019 1:30	0	0.87	168	2.09	0.29	24	Atlas		146	1
	6/9/2019 15:45	6/9/2019 17:45	120	0.87	58,277	2.57	0.29	24	Atlas		50,701	1
	6/16/2019 6:30	6/16/2019 8:15	105	0.21	352	0.87	0.17	1	Atlas		74	1
	6/16/2019 19:30	6/17/2019 4:45	555	3	477,954	3.36	3.67	6	Cloudburst		1,433,863	1
	6/18/2019 17:30	6/18/2019 17:30	0	0.5	43,818	3.84	0.19	24	Atlas		21,909	1
	6/21/2019 19:30	6/22/2019 10:00	870	0.52	660,860	5.03	0.34	3	Atlas		343,647	1
	6/23/2019 16:15	6/23/2019 19:30	195	0.64	44,184	4.73	0.50	1	Atlas		28,278	1
	6/24/2019 13:30	6/24/2019 15:45	135	0.65	270,280	2.98	0.39	3	Atlas		175,682	1
6/30/2019 19:30	6/30/2019 19:45	15	0.39	1,949	0.84	0.21	6	Atlas		760	1	
<b>CSO104 Total</b>											<b>4,380,651</b>	<b>20</b>
CSO105	4/7/2019 12:15	4/7/2019 14:00	105	0.79	4,062,138	1.01	0.43	3	Atlas		3,209,089	1
	4/19/2019 19:15	4/20/2019 10:30	915	2.69	9,440,374	4.59	1.12	24	Cloudburst		25,394,607	1
	4/24/2019 21:15	4/24/2019 21:15	0	0.91	624,145	4.06	0.30	48	Atlas		567,972	1
	4/25/2019 19:30	4/25/2019 19:30	0	0.91	136,279	4.42	0.30	48	Atlas		124,014	1
	5/26/2019 14:15	5/26/2019 14:15	0	1.09	364,861	0.82	0.65	3	Atlas		397,698	1
	6/16/2019 21:15	6/16/2019 21:15	0	3	561,898	2.78	3.67	6	Cloudburst		1,685,695	1
<b>CSO105 Total</b>											<b>31,379,075</b>	<b>6</b>
CSO108	4/19/2019 22:00	4/20/2019 14:45	1005	3.97	772,444	5.21	2.97	48	Atlas		3,066,601	1
	4/23/2019 18:30	4/23/2019 18:30	0	0.06	360,333	4.02	0.04	1	Atlas		21,620	1
	4/25/2019 18:45	4/25/2019 18:45	0	1.61	15,207	5.4	0.67	1	Atlas		24,484	1
	6/9/2019 15:30	6/9/2019 21:00	330	1.7	182,972	3.45	1.57	1	Atlas		311,053	1
	6/16/2019 20:15	6/16/2019 21:30	75	2.47	27,281	1.71	0.78	48	Atlas		67,385	1
	6/24/2019 14:15	6/24/2019 14:30	15	0.64	74,055	3.11	0.40	3	Atlas		47,395	1
<b>CSO108 Total</b>											<b>3,538,538</b>	<b>6</b>
CSO109	4/7/2019 12:15	4/7/2019 12:15	0	0.7	64,906	0.83	0.32	12	Atlas		45,434	1
	4/14/2019 3:00	4/14/2019 3:00	0	1.33	7,118	1.89	0.63	6	Atlas		9,467	1
	4/23/2019 18:00	4/23/2019 18:15	15	0.07	2,579,214	3.96	0.06	1	Atlas		180,545	1
	4/24/2019 21:00	4/24/2019 21:00	0	0.47	20,011	4.24	0.22	1	Atlas		9,405	1
	4/25/2019 18:15	4/25/2019 18:15	0	0.77	118,623	4.99	0.46	1	Atlas		91,340	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO109	5/2/2019 11:45	5/2/2019 11:45	0	0.39	100,333	1.21	0.34	1	Atlas		39,130	1
	5/3/2019 5:00	5/3/2019 5:00	0	1.01	1,346	0.78	0.55	6	Atlas		1,359	1
	5/19/2019 23:15	5/19/2019 23:15	0	0.24	64,371	0.42	0.20	1	Atlas		15,449	1
	5/26/2019 14:00	5/26/2019 14:00	0	0.44	147,584	0.43	0.25	3	Atlas		64,937	1
	5/29/2019 9:15	5/29/2019 9:15	0	0.87	77,357	0.81	0.48	6	Atlas		67,301	1
	6/5/2019 21:15	6/5/2019 21:15	0	0.73	63,856	0.87	0.52	1	Atlas		46,615	1
	6/9/2019 16:30	6/9/2019 19:30	180	1.2	378,122	2.87	0.71	1	Atlas		453,746	1
	6/16/2019 20:00	6/16/2019 21:00	60	1.38	97,454	1.42	0.68	6	Atlas		134,486	1
	6/23/2019 16:15	6/23/2019 16:15	0	0.51	372,598	3.72	0.37	1	Atlas		190,025	1
	6/24/2019 14:00	6/24/2019 14:00	0	0.55	193,073	2.99	0.35	3	Atlas		106,190	1
<b>CSO109 Total</b>											<b>1,455,429</b>	<b>15</b>
CSO110	4/23/2019 18:00	4/23/2019 18:30	30	0.25	250,044	3.7	0.22	1	Atlas		62,511	1
	4/24/2019 21:00	4/24/2019 21:15	15	0.42	99,310	3.97	0.20	1	Atlas		41,710	1
	4/25/2019 16:15	4/25/2019 16:15	0	Discharge	0	4.12					14,314	
	4/26/2019 0:45	4/26/2019 0:45	0	0.43	9,944	3.79	0.23	1	Atlas		4,276	1
	5/3/2019 3:00	5/3/2019 5:45	165	1.04	84,464	0.74	0.46	6	Atlas		87,843	1
	5/19/2019 21:15	5/19/2019 21:15	0	0.1	102,250	0.13	0.07	1	Atlas		10,225	1
	5/29/2019 9:30	5/29/2019 13:45	255	0.59	13,183	1.09	0.32	6	Atlas		7,778	1
	5/30/2019 11:30	5/30/2019 11:30	0	0.2	17,160	1.26	0.10	1	Atlas		3,432	1
	6/5/2019 21:30	6/5/2019 21:30	0	0.71	49,220	0.84	0.52	1	Atlas		34,946	1
	6/9/2019 16:45	6/9/2019 18:15	90	0.68	300,434	2.26	0.36	3	Atlas		204,295	1
6/16/2019 20:15	6/16/2019 22:15	120	1.21	86,309	1.25	0.55	12	Atlas		104,434	1	
6/18/2019 17:30	6/18/2019 17:30	0	0.43	32,200	1.93	0.17	24	Atlas		13,846	1	
6/21/2019 20:00	6/21/2019 20:00	0	0.83	1,386	2.33	0.32	24	Atlas		1,150	1	
6/22/2019 7:15	6/22/2019 7:15	0	0.83	9,910	2.53	0.32	24	Atlas		8,225	1	
6/23/2019 16:30	6/23/2019 16:45	15	0.47	327,674	2.94	0.37	1	Atlas		154,007	1	
6/24/2019 14:00	6/24/2019 14:45	45	0.45	385,327	2.27	0.28	3	Atlas		173,397	1	
<b>CSO110 Total</b>											<b>926,389</b>	<b>15</b>
CSO111	4/7/2019 12:30	4/7/2019 12:30	0	0.7	10,620	0.69	0.38	3	Atlas		7,434	1
	4/14/2019 1:45	4/14/2019 5:00	195	1.04	57,683	1.92	0.50	6	Atlas		59,990	1
	4/19/2019 19:00	4/20/2019 9:15	855	3.45	227,128	4.26	1.62	48	Cloudburst		783,593	1
	4/24/2019 20:30	4/24/2019 21:15	45	0.42	41,429	3.97	0.20	1	Atlas		17,400	1
	4/25/2019 18:15	4/25/2019 18:15	0	0.43	14,526	4.4	0.23	1	Atlas		6,246	1
	4/26/2019 2:30	4/26/2019 2:45	15	0.43	26,693	3.78	0.23	1	Atlas		11,478	1
	5/26/2019 14:00	5/26/2019 14:00	0	0.46	5,667	0.5	0.28	3	Atlas		2,607	1
	5/29/2019 9:15	5/29/2019 9:15	0	0.59	6,824	0.68	0.32	6	Atlas		4,026	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO111	5/30/2019 11:15	5/30/2019 11:15	0	0.2	22,510	1.26	0.10	1	Atlas		4,502	1
	6/9/2019 16:30	6/9/2019 17:30	60	0.68	350,860	2.16	0.36	3	Atlas		238,585	1
	6/16/2019 20:00	6/16/2019 22:00	120	1.21	133,953	1.24	0.55	12	Atlas		162,083	1
	6/18/2019 17:15	6/18/2019 17:15	0	0.43	3,430	1.93	0.17	24	Atlas		1,475	1
	6/22/2019 7:00	6/22/2019 7:00	0	0.83	8,653	2.51	0.32	24	Atlas		7,182	1
	6/23/2019 16:00	6/23/2019 16:30	30	0.47	113,587	2.97	0.37	1	Atlas		53,386	1
	6/24/2019 13:45	6/24/2019 14:15	30	0.45	273,304	2.27	0.28	3	Atlas		122,987	1
<b>CSO111 Total</b>											<b>1,482,974</b>	<b>15</b>
CSO113	4/7/2019 11:45	4/7/2019 11:45	0	0.49	3,598	0.52	0.25	3	Atlas		1,763	1
	4/14/2019 2:45	4/14/2019 2:45	0	0.92	2,176	1.35	0.43	6	Atlas		2,002	1
	4/19/2019 22:15	4/19/2019 22:15	0	3.06	219	2.29	0.99	48	Atlas		671	1
	4/23/2019 17:30	4/23/2019 18:00	30	0.34	840,056	3.4	0.30	1	Atlas		285,619	1
	4/24/2019 20:30	4/24/2019 20:30	0	0.47	35,374	3.61	0.22	12	Atlas		16,626	1
	6/5/2019 20:45	6/5/2019 20:45	0	0.8	6,443	0.86	0.58	1	Atlas		5,154	1
	6/9/2019 16:15	6/9/2019 16:45	30	0.72	248,592	2.36	0.40	3	Atlas		178,986	1
	6/16/2019 20:30	6/16/2019 20:45	15	1.43	49,302	1.24	0.65	12	Atlas		70,502	1
	6/23/2019 15:45	6/23/2019 16:00	15	0.46	172,685	3.13	0.37	1	Atlas		79,435	1
6/24/2019 13:30	6/24/2019 13:45	15	0.44	374,507	2.18	0.28	3	Atlas		164,783	1	
<b>CSO113 Total</b>											<b>805,541</b>	<b>10</b>
CSO117	4/14/2019 5:15	4/14/2019 5:45	30	0.73	93,181	1.46	0.35	6	Atlas		68,022	1
	4/19/2019 22:00	4/20/2019 14:15	975	2.08	4,320,839	3.16	0.78	24	Atlas		8,987,345	1
	4/26/2019 2:45	4/26/2019 3:45	60	0.34	1,915,024	3.1	0.15	12	Atlas		651,108	1
	5/3/2019 7:45	5/3/2019 8:45	60	0.88	689,182	1.06	0.48	6	Atlas		606,480	1
	6/9/2019 16:45	6/9/2019 19:00	135	0.6	2,309,317	2.35	0.33	3	Atlas		1,385,590	1
	6/16/2019 20:45	6/17/2019 1:30	285	1.79	609,322	2.07	0.81	12	Atlas		1,090,687	1
	6/23/2019 16:00	6/23/2019 16:00	0	0.29	474,014	3.55	0.22	1	Atlas		137,464	1
	6/24/2019 13:45	6/24/2019 15:00	75	0.41	1,023,202	2.23	0.26	3	Atlas		419,513	1
<b>CSO117 Total</b>											<b>13,346,209</b>	<b>8</b>
CSO118	4/7/2019 6:30	4/7/2019 18:30	720	0.53	2,880,060	0.71	0.26	3	Atlas		1,526,432	1
	4/12/2019 6:15	4/12/2019 6:30	15	0.07	776,543	0.59	0.05	3	Atlas		54,358	1
	4/14/2019 1:30	4/14/2019 13:45	735	0.84	4,156,585	1.46	0.40	6	Atlas		3,491,531	1
	4/18/2019 23:00	4/19/2019 5:30	390	0.46	242,178	1.41	0.21	12	Atlas		111,402	1
	4/19/2019 18:15	4/21/2019 12:45	2550	2.29	5,381,883	3.63	0.86	24	Atlas		12,324,511	1
	4/23/2019 18:15	4/23/2019 18:45	30	0.05	3,214,420	2.8	0.04	1	Atlas		160,721	1
	4/24/2019 20:45	4/25/2019 2:30	345	0.47	4,490,566	3.21	0.22	12	Atlas		2,110,566	1
	4/25/2019 18:15	4/26/2019 4:00	585	0.32	3,119,169	3.59	0.16	1	Atlas		998,134	1
	5/3/2019 5:00	5/3/2019 9:15	255	0.9	5,602,262	1.08	0.49	6	Atlas		5,042,036	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO118	5/4/2019 17:15	5/4/2019 18:00	45	0.22	1,267,968	1.26	0.13	3	Atlas		278,953	1
	5/19/2019 23:30	5/19/2019 23:45	15	0.27	431,830	0.28	0.11	12	Atlas		116,594	1
	5/23/2019 16:00	5/23/2019 16:30	30	0.1	4,394,330	0.39	0.06	1	Atlas		439,433	1
	5/26/2019 14:00	5/26/2019 16:00	120	0.42	2,754,119	0.62	0.26	3	Atlas		1,156,730	1
	5/29/2019 9:15	5/29/2019 14:15	300	0.75	1,302,209	1.27	0.41	6	Atlas		976,657	1
	5/30/2019 11:30	5/30/2019 12:00	30	0.18	1,030,206	1.41	0.07	12	Atlas		185,437	1
	6/5/2019 21:00	6/5/2019 22:00	60	0.82	2,439,977	0.99	0.61	1	Atlas		2,000,781	1
	6/7/2019 21:30	6/8/2019 3:00	330	0.57	491,868	1.39	0.24	6	Atlas		280,365	1
	6/9/2019 0:30	6/9/2019 1:15	45	0.31	1,333,826	1.74	0.16	6	Atlas		413,486	1
	6/9/2019 16:45	6/9/2019 19:15	150	0.69	5,176,643	2.41	0.37	3	Atlas		3,571,884	1
	6/16/2019 6:15	6/16/2019 6:15	0	0.15	404,133	0.96	0.10	1	Atlas		60,620	1
	6/16/2019 20:00	6/17/2019 1:45	345	1.52	3,726,622	1.81	0.68	12	Atlas		5,664,465	1
	6/18/2019 5:15	6/18/2019 5:15	0	0.29	190	1.96	0.11	24	Atlas		55	1
	6/18/2019 16:30	6/18/2019 18:15	105	0.29	11,702,883	2.1	0.11	24	Atlas		3,393,836	1
	6/21/2019 19:30	6/21/2019 22:00	150	0.58	3,189,526	2.74	0.39	3	Atlas		1,849,925	1
	6/22/2019 7:15	6/22/2019 10:00	165	0.41	2,461,222	3.03	0.27	3	Atlas		1,009,101	1
	6/23/2019 16:15	6/23/2019 17:15	60	0.33	6,544,533	2.96	0.25	1	Atlas		2,159,696	1
	6/24/2019 13:30	6/24/2019 15:45	135	0.43	5,745,991	2.11	0.27	3	Atlas		2,470,776	1
	6/30/2019 18:00	6/30/2019 18:00	0	0.1	426,060	0.55	0.07	1	Atlas		42,606	1
<b>CSO118 Total</b>											<b>51,891,091</b>	<b>28</b>
CSO119	4/7/2019 6:15	4/7/2019 13:45	450	0.53	556,498	0.71	0.26	3	Atlas		294,944	1
	4/12/2019 5:45	4/12/2019 6:00	15	0.07	558,486	0.59	0.05	3	Atlas		39,094	1
	4/14/2019 1:00	4/14/2019 5:30	270	0.84	736,943	1.44	0.40	6	Atlas		619,032	1
	4/18/2019 21:15	4/18/2019 23:00	105	0.46	93,337	1.18	0.21	12	Atlas		42,935	1
	4/19/2019 18:15	4/20/2019 14:15	1200	2.29	821,954	3.54	0.86	24	Atlas		1,882,275	1
	4/23/2019 17:45	4/23/2019 18:15	30	0.05	1,735,940	2.8	0.04	1	Atlas		86,797	1
	4/24/2019 20:30	4/24/2019 21:30	60	0.47	502,053	3.11	0.22	12	Atlas		235,965	1
	4/25/2019 18:00	4/26/2019 3:00	540	0.32	670,678	3.58	0.16	1	Atlas		214,617	1
	5/3/2019 4:45	5/3/2019 8:30	225	0.9	753,584	1.08	0.49	6	Atlas		678,226	1
	5/4/2019 16:45	5/4/2019 17:45	60	0.22	565,200	1.27	0.13	3	Atlas		124,344	1
	5/19/2019 13:15	5/19/2019 13:15	0	0.27	26,274	0.12	0.11	12	Atlas		7,094	1
	5/19/2019 23:15	5/19/2019 23:30	15	0.27	183,063	0.28	0.11	12	Atlas		49,427	1
	5/23/2019 15:45	5/23/2019 16:00	15	0.1	616,190	0.39	0.06	1	Atlas		61,619	1
	5/26/2019 13:45	5/26/2019 15:30	105	0.42	454,762	0.61	0.26	3	Atlas		191,000	1
	5/29/2019 9:00	5/29/2019 13:45	285	0.75	450,888	1.27	0.41	6	Atlas		338,166	1
	5/30/2019 11:15	5/30/2019 11:30	15	0.18	239,967	1.41	0.07	12	Atlas		43,194	1
	6/5/2019 20:45	6/5/2019 21:30	45	0.82	201,713	0.92	0.61	1	Atlas		165,405	1
	6/7/2019 21:15	6/7/2019 22:30	75	0.57	102,181	1.21	0.24	6	Atlas		58,243	1
	6/9/2019 0:15	6/9/2019 0:45	30	0.31	273,455	1.74	0.16	6	Atlas		84,771	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO119	6/9/2019 16:30	6/9/2019 18:30	120	0.69	662,654	2.4	0.37	3	Atlas		457,231	1
	6/16/2019 19:45	6/17/2019 1:15	330	1.52	423,034	1.81	0.68	12	Atlas		643,012	1
	6/18/2019 4:45	6/18/2019 4:45	0	0.29	35,372	1.94	0.11	24	Atlas		10,258	1
	6/18/2019 16:15	6/18/2019 17:15	60	0.29	850,941	2.1	0.11	24	Atlas		246,773	1
	6/21/2019 19:15	6/21/2019 21:15	120	0.58	487,538	2.74	0.39	3	Atlas		282,772	1
	6/22/2019 7:00	6/22/2019 9:15	135	0.41	518,712	3.03	0.27	3	Atlas		212,672	1
	6/23/2019 16:00	6/23/2019 16:45	45	0.33	598,836	3.15	0.25	1	Atlas		197,616	1
	6/24/2019 13:15	6/24/2019 14:30	75	0.43	707,472	2.11	0.27	3	Atlas		304,213	1
<b>CSO119 Total</b>											<b>7,571,695</b>	<b>27</b>
CSO120	4/7/2019 6:00	4/7/2019 13:30	450	0.47	137,677	0.66	0.22	3	Atlas		64,708	1
	4/12/2019 6:00	4/12/2019 6:00	0	0.08	56,638	0.53	0.05	3	Atlas		4,531	1
	4/14/2019 1:00	4/14/2019 5:00	240	0.8	318,513	1.29	0.37	6	Atlas		254,810	1
	4/19/2019 18:15	4/20/2019 9:00	885	2.57	264,291	3.11	0.83	48	Atlas		679,227	1
	4/23/2019 18:15	4/23/2019 18:15	0	0.02	26,400	2.59	0.02	1	Atlas		528	1
	4/24/2019 20:30	4/24/2019 21:00	30	0.54	313,491	2.95	0.26	1	Atlas		169,285	1
	4/25/2019 18:15	4/25/2019 18:15	0	0.31	186,858	3.27	0.14	12	Atlas		57,926	1
	4/26/2019 2:30	4/26/2019 2:45	15	0.31	144,465	3.09	0.14	12	Atlas		44,784	1
	5/3/2019 3:15	5/3/2019 8:00	285	0.88	391,492	1.06	0.48	6	Atlas		344,513	1
	5/4/2019 16:45	5/4/2019 17:00	15	0.19	87,311	1.22	0.12	3	Atlas		16,589	1
	5/19/2019 23:00	5/19/2019 23:15	15	0.14	471,250	0.24	0.10	1	Atlas		65,975	1
	5/23/2019 15:45	5/23/2019 15:45	0	0.11	628,900	0.35	0.07	1	Atlas		69,179	1
	5/26/2019 13:45	5/26/2019 15:30	105	0.51	239,696	0.7	0.33	3	Atlas		122,245	1
	5/29/2019 9:15	5/29/2019 13:15	240	0.59	58,593	1.18	0.32	6	Atlas		34,570	1
	5/30/2019 11:15	5/30/2019 11:15	0	0.21	4,738	1.35	0.09	3	Atlas		995	1
	6/7/2019 21:00	6/7/2019 22:15	75	0.52	68,612	1.14	0.22	6	Atlas		35,678	1
6/9/2019 0:15	6/9/2019 0:30	15	0.3	74,157	1.66	0.15	6	Atlas		22,247	1	
6/9/2019 15:15	6/9/2019 17:45	150	0.72	265,560	2.28	0.39	3	Atlas		191,203	1	
6/16/2019 21:15	6/17/2019 8:15	660	1.68	74,129	2.06	0.77	12	Atlas		124,537	1	
6/18/2019 4:45	6/18/2019 4:45	0	0.14	125,443	2.18	0.06	12	Atlas		17,562	1	
<b>CSO120 Total</b>											<b>2,321,092</b>	<b>20</b>
CSO121	4/7/2019 6:15	4/7/2019 13:45	450	0.47	248,630	0.66	0.22	3	Atlas		116,856	1
	4/14/2019 1:15	4/14/2019 5:30	255	0.8	351,706	1.31	0.37	6	Atlas		281,365	1
	4/18/2019 23:00	4/18/2019 23:00	0	2.57	3,489	1.08	0.83	48	Atlas		8,967	1
	4/19/2019 15:45	4/20/2019 14:45	1380	2.57	461,016	3.3	0.83	48	Atlas		1,184,811	1
	4/24/2019 21:15	4/24/2019 21:30	15	0.54	104,850	2.97	0.26	1	Atlas		56,619	1
	4/25/2019 18:30	4/25/2019 18:30	0	0.31	106,255	3.28	0.14	12	Atlas		32,939	1
	4/26/2019 2:45	4/26/2019 3:00	15	0.31	150,706	3.08	0.14	12	Atlas		46,719	1
	5/2/2019 11:45	5/2/2019 11:45	0	0.11	3,955	0.51	0.10	1	Atlas		435	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO121	5/3/2019 6:15	5/3/2019 8:00	105	0.88	215,236	1.05	0.48	6	Atlas		189,408	1
	5/4/2019 17:30	5/4/2019 17:30	0	0.19	83,574	1.24	0.12	3	Atlas		15,879	1
	5/19/2019 13:30	5/19/2019 13:30	0	0.09	55,322	0.11	0.06	1	Atlas		4,979	1
	5/19/2019 23:15	5/19/2019 23:15	0	0.14	92,636	0.24	0.10	1	Atlas		12,969	1
	5/23/2019 16:00	5/23/2019 16:00	0	0.11	157,318	0.35	0.07	1	Atlas		17,305	1
	5/26/2019 14:15	5/26/2019 15:30	75	0.51	159,459	0.7	0.33	3	Atlas		81,324	1
	5/29/2019 9:15	5/29/2019 13:45	270	0.59	157,286	1.21	0.32	6	Atlas		92,799	1
	5/30/2019 11:30	5/30/2019 11:30	0	0.21	46,076	1.37	0.09	3	Atlas		9,676	1
	6/5/2019 20:45	6/5/2019 21:30	45	0.81	259,637	0.95	0.61	1	Atlas		210,306	1
	6/7/2019 21:15	6/8/2019 2:30	315	0.52	46,190	1.31	0.22	6	Atlas		24,019	1
	6/9/2019 0:30	6/9/2019 0:45	15	0.3	98,440	1.66	0.15	6	Atlas		29,532	1
	6/9/2019 17:45	6/9/2019 18:30	45	0.72	56,331	2.34	0.39	3	Atlas		40,558	1
	6/16/2019 6:00	6/16/2019 6:15	15	0.24	76,463	1.07	0.17	1	Atlas		18,351	1
	6/16/2019 20:15	6/17/2019 1:15	300	1.68	114,978	2.08	0.77	12	Atlas		193,163	1
	6/18/2019 16:30	6/18/2019 18:00	90	0.38	5,253,124	2.58	0.31	1	Atlas		1,996,187	1
	6/21/2019 19:30	6/21/2019 21:15	105	0.58	2,590,079	3.22	0.38	3	Atlas		1,502,246	1
	6/22/2019 7:00	6/22/2019 9:30	150	0.35	4,692,234	3.46	0.23	3	Atlas		1,642,282	1
6/23/2019 16:30	6/23/2019 16:45	15	0.38	780,734	3.3	0.30	1	Atlas		296,679	1	
6/24/2019 13:30	6/24/2019 14:45	75	0.4	2,948,463	2.31	0.25	3	Atlas		1,179,385	1	
<b>CSO121 Total</b>											<b>9,285,758</b>	<b>27</b>
CSO125	4/7/2019 6:15	4/7/2019 14:00	465	0.51	72,982	0.72	0.26	3	Atlas		37,221	1
	4/12/2019 6:15	4/12/2019 6:15	0	0.06	89,517	0.57	0.04	3	Atlas		5,371	1
	4/14/2019 1:15	4/14/2019 5:45	270	1.19	140,425	1.78	0.57	6	Atlas		167,106	1
	4/18/2019 23:00	4/18/2019 23:15	15	3.71	3,657	1.8	2.10	48	Cloudburst		13,566	1
	4/19/2019 18:30	4/20/2019 19:15	1485	3.71	1,650,353	4.94	2.10	48	Cloudburst		6,122,810	1
	4/24/2019 20:45	4/24/2019 21:45	60	0.48	154,840	4.03	0.23	1	Atlas		74,323	1
	4/25/2019 18:30	4/26/2019 3:30	540	0.42	393,455	4.61	0.19	12	Atlas		165,251	1
	5/2/2019 12:00	5/2/2019 12:00	0	0.14	55,807	0.62	0.12	1	Atlas		7,813	1
	5/3/2019 5:00	5/3/2019 9:00	240	0.96	416,723	1.16	0.52	6	Atlas		400,054	1
	5/4/2019 17:15	5/4/2019 18:00	45	0.28	89,836	1.41	0.16	3	Atlas		25,154	1
	5/16/2019 21:15	5/16/2019 22:45	90	0.03	313,667	0.27	0.03	1	Atlas		9,410	1
	5/19/2019 23:15	5/19/2019 23:45	30	0.28	340,611	0.3	0.11	12	Atlas		95,371	1
	5/26/2019 14:15	5/26/2019 15:45	90	0.55	115,835	0.64	0.31	3	Atlas		63,709	1
	5/29/2019 9:15	5/29/2019 14:00	285	0.81	257,163	1.42	0.44	6	Atlas		208,302	1
5/30/2019 11:30	5/30/2019 11:45	15	0.19	111,626	1.59	0.10	1	Atlas		21,209	1	
6/5/2019 21:00	6/5/2019 21:30	30	0.57	108,349	0.68	0.39	1	Atlas		61,759	1	
6/7/2019 21:15	6/8/2019 8:30	675	0.59	137,863	1.24	0.24	12	Atlas		81,339	1	

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO125	6/9/2019 0:30	6/9/2019 0:30	0	0.27	23,256	1.49	0.14	6	Atlas		6,279	1
	6/9/2019 15:45	6/9/2019 23:15	450	1.24	117,967	2.75	0.71	3	Atlas		146,279	1
	6/10/2019 12:30	6/10/2019 16:30	240	Discharge	0	2.76				Data Under Review	360	
	6/16/2019 6:00	6/16/2019 6:15	15	0.2	12,655	1.56	0.13	3	Atlas		2,531	1
	6/16/2019 20:15	6/17/2019 1:15	300	1.55	1,960	1.86	0.69	12	Atlas		3,038	1
	6/18/2019 5:00	6/18/2019 5:00	0	1.2	190	2.11	0.73	1	Atlas		228	1
	6/18/2019 16:45	6/18/2019 17:45	60	1.2	324	3.09	0.73	1	Atlas		389	1
	6/21/2019 19:45	6/21/2019 21:15	90	0.43	1,202	3.59	0.29	3	Atlas		517	1
	6/24/2019 13:45	6/24/2019 14:30	45	0.56	861	3.13	0.35	3	Atlas		482	1
	6/30/2019 17:45	6/30/2019 17:45	0	0.04	2,825	0.65	0.03	3	Atlas		113	1
<b>CSO125 Total</b>											<b>7,719,984</b>	<b>26</b>
CSO126	4/7/2019 12:00	4/7/2019 12:30	30	0.51	8,449	0.63	0.26	3	Atlas		4,309	1
	4/14/2019 2:00	4/14/2019 5:00	180	1.19	53,420	1.74	0.57	6	Atlas		63,570	1
	4/19/2019 19:00	4/21/2019 0:45	1785	3.71	572,911	4.94	2.10	48	Cloudburst		2,125,501	1
	4/24/2019 21:00	4/24/2019 22:15	75	0.48	47,098	4.04	0.23	1	Atlas		22,607	1
	4/25/2019 18:15	4/26/2019 4:15	600	0.42	183,348	4.62	0.19	12	Atlas		77,006	1
	5/3/2019 7:00	5/3/2019 17:30	630	0.96	103,260	1.16	0.52	6	Atlas		99,130	1
	5/26/2019 14:00	5/26/2019 14:00	0	0.55	5,956	0.49	0.31	3	Atlas		3,276	1
	5/29/2019 9:15	5/29/2019 9:15	0	0.81	16,580	1.02	0.44	6	Atlas		13,430	1
	6/5/2019 21:15	6/5/2019 21:15	0	0.57	2,863	0.67	0.39	1	Atlas		1,632	1
	6/9/2019 4:30	6/9/2019 4:30	0	0.27	3,400	1.51	0.14	6	Atlas		918	1
	6/9/2019 15:45	6/9/2019 21:00	315	1.24	790,382	2.75	0.71	3	Atlas		980,074	1
	6/16/2019 21:00	6/17/2019 2:00	300	1.55	49,574	1.85	0.69	12	Atlas		76,839	1
	6/18/2019 17:15	6/18/2019 18:15	60	1.2	37,783	3.09	0.73	1	Atlas		45,339	1
	6/21/2019 20:45	6/21/2019 21:45	60	0.43	12,788	3.59	0.29	3	Atlas		5,499	1
6/22/2019 8:45	6/22/2019 10:00	75	0.33	33,312	3.8	0.22	3	Atlas		10,993	1	
6/23/2019 16:30	6/23/2019 17:00	30	0.52	7,623	3.93	0.41	1	Atlas		3,964	1	
6/24/2019 14:15	6/24/2019 15:30	75	0.56	99,848	3.13	0.35	3	Atlas		55,915	1	
<b>CSO126 Total</b>											<b>3,590,002</b>	<b>17</b>
CSO127	4/7/2019 6:00	4/7/2019 14:15	495	0.62	299,287	0.85	0.31	1	Atlas		185,558	1
	4/12/2019 6:00	4/12/2019 6:15	15	0.06	370,983	0.66	0.04	1	Atlas		22,259	1
	4/14/2019 1:00	4/14/2019 6:15	315	1.22	169,058	1.93	0.58	6	Atlas		206,251	1
	4/18/2019 23:00	4/19/2019 5:15	375	3.83	3,254	1.94	2.49	48	Cloudburst		12,462	1
	4/19/2019 18:15	4/20/2019 18:45	1470	3.83	701,662	5.09	2.49	48	Cloudburst		2,687,367	1



CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO127	4/23/2019 18:00	4/23/2019 18:45	45	0.15	1,176,947	3.98	0.13	1	Atlas		176,542	1
	4/24/2019 20:45	4/24/2019 22:15	90	0.52	182,315	4.33	0.27	1	Atlas		94,804	1
	4/25/2019 18:30	4/26/2019 4:00	570	0.44	156,432	4.93	0.19	12	Atlas		68,830	1
	5/3/2019 3:30	5/3/2019 9:15	345	1.07	262,294	1.32	0.58	6	Atlas		280,655	1
	5/4/2019 17:15	5/4/2019 18:30	75	0.26	533,477	1.54	0.15	3	Atlas		138,704	1
	5/11/2019 21:15	5/11/2019 21:30	15	0.24	27,688	0.26	0.13	3	Atlas		6,645	1
	5/19/2019 13:30	5/19/2019 13:45	15	0.15	166,153	0.2	0.10	1	Atlas		24,923	1
	5/19/2019 23:30	5/19/2019 23:30	0	0.13	94,215	0.3	0.09	1	Atlas		12,248	1
	5/23/2019 16:00	5/23/2019 16:15	15	0.11	237,055	0.43	0.07	1	Atlas		26,076	1
	5/26/2019 14:00	5/26/2019 17:30	210	0.5	608,532	0.75	0.31	3	Atlas		304,266	1
	5/29/2019 9:15	5/29/2019 14:15	300	0.77	814,838	1.39	0.42	6	Atlas		627,425	1
	5/30/2019 11:15	5/30/2019 12:00	45	0.23	336,548	1.57	0.10	1	Atlas		77,406	1
	6/5/2019 21:00	6/5/2019 21:45	45	0.62	211,068	0.79	0.42	1	Atlas		130,862	1
	6/7/2019 21:15	6/8/2019 9:00	705	0.65	258,446	1.3	0.24	12	Atlas		167,990	1
	6/9/2019 0:30	6/9/2019 0:45	15	0.3	56,313	1.57	0.15	6	Atlas		16,894	1
	6/9/2019 15:15	6/9/2019 20:00	285	1.45	1,952,596	3.01	0.89	3	Atlas		2,831,264	1
	6/16/2019 6:15	6/16/2019 6:45	30	0.17	223,565	1.75	0.11	3	Atlas		38,006	1
	6/16/2019 20:00	6/17/2019 1:45	345	1.66	105,511	1.94	0.73	12	Atlas		175,148	1
	6/17/2019 21:30	6/18/2019 18:15	1245	0.8	90,604	2.77	0.33	1	Atlas		72,483	1
	6/19/2019 21:15	6/19/2019 21:30	15	0.09	127,567	2.86	0.06	1	Atlas		11,481	1
6/21/2019 19:45	6/21/2019 21:45	120	0.57	116,951	3.43	0.38	3	Atlas		66,662	1	
6/22/2019 7:00	6/22/2019 10:00	180	0.32	364,091	3.62	0.21	3	Atlas		116,509	1	
6/23/2019 16:15	6/23/2019 17:15	60	0.7	832,149	3.89	0.57	1	Atlas		582,504	1	
6/24/2019 13:30	6/24/2019 15:15	105	0.61	299,616	3.1	0.38	3	Atlas		182,766	1	
<b>CSO127 Total</b>											<b>9,344,990</b>	<b>29</b>
CSO131	4/14/2019 2:15	4/14/2019 2:15	0	0.8	30,703	1.1	0.39	6	Atlas		24,562	1
	4/24/2019 21:00	4/24/2019 21:00	0	0.55	37,607	3.09	0.26	6	Atlas		20,684	1
	4/25/2019 18:15	4/25/2019 18:30	15	0.36	54,931	3.51	0.17	1	Atlas		19,775	1
	5/26/2019 14:00	5/26/2019 14:00	0	0.78	53,727	0.64	0.49	3	Atlas		41,907	1
	6/5/2019 21:00	6/5/2019 21:00	0	0.66	4,794	0.78	0.48	1	Atlas		3,164	1
	6/9/2019 15:30	6/9/2019 17:15	105	0.73	79,804	2.13	0.40	3	Atlas		58,257	1
	6/16/2019 20:00	6/16/2019 21:00	60	1.4	65,686	1.26	0.64	12	Atlas		91,961	1
	6/18/2019 17:15	6/18/2019 17:15	0	1.05	16,864	2.87	0.87	1	Atlas		17,707	1
	6/23/2019 16:15	6/23/2019 16:30	15	0.45	148,816	3.6	0.36	1	Atlas		66,967	1
6/24/2019 14:15	6/24/2019 14:15	0	0.42	54,355	2.9	0.26	3	Atlas		22,829	1	
<b>CSO131 Total</b>											<b>367,813</b>	<b>10</b>
CSO132	4/7/2019 6:45	4/7/2019 14:15	450	0.57	340,896	0.77	0.29	3	Atlas		194,311	1
	4/12/2019 6:00	4/12/2019 6:15	15	0.08	2,503,238	0.67	0.05	3	Atlas		200,259	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO132	4/14/2019 1:15	4/14/2019 7:15	360	0.91	343,873	1.61	0.44	6	Atlas		312,924	1
	4/18/2019 22:45	4/18/2019 23:30	45	3.01	4,325	1.44	0.98	48	Atlas		13,018	1
	4/19/2019 18:30	4/21/2019 7:00	2190	3.01	3,607,134	3.99	0.98	48	Atlas		10,857,473	1
	4/24/2019 20:30	4/24/2019 22:15	105	0.59	1,045,741	3.45	0.32	1	Atlas		616,987	1
	4/25/2019 18:00	4/26/2019 4:30	630	0.43	874,437	4.04	0.23	1	Atlas		376,008	1
	5/3/2019 5:00	5/3/2019 9:30	270	0.95	1,099,032	1.11	0.51	6	Atlas		1,044,080	1
	5/4/2019 17:00	5/4/2019 18:15	75	0.19	561,847	1.27	0.11	3	Atlas		106,751	1
	5/19/2019 13:30	5/19/2019 13:45	15	0.13	312,615	0.18	0.08	1	Atlas		40,640	1
	5/19/2019 23:00	5/19/2019 23:45	45	0.09	3,611,978	0.27	0.08	1	Atlas		325,078	1
	5/26/2019 13:45	5/26/2019 16:00	135	0.69	633,013	0.82	0.43	3	Atlas		436,779	1
	5/29/2019 9:00	5/29/2019 14:15	315	0.64	1,107,314	1.41	0.35	6	Atlas		708,681	1
	5/30/2019 11:15	5/30/2019 12:00	45	0.19	648,379	1.56	0.09	1	Atlas		123,192	1
	6/5/2019 20:45	6/5/2019 22:15	90	0.53	2,007,040	0.7	0.37	1	Atlas		1,063,731	1
	6/7/2019 21:15	6/8/2019 8:45	690	0.6	617,120	1.2	0.26	12	Atlas		370,272	1
	6/9/2019 0:30	6/9/2019 0:30	0	0.3	36,750	1.48	0.15	6	Atlas		11,025	1
	6/9/2019 15:15	6/9/2019 22:30	435	1.03	3,746,359	2.53	0.59	3	Atlas		3,858,750	1
	6/16/2019 5:45	6/16/2019 6:30	45	0.16	1,508,213	1.28	0.11	3	Atlas		241,314	1
	6/16/2019 19:45	6/17/2019 8:45	780	1.23	2,156,437	1.56	0.55	12	Atlas		2,652,417	1
	6/18/2019 4:45	6/18/2019 5:15	30	1.5	55,441	1.66	1.52	1	Atlas		83,161	1
	6/18/2019 16:00	6/18/2019 22:45	405	1.5	4,948,429	3.03	1.52	1	Atlas		7,422,644	1
6/21/2019 19:30	6/21/2019 22:00	150	0.34	940,765	3.44	0.23	3	Atlas		319,860	1	
6/22/2019 7:15	6/22/2019 10:15	180	0.29	2,058,759	3.6	0.19	3	Atlas		597,040	1	
6/23/2019 16:00	6/23/2019 17:15	75	0.42	425,155	3.79	0.33	1	Atlas		178,565	1	
6/24/2019 13:30	6/24/2019 17:00	210	0.48	3,513,723	3.11	0.30	3	Atlas		1,686,587	1	
<b>CSO132 Total</b>											<b>33,841,547</b>	<b>26</b>
CSO140	4/19/2019 21:15	4/19/2019 23:15	120	2.88	33,941	2.4	0.94	48	Atlas		97,749	1
	4/20/2019 9:30	4/20/2019 9:45	15	2.88	35,894	3.54	0.94	48	Atlas		103,375	1
	4/24/2019 20:45	4/24/2019 21:15	30	0.54	30,739	3.24	0.25	1	Atlas		16,599	1
<b>CSO140 Total</b>											<b>217,723</b>	<b>3</b>
CSO141	4/25/2019 18:15	4/25/2019 18:15	0	0.31	14,745	3.27	0.14	12	Atlas		4,571	1
	6/9/2019 16:30	6/9/2019 16:30	0	0.72	84,921	1.9	0.39	3	Atlas		61,143	1
	6/23/2019 16:00	6/23/2019 16:00	0	0.38	22,313	3.48	0.30	1	Atlas		8,479	1
<b>CSO141 Total</b>											<b>74,193</b>	<b>3</b>
CSO142	4/7/2019 12:00	4/7/2019 12:00	0	0.58	2,838	0.57	0.30	3	Atlas	Retained by Sneads Branch	1,646	1
	4/14/2019 2:00	4/14/2019 3:00	60	0.77	14,483	1.42	0.36	6	Atlas	Retained by Sneads Branch	11,152	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO142	4/19/2019 21:30	4/19/2019 21:30	0	2.79	322	1.85	0.91	48	Atlas		898	1
	4/23/2019 18:00	4/23/2019 18:00	0	0.24	99,538	3.03	0.21	1	Atlas	Retained by Sneads Branch	23,889	1
	4/24/2019 20:30	4/24/2019 20:45	15	0.58	9,778	3.35	0.28	1	Atlas	Retained by Sneads Branch	5,671	1
	4/25/2019 18:15	4/25/2019 18:15	0	0.33	21,394	3.75	0.15	12	Atlas	Retained by Sneads Branch	7,060	1
	5/29/2019 9:15	5/29/2019 9:15	0	0.64	11,394	0.83	0.35	6	Atlas	Retained by Sneads Branch	7,292	1
	6/5/2019 21:00	6/5/2019 21:00	0	0.8	9,579	0.91	0.58	1	Atlas	Retained by Sneads Branch	7,663	1
	6/9/2019 16:45	6/9/2019 17:00	15	0.59	35,859	2.16	0.31	3	Atlas		21,157	1
	6/16/2019 6:00	6/16/2019 6:00	0	0.12	1,667	0.81	0.08	3	Atlas	Retained by Sneads Branch	200	1
	6/16/2019 20:45	6/16/2019 21:45	60	1.4	24,284	1.36	0.63	6	Atlas		33,997	1
	6/23/2019 16:15	6/23/2019 16:15	0	0.41	35,861	3	0.32	1	Atlas		14,703	1
6/24/2019 13:45	6/24/2019 14:00	15	0.42	88,064	2.15	0.26	3	Atlas		36,987	1	
<b>CSO142 Total</b>											<b>172,315</b>	<b>13</b>
CSO144	6/9/2019 15:15	6/9/2019 17:00	105	1	45,126	2.35	0.57	3	Atlas		45,126	1
	6/18/2019 16:45	6/18/2019 16:45	0	0.99	16,224	2.97	0.64	1	Atlas		16,062	1
	6/23/2019 16:15	6/23/2019 16:15	0	0.52	1,460	3.71	0.42	1	Atlas		759	1
	6/24/2019 13:45	6/24/2019 14:00	15	0.5	92,416	2.85	0.31	3	Atlas		46,208	1
<b>CSO144 Total</b>											<b>108,155</b>	<b>4</b>
CSO146	4/19/2019 22:00	4/19/2019 23:30	90	2.79	30,237	2.27	0.91	48	Atlas		84,360	1
	4/23/2019 18:00	4/23/2019 18:00	0	0.24	130,683	3.03	0.21	1	Atlas		31,364	1
	5/3/2019 5:30	5/3/2019 5:30	0	0.85	69	0.65	0.46	6	Atlas		59	1
	6/5/2019 21:15	6/5/2019 21:15	0	0.8	12,305	0.91	0.58	1	Atlas		9,844	1
<b>CSO146 Total</b>											<b>125,627</b>	<b>4</b>
CSO148	4/19/2019 22:15	4/20/2019 6:30	495	3.64	19,376	4.25	1.92	48	Cloudburst		70,529	1
	4/23/2019 17:45	4/23/2019 18:00	15	0.24	57,771	3.88	0.21	1	Atlas		13,865	1
	6/9/2019 16:30	6/9/2019 16:30	0	0.83	49,987	2.01	0.48	3	Atlas		41,489	1
	6/16/2019 20:45	6/16/2019 20:45	0	1.28	14,352	1.04	0.58	12	Atlas		18,371	1
	6/23/2019 16:15	6/23/2019 16:15	0	0.47	9,600	3.05	0.36	1	Atlas		4,512	1
	6/24/2019 13:45	6/24/2019 14:00	15	0.48	12,958	2.36	0.30	3	Atlas		6,220	1
<b>CSO148 Total</b>											<b>154,986</b>	<b>6</b>

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO149	4/14/2019 5:30	4/14/2019 6:00	30	0.77	365,636	1.59	0.36	6	Atlas		281,540	1
	4/19/2019 22:15	4/20/2019 10:15	720	2.79	3,834,350	3.38	0.91	48	Atlas		10,697,836	1
<b>CSO149 Total</b>											<b>10,979,376</b>	<b>2</b>
CSO150	4/7/2019 12:30	4/7/2019 14:30	120	0.57	77,147	0.78	0.27	3	Atlas		43,974	1
	4/14/2019 2:15	4/14/2019 6:15	240	0.79	131,852	1.47	0.38	6	Atlas		104,163	1
	4/19/2019 19:00	4/20/2019 16:15	1275	2.39	234,351	3.18	0.77	48	Atlas		560,100	1
	4/24/2019 21:00	4/24/2019 21:45	45	1.04	19,700	2.86	0.34	48	Atlas		20,488	1
	4/25/2019 18:00	4/25/2019 18:00	0	1.04	768	3.24	0.34	48	Atlas		799	1
	5/3/2019 5:00	5/3/2019 9:45	285	0.95	173,887	1.28	0.51	6	Atlas		165,193	1
	5/26/2019 13:45	5/26/2019 17:15	210	0.79	23,262	1	0.45	3	Atlas		18,377	1
	5/29/2019 9:00	5/29/2019 14:00	300	0.8	64,609	1.62	0.44	6	Atlas		51,687	1
	6/5/2019 20:30	6/5/2019 21:30	60	0.95	31,782	1.05	0.70	1	Atlas		30,193	1
	6/9/2019 16:45	6/9/2019 21:45	300	0.37	151,400	2.03	0.17	6	Atlas		56,018	1
	6/16/2019 5:45	6/16/2019 5:45	0	0.58	2,450	1.01	0.42	1	Atlas		1,421	1
	6/16/2019 19:30	6/17/2019 1:30	360	2.25	71,665	3.02	1.19	12	Cloudburst		161,246	1
	6/18/2019 16:15	6/18/2019 18:45	150	0.42	88,326	3.54	0.33	1	Atlas		37,097	1
	6/21/2019 19:30	6/21/2019 21:30	120	0.46	75,539	4.09	0.31	3	Atlas		34,748	1
	6/22/2019 8:30	6/22/2019 9:30	60	0.52	41,663	4.46	0.34	3	Atlas		21,665	1
6/23/2019 16:00	6/23/2019 17:15	75	0.27	49,748	3.92	0.20	1	Atlas		13,432	1	
6/24/2019 13:45	6/24/2019 15:30	105	0.48	78,210	2.38	0.31	3	Atlas		37,541	1	
<b>CSO150 Total</b>											<b>1,358,142</b>	<b>17</b>
CSO151	4/7/2019 6:15	4/7/2019 14:00	465	0.52	537,719	0.7	0.25	3	Atlas		279,614	1
	4/14/2019 1:30	4/14/2019 7:15	345	1.09	926,746	1.68	0.52	6	Atlas		1,010,153	1
	4/18/2019 23:15	4/18/2019 23:15	0	3.32	1,017	1.54	1.40	48	Cloudburst		3,378	1
	4/19/2019 19:00	4/20/2019 21:30	1590	3.32	3,589,339	4.47	1.40	48	Cloudburst		11,916,607	1
	4/23/2019 18:15	4/23/2019 18:15	0	0.3	860,843	3.62	0.26	1	Atlas		258,253	1
<b>CSO151 Total</b>											<b>13,468,005</b>	<b>5</b>
CSO152	4/7/2019 12:15	4/7/2019 12:30	15	0.49	44,453	0.59	0.25	3	Atlas		21,782	1
	4/14/2019 5:30	4/14/2019 6:30	60	0.92	393,097	1.6	0.43	6	Atlas		361,649	1
	4/19/2019 22:15	4/20/2019 16:15	1080	3.06	2,998,142	4.02	0.99	48	Atlas		9,174,313	1
	4/23/2019 18:15	4/23/2019 18:15	0	0.34	504,768	3.4	0.30	1	Atlas		171,621	1
	4/24/2019 21:00	4/24/2019 21:00	0	0.47	157,430	3.68	0.22	12	Atlas		73,992	1
	4/25/2019 18:30	4/25/2019 18:30	0	0.35	35,337	4.04	0.16	12	Atlas		12,368	1
	5/3/2019 5:30	5/3/2019 5:30	0	0.87	12,451	0.65	0.47	6	Atlas		10,832	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO152	6/9/2019 16:45	6/9/2019 17:00	15	0.72	231,879	2.38	0.40	3	Atlas		166,953	1
<b>CSO152 Total</b>											<b>9,993,510</b>	<b>8</b>
CSO153	4/7/2019 6:00	4/7/2019 13:45	465	0.47	366,457	0.66	0.22	3	Atlas		172,235	1
	4/12/2019 6:00	4/12/2019 6:00	0	0.08	96,300	0.53	0.05	3	Atlas		7,704	1
	4/14/2019 1:00	4/14/2019 5:45	285	0.8	509,234	1.32	0.37	6	Atlas		407,387	1
	4/18/2019 22:45	4/18/2019 23:15	30	2.57	10,942	1.09	0.83	48	Atlas		28,122	1
	4/19/2019 18:15	4/20/2019 5:00	645	2.57	202,723	2.73	0.83	48	Atlas		520,999	1
	4/23/2019 18:15	4/23/2019 18:15	0	0.02	380,000	2.59	0.02	1	Atlas		7,600	1
	4/24/2019 20:30	4/25/2019 1:45	315	0.54	512,559	3.08	0.26	1	Atlas		276,782	1
	4/25/2019 18:00	4/26/2019 5:00	660	0.31	901,284	3.45	0.14	12	Atlas		279,398	1
	5/3/2019 3:15	5/3/2019 8:45	330	0.88	551,800	1.09	0.48	6	Atlas		485,584	1
	5/4/2019 16:45	5/4/2019 17:45	60	0.19	352,295	1.24	0.12	3	Atlas		66,936	1
	5/11/2019 21:00	5/11/2019 21:00	0	0.23	53,043	0.22	0.13	3	Atlas		12,200	1
	5/19/2019 13:15	5/19/2019 13:15	0	0.09	195,633	0.11	0.06	1	Atlas		17,607	1
	5/19/2019 23:00	5/19/2019 23:30	30	0.14	219,286	0.24	0.10	1	Atlas		30,700	1
	5/23/2019 15:45	5/23/2019 16:00	15	0.11	142,527	0.35	0.07	1	Atlas		15,678	1
	5/26/2019 13:45	5/26/2019 17:00	195	0.51	178,751	0.76	0.33	3	Atlas		91,163	1
	5/29/2019 9:15	5/29/2019 14:00	285	0.59	233,683	1.21	0.32	6	Atlas		137,873	1
	5/30/2019 11:00	5/30/2019 11:45	45	0.21	139,781	1.37	0.09	3	Atlas		29,354	1
	6/5/2019 20:45	6/5/2019 21:30	45	0.81	347,737	0.95	0.61	1	Atlas		281,667	1
	6/7/2019 21:00	6/8/2019 8:30	690	0.52	143,006	1.38	0.22	6	Atlas		74,363	1
	6/9/2019 0:15	6/9/2019 0:45	30	0.3	188,153	1.66	0.15	6	Atlas		56,446	1
	6/9/2019 16:30	6/9/2019 17:30	60	0.72	356,222	2.26	0.39	3	Atlas		256,480	1
	6/16/2019 6:00	6/16/2019 6:00	0	0.24	106,400	1.07	0.17	1	Atlas		25,536	1
	6/16/2019 16:30	6/17/2019 8:15	945	1.68	323,041	2.6	0.77	12	Atlas		542,709	1
	6/18/2019 4:45	6/18/2019 4:45	0	0.14	135,029	2.18	0.06	12	Atlas		18,904	1
	6/18/2019 16:00	6/18/2019 19:00	180	0.38	1,176,318	2.58	0.31	1	Atlas		447,001	1
	6/21/2019 19:30	6/21/2019 22:15	165	0.58	380,441	3.23	0.38	3	Atlas		220,656	1
	6/22/2019 7:00	6/22/2019 10:45	225	0.35	579,057	3.46	0.23	3	Atlas		202,670	1
	6/23/2019 16:00	6/23/2019 17:45	105	0.38	524,621	3.5	0.30	1	Atlas		199,356	1
	6/24/2019 13:00	6/24/2019 14:30	90	0.4	792,748	2.31	0.25	3	Atlas		317,099	1
<b>CSO153 Total</b>											<b>5,230,209</b>	<b>29</b>
CSO154	4/19/2019 3:45	4/19/2019 5:45	120	3.01	153	1.65	0.98	48	Atlas		460	1
	4/19/2019 18:15	4/20/2019 19:45	1530	3.01	1,179,630	3.99	0.98	48	Atlas		3,550,687	1
	5/2/2019 11:45	5/2/2019 11:45	0	0.05	20,440	0.59	0.04	1	Atlas		1,022	1
	5/3/2019 3:15	5/3/2019 7:45	270	0.95	4,583	1.08	0.51	6	Atlas		4,354	1
	5/4/2019 15:45	5/4/2019 17:45	120	0.19	39,453	1.29	0.11	3	Atlas		7,496	1
	6/18/2019 16:15	6/18/2019 18:15	120	1.5	1,310,544	3.03	1.52	1	Atlas		1,965,816	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO154	6/24/2019 11:30	6/24/2019 15:15	225	0.48	341,560	3.11	0.30	3	Atlas		163,949	1
<b>CSO154 Total</b>											<b>5,693,784</b>	<b>7</b>
CSO155	4/7/2019 11:45	4/7/2019 12:15	30	0.62	28,260	0.75	0.28	12	Atlas		17,521	1
	4/14/2019 1:45	4/14/2019 3:00	75	0.86	5,074	1.39	0.40	6	Atlas		4,364	1
	4/19/2019 19:00	4/20/2019 0:15	315	2.59	8,881	2.24	0.84	48	Atlas		23,002	1
	4/24/2019 20:30	4/24/2019 20:45	15	1.16	9,479	2.98	0.38	24	Atlas		10,996	1
	4/25/2019 18:00	4/25/2019 18:00	0	1.16	15,238	3.56	0.38	24	Atlas		17,676	1
	5/2/2019 11:15	5/2/2019 11:15	0	0.22	32,591	0.8	0.19	1	Atlas		7,170	1
	5/3/2019 4:45	5/3/2019 7:30	165	1.14	13,189	1.33	0.62	6	Atlas		15,035	1
	5/26/2019 15:00	5/26/2019 15:00	0	0.87	305	0.92	0.53	3	Atlas		265	1
	5/29/2019 9:00	5/29/2019 9:00	0	0.9	3,161	1.2	0.49	6	Atlas		2,845	1
	6/5/2019 20:30	6/5/2019 21:00	30	0.95	3,432	1.08	0.70	1	Atlas		3,260	1
	6/16/2019 5:45	6/16/2019 5:45	0	0.59	8,729	0.97	0.39	3	Atlas		5,150	1
	6/16/2019 16:00	6/16/2019 20:45	285	2.61	15,946	2.99	2.00	12	Cloudburst		41,618	1
	6/18/2019 16:15	6/18/2019 16:30	15	0.65	31,089	3.97	0.37	1	Atlas		20,208	1
	6/22/2019 6:45	6/22/2019 6:45	0	0.5	2,436	4.5	0.33	3	Atlas		1,218	1
	6/23/2019 16:00	6/23/2019 16:00	0	0.31	23,558	4.41	0.23	1	Atlas		7,303	1
	6/24/2019 13:30	6/24/2019 13:45	15	0.53	4,223	2.51	0.33	3	Atlas		2,238	1
<b>CSO155 Total</b>											<b>179,869</b>	<b>16</b>
CSO160	6/16/2019 20:30	6/16/2019 20:30	0	1.81	1,510	1.67	0.83	12	Atlas		2,733	1
	6/18/2019 16:15	6/18/2019 16:15	0	0.15	680	2.49	0.12	1	Atlas		102	1
<b>CSO160 Total</b>											<b>2,835</b>	<b>2</b>
CSO161	4/7/2019 11:45	4/7/2019 12:15	30	0.6	233	0.67	0.28	3	Atlas		140	1
	4/14/2019 2:00	4/14/2019 2:00	0	0.68	197	1.08	0.33	6	Atlas		134	1
	4/24/2019 20:30	4/24/2019 20:45	15	0.86	113	2.64	0.28	48	Atlas		97	1
	5/3/2019 5:00	5/3/2019 5:00	0	0.91	1,449	0.56	0.49	6	Atlas		1,319	1
	5/23/2019 15:45	5/23/2019 21:00	315	0.07	24,286	0.32	0.04	1	Atlas		1,700	1
	5/26/2019 13:45	5/26/2019 13:45	0	0.55	1,695	0.43	0.32	3	Atlas		932	1
	6/5/2019 21:00	6/5/2019 21:00	0	0.92	5,451	1.04	0.70	1	Atlas		5,015	1
	6/9/2019 16:45	6/9/2019 16:45	0	0.48	21,179	2.01	0.23	6	Atlas		10,166	1
	6/16/2019 19:30	6/16/2019 20:45	75	1.81	15,878	1.79	0.83	12	Atlas		28,740	1
	6/18/2019 16:15	6/18/2019 16:30	15	0.15	194,240	2.5	0.12	1	Atlas		29,136	1
	6/21/2019 19:30	6/21/2019 19:30	0	0.84	190	3.1	0.56	3	Atlas		160	1
	6/22/2019 6:45	6/22/2019 6:45	0	0.49	112	3.49	0.33	3	Atlas		55	1
	6/23/2019 16:00	6/23/2019 16:00	0	0.26	18,746	3.67	0.19	1	Atlas		4,874	1
	6/24/2019 13:30	6/24/2019 13:45	15	0.37	1,076	2.32	0.23	3	Atlas		398	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
<b>CSO161 Total</b>											<b>82,866</b>	<b>14</b>
CSO166	4/7/2019 6:45	4/7/2019 14:45	480	0.62	541,929	0.85	0.31	1	Atlas		335,996	1
	4/14/2019 1:30	4/14/2019 7:30	360	1.22	749,932	1.93	0.58	6	Atlas		914,917	1
	4/18/2019 23:30	4/18/2019 23:30	0	3.83	1,762	1.67	2.49	48	Cloudburst		6,749	1
	4/19/2019 18:45	4/21/2019 12:45	2520	3.83	3,215,399	5.09	2.49	48	Cloudburst		12,314,978	1
	4/24/2019 21:00	4/24/2019 22:30	90	0.52	473,383	4.33	0.27	1	Atlas		246,159	1
	4/25/2019 18:15	4/26/2019 5:00	645	0.44	1,449,845	4.93	0.19	12	Atlas		637,932	1
	5/2/2019 12:00	5/2/2019 12:45	45	0.16	924,931	0.67	0.14	1	Atlas		147,989	1
	5/3/2019 5:15	5/3/2019 10:15	300	1.07	1,060,009	1.31	0.58	6	Atlas		1,134,210	1
	5/4/2019 17:45	5/4/2019 18:45	60	0.26	191,458	1.54	0.15	3	Atlas		49,779	1
	5/19/2019 23:30	5/20/2019 0:15	45	0.13	1,681,123	0.3	0.09	1	Atlas		218,546	1
	5/26/2019 14:15	5/26/2019 16:15	120	0.5	499,874	0.7	0.31	3	Atlas		249,937	1
	5/29/2019 9:30	5/29/2019 14:15	285	0.77	350,212	1.39	0.42	6	Atlas		269,663	1
	5/30/2019 11:30	5/30/2019 11:45	15	0.23	270,935	1.57	0.10	1	Atlas		62,315	1
	6/5/2019 21:15	6/5/2019 22:15	60	0.62	279,081	0.83	0.42	1	Atlas		173,030	1
	6/7/2019 21:30	6/8/2019 3:15	345	0.65	66,765	1.18	0.24	12	Atlas		43,397	1
	6/8/2019 23:45	6/9/2019 1:00	75	0.3	381,477	1.57	0.15	6	Atlas		114,443	1
	6/9/2019 15:45	6/10/2019 3:30	705	1.45	983,491	3.04	0.89	3	Atlas		1,426,062	1
	6/16/2019 6:30	6/16/2019 6:45	15	0.17	219,700	1.75	0.11	3	Atlas		37,349	1
	6/16/2019 20:00	6/17/2019 2:45	405	1.66	827,513	1.94	0.73	12	Atlas		1,373,671	1
	6/18/2019 5:15	6/18/2019 18:15	780	0.8	114,845	2.77	0.33	1	Atlas		91,876	1
	6/21/2019 20:15	6/21/2019 22:00	105	0.57	105,902	3.43	0.38	3	Atlas		60,364	1
	6/22/2019 8:30	6/22/2019 10:15	105	0.32	285,116	3.62	0.21	3	Atlas		91,237	1
	6/23/2019 16:30	6/23/2019 17:30	60	0.7	272,249	3.89	0.57	1	Atlas		190,574	1
	6/24/2019 14:00	6/24/2019 16:00	120	0.61	658,000	3.1	0.38	3	Atlas		401,380	1
	6/30/2019 18:00	6/30/2019 18:00	0	0.1	32,980	0.75	0.08	1	Atlas		3,298	1
<b>CSO166 Total</b>											<b>20,595,851</b>	<b>25</b>
CSO167	4/7/2019 6:00	4/7/2019 13:45	465	0.57	226,495	0.77	0.29	3	Atlas		129,102	1
	4/12/2019 6:00	4/12/2019 6:00	0	0.08	113,238	0.67	0.05	3	Atlas		9,059	1
	4/14/2019 1:00	4/14/2019 5:45	285	0.91	347,903	1.6	0.44	6	Atlas		316,592	1
	4/18/2019 22:45	4/18/2019 23:15	30	3.01	6,301	1.43	0.98	48	Atlas		18,967	1
	4/19/2019 18:15	4/20/2019 22:45	1710	3.01	367,536	3.99	0.98	48	Atlas		1,106,284	1
	4/24/2019 20:30	4/24/2019 21:45	75	0.59	213,915	3.45	0.32	1	Atlas		126,210	1
	4/25/2019 18:00	4/26/2019 3:30	570	0.43	203,949	4.03	0.23	1	Atlas		87,698	1
	5/3/2019 4:45	5/3/2019 8:45	240	0.95	294,543	1.1	0.51	6	Atlas		279,816	1
	5/4/2019 17:00	5/4/2019 17:45	45	0.19	84,063	1.27	0.11	3	Atlas		15,972	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO167	5/19/2019 23:00	5/19/2019 23:30	30	0.09	375,667	0.27	0.08	1	Atlas		33,810	1
	5/26/2019 13:45	5/26/2019 15:45	120	0.69	161,391	0.8	0.43	3	Atlas		111,360	1
	5/29/2019 9:00	5/29/2019 14:00	300	0.64	191,858	1.41	0.35	6	Atlas		122,789	1
	5/30/2019 11:15	5/30/2019 11:45	30	0.19	78,037	1.56	0.09	1	Atlas		14,827	1
	6/5/2019 20:45	6/5/2019 21:30	45	0.53	229,158	0.65	0.37	1	Atlas		121,454	1
	6/7/2019 21:15	6/8/2019 8:30	675	0.6	64,662	1.2	0.26	12	Atlas		38,797	1
	6/9/2019 15:15	6/9/2019 19:45	270	1.03	380,803	2.5	0.59	3	Atlas		392,227	1
	6/16/2019 5:45	6/16/2019 6:15	30	0.16	142,650	1.28	0.11	3	Atlas		22,824	1
	6/16/2019 19:45	6/17/2019 8:30	765	1.23	284,360	1.56	0.55	12	Atlas		349,763	1
	6/18/2019 4:45	6/18/2019 5:00	15	1.5	5,622	1.66	1.52	1	Atlas		8,433	1
	6/18/2019 16:00	6/18/2019 20:15	255	1.5	281,200	3.03	1.52	1	Atlas		421,800	1
	6/21/2019 19:30	6/21/2019 21:30	120	0.34	236,832	3.44	0.23	3	Atlas		80,523	1
	6/22/2019 7:45	6/22/2019 9:30	105	0.29	224,721	3.6	0.19	3	Atlas		65,169	1
	6/23/2019 16:00	6/23/2019 16:45	45	0.42	197,452	3.79	0.33	1	Atlas		82,930	1
	6/24/2019 13:15	6/24/2019 15:15	120	0.48	331,679	3.11	0.30	3	Atlas		159,206	1
<b>CSO167 Total</b>											<b>4,115,612</b>	<b>24</b>
CSO174	4/14/2019 2:00	4/14/2019 2:00	0	0.77	153,690	1.24	0.36	6	Atlas	Retained by Sneads Branch	118,341	1
	4/23/2019 17:45	4/23/2019 18:00	15	0.24	4,533,275	3.03	0.21	1	Atlas	Retained by Sneads Branch	1,087,986	1
	4/24/2019 20:45	4/24/2019 21:00	15	0.58	209,209	3.39	0.28	1	Atlas	Retained by Sneads Branch	121,341	1
	6/5/2019 21:00	6/5/2019 21:00	0	0.8	132,138	0.91	0.58	1	Atlas	Retained by Sneads Branch	105,710	1
	6/9/2019 16:45	6/9/2019 17:00	15	0.59	1,135,819	2.16	0.31	3	Atlas	Retained by Sneads Branch	670,133	1
	6/16/2019 20:00	6/16/2019 22:00	120	1.4	668,889	1.41	0.63	6	Atlas	Retained by Sneads Branch	936,445	1
	6/18/2019 17:15	6/18/2019 17:30	15	0.24	658,650	1.89	0.09	24	Atlas	Retained by Sneads Branch	158,076	1
	6/21/2019 20:00	6/21/2019 20:00	0	0.5	1,478	2.31	0.33	3	Atlas	Retained by Sneads Branch	739	1
	6/22/2019 7:00	6/22/2019 7:15	15	0.5	258,410	2.64	0.33	3	Atlas	Retained by Sneads Branch	129,205	1
	6/23/2019 16:15	6/23/2019 16:45	30	0.41	2,040,698	3	0.32	1	Atlas		836,686	1
	6/24/2019 13:45	6/24/2019 14:30	45	0.42	2,012,148	2.15	0.26	3	Atlas		845,102	1
<b>CSO174 Total</b>											<b>5,009,764</b>	<b>11</b>



CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO180	4/7/2019 6:00	4/7/2019 13:30	450	0.58	69,738	0.75	0.30	3	Atlas	Retained by Sneads Branch	40,448	1
	4/12/2019 6:00	4/12/2019 6:00	0	0.24	946	0.79	0.17	1	Atlas	Retained by Sneads Branch	227	1
	4/14/2019 2:00	4/14/2019 5:00	180	0.77	102,768	1.57	0.36	6	Atlas	Retained by Sneads Branch	79,131	1
	4/19/2019 18:30	4/19/2019 23:15	285	2.79	27,401	2.24	0.91	48	Atlas		76,449	1
	4/23/2019 17:45	4/23/2019 18:15	30	0.24	958,054	3.03	0.21	1	Atlas	Retained by Sneads Branch	229,933	1
	4/24/2019 20:30	4/24/2019 21:00	30	0.58	72,198	3.39	0.28	1	Atlas	Retained by Sneads Branch	41,875	1
	4/25/2019 18:15	4/25/2019 18:15	0	0.33	34,061	3.75	0.15	12	Atlas	Retained by Sneads Branch	11,240	1
	4/26/2019 2:30	4/26/2019 2:45	15	0.33	66,579	3.44	0.15	12	Atlas	Retained by Sneads Branch	21,971	1
	5/3/2019 4:45	5/3/2019 7:45	180	0.85	62,629	1.03	0.46	6	Atlas	Retained by Sneads Branch	53,235	1
	5/19/2019 13:15	5/19/2019 13:15	0	0.3	15,150	0.13	0.13	1	Atlas	Retained by Sneads Branch	4,545	1
	5/19/2019 23:00	5/19/2019 23:15	15	0.3	89,457	0.3	0.13	1	Atlas	Retained by Sneads Branch	26,837	1
	5/23/2019 15:45	5/23/2019 15:45	0	0.05	587,700	0.35	0.03	1	Atlas	Retained by Sneads Branch	29,385	1
	5/26/2019 15:00	5/26/2019 15:00	0	0.57	204	0.64	0.34	3	Atlas	Retained by Sneads Branch	116	1
	5/29/2019 9:15	5/29/2019 9:15	0	0.64	18,164	0.83	0.35	6	Atlas	Retained by Sneads Branch	11,625	1
	6/5/2019 21:00	6/5/2019 21:15	15	0.8	99,936	0.91	0.58	1	Atlas	Retained by Sneads Branch	79,949	1
	6/7/2019 21:00	6/7/2019 22:15	75	0.88	6,611	1.19	0.29	48	Atlas	Retained by Sneads Branch	5,818	1
	6/9/2019 0:15	6/9/2019 0:45	30	0.88	11,058	1.73	0.29	48	Atlas		9,731	1
	6/9/2019 16:45	6/9/2019 17:00	15	0.59	144,471	2.16	0.31	3	Atlas		85,238	1
	6/16/2019 6:00	6/16/2019 6:00	0	0.12	22,833	0.81	0.08	3	Atlas		2,740	1
	6/16/2019 19:45	6/16/2019 21:45	120	1.4	122,844	1.39	0.63	6	Atlas		171,982	1
	6/18/2019 4:45	6/18/2019 4:45	0	0.24	1,242	1.78	0.09	24	Atlas	Retained by Sneads Branch	298	1
	6/21/2019 19:30	6/21/2019 19:30	0	0.5	7,552	2.18	0.33	3	Atlas	Retained by Sneads Branch	3,776	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO180	6/22/2019 7:00	6/22/2019 7:00	0	0.5	178	2.62	0.33	3	Atlas	Retained by Sneads Branch	89	1
	6/23/2019 16:00	6/23/2019 16:30	30	0.41	244,610	3.09	0.32	1	Atlas		100,290	1
	6/24/2019 13:30	6/24/2019 14:00	30	0.42	313,286	2.15	0.26	3	Atlas		131,580	1
<b>CSO180 Total</b>											<b>1,218,508</b>	<b>25</b>
CSO181	6/9/2019 16:45	6/9/2019 16:45	0	0.59	512,980	2.22	0.32	3	Atlas		302,658	1
	6/18/2019 16:15	6/18/2019 16:15	0	0.21	1,261,733	2.36	0.08	24	Atlas		264,964	1
<b>CSO181 Total</b>											<b>567,622</b>	<b>2</b>
CSO182	4/7/2019 6:15	4/7/2019 14:30	495	0.85	50,193	1.03	0.47	3	Atlas	Retained by Sneads Branch	42,664	1
	4/12/2019 6:30	4/12/2019 6:30	0	0.38	224	1.2	0.30	1	Atlas	Retained by Sneads Branch	85	1
	4/14/2019 1:15	4/14/2019 6:15	300	0.86	84,660	2.1	0.40	6	Atlas	Retained by Sneads Branch	72,808	1
	4/18/2019 23:00	4/19/2019 5:00	360	3.1	2,267	2.04	1.02	48	Cloudburst	Retained by Sneads Branch	7,028	1
	4/19/2019 18:30	4/20/2019 19:45	1515	3.1	56,680	4.04	1.02	48	Cloudburst		175,707	1
	4/23/2019 18:00	4/23/2019 19:00	60	0.24	105,042	3.34	0.21	1	Atlas	Retained by Sneads Branch	25,210	1
	4/24/2019 21:15	4/25/2019 2:15	300	0.91	10,886	3.79	0.30	48	Atlas	Retained by Sneads Branch	9,906	1
	4/26/2019 2:30	4/26/2019 4:00	90	0.91	642	3.63	0.30	48	Atlas	Retained by Sneads Branch	584	1
	5/2/2019 12:00	5/2/2019 12:00	0	0.29	8,393	0.74	0.25	1	Atlas	Retained by Sneads Branch	2,434	1
	5/3/2019 4:45	5/3/2019 9:30	285	0.9	136,114	1.24	0.49	6	Atlas	Retained by Sneads Branch	122,503	1
	5/4/2019 17:15	5/4/2019 18:15	60	0.22	23,823	1.43	0.13	3	Atlas	Retained by Sneads Branch	5,241	1
	5/11/2019 20:45	5/11/2019 21:30	45	0.22	31,155	0.23	0.12	6	Atlas	Retained by Sneads Branch	6,854	1
	5/19/2019 23:30	5/19/2019 23:30	0	0.31	33,500	0.32	0.14	1	Atlas		10,385	1
	5/23/2019 16:00	5/23/2019 16:00	0	0.09	16,500	0.41	0.05	1	Atlas	Retained by Sneads Branch	1,485	1
	5/26/2019 14:15	5/26/2019 17:30	195	0.54	20,646	0.83	0.32	3	Atlas	Retained by Sneads Branch	11,149	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO182	5/29/2019 9:45	5/29/2019 14:15	270	0.59	44,186	1.22	0.32	6	Atlas	Retained by Sneads Branch	26,070	1
	5/30/2019 11:45	5/30/2019 11:45	0	0.19	12,037	1.37	0.09	1	Atlas	Retained by Sneads Branch	2,287	1
	6/5/2019 21:00	6/5/2019 21:45	45	1.02	4,911	1.16	0.79	1	Atlas	Retained by Sneads Branch	5,009	1
	6/7/2019 21:30	6/8/2019 3:00	330	0.88	24,200	1.57	0.29	48	Atlas	Retained by Sneads Branch	21,296	1
	6/8/2019 19:45	6/9/2019 1:15	330	0.88	4,716	1.95	0.29	48	Atlas	Retained by Sneads Branch	4,150	1
	6/9/2019 18:30	6/9/2019 21:30	180	0.61	22,126	2.58	0.31	6	Atlas		13,497	1
	6/16/2019 6:15	6/16/2019 6:45	30	0.16	61,000	0.9	0.11	1	Atlas		9,760	1
	6/16/2019 17:45	6/17/2019 1:30	465	1.27	34,722	1.69	0.60	6	Atlas		44,097	1
	6/17/2019 21:15	6/17/2019 21:30	15	0.33	3,873	1.62	0.13	24	Atlas	Retained by Sneads Branch	1,278	1
	6/18/2019 9:00	6/18/2019 9:30	30	0.33	10,918	1.83	0.13	24	Atlas	Retained by Sneads Branch	3,603	1
	6/18/2019 17:45	6/18/2019 17:45	0	0.33	11,618	1.89	0.13	24	Atlas	Retained by Sneads Branch	3,834	1
	6/19/2019 21:00	6/19/2019 21:30	30	0.08	105,438	1.97	0.05	1	Atlas	Retained by Sneads Branch	8,435	1
	6/21/2019 19:30	6/21/2019 21:45	135	0.87	21,587	2.4	0.33	24	Atlas	Retained by Sneads Branch	18,781	1
	6/22/2019 6:45	6/22/2019 10:00	195	0.87	19,879	2.72	0.33	24	Atlas	Retained by Sneads Branch	17,295	1
	6/23/2019 16:00	6/23/2019 16:00	0	0.42	6,952	2.9	0.32	1	Atlas		2,920	1
<b>CSO182 Total</b>											<b>676,355</b>	<b>30</b>
CSO183	6/9/2019 16:45	6/9/2019 16:45	0	0.65	2,022	2.08	0.33	6	Atlas		1,314	1
	6/16/2019 20:45	6/16/2019 20:45	0	1.16	5,814	0.99	0.56	6	Atlas		6,744	1
	6/24/2019 13:45	6/24/2019 13:45	0	0.45	1,820	2.43	0.28	3	Atlas		819	1
<b>CSO183 Total</b>											<b>8,877</b>	<b>3</b>
CSO184	4/7/2019 12:15	4/7/2019 12:15	0	0.61	959	0.74	0.34	1	Atlas	Retained by Sneads Branch	585	1
	4/14/2019 2:00	4/14/2019 2:00	0	1.02	111	1.63	0.48	6	Atlas	Retained by Sneads Branch	113	1
	4/23/2019 18:00	4/23/2019 18:00	0	0.06	101,350	3.39	0.05	1	Atlas	Retained by Sneads Branch	6,081	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO184	4/24/2019 20:45	4/24/2019 20:45	0	0.46	5,596	3.62	0.21	6	Atlas	Retained by Sneads Branch	2,574	1
	4/25/2019 18:15	4/25/2019 18:15	0	0.39	6,821	4.07	0.18	1	Atlas	Retained by Sneads Branch	2,660	1
	6/9/2019 16:45	6/9/2019 17:00	15	0.65	53,388	2.1	0.33	6	Atlas		34,702	1
	6/16/2019 21:00	6/16/2019 21:00	0	1.16	1,162	0.99	0.56	6	Atlas		1,348	1
	6/23/2019 16:15	6/23/2019 16:15	0	0.41	198,776	3.08	0.32	1	Atlas		81,498	1
	6/24/2019 13:45	6/24/2019 14:00	15	0.45	31,229	2.43	0.28	3	Atlas		14,053	1
<b>CSO184 Total</b>											<b>143,614</b>	<b>9</b>
CSO185	4/7/2019 12:00	4/7/2019 13:30	90	0.61	60,341	0.82	0.34	1	Atlas	Retained by Sneads Branch	36,808	1
	4/12/2019 6:00	4/12/2019 6:00	0	0.45	2,907	1.03	0.36	1	Atlas	Retained by Sneads Branch	1,308	1
	4/14/2019 2:00	4/14/2019 5:00	180	1.02	37,433	2.05	0.48	6	Atlas	Retained by Sneads Branch	38,182	1
	4/18/2019 21:30	4/18/2019 21:30	0	3.33	457	1.83	1.42	48	Cloudburst	Retained by Sneads Branch	1,523	1
	4/19/2019 19:15	4/19/2019 23:15	240	3.33	19,100	2.78	1.42	48	Cloudburst		63,604	1
	4/23/2019 18:00	4/23/2019 18:15	15	0.06	91,333	3.39	0.05	1	Atlas	Retained by Sneads Branch	5,480	1
	4/24/2019 20:45	4/24/2019 21:15	30	0.46	60,313	3.66	0.21	6	Atlas	Retained by Sneads Branch	27,744	1
	4/25/2019 18:15	4/25/2019 18:15	0	0.39	55,128	4.07	0.18	1	Atlas	Retained by Sneads Branch	21,500	1
	4/26/2019 2:45	4/26/2019 2:45	0	0.39	8,918	3.47	0.18	1	Atlas	Retained by Sneads Branch	3,478	1
	5/3/2019 5:00	5/3/2019 7:30	150	0.93	12,155	1.13	0.50	6	Atlas	Retained by Sneads Branch	11,304	1
	5/19/2019 23:15	5/19/2019 23:15	0	0.21	43,529	0.36	0.15	1	Atlas	Retained by Sneads Branch	9,141	1
	5/26/2019 14:00	5/26/2019 15:30	90	0.48	16,115	0.74	0.29	3	Atlas	Retained by Sneads Branch	7,735	1
	5/29/2019 9:15	5/29/2019 9:15	0	0.52	8,863	0.77	0.28	6	Atlas	Retained by Sneads Branch	4,609	1
	5/30/2019 11:15	5/30/2019 11:15	0	0.19	9,474	1.3	0.10	1	Atlas	Retained by Sneads Branch	1,800	1
	6/5/2019 21:15	6/5/2019 21:15	0	0.77	27,660	0.9	0.57	1	Atlas	Retained by Sneads Branch	21,298	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO185	6/7/2019 22:30	6/7/2019 22:30	0	0.54	291	1.11	0.21	6	Atlas	Retained by Sneads Branch	157	1
	6/9/2019 0:30	6/9/2019 0:30	0	0.3	24,603	1.66	0.15	6	Atlas		7,381	1
	6/9/2019 16:45	6/9/2019 17:00	15	0.65	116,031	2.1	0.33	6	Atlas		75,420	1
	6/16/2019 20:00	6/16/2019 21:45	105	1.16	68,909	1.23	0.56	6	Atlas		79,935	1
	6/18/2019 17:15	6/18/2019 17:15	0	0.65	34,242	2.1	0.25	24	Atlas	Retained by Sneads Branch	22,257	1
	6/21/2019 19:45	6/21/2019 19:45	0	0.82	4,304	2.42	0.32	24	Atlas	Retained by Sneads Branch	3,529	1
	6/22/2019 7:00	6/22/2019 7:00	0	0.82	6,246	2.68	0.32	24	Atlas	Retained by Sneads Branch	5,122	1
	6/23/2019 16:15	6/23/2019 16:30	15	0.41	632,749	3.09	0.32	1	Atlas		259,427	1
	6/24/2019 13:45	6/24/2019 14:15	30	0.45	198,589	2.43	0.28	3	Atlas		89,365	1
<b>CSO185 Total</b>											<b>798,107</b>	<b>24</b>
CSO187	4/23/2019 17:30	4/23/2019 17:45	15	0.24	47,492	3.02	0.21	1	Atlas	Retained by Sneads Branch	11,398	1
	6/16/2019 20:30	6/16/2019 20:30	0	1.4	16,901	1.14	0.63	6	Atlas		23,662	1
	6/23/2019 15:45	6/23/2019 15:45	0	0.41	28,520	2.84	0.32	1	Atlas		11,693	1
	6/24/2019 13:30	6/24/2019 13:30	0	0.42	33,907	2.11	0.26	3	Atlas		14,241	1
<b>CSO187 Total</b>											<b>60,994</b>	<b>4</b>
CSO188	6/16/2019 20:45	6/16/2019 20:45	0	1.4	251	1.22	0.63	6	Atlas		351	1
<b>CSO188 Total</b>											<b>351</b>	<b>1</b>
CSO189	5/9/2019 10:30	5/10/2019 0:30	840	0.03	6,783,767	1.68	0.03	1	Atlas		203,513	1
	5/26/2019 14:15	5/26/2019 16:00	105	1.09	2,076,558	1.13	0.65	3	Atlas		2,263,448	1
	6/16/2019 19:45	6/17/2019 1:45	360	3	2,949,154	3.35	3.67	6	Cloudburst		8,847,462	1
<b>CSO189 Total</b>											<b>11,314,423</b>	<b>3</b>
CSO190	4/7/2019 11:45	4/7/2019 12:00	15	0.62	89,768	0.72	0.28	12	Atlas		55,656	1
	4/14/2019 1:45	4/14/2019 1:45	0	0.86	523	1.18	0.40	6	Atlas		450	1
	4/19/2019 19:15	4/20/2019 0:15	300	2.59	78,302	2.24	0.84	48	Atlas		202,801	1
	4/24/2019 20:30	4/24/2019 20:45	15	1.16	24,609	2.98	0.38	24	Atlas		28,547	1
	4/25/2019 18:00	4/25/2019 18:00	0	1.16	99,509	3.56	0.38	24	Atlas		115,430	1
<b>CSO190 Total</b>											<b>402,884</b>	<b>5</b>
CSO191	4/14/2019 2:30	4/14/2019 11:00	510	1.03	1,156,370	1.82	0.47	12	Atlas		1,191,061	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO191	4/16/2019 7:00	4/16/2019 20:15	795	Discharge	0	1.18					15,439	
	4/19/2019 20:00	4/22/2019 20:15	4335	2.44	4,238,941	4.27	0.92	24	Atlas		10,343,015	1
	4/26/2019 2:45	4/26/2019 5:45	180	0.96	256,006	3.76	0.31	48	Atlas		245,766	1
	5/2/2019 11:45	5/2/2019 15:15	210	0.1	5,810	0.65	0.09	1	Atlas		581	1
	5/3/2019 5:15	5/3/2019 18:30	795	1.22	1,744,623	1.37	0.67	6	Atlas		2,128,440	1
	5/15/2019 13:15	5/15/2019 19:15	360	0.01	9,700	0.43	0.01	1	Atlas		97	1
	5/26/2019 18:00	5/26/2019 21:00	180	0.41	734	0.65	0.25	3	Atlas		301	1
	5/29/2019 15:00	5/29/2019 20:45	345	0.63	1,538	1.13	0.34	6	Atlas		969	1
	5/30/2019 15:30	5/30/2019 16:15	45	0.35	111	1.39	0.16	3	Atlas		39	1
	6/9/2019 10:45	6/9/2019 19:30	525	0.92	305	2.59	0.30	24	Atlas		281	1
	6/16/2019 20:30	6/16/2019 21:30	60	1.95	201,871	1.75	0.91	6	Atlas		393,649	1
	6/17/2019 9:30	6/17/2019 20:30	660	1.95	1,005	2.28	0.91	6	Atlas		1,960	1
	6/22/2019 11:00	6/23/2019 0:00	780	0.96	984	3.55	0.37	24	Atlas		945	1
	6/23/2019 16:30	6/23/2019 20:15	225	0.58	68,760	3.84	0.45	1	Atlas		39,881	1
	6/24/2019 14:15	6/24/2019 22:00	465	0.66	54,965	2.67	0.39	3	Atlas		36,277	1
<b>CSO191</b>											<b>14,398,701</b>	<b>15</b>
<b>Total</b>												
CSO193	4/7/2019 12:00	4/7/2019 12:00	0	0.57	709	0.59	0.30	3	Atlas		404	1
	4/14/2019 2:00	4/14/2019 2:00	0	0.71	2,577	1.15	0.34	6	Atlas		1,830	1
	4/19/2019 18:30	4/19/2019 22:30	240	2.33	926	1.72	0.75	48	Atlas		2,157	1
	4/23/2019 18:00	4/23/2019 18:00	0	0.14	4,107	2.47	0.12	1	Atlas		575	1
	4/24/2019 20:45	4/24/2019 20:45	0	1.09	905	2.88	0.35	48	Atlas		986	1
	5/3/2019 4:45	5/3/2019 7:30	165	0.84	2,092	1.04	0.45	6	Atlas		1,757	1
	5/23/2019 15:45	5/23/2019 15:45	0	0.03	80,033	0.27	0.02	1	Atlas		2,401	1
	5/26/2019 13:45	5/26/2019 13:45	0	0.89	1,299	0.65	0.49	3	Atlas		1,156	1
	6/9/2019 16:45	6/9/2019 16:45	0	0.53	22,506	2.05	0.27	3	Atlas		11,928	1
	6/16/2019 19:45	6/17/2019 1:00	315	2.14	7,482	2.49	0.97	3	Atlas		16,011	1
	6/21/2019 19:15	6/21/2019 19:30	15	0.8	1,721	3.27	0.53	3	Atlas		1,377	1
	6/23/2019 16:00	6/23/2019 16:15	15	0.36	12,194	4.05	0.28	1	Atlas		4,390	1
	6/24/2019 13:30	6/24/2019 13:45	15	0.4	7,105	2.38	0.25	3	Atlas		2,842	1
	6/30/2019 17:30	6/30/2019 17:30	0	0.2	675	0.6	0.12	1	Atlas		135	1
<b>CSO193</b>											<b>47,949</b>	<b>14</b>
<b>Total</b>												
CSO195	6/16/2019 20:45	6/16/2019 20:45	0	1.62	487	1.44	0.75	6	Atlas		789	1
<b>CSO195</b>											<b>789</b>	<b>1</b>
<b>Total</b>												
CSO196	4/23/2019 18:00	4/23/2019 18:00	0	0.38	22,637	2.92	0.33	1	Atlas		8,602	1
	4/24/2019 20:45	4/24/2019 20:45	0	1.03	7,217	3.29	0.33	48	Atlas		7,433	1
	5/3/2019 4:45	5/3/2019 5:15	30	0.79	86,620	0.63	0.43	6	Atlas		68,430	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
<b>CSO196 Total</b>											<b>84,465</b>	<b>3</b>
CSO197	4/23/2019 17:45	4/23/2019 17:45	0	0.38	1,611	2.92	0.33	1	Atlas		612	1
	4/24/2019 20:30	4/24/2019 20:30	0	1.03	332	3.23	0.33	48	Atlas		342	1
	5/3/2019 4:30	5/3/2019 4:45	15	0.79	4,434	0.52	0.43	6	Atlas		3,503	1
	6/5/2019 20:45	6/5/2019 20:45	0	0.89	640	0.9	0.66	1	Atlas		570	1
	6/23/2019 15:45	6/23/2019 15:45	0	0.38	2,584	3.03	0.30	1	Atlas		982	1
	6/24/2019 13:30	6/24/2019 13:30	0	0.44	2,291	2.04	0.27	3	Atlas		1,008	1
<b>CSO197 Total</b>											<b>7,017</b>	<b>6</b>
CSO198	4/23/2019 17:45	4/23/2019 17:45	0	0.38	1,811	2.92	0.33	1	Atlas		688	1
	5/3/2019 4:30	5/3/2019 4:45	15	0.79	2,149	0.52	0.43	6	Atlas		1,698	1
	6/5/2019 20:45	6/5/2019 20:45	0	0.89	787	0.9	0.66	1	Atlas		700	1
	6/9/2019 16:30	6/9/2019 16:30	0	0.52	17,179	1.97	0.27	3	Atlas		8,933	1
	6/16/2019 19:30	6/16/2019 20:45	75	1.62	12,170	1.47	0.75	6	Atlas		19,716	1
	6/23/2019 15:45	6/23/2019 15:45	0	0.38	10,355	3.03	0.30	1	Atlas		3,935	1
	6/24/2019 13:30	6/24/2019 13:30	0	0.44	10,075	2.04	0.27	3	Atlas		4,433	1
<b>CSO198 Total</b>											<b>40,103</b>	<b>7</b>
CSO199	4/7/2019 11:45	4/7/2019 11:45	0	0.59	2,417	0.59	0.29	3	Atlas		1,426	1
	4/23/2019 17:45	4/23/2019 18:00	15	0.38	7,861	2.92	0.33	1	Atlas		2,987	1
	4/24/2019 20:30	4/24/2019 20:45	15	1.03	1,252	3.29	0.33	48	Atlas		1,290	1
	5/3/2019 4:45	5/3/2019 5:00	15	0.79	6,639	0.58	0.43	6	Atlas		5,245	1
	6/9/2019 15:15	6/9/2019 17:00	105	0.52	72,638	2.1	0.27	3	Atlas		37,772	1
	6/16/2019 20:45	6/16/2019 21:30	45	1.62	19,087	1.58	0.75	6	Atlas		30,921	1
	6/23/2019 16:00	6/23/2019 16:15	15	0.38	77,408	3.22	0.30	1	Atlas		29,415	1
	6/24/2019 13:30	6/24/2019 13:45	15	0.44	3,477	2.07	0.27	3	Atlas		1,530	1
<b>CSO199 Total</b>											<b>110,586</b>	<b>8</b>
CSO201	6/5/2019 21:00	6/5/2019 21:00	0	0.8	178	0.91	0.58	1	Atlas		142	1
	6/8/2019 19:15	6/8/2019 19:15	0	0.28	117,268	1.47	0.14	6	Atlas		32,835	1
	6/9/2019 17:00	6/9/2019 17:00	0	0.53	23,223	2.07	0.27	3	Atlas		12,308	1
	6/16/2019 19:45	6/16/2019 20:45	60	2.14	15,971	1.96	0.97	3	Atlas		34,178	1
	6/21/2019 19:30	6/21/2019 19:30	0	0.8	1,489	3.27	0.53	3	Atlas		1,191	1
	6/23/2019 16:15	6/23/2019 16:15	0	0.36	12,181	3.82	0.28	1	Atlas		4,385	1
	6/24/2019 13:45	6/24/2019 13:45	0	0.4	2,930	2.38	0.25	3	Atlas		1,172	1
<b>CSO201 Total</b>											<b>86,211</b>	<b>7</b>
CSO202	4/7/2019 11:45	4/7/2019 11:45	0	0.59	2,300	0.59	0.29	3	Atlas		1,357	1
	4/14/2019 2:00	4/14/2019 3:00	60	0.72	1,074	1.4	0.33	6	Atlas		773	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO202	4/19/2019 21:30	4/19/2019 22:30	60	2.54	197	1.83	0.82	48	Atlas		501	1
	4/23/2019 17:45	4/23/2019 18:00	15	0.38	16,226	2.92	0.33	1	Atlas		6,166	1
	4/24/2019 20:30	4/24/2019 20:45	15	1.03	4,242	3.29	0.33	48	Atlas		4,369	1
	4/26/2019 2:30	4/26/2019 2:30	0	1.03	1,031	3.47	0.33	48	Atlas		1,062	1
	5/3/2019 4:45	5/3/2019 5:00	15	0.79	9,633	0.58	0.43	6	Atlas		7,610	1
	5/26/2019 13:45	5/26/2019 14:45	60	0.64	4,317	0.59	0.37	3	Atlas		2,763	1
	6/5/2019 21:00	6/5/2019 21:00	0	0.89	5,178	0.98	0.66	1	Atlas		4,608	1
	6/7/2019 21:00	6/7/2019 21:00	0	0.53	211	1.12	0.22	6	Atlas		112	1
	6/9/2019 15:15	6/9/2019 17:00	105	0.52	74,042	2.1	0.27	3	Atlas		38,502	1
	6/16/2019 19:45	6/16/2019 21:00	75	1.62	11,009	1.52	0.75	6	Atlas		17,834	1
	6/21/2019 19:15	6/21/2019 19:15	0	0.52	2,462	2.5	0.35	3	Atlas		1,280	1
	6/22/2019 6:45	6/22/2019 6:45	0	0.43	3,453	2.86	0.28	3	Atlas		1,485	1
	6/23/2019 16:00	6/23/2019 16:15	15	0.38	47,345	3.22	0.30	1	Atlas		17,991	1
	6/24/2019 13:30	6/24/2019 13:45	15	0.44	5,720	2.07	0.27	3	Atlas		2,517	1
	6/30/2019 17:30	6/30/2019 17:30	0	0.15	3,453	0.57	0.09	1	Atlas		518	1
<b>CSO202</b>											<b>109,448</b>	<b>17</b>
<b>Total</b>												
CSO203	4/14/2019 2:00	4/14/2019 2:00	0	0.72	518	1.26	0.33	6	Atlas		373	1
	4/23/2019 18:00	4/23/2019 18:00	0	0.38	442	2.92	0.33	1	Atlas		168	1
	4/24/2019 20:45	4/24/2019 20:45	0	1.03	302	3.29	0.33	48	Atlas		311	1
	5/3/2019 5:00	5/3/2019 5:00	0	0.79	24,277	0.58	0.43	6	Atlas		19,179	1
	6/5/2019 21:00	6/5/2019 21:00	0	0.89	6,780	0.98	0.66	1	Atlas		6,034	1
	6/9/2019 16:45	6/9/2019 17:00	15	0.52	9,444	2.1	0.27	3	Atlas		4,911	1
	6/16/2019 19:30	6/16/2019 20:45	75	1.62	45,438	1.47	0.75	6	Atlas		73,610	1
	6/23/2019 16:00	6/23/2019 16:15	15	0.38	1,218	3.22	0.30	1	Atlas		463	1
	6/24/2019 13:45	6/24/2019 13:45	0	0.44	2,166	2.07	0.27	3	Atlas		953	1
<b>CSO203</b>											<b>106,002</b>	<b>9</b>
<b>Total</b>												
CSO205	4/7/2019 6:00	4/7/2019 13:30	450	0.85	2,525	1.02	0.47	3	Atlas	Retained by Sneads Branch	2,146	1
	4/12/2019 6:00	4/12/2019 6:00	0	0.38	811	1.19	0.30	1	Atlas	Retained by Sneads Branch	308	1
	4/14/2019 1:00	4/14/2019 5:30	270	0.86	7,849	2.09	0.40	6	Atlas	Retained by Sneads Branch	6,750	1
	4/22/2019 15:45	4/22/2019 16:00	15	Discharge	0	3.1				Retained by Sneads Branch	182	
	4/23/2019 17:45	4/23/2019 18:30	45	0.24	8,042	3.34	0.21	1	Atlas	Retained by Sneads Branch	1,930	1
	4/24/2019 20:30	4/25/2019 2:00	330	0.91	4,584	3.78	0.30	48	Atlas	Retained by Sneads Branch	4,171	1



CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
CSO205	4/25/2019 18:00	4/26/2019 3:30	570	0.91	1,507	4.24	0.30	48	Atlas	Retained by Sneads Branch	1,371	1
	5/3/2019 4:45	5/3/2019 8:30	225	0.9	3,268	1.24	0.49	6	Atlas	Retained by Sneads Branch	2,941	1
	5/4/2019 17:15	5/4/2019 17:30	15	0.22	1,045	1.43	0.13	3	Atlas	Retained by Sneads Branch	230	1
	5/11/2019 20:15	5/11/2019 22:30	135	0.22	700	0.26	0.12	6	Atlas	Retained by Sneads Branch	154	1
	5/19/2019 13:15	5/19/2019 13:30	15	0.31	787	0.14	0.14	1	Atlas	Retained by Sneads Branch	244	1
	5/19/2019 23:00	5/19/2019 23:30	30	0.31	984	0.32	0.14	1	Atlas	Retained by Sneads Branch	305	1
	5/26/2019 14:00	5/26/2019 15:30	90	0.54	920	0.73	0.32	3	Atlas	Retained by Sneads Branch	497	1
	5/29/2019 9:15	5/29/2019 13:45	270	0.59	2,325	1.22	0.32	6	Atlas	Retained by Sneads Branch	1,372	1
	5/30/2019 11:00	5/30/2019 11:30	30	0.19	2,274	1.37	0.09	1	Atlas	Retained by Sneads Branch	432	1
	6/5/2019 21:00	6/5/2019 21:15	15	1.02	2,673	1.14	0.79	1	Atlas	Retained by Sneads Branch	2,726	1
	6/7/2019 21:00	6/8/2019 2:15	315	0.88	607	1.53	0.29	48	Atlas	Retained by Sneads Branch	534	1
	6/9/2019 0:15	6/9/2019 0:45	30	0.88	318	1.94	0.29	48	Atlas		280	1
	6/9/2019 16:45	6/9/2019 18:30	105	0.61	5,948	2.49	0.31	6	Atlas		3,628	1
	6/16/2019 6:00	6/16/2019 6:45	45	0.16	6,569	0.9	0.11	1	Atlas		1,051	1
	6/16/2019 17:45	6/17/2019 1:15	450	1.27	4,143	1.68	0.60	6	Atlas		5,262	1
	6/18/2019 4:45	6/18/2019 4:45	0	0.33	1,297	1.76	0.13	24	Atlas	Retained by Sneads Branch	428	1
	6/18/2019 17:15	6/18/2019 17:15	0	0.33	1,479	1.89	0.13	24	Atlas	Retained by Sneads Branch	488	1
	6/19/2019 21:00	6/19/2019 21:00	0	0.08	975	1.97	0.05	1	Atlas	Retained by Sneads Branch	78	1
	6/21/2019 19:30	6/21/2019 21:15	105	0.87	2,007	2.4	0.33	24	Atlas	Retained by Sneads Branch	1,746	1
	6/22/2019 6:45	6/22/2019 9:30	165	0.87	3,786	2.72	0.33	24	Atlas	Retained by Sneads Branch	3,294	1
	6/23/2019 16:00	6/23/2019 16:30	30	0.42	1,614	2.91	0.32	1	Atlas		678	1
	6/24/2019 13:00	6/24/2019 15:30	150	0.44	13,875	2.14	0.28	3	Atlas		6,105	1
	6/30/2019 17:45	6/30/2019 17:45	0	0.11	1,827	0.55	0.06	6	Atlas	Retained by Sneads Branch	201	1

CSO	Start Date	End Date	Duration (Min)	Rain Total (Inch)	Discharge per Rain	Antecedent Rain	Frequency (yr)	Period (hr)	Standard	Comment	Discharge Volume (Gal)	Count of KEY
<b>CSO205 Total</b>											<b>49,532</b>	<b>28</b>
CSO208	6/5/2019 20:45	6/5/2019 20:45	0	0.78	3,359	0.89	0.57	1	Atlas		2,620	1
	6/16/2019 19:30	6/16/2019 20:30	60	2.14	13,566	1.99	0.98	12	Atlas		29,031	1
<b>CSO208 Total</b>											<b>31,651</b>	<b>2</b>
CSO210	4/7/2019 11:30	4/7/2019 17:00	330	0.75	229,869	0.96	0.35	1	Atlas		172,402	1
	4/14/2019 1:30	4/14/2019 8:30	420	1.1	222,978	2.02	0.51	6	Atlas		245,276	1
	4/18/2019 21:30	4/19/2019 6:00	510	0.68	348,616	2.17	0.31	12	Atlas		237,059	1
	4/19/2019 18:45	4/20/2019 19:15	1470	2.53	421,581	4.54	0.96	24	Atlas		1,066,601	1
	4/24/2019 20:15	4/25/2019 1:15	300	1.05	94,306	3.87	0.34	48	Atlas		99,021	1
	4/25/2019 17:45	4/26/2019 4:45	660	1.05	147,008	4.43	0.34	48	Atlas		154,358	1
	5/3/2019 5:15	5/3/2019 12:15	420	1.19	146,178	1.41	0.64	6	Atlas		173,952	1
	5/26/2019 13:30	5/26/2019 21:00	450	0.45	449,227	0.77	0.27	3	Atlas		202,152	1
	5/29/2019 8:45	5/29/2019 17:30	525	0.72	338,221	1.23	0.39	6	Atlas		243,519	1
	6/5/2019 20:30	6/6/2019 1:15	285	0.99	1,274,298	1.3	0.70	1	Atlas		1,261,555	1
	6/7/2019 22:15	6/8/2019 5:15	420	0.52	3,114,548	1.55	0.22	6	Atlas		1,619,565	1
	6/9/2019 1:00	6/9/2019 4:15	195	0.77	1,078,457	1.91	0.25	48	Atlas		830,412	1
	6/9/2019 15:15	6/9/2019 23:45	510	0.77	6,769,082	2.35	0.25	48	Atlas		5,212,193	1
<b>CSO210 Total</b>											<b>11,518,065</b>	<b>13</b>
CSO211	4/7/2019 12:15	4/7/2019 15:00	165	0.75	6,066,219	0.96	0.35	1	Atlas		4,549,664	1
	4/14/2019 2:00	4/14/2019 6:30	270	1.1	19,677,917	2.02	0.51	6	Atlas		21,645,709	1
	4/19/2019 19:15	4/20/2019 10:00	885	2.53	16,802,314	4.34	0.96	24	Atlas		42,509,854	1
	4/23/2019 18:30	4/23/2019 19:15	45	0.17	703,741	3.39	0.15	1	Atlas		119,636	1
	4/24/2019 20:45	4/24/2019 23:00	135	1.05	648,547	3.82	0.34	48	Atlas		680,974	1
	5/3/2019 5:30	5/3/2019 9:30	240	1.19	20,479,465	1.41	0.64	6	Atlas		24,370,563	1
	5/29/2019 14:15	5/29/2019 15:15	60	0.72	440,263	1.23	0.39	6	Atlas		316,989	1
	6/5/2019 21:45	6/5/2019 23:00	75	0.99	1,281,938	1.26	0.70	1	Atlas		1,269,119	1
	6/8/2019 0:45	6/8/2019 1:00	15	0.52	219,212	1.36	0.22	6	Atlas		113,990	1
	6/9/2019 17:00	6/9/2019 19:00	120	0.77	17,907,799	2.22	0.25	48	Atlas		13,789,005	1
	6/16/2019 19:30	6/17/2019 3:45	495	2.09	22,785,615	2.53	0.96	6	Atlas		47,621,936	1
	6/23/2019 16:30	6/23/2019 18:15	105	0.61	12,996,036	3.96	0.48	1	Atlas		7,927,582	1
	6/24/2019 14:00	6/24/2019 16:00	120	0.65	11,873,074	2.67	0.38	3	Atlas		7,717,498	1
<b>CSO211 Total</b>											<b>172,632,519</b>	<b>13</b>
<b>Grand Total</b>											<b>1,069,791,712</b>	<b>1031</b>

**Appendix C**

**Acronyms**

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**Appendix C                      Acronyms**

AAOV	Average Annual Overflow Volume
ACD	Amended Consent Decree
BGI	Beargrass Interceptor
BGIR	Beargrass Interceptor Relief
BOD	Biological Oxygen Demand
CCP	Composite Correction Plan
CCWQTC	Cedar Creek Water Quality Treatment Center
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
DAP	Discharge Abatement Plan
DRGWQTC	Derek R. Guthrie Water Quality Treatment Center
DWO	Dry Weather Overflow
EPA	Environmental Protection Agency
FEPS	Final Effluent Pump Station
FOG	Fat Oil and Grease
FY	Fiscal Year
GLPM	Gravity Line Preventive Maintenance
HCWQTC	Hite Creek Water Quality Treatment Center
HMI	Human Machine Interface
I/I	Inflow and Infiltration
I/O	Input/ Output
ICM	Integrated Catchment Model
ID	Identification
IFIX	Software name
IOAP	Integrated Overflow Abatement Plan
ISSDP	Interim Sanitary Sewer Discharge Plan
KDEP	Kentucky Department of Environmental Protection
KPDES	Kentucky Pollutant Discharge Elimination System
LG&E	Louisville Gas & Electric Company
LTCP	Long Term Control Plan
LWC	Louisville Water Company
MCC	Motor Control Center
MF/MFWQTC	Morris Forman Water Quality Treatment Center
MFI	Middle Fork Interceptor
MG	Million Gallons

**Appendix C****Acronyms**

MGD	Million Gallons per Day
MSD	Metropolitan Sewer District (Louisville and Jefferson County)
NGPS	Nightingale Pump Station
NMC	Nine Minimum Controls
ORFM	Ohio River Force Main
ORI	Ohio River Interceptor
PLC	Programmable Logic Controller
PM	Preventive Maintenance
PS	Pump Station
RAS	Return Activated Sludge
RTC	Real Time Control
SCADA	Supervisory Control And Data Acquisition
SCAP	System Capacity Assurance Plan
SCS	Soil Conservation Service
SED2	South East Diversion 2
SOP	Standard Operating Procedure
SOR1	Southern Outfall Retention Facility 1
SORP	Sewer Overflow Response Protocol
SPS	Starkey Pump Station
SSDP	Sanitary Sewer Discharge Plan
SSES	Sewer System Evaluation Survey
SSO	Sanitary Sewer Overflow
SSOP	Sanitary Sewer Overflow Plan
SWOR1	Southwestern Outfall Retention – Phase 1
SWOR2	Southwestern Outfall Retention – Phase 2
SWPS	Southwestern Pump Station
WSWG	Southwest Sluice Gate
TRFD	Total Rainfall Depth
TSS	Total Suspended Solids
TV	Television
UM	Unplanned Maintenance
UMFPS	Upper Middle Fork Pump Station
US	United States
VFD	Variable Frequency Drive
WIN	Waterway Improvements Now
WQTC	Water Quality Treatment Center
WUS	Waters of the United States
WWTF	Wastewater Treatment Facility

**Appendix D**

**SCAP Balance**

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<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
<b>CCREEK</b>						
235533	MAINTENANCE WORK FY06 AUG-FY 09	SCAPCREDIT		11/1/08	6,521	6,521
362688	MAINTENANCE WORK FY09A - CEDAR	SCAPCREDIT		12/31/08	5	6,526
236380	FAIRMOUNT ROAD MH REHAB	SCAPCREDIT		6/5/09	10,734	17,260
362689	MAINTENANCE WORK FY09B - CEDAR	SCAPCREDIT		6/30/09	201	17,461
SC1011254	MAINTENANCE WORK FY10A - CEDAR	SCAPCREDIT		12/31/09	347	17,808
SC1011255	MAINTENANCE WORK FY10B - CEDAR	SCAPCREDIT		6/30/10	194	18,002
SC1011259	MAINTENANCE WORK FY11A - CEDAR	SCAPCREDIT		12/31/10	1,720	19,722
SC1011262	MAINTENANCE WORK FY11B - CEDAR	SCAPCREDIT		6/30/11	934	20,656
SC1011264	MAINTENANCE WORK FY12A - CEDAR	SCAPCREDIT		12/31/11	269	20,925
SC1011267	MAINTENANCE WORK FY12B - CEDAR	SCAPCREDIT		6/30/12	814	21,739
SC1005519	CONTRACTED WORK FY12 - CEDAR	SCAPCREDIT		9/10/12	21,321	43,060
320989	LITTLE CEDAR CREEK III REHABIL	SCAPCREDIT		9/27/12	652,907	695,967
263934	ST JAMES CROSSINGS	LAT FXT	9,000	11/30/12	-19,575	676,392
196927	SONIC SPRINGS	LAT EXT	3,600	12/5/12	-7,830	668,562
SC1074160	MAINTENANCE WORK FY13 JAN-JUN -	SCAPCREDIT		6/30/13	4,443	673,005
SC1005524	CONTRACTED WORK FY13 - CEDAR	SCAPCREDIT		8/19/13	425	673,430
14SC1000	MAINTENANCE WORK FY13A - CEDAR	SCAPCREDIT		12/31/13	2,220	675,650
SC1082184	MAINTENANCE WORK FY14 JUL-DEC -	SCAPCREDIT		12/31/13	1,482	677,132
13LE1155	RAISING CANE'S CEDARLOOK DRIVE	LAT EXT	1,175	5/23/14	-2,556	674,576
SC1082223	MAINTENANCE WORK FY14 JAN-JUN-	SCAPCREDIT		6/30/14	4,729	679,305
SC1082493	MAINTENANCE WORK FY15	SCAPCREDIT		12/30/14	4,583	683,888
239030	POPLAR LAKES PH 1	LAT EXT	18,000	1/26/15	-39,150	644,738
13LE1003	Bardstown Woods Sec 6	LAT EXT	5,200	5/26/15	-11,310	633,428
SC1082496	MAINTENANCE WORK FY15	SCAPCREDIT		6/30/15	21	633,449
LE916330	Altawood Development	LAT EXT	1,600	9/14/15	-3,480	629,969
SC1003694	CONTRACTED WORK FY16 - CEDAR	SCAPCREDIT		9/25/15	328	630,297
SC1006188	CONTRACTED WORK FY15 - CEDAR	SCAPCREDIT		9/25/15	1	630,298



<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
SC1082497	MAINTENANCE WORK FY 16	SCAPCREDIT		12/30/15	16	630,314
LE915727	BARDSTOWN WOODS SEC 7	LAT EXT	4,400	5/25/16	-9,570	620,744
SC1082498	MAINTENANCE WORK FY 16	SCAPCREDIT		6/30/16	169	620,913
SC1006171	CONTRACTED WORK FY 14 - CEDAR	SCAPCREDIT		10/26/16	45,900	666,813
SC1082499	MAINTENANCE WORK FY 17	SCAPCREDIT		12/30/16	2,396	669,209
SC1082500	MAINTENANCE WORK FY 17	SCAPCREDIT		6/30/17	3,464	672,673
SC1097042	Cedar Creek I&I Rehab FY 17	SCAPCREDIT		7/13/17	309	672,982
LE983107	Poplar Lakes Phase 3	LAT EXT	12,000	8/14/17	-26,100	646,882
LE971176	Cedar Ridge	LAT EXT	18,800	10/24/17	-40,890	605,992
SC1082501	MAINTENANCE WORK FY 18	SCAPCREDIT		12/30/17	3,067	609,059
LE1027406	Chenoweth Run, LLC	LAT EXT	1,600	3/13/18	-3,480	605,579
I F 1005655	Carrier Court	I AT FXT	400	4/2/18	-870	604,709
I F 1048252	Landherr Estates Phase II	I AT FXT	17,600	7/23/19	-38,280	566,429
<b>FFORK</b>						
235557	MAINTENANCE WORK FY06 AUG-FY 09	SCAPCREDIT		11/1/08	14,540	14,540
362638	MAINTENANCE WORK FY09A - FLOYDS	SCAPCREDIT		12/31/08	1	14,541
362647	MAINTENANCE WORK FY09B - FLOYDS	SCAPCREDIT		6/30/09	4	14,545
362651	MAINTENANCE WORK FY10A - FLOYDS	SCAPCRFDIT		12/31/09	524	15,069
230379	SHAKES RUN SECTION 4	I AT FXT	3,770	1/5/10	-8,200	6,869
362655	MAINTENANCE WORK FY 10B - FLOYDS	SCAPCREDIT		6/30/10	82	6,951
362661	MAINTENANCE WORK FY 11A - FLOYDS	SCAPCREDIT		12/31/10	14,163	21,114
362669	MAINTENANCE WORK FY 11B - FLOYDS	SCAPCREDIT		6/30/11	22,707	43,821
242480	CLAIBOURNE CROSSINGS PHASE 2	LAT EXT	0	10/17/11	0	43,821
359320	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	4,000	47,821
362674	MAINTENANCE WORK FY 12A - FLOYDS	SCAPCREDIT		12/31/11	317	48,138
362678	MAINTENANCE WORK FY 12B - FLOYDS	SCAPCREDIT		6/30/12	338	48,476
332823	SINGLE FAMILY HOME	LAT EXT	400	7/13/12	-870	47,606
315945	BROOKFIELD SEC 3	LAT EXT	12,800	10/26/12	-27,840	19,766

<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
361689	LAKE FOREST REHAB PH1	SCAPCREDIT		12/18/12	174,769	194,535
362683	MAINTENANCE WORK FY 13A - FLOYDS	SCAPCREDIT		12/31/12	10	194,545
331397	BROOKFIELD SEC 2A	LAT EXT	14,400	5/8/13	-31,320	163,225
13SC1000	FY 14 STARVIEW REHABILITATION	SCAPCREDIT		6/30/13	14,183	177,408
SC1082514	MAINTENANCE WORK FY 13	SCAPCREDIT		6/30/13	161	177,569
SC1082517	MAINTENANCE WORK FY 14	SCAPCREDIT		12/30/13	991	178,560
SC1082518	MAINTENANCE WORK FY 14	SCAPCREDIT		6/30/14	662	179,222
SC1082519	MAINTENANCE WORK FY 15	SCAPCREDIT		12/30/14	1,318	180,540
13LE1062	SPEEDWAY #9451	LAT EXT	540	2/18/15	-1,175	179,366
SC1003809	BERRYTOWN WQTC I/I REMEDIATION	SCAPCREDIT		6/30/15	116,834	296,200
SC1082520	MAINTENANCE WORK FY 15	SCAPCREDIT		6/30/15	661	296,861
SC1003723	MIDDLETOWN SSR P2S2 I/I	SCAPCREDIT		11/6/15	102	296,963
SC1082521	MAINTENANCE WORK FY 16	SCAPCREDIT		12/30/15	659	297,622
LE941673	Locust Creek Section 8B	LAT EXT	2,000	1/7/16	-4,350	293,272
SC1082523	MAINTENANCE WORK FY 16	SCAPCREDIT		6/30/16	3,578	296,850
SC1003331	CONTRACTED WORK FY 16 - FLOYDS	SCAPCREDIT		7/7/16	35	296,885
LE932677	Shakes Run Sec 9	LAT EXT	12,000	9/20/16	-26,100	270,785
SC1082524	MAINTENANCE WORK FY 17	SCAPCREDIT		12/30/16	1,804	272,589
LE945783	Urton Woods, Section 2B	LAT EXT	17,200	1/4/17	-37,410	235,179
LE971261	Notting Hills Section 4 and Clubhouse	LAT EXT	10,400	2/27/17	-22,620	212,559
SC1082525	MAINTENANCE WORK FY 17	SCAPCREDIT		6/30/17	1,320	213,879
LE992628	Blankenbaker Centre II	LAT EXT	2,340	10/9/17	-5,090	208,789
SC1082526	MAINTENANCE WORK FY 18	SCAPCREDIT		12/30/17	6,158	214,947
LE1026269	Valencia Villas at Landis Lakes	LAT EXT	2,000	12/27/18	-4,350	210,597
LE1039193	Glen Lakes Section 4 - Phase 3	LAT EXT	16,400	1/7/19	-35,670	174,927
LE1030172	Victory Knoll Apartments - Phase 2	LAT EXT	36,100	6/25/19	-78,518	96,410
<b>HCREEK</b>						
SC1006307	CONTRACTED WORK FY06 - HITE CREEK	SCAPCREDIT		5/15/06	656	656



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235561	MAINTENANCE WORK FY06 AUG-FY 09	SCAPCREDIT		11/1/08	6,404	7,060
362641	MAINTENANCE WORK FY09A - HITE	SCAPCREDIT		12/31/08	2	7,062
SC1006214	CONTRACTED WORK FY09 - HITE CREEK	SCAPCREDIT		6/1/09	328	7,390
362648	MAINTENANCE WORK FY09B - HITE	SCAPCREDIT		6/30/09	7	7,397
362652	MAINTENANCE WORK FY 10A - HITE	SCAPCREDIT		12/31/09	10	7,407
362657	MAINTENANCE WORK FY 10B - HITE	SCAPCREDIT		6/30/10	332	7,739
320906	FLOYDSBURG ROAD I/I REHABILITA	SCAPCREDIT		12/17/10	28,437	36,176
362662	MAINTENANCE WORK FY 11A - HITE	SCAPCREDIT		12/31/10	9	36,185
362670	MAINTENANCE WORK FY 11B - HITE	SCAPCREDIT		6/30/11	9	36,194
SC1011058	Meadow Stream Pump Station & Force Main	SCAPCREDIT		9/7/11	2,304,000	2,340,194
246638	CHAPMAN COURT S/S	LAT EXT	800	9/28/11	-1,740	2,338,454
362675	MAINTENANCE WORK FY 12A - HITE	SCAPCRFDIT		12/31/11	340	2,338,794
362679	MAINTENANCE WORK FY 12B - HITE	SCAPCRFDIT		6/30/12	5,007	2,343,801
290181	CAMDEN WOOD APARTMENTS	LAT EXT	12,400	8/31/12	-26,970	2,316,831
304536	MAGNOLIA SPRINGS EAST PRIV P/S	LAT EXT	9,500	12/1/12	-20,663	2,296,169
335610	ROCK SPRINGS FARM SEC 4B	LAT EXT	6,400	12/7/12	-13,920	2,282,249
362684	MAINTENANCE WORK FY 13A - HITE	SCAPCREDIT		12/31/12	7	2,282,256
SC1005530	CONTRACTED WORK FY 13 - HITE CREEK	SCAPCREDIT		4/11/13	1,442	2,283,698
SC1082527	MAINTENANCE WORK FY 13	SCAPCREDIT		6/30/13	967	2,284,665
SC1082528	MAINTENANCE WORK FY 14	SCAPCREDIT		12/30/13	3,211	2,287,876
SC1082529	MAINTENANCE WORK FY 14	SCAPCREDIT		6/30/14	2,207	2,290,083
SC1082530	MAINTENANCE WORK FY 15	SCAPCREDIT		12/30/14	360	2,290,443
SC1006178	CONTRACTED WORK FY 14 - HITE CREEK	SCAPCREDIT		1/27/15	77,660	2,368,103
SC983697	MEADOW STREAM REHABILITATION -	SCAPCREDIT		3/13/15	448,447	2,816,550
SC1082531	MAINTENANCE WORK FY 15	SCAPCREDIT		6/30/15	124	2,816,674
SC1082532	MAINTENANCE WORK FY 16	SCAPCREDIT		12/30/15	1,191	2,817,865
SC1082533	MAINTENANCE WORK FY 16	SCAPCRFDIT		6/30/16	336	2,818,201
IF943178	Rock Springs Farm Section 5A	LAT EXT	6,800	9/13/16	-14,790	2,803,411
SC1006192	CONTRACTED WORK FY 15 - HITE CREEK	SCAPCREDIT		10/26/16	1	2,803,412



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SC1082534	MAINTENANCE WORK FY 17	SCAPCREDIT		12/30/16	3,599	2,807,011
LE971406	Old Henry Business Park	LAT EXT	930	3/17/17	-2,023	2,804,988
SC1082535	MAINTENANCE WORK FY 17	SCAPCREDIT		6/30/17	4,109	2,809,097
SC1082536	MAINTENANCE WORK FY 18	SCAPCREDIT		12/30/17	6,823	2,815,920
LE1031180	Norton Commons North Village Phase 6	LAT EXT	26,800	1/7/19	-58,290	2,757,630
LE1042390	Norton Commons North Village Phase 7	LAT EXT	12,000	1/7/19	-26,100	2,731,530
LE1056431	Norton Commons North Village The Grove	LAT EXT	400	3/15/19	-870	2,730,660
14LE1103	Accomack Mini Warehouses	LAT EXT	400	5/8/19	-870	2,729,790
LE1068686	Ghasem/Factory Lane Project	LAT EXT	685	5/29/19	-1,490	2,728,300
<b>JTOWN</b>						
235563	MAINTENANCE WORK FY06 AUG-FY 09	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
359324	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	4,000	1,006,214
14SC1002	MAINTENANCE WORK FY 13A -	SCAPCREDIT		12/31/12	3,490	1,009,704
337261	SINGLE FAMILY 2909 PELHAM CT	LAT EXT	400	5/28/13	-870	1,008,834
13I F1010	SWOPE HR & TRAINING BLDG	I AT FXT	400	6/28/13	-870	1,007,964
13I F1092	BALE EQUIPMENT	I AT FXT	450	10/25/13	-979	1,006,985
13LE1098	UNIPAK	LAT EXT	720	2/27/14	-1,566	1,005,419
LE924043	Bluegrass Indoor Carting	LAT EXT	400	5/1/14	-870	1,004,549
13LE1067	PARK COMMUNITY	LAT EXT	2,220	12/31/14	-4,829	999,720
14LE1149	Grand Lakes Section 3	LAT EXT	5,600	2/1/16	-12,180	987,540
LE924049	Blankenbaker Road S/S	LAT EXT	9,010	3/10/16	-19,597	967,944
326360	WATTERSON TRAIL CENTER	LAT EXT	2,745	5/4/16	-5,970	961,973
LE930127	Vantage Point Sec 3B	LAT EXT	7,200	6/21/16	-15,660	946,313
14LE1148	Grand Lakes Section 2	LAT EXT	4,400	11/8/16	-9,570	936,743
LE926081	Monticello Manors Sec 2	LAT EXT	7,600	3/23/17	-16,530	920,213



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<b>MCREEK</b>						
359380	CALENDAR 2005 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/05	12,000	12,000
359381	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCRFDIT		12/31/07	24,000	36,000
235568	MAINTENANCE WORK FY06 AUG-FY 09	SCAPCRFDIT		11/1/08	51,530	87,530
359382	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/08	16,000	103,530
362642	MAINTENANCE WORK FY09A - MILL	SCAPCREDIT		12/31/08	93	103,623
362649	MAINTENANCE WORK FY09B - MILL	SCAPCREDIT		6/30/09	1,507	105,130
236614	DEVEROES	LAT EXT	960	9/9/09	-2,088	103,042
362653	MAINTENANCE WORK FY 10A - MILL	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
362658	MAINTENANCE WORK FY 10B - MILL	SCAPCREDIT		6/30/10	6,216	160,919
259408	FAMILY DOLLAR 5105 DIXIE	LAT EXT	1,200	7/2/10	-2,610	158,309
264294	SAINT PETER THE APOSTLE CATHOL	LAT EXT	2,000	7/23/10	-4,350	153,959
276215	FAMILY DOLLAR - KRISTIN WAY	LAT EXT	400	10/12/10	-870	153,089
362664	MAINTENANCE WORK FY 11A - MILL	SCAPCREDIT		12/31/10	22,745	175,834
359384	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCRFDIT		12/31/10	4,000	179,834
359325	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCRFDIT		12/31/10	8,000	187,834
320916	SONNE AVE PS REHABILITATION -	SCAPCREDIT		6/30/11	120,800	308,634
362671	MAINTENANCE WORK FY 11B - MILL	SCAPCREDIT		6/30/11	11,745	320,379
299399	FAMILY DOLLAR - GREENWOOD RD	LAT EXT	800	10/4/11	-1,740	318,639
309018	PRP PERFORMING ARTS ADDITION	LAT EXT	1,134	11/9/11	-2,466	316,172
359385	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	12,000	328,172
362676	MAINTENANCE WORK FY 12A - MILL	SCAPCREDIT		12/31/11	4,800	332,972
359326	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	12,000	344,972
318096	CRACKER BARREL OLD COUNTRY	LAT EXT	6,000	1/19/12	-13,050	331,922
SC1005678	CONTRACTED WORK FY 12 - MILL CREEK	SCAPCREDIT		3/16/12	22	331,944

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262545	DIXIE MANOR SHOPPING CENTER	LAT EXT	965	5/21/12	-2,099	329,845
300374	FORT KNOX FEDERAL CREDIT UNION	LAT EXT	400	6/26/12	-870	328,975
362680	MAINTENANCE WORK FY12B - MILL	SCAPCREDIT		6/30/12	4,133	333,108
361693	FY12 MILL CREEK REHAB	SCAPCREDIT		6/30/12	81,675	414,783
231800	PIONEER MOBILE HOME PARK	LAT EXT	11,200	7/24/12	-24,360	390,423
237457	WAVERLY HILLS	LAT EXT	400	9/18/12	-870	389,553
341883	NHK SPRING PRECISION	LAT EXT	17,800	10/19/12	-38,715	350,838
334997	BEECHLAND BAPTIST CHURCH	LAT EXT	2,715	12/5/12	-5,905	344,933
359327	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	148,000	492,933
362685	MAINTENANCE WORK FY13A - MILL	SCAPCREDIT		12/31/12	22,996	515,929
359386	CALENDAR 2012 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/12	4,000	519,929
343763	SOUTHEAST CHRISTIAN CHURCH SW	IAT FXT	6,000	1/18/13	-13,050	506,879
224875	ASHBY GREEN APARTMENT HOMES	IAT FXT	36,400	3/20/13	-79,170	427,709
265944	RIVERPORT PHASE 4A - MICHELIN	LAT EXT	400	6/6/13	-870	426,839
SC1082559	MAINTENANCE WORK FY13	SCAPCREDIT		6/30/13	32,425	459,264
314887	DAYTON FREIGHT	LAT EXT	1,200	9/10/13	-2,610	456,654
13LE1014	LOUISVILLE FREE PUBLIC LIBRARY	LAT EXT	8,200	9/26/13	-17,835	438,819
357140	FAMILY DOLLAR CANE RUN ROAD	LAT EXT	832	10/3/13	-1,810	437,009
SC1082560	MAINTENANCE WORK FY14	SCAPCREDIT		12/30/13	11,451	448,460
13LE1171	SINGLE FAMILY HOME 3700 ROMANIA DR	LAT EXT	400	1/29/14	-870	447,590
SC1082562	MAINTENANCE WORK FY14	SCAPCREDIT		6/30/14	7,753	455,343
SC1082563	MAINTENANCE WORK FY15	SCAPCREDIT		12/30/14	4,491	459,834
SC1005536	ROSA TERRACE III REHABILITATION FY13	SCAPCREDIT		3/10/15	156,635	616,469
SC1082564	MAINTENANCE WORK FY15	SCAPCREDIT		6/30/15	4,861	621,330
SC1003690	CONTRACTED WORK FY15 - MILL CREEK	SCAPCREDIT		7/31/15	58	621,388
LE937142	ZAXBYS DIXIE HWY	LAT EXT	924	8/10/15	-2,010	619,379
SC1082565	MAINTENANCE WORK FY16	SCAPCREDIT		12/30/15	6,692	626,071
SC1082566	MAINTENANCE WORK FY16	SCAPCREDIT		6/30/16	3,523	629,594
LE944727	Britz Deer Hollow Lane	LAT EXT	800	7/28/16	-1,740	627,854

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SC1082567	MAINTENANCE WORK FY 17	SCAPCREDIT		12/30/16	12,857	640,711
SC1082568	MAINTENANCE WORK FY 17	SCAPCREDIT		6/30/17	5,103	645,814
SC1082569	MAINTENANCE WORK FY 18	SCAPCREDIT		12/30/17	27,293	673,107
LE1049057	Advanced ENT	LAT EXT	705	5/15/18	-1,533	671,573
LE995375	1105 Dorsey lane	LAT EXT	10,300	4/10/19	-22,403	649,171
<b>MFORK</b>						
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	MAINTENANCE WORK FY06 AUG-FY 09	SCAPCREDIT		11/1/08	43,779	147,779
359329	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		12/31/08	8,000	155,779
SC1011287	MAINTENANCE WORK FY09A - MIDDLE	SCAPCREDIT		12/31/08	13	155,792
236517	ANCHOR ESTATES MH REHAB	SCAPCREDIT		1/16/09	15,552	171,344
217235	SINKING FORK ICA PHASE I REHAB	SCAPCREDIT		3/30/09	437,967	609,311
235376	MIDDLE FORK INT REHAB PH1	SCAPCREDIT		5/15/09	487,744	1,097,055
179246	SHADY GLEN OF LYNDON PERSONAL	LAT EXT	-500	5/26/09	1,088	1,098,143
SC1011288	MAINTENANCE WORK FY09B - MIDDLE	SCAPCREDIT		6/30/09	4,208	1,102,351
250572	1316 WITAWANGA AVE	LAT EXT	400	11/4/09	-870	1,101,481
359331	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	24,000	1,125,481
359401	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	4,000	1,129,481
SC1011290	MAINTENANCE WORK FY 10A - MIDDLE	SCAPCREDIT		12/31/09	50	1,129,531
197432	ALMOST HOME KENNELS - ALL PET	LAT EXT	3,700	3/16/10	-8,048	1,121,483
260064	OXMOOR GOLF FRONT 9	LAT EXT	400	4/15/10	-870	1,120,613
260065	OXMOOR GOLF BACK 9	LAT EXT	400	4/15/10	-870	1,119,743
229834	THE BROOK HOS- DUPONT ADDITION	LAT EXT	1,763	4/27/10	-3,835	1,115,908
SC1011292	MAINTENANCE WORK FY 10B - MIDDLE	SCAPCREDIT		6/30/10	1,113	1,117,021
265723	Z-XPRESS CAR WASH	LAT EXT	5,449	7/2/10	-11,852	1,105,170
255793	HERR LANE APARTMENTS - 4 PLEX	LAT EXT	1,200	7/14/10	-2,610	1,102,560
255792	HERR LANE APARTMENTS - 8 PLEX	LAT EXT	2,400	7/14/10	-5,220	1,097,340



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274303	FARM CREDIT SERVICES	LAT EXT	525	9/9/10	-1,142	1,096,198
278015	METROPOLITAN UROLOGY	LAT EXT	400	12/15/10	-870	1,095,328
359402	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/10	8,000	1,103,328
359333	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	12,000	1,115,328
SC1011293	MAINTENANCE WORK FY 11A - MIDDLE	SCAPCREDIT		12/31/10	1,205	1,116,533
285637	SHELBYHURST OFFICE BUILDING 1	LAT EXT	6,600	1/20/11	-14,355	1,102,178
313465	DORSEY POINTE/CODOMINIUM S 8-13	LAT EXT	2,400	1/27/11	-5,220	1,096,958
291263	BROWNS LANE BUILDING	LAT EXT	400	4/14/11	-870	1,096,088
293400	FOUR PLEX APARTMENTS	LAT EXT	1,200	6/14/11	-2,610	1,093,478
SC1011294	MAINTENANCE WORK FY 11B - MIDDLE	SCAPCREDIT		6/30/11	7,183	1,100,661
330019	FY 11 ANCHOR ESTATES REHAB	SCAPCREDIT		8/11/11	1,359	1,102,020
310046	EL NAPEL - MCMAHAN CENTER	I AT FXT	3,100	10/31/11	-6,743	1,095,278
314591	CHOCOLATE MARTINI BAR/REST	I AT FXT	3,275	11/29/11	-7,123	1,088,154
320983	HURSTBOURNE III INVESTIGATION	SCAPCREDIT		12/27/11	1,408,279	2,496,433
359335	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	16,000	2,512,433
SC1011295	MAINTENANCE WORK FY 12A - MIDDLE	SCAPCREDIT		12/31/11	919	2,513,352
321228	SINGLE FAMILY UNIT	LAT EXT	400	2/15/12	-870	2,512,482
SC1005671	CONTRACTED WORK FY 12 - MIDDLE	SCAPCREDIT		3/16/12	7,305	2,519,787
321647	SINGLE FAMILY	LAT EXT	400	3/27/12	-870	2,518,917
328074	SINGLE FAMILY-703 FOUNTAIN AVE	LAT EXT	400	6/22/12	-870	2,518,047
SC1011297	MAINTENANCE WORK FY 12B - MIDDLE	SCAPCREDIT		6/30/12	949	2,518,996
193195	CEDAR LAKE LODGE WASHBURN	LAT EXT	1,900	8/20/12	-4,133	2,514,864
320923	ST MATTHEW S III REHABILITATION	SCAPCREDIT		8/23/12	20,841	2,535,705
337796	CHAMPPS	LAT EXT	635	9/5/12	-1,381	2,534,324
347126	ADVANCE PRODUCTION SYSTEMS	LAT EXT	400	12/28/12	-870	2,533,454
359336	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	92,000	2,625,454
14SC1003	MAINTENANCE WORK FY 13A - MIDDLE	SCAPCREDIT		12/31/12	3,309	2,628,763
339367	BAPTIST RADIATION ONCOLOGY	I AT FXT	1,500	1/4/13	-3,263	2,625,500
340778	PANDA RESTAURANT	LAT EXT	1,725	1/16/13	-3,752	2,621,748



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349044	BLAIRWOOD POOL ADDITION	LAT EXT	400	1/29/13	-870	2,620,878
328659	SINGLE FAMILY HOME - 6911 AMBR	LAT EXT	400	2/4/13	-870	2,620,008
352805	POOL HOUSE 9213 REIGATE COURT	LAT EXT	200	2/20/13	-435	2,619,573
14LE1001	MIRANDA LAGRANGE RD	LAT EXT	400	3/19/13	-870	2,618,703
350246	SINGLE FAMILY - 218 BLISS AVE	LAT EXT	400	3/20/13	-870	2,617,833
349974	SINGLE FAMILY 205 N WATTERSON	LAT EXT	400	3/26/13	-870	2,616,963
342433	SHELBYHURST 700 OFFICE BLDG	LAT EXT	7,500	4/15/13	-16,313	2,600,651
350340	JARED THE GALLERY OF JEWELRY	LAT EXT	770	4/16/13	-1,675	2,598,976
SC1005532	CONTRACTED WORK FY 13 - MIDDLE	SCAPCREDIT		5/30/13	6,480	2,605,456
13LE1009	Single family 11716 Wetherby Ave	LAT EXT	400	6/7/13	-870	2,604,586
SC1082545	MAINTENANCE W ORK FY 13	SCAPCREDIT		6/30/13	6,989	2,611,575
13I F 1001	Single Family 835 Fountain Ave	I AT FXT	400	8/28/13	-870	2,610,705
355162	PROPOSED RESTAURANT	I AT FXT	7,540	9/10/13	-16,400	2,594,306
13LE1045	SINGLE FAMILY 8325 WHIPPS MILL RD	LAT EXT	400	9/30/13	-870	2,593,436
319292	WATERMARK ON HURSTBOURNE	LAT EXT	71,600	10/22/13	-155,730	2,437,706
331542	DENTAL/MEDICAL OFFICE BLDG	LAT EXT	400	10/28/13	-870	2,436,836
13LE1128	SINGLE FAMILY HOME 1327 ETAWAH AVE	LAT EXT	400	11/5/13	-870	2,435,966
13LE1144	SINGLE FAMILY 1329 ETAWAH AVE	LAT EXT	400	11/5/13	-870	2,435,096
13LE1165	SINGLE FAMILY 8504 LORE LANE	LAT EXT	400	11/25/13	-870	2,434,226
13LE1146	CITY OF ST MATTHEWS COMMUNITY	LAT EXT	1,500	11/26/13	-3,263	2,430,963
13LE1099	NICKLIES - ST MATTHEW S	LAT EXT	1,920	12/11/13	-4,176	2,426,787
353963	DORSEY COMMONS TRACTS 1,2,3	LAT EXT	4,335	12/18/13	-9,429	2,417,359
SC1082546	MAINTENANCE W ORK FY 14	SCAPCREDIT		12/30/13	91,183	2,508,542
352026	MCMAHAN PLAZA PHASE II BLDG B	LAT EXT	766	12/31/13	-1,666	2,506,875
13LE1117	THE VININGS	LAT EXT	850	4/10/14	-1,849	2,505,027
14LE1021	KODA KENTUCKY ORGAN DONOR	LAT EXT	400	6/18/14	-870	2,504,157
SC1082547	MAINTENANCE W ORK FY 14	SCAPCRFDIT		6/30/14	4,404	2,508,561
14I F 1128	WALDORF SCHOOL OF LOUISVILLE	I AT FXT	400	6/30/14	-870	2,507,691
SC1082548	MAINTENANCE W ORK FY 15	SCAPCREDIT		12/30/14	3,664	2,511,355

APNO	APNAME	APTYPE	FLOW	Release Date	Approved Credit Required/ Flow Reduction	Running Total
SC1006201	GOOSE CREEK PLANTATION II	SCAPCREDIT		2/10/15	163,919	2,675,274
SC1006179	CONTRACTED WORK FY 14 - MIDDLE	SCAPCREDIT		2/11/15	15,043	2,690,317
SC1082549	MAINTENANCE WORK FY 15	SCAPCREDIT		6/30/15	2,568	2,692,885
SC1082550	MAINTENANCE WORK FY 16	SCAPCREDIT		12/30/15	15,216	2,708,101
LE939199	Westport Road Apartments	LAT EXT	62,800	6/8/16	-136,590	2,571,511
SC1082552	MAINTENANCE WORK FY 16	SCAPCREDIT		6/30/16	3,573	2,575,084
LE971405	Lyndon Lane Office Condos	LAT EXT	2,652	8/30/16	-5,768	2,569,316
SC1003387	CONTRACTED WORK FY 16 - MIDDLE	SCAPCREDIT		10/18/16	91,264	2,660,580
SC1006194	CONTRACTED WORK FY 15 - MIDDLE	SCAPCREDIT		10/24/16	3	2,660,583
LE938563	The Paddock at Sawyer Park	LAT EXT	99,800	12/20/16	-217,065	2,443,518
SC1082554	MAINTENANCE WORK FY 17	SCAPCREDIT		12/30/16	2,385	2,445,903
SC1082555	MAINTENANCE WORK FY 17	SCAPCREDIT		6/30/17	3,799	2,449,702
SC1082557	MAINTENANCE WORK FY 18	SCAPCREDIT		12/30/17	5,851	2,455,553
LE1042560	202 Oxmoor Lane Residential	LAT EXT	76,700	4/11/18	-166,823	2,288,730
LE1032029	The Enclave at Douglas Hills Section 1	LAT EXT	27,200	4/23/18	-59,160	2,229,570
LE1055615	Bennett & Bloom Medical Office	LAT EXT	585	6/6/18	-1,272	2,228,298
LE1041043	Single Family Unit (Lot 11)	LAT EXT	400	7/24/18	-870	2,227,428
166053	616 & 618 FOUNTAIN AVE S/S	LAT EXT	1,600	9/7/18	-3,480	2,223,948
LE1082291	Taco Bell	LAT EXT	1,100	5/29/19	-2,393	2,221,555
<b>NDITCH</b>						
359404	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/07	28,000	28,000
235569	MAINTENANCE WORK FY06 AUG-FY 09	SCAPCREDIT		11/1/08	11,147	39,147
236363	NORTHERN DITCH INT REHAB PH1	SCAPCREDIT		11/25/08	108,760	147,907
SC1011338	MAINTENANCE WORK FY09A -	SCAPCREDIT		12/31/08	11	147,918
SC1011339	MAINTENANCE WORK FY09B -	SCAPCREDIT		6/30/09	1,884	149,802
359339	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	4,000	153,802
SC1011340	MAINTENANCE WORK FY10A -	SCAPCREDIT		12/31/09	1,177	154,979
234678	THE LIGHTHOUSE PROMISE COMPLEX	LAT EXT	2,825	3/5/10	-6,144	148,835

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SC1011343	MAINTENANCE WORK FY10B -	SCAPCREDIT		6/30/10	2,532	151,367
284728	SUBWAY - NEW CUT RD	LAT EXT	1,314	12/21/10	-2,858	148,509
359340	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	4,000	152,509
SC1011344	MAINTENANCE WORK FY11A -	SCAPCREDIT		12/31/10	2,456	154,965
320908	PARKVIEW ESTATES REHABILITATIO	SCAPCREDIT		6/28/11	36	155,001
SC1011345	MAINTENANCE WORK FY11B -	SCAPCREDIT		6/30/11	1,989	156,990
312810	WILLOW PLACE APT COMMUNITY CEN	LAT EXT	400	11/11/11	-870	156,120
359341	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	24,000	180,120
359405	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	12,000	192,120
SC1011346	MAINTENANCE WORK FY12A -	SCAPCREDIT		12/31/11	911	193,031
315723	JCPS EARLY CHILDHOOD DEVELOP	LAT EXT	6,000	1/26/12	-13,050	179,981
312057	DOLLAR GENERAL - MEDALLION CT	LAT EXT	400	3/21/12	-870	179,111
SC1011336	MAINTENANCE WORK FY12B -	SCAPCREDIT		6/30/12	7,893	187,004
312659	KROGER L-350 FUEL STATION	LAT EXT	400	8/20/12	-870	186,134
359343	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	24,000	210,134
14SC1004	MAINTENANCE WORK FY13A -	SCAPCREDIT		12/31/12	4,239	214,373
SC1082570	MAINTENANCE WORK FY13	SCAPCREDIT		6/30/13	6,459	220,832
13LE1147	CARLON ROOFING	LAT EXT	992	12/5/13	-2,158	218,674
13LE1126	JENNINGS CROSSING TRACT 3	LAT EXT	2,100	12/12/13	-4,568	214,107
SC1082571	MAINTENANCE WORK FY14	SCAPCREDIT		12/30/13	2,707	216,814
SC1082572	MAINTENANCE WORK FY14	SCAPCREDIT		6/30/14	9,044	225,858
SC1006180	CONTRACTED WORK FY14 - NORTHERN	SCAPCREDIT		10/21/14	5	225,863
SC1082573	MAINTENANCE WORK FY15	SCAPCREDIT		12/30/14	8,330	234,193
SC1082575	MAINTENANCE WORK FY15	SCAPCREDIT		6/30/15	5,564	239,757
LE947316	Heimbrock I	LAT EXT	400	8/14/15	-870	238,887
LE947318	Heimbrock II	LAT EXT	400	8/14/15	-870	238,017
SC1082576	MAINTENANCE WORK FY16	SCAPCREDIT		12/30/15	6,074	244,091
SC1082577	MAINTENANCE WORK FY16	SCAPCREDIT		6/30/16	5,519	249,610
SC1082578	MAINTENANCE WORK FY17	SCAPCREDIT		12/30/16	9,266	258,876



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SC1082579	MAINTENANCE WORK FY 17	SCAPCREDIT		6/30/17	6,441	265,317
SC1082580	MAINTENANCE WORK FY 18	SCAPCREDIT		12/30/17	7,810	273,127
LE1056400	Thomas Car Wash	LAT EXT	4,670	10/10/18	-10,157	262,969
LE1032761	TRACKSIDE at Churchill Downs	LAT EXT	13,400	10/22/18	-29,145	233,824
<b>ORFM</b>						
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	MAINTENANCE WORK FY06 AUG-FY 09	SCAPCREDIT		11/1/08	19,826	79,826
362643	MAINTENANCE WORK FY09A - ORFM	SCAPCREDIT		12/31/08	2	79,828
362650	MAINTENANCE WORK FY09B - ORFM	SCAPCREDIT		6/30/09	3,835	83,663
362654	MAINTENANCE WORK FY10A - ORFM	SCAPCREDIT		12/31/09	7,330	90,993
263548	SINGLE FAMILY CONNECTION	LAT EXT	400	5/18/10	-870	90,123
213488	NORTHEAST CHRISTIAN CHURCH	LAT EXT	10,000	6/28/10	-21,750	68,373
362660	MAINTENANCE WORK FY 10B - ORFM	SCAPCREDIT		6/30/10	6,773	75,146
362665	MAINTENANCE WORK FY 11A - ORFM	SCAPCREDIT		12/31/10	181	75,327
362672	MAINTENANCE WORK FY 11B - ORFM	SCAPCREDIT		6/30/11	4,139	79,466
280837	SPRINGHURST TOWNE CTR LOT C	LAT EXT	400	9/20/11	-870	78,596
320920	SHADOW WOOD III REHABILITATION	SCAPCREDIT		9/30/11	14,279	92,875
311412	SPRINGHURST CHEVROLET	LAT EXT	855	10/14/11	-1,860	91,015
359345	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	16,000	107,015
359434	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	16,000	123,015
362677	MAINTENANCE WORK FY 12A - ORFM	SCAPCREDIT		12/31/11	7,268	130,283
320921	DERINGTON COURT III REHABILITATION	SCAPCREDIT		3/1/12	56,208	186,491
187028	GLENVIEW PARK SUBD SECTION 1	LAT EXT	4,400	3/5/12	-9,570	176,921
213450	GLENVIEW PARK SUB, SEC 2	LAT EXT	5,600	3/5/12	-12,180	164,741
322455	FIRST LADY NAILS	LAT EXT	400	3/12/12	-870	163,871
362681	MAINTENANCE WORK FY 12B - ORFM	SCAPCREDIT		6/30/12	19,941	183,812
SC1011315	MAINTENANCE WORK FY 12B - ORFM	SCAPCREDIT		6/30/12	19,941	203,753

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292239	SPRINGHURST RESTAURANT/ RETAIL	LAT EXT	3,440	7/5/12	-7,482	196,271
323821	TIRE DISCOUNTERS WESTPORT RD	LAT EXT	400	12/11/12	-870	195,401
363238	FY 13 PROSPECT MANHOLE REHAB	SCAPCREDIT		12/18/12	72,703	268,104
341319	RAISING CANES RETAIL CENTER	LAT EXT	1,225	12/18/12	-2,664	265,440
359346	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	24,000	289,440
363235	FY 13 MUDDY FORK MH REHAB	SCAPCREDIT		12/31/12	41,653	331,093
362686	MAINTENANCE WORK FY 13A - ORFM	SCAPCREDIT		12/31/12	1,161	332,254
360262	SINGLE FAMILY 3419 HILLVALE RD	LAT EXT	400	5/13/13	-870	331,384
343729	RETAIL & RESTAURANT	LAT EXT	3,500	6/21/13	-7,613	323,772
SC1082581	MAINTENANCE WORK FY 13	SCAPCREDIT		6/30/13	279	324,051
334154	GLENVIEW PARK SUBD SEC 4	LAT EXT	3,600	11/7/13	-7,830	316,221
SC1082582	MAINTENANCE WORK FY 14	SCAPCREDIT		12/30/13	1,302	317,523
13IF1024	Overlook at Beech Spring Farm Sec 4	LAT EXT	5,600	12/31/13	-12,180	305,343
199896	SPRINGDALE OFFICE BUILDING	LAT EXT	4,210	3/11/14	-9,157	296,186
225863	SPRING FARM LAKES SEC 1	LAT EXT	4,800	5/16/14	-10,440	285,746
SC1082583	MAINTENANCE WORK FY 14	SCAPCREDIT		6/30/14	1,293	287,039
177756	SUMMIT GARDENS PHASE 1	LAT EXT	32,000	9/22/14	-69,600	217,439
14LE1121	Riverside Sewer Extension	LAT EXT	1,200	11/10/14	-2,610	214,829
SC1082584	MAINTENANCE WORK FY 15	SCAPCREDIT		12/30/14	4,394	219,223
SC1006181	CONTRACTED WORK FY 14 - ORFM	SCAPCREDIT		12/31/14	1,654	220,877
13LE1071	SPRING FARM LAKE SEC 2	LAT EXT	6,000	1/16/15	-13,050	207,827
352634	BAUER PROPERTY	LAT EXT	2,920	2/12/15	-6,351	201,476
SC1082585	MAINTENANCE WORK FY 15	SCAPCREDIT		6/30/15	2,547	204,023
SC983704	PROSPECT I&I REHABILITATION - FY 13	SCAPCREDIT		7/12/15	1,034,758	1,238,781
SC1003730	RIVER ROAD I/I REMEDIATION	SCAPCREDIT		8/5/15	120,418	1,359,199
LE929244	Summit Gardens Phase 2	LAT EXT	18,000	10/21/15	-39,150	1,320,049
SC1006195	CONTRACTED WORK FY 15 - ORFM	SCAPCREDIT		11/19/15	1	1,320,050
IF938166	Spring Farm Lake Section 3	LAT EXT	3,200	12/14/15	-6,960	1,313,090
SC1082586	MAINTENANCE WORK FY 16	SCAPCREDIT		12/30/15	1,478	1,314,568

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SC1082589	MAINTENANCE WORK FY 17	SCAPCREDIT		6/30/16	3,171	1,317,739
SC1082587	MAINTENANCE WORK FY 16	SCAPCREDIT		6/30/16	460	1,318,199
SC1003696	CONTRACTED WORK FY 16 - ORFM	SCAPCREDIT		8/10/16	17,566	1,335,765
SC1003728	PROSPECT I&I REHABILITATION - FY 16	SCAPCREDIT		10/6/16	199,036	1,534,801
LE923204	Indian Springs Hotel	LAT EXT	13,000	11/16/16	-28,275	1,506,526
SC1082590	MAINTENANCE WORK FY 17	SCAPCREDIT		6/30/17	1,630	1,508,156
SC1082592	MAINTENANCE WORK FY 18	SCAPCREDIT		12/30/17	3,330	1,511,486
<b>PCREEK</b>						
235574	MAINTENANCE WORK FY06 AUG-FY 09	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
SC1011298	MAINTENANCE WORK FY09A - POND	SCAPCREDIT		12/31/08	1,913	81,695
SC1011299	MAINTENANCE WORK FY09B - POND	SCAPCREDIT		6/30/09	6,403	88,098
359439	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	12,000	100,098
359348	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	4,000	104,098
SC1011305	MAINTENANCE WORK FY 10A - POND	SCAPCREDIT		12/31/09	22,337	126,435
192513	BANNON CROSSINGS SECTION 3A-1	LAT EXT	800	2/17/10	-1,740	124,695
261115	EMERGENCY RESTORATION	LAT EXT	400	4/27/10	-870	123,825
SC1011307	MAINTENANCE WORK FY 10B - POND	SCAPCREDIT		6/30/10	11,060	134,885
276977	DADISMAN BUILDERS-POPLAR TREE	LAT EXT	400	10/13/10	-870	134,015
266833	THORNTONS @ PRESTON HWY	LAT EXT	400	12/1/10	-870	133,145
280751	NOTTINGTON HILLS SEC 1	LAT EXT	4,400	12/29/10	-9,570	123,575
359350	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	12,000	135,575
SC1011308	MAINTENANCE WORK FY 11A - POND	SCAPCREDIT		12/31/10	19,773	155,348
187739	GLENGARRY INDUSTRIAL PARK	LAT EXT	4,300	1/13/11	-9,353	145,996
277777	TIRE DISCOUNTERS - BOERSTE WAY	LAT EXT	2,960	3/21/11	-6,438	139,558
SC1011309	MAINTENANCE WORK FY 11B - POND	SCAPCREDIT		6/30/11	10,562	150,120
304408	UPS SUPPLY CHAIN SOLUTIONS #7	LAT EXT	2,250	9/14/11	-4,894	145,226

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320918	EDSEL III REHABILITATION - FY1	SCAPCREDIT		9/27/11	106,700	251,926
313444	PLANET FITNESS - JEFF BLVD	LAT EXT	1,600	11/4/11	-3,480	248,446
312391	LONGHORN STEAKHOUSE RESTAURANT	LAT EXT	4,840	11/29/11	-10,527	237,919
320919	LANTANA III REHABILITATION - F	SCAPCREDIT		12/29/11	5,000	242,919
359351	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	20,000	262,919
SC1011310	MAINTENANCE WORK FY12A - POND	SCAPCREDIT		12/31/11	5,380	268,299
310845	ZAXBY'S RESTAURANT	LAT EXT	3,750	2/28/12	-8,156	260,143
255044	ISA-RECYCLING CENTER	LAT EXT	400	3/13/12	-870	259,273
312814	MILLER TRANSPORTATION	LAT EXT	1,800	3/19/12	-3,915	255,358
324554	NORTONS TEMPORARY OFFICE	LAT EXT	900	4/16/12	-1,958	253,400
234102	ETHOS AT VALLEY FARM SR LIVING	LAT EXT	7,050	6/19/12	-15,334	238,066
322367	SHEPHERDS CARE MEMORY HOME	I AT FXT	2,000	6/21/12	-4,350	233,716
SC1011313	MAINTENANCE WORK FY12B - POND	SCAPCREDIT		6/30/12	3,877	237,593
307332	LOUISVILLE INDUSTRIAL BLDG B	LAT EXT	2,520	8/6/12	-5,481	232,112
SC1005684	CONTRACTED WORK FY12 - POND	SCAPCREDIT		8/10/12	3,812	235,924
279860	BANNON CROSSINGS SEC 3B-2	LAT EXT	9,600	8/10/12	-20,880	215,044
312053	DOLLAR GENERAL - CLEARWATER FA	LAT EXT	400	8/13/12	-870	214,174
343455	SINGLE FAMILY 1812 GREYLING DR	LAT EXT	400	10/12/12	-870	213,304
243109	OVERBROOK APARTMENTS	LAT EXT	41,200	11/9/12	-89,610	123,694
359354	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	56,000	179,694
14SC1005	MAINTENANCE WORK FY13A - POND	SCAPCREDIT		12/31/12	25,984	205,678
329624	COPART	LAT EXT	400	2/20/13	-870	204,808
346082	ZAXBYS	LAT EXT	2,065	5/2/13	-4,491	200,317
320924	LEA ANN WAY INTERCEPTOR I&I RE	SCAPCREDIT		6/30/13	1,017,423	1,217,740
SC1082593	MAINTENANCE WORK FY13	SCAPCREDIT		6/30/13	41,995	1,259,735
335385	HARRISON LOW PRESSURE S/S	LAT EXT	1,600	7/2/13	-3,480	1,256,255
SC1005534	PICADILLY III REHABILITATION FY13	SCAPCREDIT		7/12/13	187,564	1,443,819
320940	4 RESIDENCE SFU 7821 MANSCLICK	I AT FXT	400	8/16/13	-870	1,442,949
SC1005538	CONTRACTED WORK FY13 - POND	SCAPCREDIT		8/27/13	18,958	1,461,907



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361336	RENAISSANCE SOUTH BUSINESS	LAT EXT	540	9/6/13	-1,175	1,460,732
324886	PNC BANK	LAT EXT	400	9/6/13	-870	1,459,862
13LE1083	SINGLE FAMILY HOME 5402 (H) E	LAT EXT	400	9/26/13	-870	1,458,992
SC1005319	FEGENBUSH I/II REHABILITATION FY 13	SCAPCREDIT		11/12/13	226,201	1,685,193
353125	PEGASUS TRANSPORTATION	LAT EXT	250	12/9/13	-544	1,684,650
341439	PRESTON GARDENS APTS	LAT EXT	22,200	12/10/13	-48,285	1,636,365
308206	APPLEGATE FARMS	LAT EXT	57,200	12/10/13	-124,410	1,511,955
SC1082594	MAINTENANCE WORK FY 14	SCAPCREDIT		12/30/13	19,491	1,531,446
13LE1179	TIMBERBEND SUBDIVISION SEC 5B	LAT EXT	6,400	2/14/14	-13,920	1,517,526
13LE1035	RENAISSANCE SOUTH BUSINESS PARK	LAT EXT	5,415	4/10/14	-11,778	1,505,748
13LE1115	VERIZON-OUTER LOOP	LAT EXT	400	4/22/14	-870	1,504,878
348014	ASHTON PARK TOWN HOMES	I AT FXT	9,000	4/24/14	-19,575	1,485,303
280180	LOUISVILLE INDUSTRIAL CTR F	I AT FXT	2,480	5/16/14	-5,394	1,479,909
14LE1085	Williams Properties - Self Storage Facility	LAT EXT	400	5/28/14	-870	1,479,039
13LE1034	6300 GEIL LANE WAREHOUSE	LAT EXT	720	6/9/14	-1,566	1,477,473
SC1082595	MAINTENANCE WORK FY 14	SCAPCREDIT		6/30/14	14,457	1,491,930
284215	HURSTBOURNE POINTE APTS	LAT EXT	9,600	7/7/14	-20,880	1,471,050
344230	AUSTIN PARK APARTMENTS PH6	LAT EXT	27,600	8/25/14	-60,030	1,411,020
13LE1105	JEFFERSON COMMONS	LAT EXT	17,075	11/13/14	-37,138	1,373,882
SC1005323	FERN CREEK I/II REHABILITATION FY13	SCAPCREDIT		11/18/14	551,108	1,924,990
SC1082596	MAINTENANCE WORK FY 15	SCAPCREDIT		12/30/14	26,095	1,951,085
13LE1017	APEX ON PRESTON APT HOMES(Formerly	LAT EXT	84,400	1/13/15	-183,570	1,767,515
SC1005541	STONY BROOK I/II REHABILITATION FY 13	SCAPCREDIT		3/10/15	345,397	2,112,912
SC995942	CAVEN AVE I/II REMEDIATION - FY 13	SCAPCREDIT		3/11/15	225,645	2,338,557
354207	COOPER FARMS SEC 11B	LAT EXT	12,400	4/29/15	-26,970	2,311,587
354209	COOPER FARMS SEC 11A	LAT EXT	13,200	4/29/15	-28,710	2,282,877
SC1082597	MAINTENANCE WORK FY 15	SCAPCREDIT		6/30/15	10,279	2,293,156
IF948692	Jim's Express Wash	I AT FXT	10,500	7/28/15	-22,838	2,270,318
LE951121	Allgeier Site	LAT EXT	400	8/7/15	-870	2,269,448



<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
13LE1086	WOODS OF PENN RUN OFFSITE SS	LAT EXT	1,000	8/25/15	-2,175	2,267,273
13LE1140	JEFFERSON POST APARTMENTS	LAT EXT	28,800	10/2/15	-62,640	2,204,633
SC1082598	MAINTENANCE WORK FY 16	SCAPCREDIT		12/30/15	13,994	2,218,627
14LE1116	CATALPA SPRINGS	LAT EXT	2,800	12/30/15	-6,090	2,212,537
SC939830	Lea Ann Way West Quad 1 & 2	SCAPCREDIT		12/31/15	445,911	2,658,448
358356	WOODS OF PENN RUN Section 1	LAT EXT	18,800	2/12/16	-40,890	2,617,558
SC1003699	CONTRACTED WORK FY 16 - POND	SCAPCREDIT		5/17/16	36,063	2,653,621
LE936598	Jefferson Commerce Center Tract 1A	LAT EXT	5,250	6/6/16	-11,419	2,642,203
LE918484	AUSTIN PARK SS PHASE 8	LAT EXT	16,800	6/21/16	-36,540	2,605,663
14LE1170	Austin Park Phase 7 & 8	LAT EXT	26,400	6/21/16	-57,420	2,548,243
SC1082599	MAINTENANCE WORK FY 16	SCAPCREDIT		6/30/16	12,650	2,560,893
SC1003087	HILLRIDGE III REMEDIATION	SCAPCREDIT		8/5/16	308,184	2,869,077
SC1003292	LEA ANN WAY WEST (LAW W) QUAD 3 III	SCAPCREDIT		8/31/16	311,526	3,180,603
SC1006197	CONTRACTED WORK FY 15 - POND	SCAPCREDIT		10/24/16	310	3,180,913
SC1006182	CONTRACTED WORK FY 14 - POND	SCAPCREDIT		10/26/16	8,390	3,189,303
SC1005639	SILVER HEIGHTS SEWER REHAB	SCAPCREDIT		10/31/16	284,936	3,474,239
SC1005631	LEA ANN WAY WEST (LAW W) QUAD 4 III	SCAPCREDIT		10/31/16	692,905	4,167,144
SC1082601	MAINTENANCE WORK FY 17	SCAPCREDIT		12/30/16	14,699	4,181,843
LE954229	Jefferson Commerce Center Bldg.2	LAT EXT	3,150	2/2/17	-6,851	4,174,991
SC1082602	MAINTENANCE WORK FY 17	SCAPCREDIT		6/30/17	14,076	4,189,067
SC1082603	MAINTENANCE WORK FY 18	SCAPCREDIT		12/30/17	10,803	4,199,870
LE1053266	Yokomori Manufacturing Facility	LAT EXT	1,750	4/9/18	-3,806	4,196,064
SC1096902	Admiral PS III Rehab FY 17 FY 18	SCAPCREDIT		6/30/18	977,768	5,173,832
LE1047077	Orell Station 1C	LAT EXT	10,400	6/10/19	-22,620	5,151,212
LE1053368	Ferndale Place Subdivision	LAT EXT	9,600	7/10/19	-20,880	5,130,332
<b>SEDIV</b>						
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

<u>APNO</u>	<u>APNAME</u>	<u>ATYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
235575	MAINTENANCE WORK FY06 AUG-FY 09	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
SC1011317	MAINTENANCE WORK FY09A - SE	SCAPCREDIT		12/31/08	1,555	666,523
SC1011318	MAINTENANCE WORK FY09B - SE	SCAPCREDIT		6/30/09	2,929	669,452
229854	TINY HANDS DAYCARE	LAT EXT	1,225	10/20/09	-2,664	666,788
359357	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	12,000	678,788
359443	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	8,000	686,788
SC1011322	MAINTENANCE WORK FY10A - SE	SCAPCREDIT		12/31/09	16,974	703,762
235291	SULLIVAN COLLEGE OF TECHNOLOGY	I AT FXT	900	2/11/10	-1,958	701,804
238328	LOUISVILLE COLLEGIATE SPORTS	I AT FXT	400	3/1/10	-870	700,934
241759	FRISCHS BIG BOY RESTAURANT	LAT EXT	2,400	3/5/10	-5,220	695,714
257275	LOUISVILLE JUNIOR ACADEMY	LAT EXT	520	4/16/10	-1,131	694,583
SC1011326	MAINTENANCE WORK FY10B - SE	SCAPCREDIT		6/30/10	10,739	705,322
320993	BEARGRASS CREEK PHASE II - FY 1	SCAPCREDIT		12/14/10	10,368	715,690
359358	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	4,000	719,690
359444	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/10	24,000	743,690
SC1011328	MAINTENANCE WORK FY11A - SE	SCAPCREDIT		12/31/10	11,090	754,780
286513	GARDINER POINT RESIDENCE HALL	LAT EXT	10,800	2/16/11	-23,490	731,290
276378	TIRE DISCOUNTERS - BARDSTOWN	LAT EXT	1,500	5/6/11	-3,263	728,028
287888	BEVERAGE WAREHOUSE	LAT EXT	1,180	5/30/11	-2,567	725,461
SC1011330	MAINTENANCE WORK FY11B - SE	SCAPCREDIT		6/30/11	3,661	729,122
296295	KEN TOWER Y -3800 S HURSTBOURNE	LAT EXT	400	7/1/11	-870	728,252
359445	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	8,000	736,252
359359	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	64,000	800,252
SC1011331	MAINTENANCE WORK FY12A - SE	SCAPCREDIT		12/31/11	5,071	805,323
SC1011316	MAINTENANCE WORK FY12B - SE	SCAPCREDIT		6/30/12	24,202	829,525

<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
SC1011333	MAINTENANCE WORK FY 12B - SE	SCAPCREDIT		6/30/12	6,141	835,666
307018	HOOK PROPERTY FAMILY DOLLAR	LAT EXT	400	8/10/12	-870	834,796
359361	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	68,000	902,796
359446	CALENDAR 2012 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/12	4,000	906,796
14SC1006	MAINTENANCE WORK FY 13A - SE	SCAPCREDIT		12/31/12	24,202	930,998
187741	BROOKSTONE SENIOR APARTMENTS	LAT EXT	16,800	3/11/13	-36,540	894,458
232601	RAINTREE/MARIAN CT P/S ELIM	LAT EXT	105,800	6/14/13	-230,115	664,343
SC1082605	MAINTENANCE WORK FY 13	SCAPCREDIT		6/30/13	21,761	686,104
SC1005539	CONTRACTED WORK FY 13 - SOUTHEAST	SCAPCREDIT		9/18/13	25,344	711,448
330437	COLLEGIATE ATHLETIC FIELD	LAT EXT	800	11/26/13	-1,740	709,708
SC1082606	MAINTENANCE WORK FY 14	SCAPCREDIT		12/30/13	19,491	729,199
SC1082607	MAINTENANCE WORK FY 14	SCAPCREDIT		6/30/14	9,087	738,286
SC1082608	MAINTENANCE WORK FY 15	SCAPCREDIT		12/30/14	15,321	753,607
SC1006185	CONTRACTED WORK FY 14 - SOUTHEAST	SCAPCREDIT		2/11/15	187,478	941,085
SC1082610	MAINTENANCE WORK FY 15	SCAPCREDIT		6/30/15	10,273	951,358
SC1006199	CONTRACTED WORK FY 15 - SOUTHEAST	SCAPCREDIT		10/20/15	1	951,359
LE919560	Todd's Place Express Car Wash	LAT EXT	4,830	12/22/15	-10,505	940,854
SC1082611	MAINTENANCE WORK FY 16	SCAPCREDIT		12/30/15	7,052	947,906
SC1003718	SOUTHEAST DIVERSION AREA G (SEDG)	SCAPCREDIT		2/16/16	75,998	1,023,904
SC1003704	CONTRACTED WORK FY 16 - SOUTHEAST	SCAPCREDIT		5/24/16	66	1,023,970
SC1082612	MAINTENANCE WORK FY 16	SCAPCREDIT		6/30/16	19,904	1,043,874
LE943171	Costco Wholesale and Fuel Facility	LAT EXT	8,000	7/28/16	-17,400	1,026,474
SC1082613	MAINTENANCE WORK FY 17	SCAPCREDIT		12/30/16	5,812	1,032,286
SC1082614	MAINTENANCE WORK FY 17	SCAPCREDIT		6/30/17	6,961	1,039,247
SC1082615	MAINTENANCE WORK FY 18	SCAPCREDIT		12/30/17	14,909	1,054,156
LE1039341	Silver Creek Place Apartments	LAT EXT	7,200	4/9/18	-15,660	1,038,496
IF1046691	Crown Packaging	LAT EXT	400	4/18/18	-870	1,037,626

**Appendix E      IOAP Project Crosswalk**

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PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
17TH ST FPS DWO ELIMINATION	IOAP	MSD0306-FP	L_OR_MF_190_S_03_A_A
27TH STREET FPS DWO ELIM	IOAP	MSD0307-FP	L_OR_MF_019_S_03_A_A
34TH ST FPS DWO ELIMINATION	IOAP	MSD0308-FP	L_OR_MF_019_S_03_A_B
4TH STREET FPS DWO ELIMINATION	IOAP	MSD0303-FP	L_OR_MF_022_M_03_A_A
ADAMS STREET SEWER SEPARATION (FORMERLY STORAGE BASIN)	IOAP	CSO172	L_OR_MF_172_S_09B_B_A_0
ANCHOR ESTATES PS ELIMINATIONS 1 - VANNAH PUMP STATION ELIMINATION	IOAP	01106	S_MI_MF_NB06_M_01_A_A-2
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	IOAP	00056-W	S_MI_MF_NB06_M_01_A_A - 1
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	IOAP	00057-W	S_MI_MF_NB06_M_01_A_A - 1
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	IOAP	00746	S_MI_MF_NB06_M_01_A_A - 1
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	IOAP	00817	S_MI_MF_NB06_M_01_A_A - 1
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	IOAP	MSD0057-LS	S_MI_MF_NB06_M_01_A_A - 1



PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
ASHBURTON PS IMPROVEMENTS & DIVERSION	IOAP	MSD0165-PS	S_FF_FF_NB03_M_01_C_A
ASHBURTON PS IMPROVEMENTS & DIVERSION	IOAP	MSD0166-PS	S_FF_FF_NB03_M_01_C_A
AVANTI PS ELIMINATION	IOAP	21229	S_PO_WC_PC07_M_01_A
BARDSTOWN RD PS IMPROVEMENTS	IOAP	88545	S_CC_CC_MSD1025_S_03_B
BEARGRASS INTERCEPTOR REHABILITATION PH 2	IOAP	51594	S_SD_MF_NB06_S_13_C
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21061	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21089	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21089A	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21101	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21153	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21156	BEECHWOOD VILLAGE SEWER REPL
BELLS LANE (FORMERLY PADDY'S RUN) WET WEATHER TREATMENT FACILITY	IOAP	CSO015	L_OR_MF_015_M_13_B_B_8



<b>PROJECT NAME</b>	<b>PROGRAM</b>	<b>ASSET ID</b>	<b>PROJECT ID</b>
BELLS LANE (FORMERLY PADDY'S RUN) WET WEATHER TREATMENT FACILITY	IOAP	CSO191	L_OR_MF_015_M_13_B_B_8
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	08717	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	104223	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	104224	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	104231	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	13931	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	13943	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	13946	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	34093542	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	36763	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	44396	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	44397	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	51301	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	66349	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	99259	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	KK14815019	S_SF_MF_30917_M_09_A

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	KK14855239	S_SF_MF_30917_M_09_A
CAVEN AVENUE PS ELIMINATION	IOAP	17724	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	IOAP	27116	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	IOAP	61667	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	IOAP	61687	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	IOAP	70212	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	IOAP	MSD0133-PS	S_PO_WC_PC09_M_09B_C
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO028	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO029	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO034	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO036	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO178	L_OR_MF_155_M_09B_B_B_4-1

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO181	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO193	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO195	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO196	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO197	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO199	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO200	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO202	L_OR_MF_155_M_09B_B_B_4-1
CHARLESWOOD INTERCEPTOR EXTENSION	IOAP	25477	S_PO_WC_PC03_M_01_C
CHARLESWOOD INTERCEPTOR EXTENSION	IOAP	25479	S_PO_WC_PC03_M_01_C
CHARLESWOOD INTERCEPTOR EXTENSION	IOAP	25480	S_PO_WC_PC03_M_01_C

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
CHARLESWOOD INTERCEPTOR EXTENSION	IOAP	MSD0130-PS	S_PO_WC_PC03_M_01_C
CINDERELLA PS ELIMINATION	IOAP	102339	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	IOAP	35309	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	IOAP	60679	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	IOAP	MSD1013-PS	S_PO_WC_PC04_M_01_C
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO083	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO088	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO131	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO132	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO154	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO167	L_MU_MF_154_M_09B_B_A_8
CSO058 IN-LINE STORAGE & GREEN INFRASTRUCTURE	IOAP	CSO058	L_OR_MF_058_S_08_A_A_0
CSO093 STRUCTURAL MODIFICATIONS & GREEN INFRASTRUCTURE	IOAP	CSO093	L_SO_MF_093_S_08_A_A_0
CSO108 DAM MODIFICATION	IOAP	CSO108	L_SO_MF_108_S_09A_B_A_4
CSO140 IN-LINE STORAGE & GREEN INFRASTRUCTURE	IOAP	CSO140	L_MI_MF_140_S_08_A_A_0

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
CSO160 SEWER SEPARATION	IOAP	CSO160	L_OR_MF_160_S_08_A_A_0
CSO190 GREEN INFRASTRUCTURE (FORMERLY 18TH & NORTHWESTERN PKWY STORAGE BASIN)	IOAP	CSO190	L_OR_MF_190_S_09B_B_A_8
CSO206 SEWER SEPARATION	IOAP	CSO206	L_MI_MF_206_S_08_A_A_0
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	104289	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28249	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28250	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28336	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28340	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28413	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28414	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28415	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28416	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28417	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28451	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28453	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28711	S_JT_JT_NB02_M_01_C

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	22307	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	22370	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	22385	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	32682	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	32688	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	59169	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	MSD0277	DEREK R GUTHRIE WQTC UPGRADES
DERINGTON CT PS I&I INVESTIGATION & REHABILITATION	IOAP	20154-W	S_OR_MF_NB03_S_07_C
DERINGTON CT PS I&I INVESTIGATION & REHABILITATION	IOAP	20155	S_OR_MF_NB03_S_07_C
DERINGTON CT PS I&I INVESTIGATION & REHABILITATION	IOAP	MSD0095-PS	S_OR_MF_NB03_S_07_C
EAST ROCKFORD PS RELOCATION	IOAP	04699-W	S_MC_WC_NB02_S_03_C

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
EDEN CARE PS SSO INVESTIGATION	IOAP	MSD1105-PS	S_FF_FF_NB02_S_13_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
EDSEL PS I&I INVESTIGATION & REHABILITATION	IOAP	94009	S_PO_WC_PC11_M_07_C
EDSEL PS I&I INVESTIGATION & REHABILITATION	IOAP	MSD1048-PS	S_PO_WC_PC11_M_07_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	IOAP	64096	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	IOAP	86052	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	IOAP	92061	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	IOAP	MSD0196-PS	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	IOAP	MSD0263	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	IOAP	MSD0263A-PS	S_JT_JT_NB01A_M_03_C



PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	IOAP	MSD1043-PS	S_JT_JT_NB01A_M_03_C
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	116106	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	81316	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	97362	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	97363	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	97365	S_FF_CC_81316_M_03_C_A
FAIRWAY VIEW PS IMPROVEMENTS	IOAP	MSD1065-PS	S_HC_HS_NB01_S_03_C_A
FLOYDSBURG RD I&I INVEST	IOAP	108953	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	IOAP	108956	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	IOAP	108957	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	IOAP	108958	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	IOAP	90776	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	IOAP	MSD1086-PS	S_HC_HC_MSD1086_M_07_C_A
FOX HARBOR IN-LINE STORAGE	IOAP	62769	S_HC_HN_NB03_S_09A_A_A

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	105936	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	117721	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	43472	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	46891	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	62418	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	62420	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	91629	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	91630	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	MSD0040-PS	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	MSD1024-PS	S_MI_MF_NB04_M_03_B-1
GOVERNMENT CENTER PS ELIMINATION	IOAP	94541	S_PO_WC_PC06_M_01_C

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
GOVERNMENT CENTER PS ELIMINATION	IOAP	94542	S_PO_WC_PC06_M_01_C
GOVERNMENT CENTER PS ELIMINATION	IOAP	MSD0180-PS	S_PO_WC_PC06_M_01_C
GUNPOWDER PS IN-LINE STORAGE	IOAP	MSD1055-LS	S_HC_HN_NB02_S_09A_C_B
HAZELWOOD PS I&I INVESTIGATION & REHABILITATION	IOAP	55665	S_MC_MF_55665_S_07_C
HAZELWOOD PS I&I INVESTIGATION & REHABILITATION	IOAP	55667	S_MC_MF_55665_S_07_C
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	17571	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18134	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18297	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18298	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18299	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18302	HIKES LN INTER & HIGHGATE SPR

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18318-W	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18370	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18434	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18471	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18483	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18505	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18595	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	47960A	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	48885	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	48886	HIKES LN INTER & HIGHGATE SPR

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	48888	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	49224	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	49236	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	49672	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	49673	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	73111	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	MSD0012-PS	HIKES LN INTER & HIGHGATE SPR
HURSTBOURNE I/I INVESTIGATION & REHABILITATION	IOAP	01793	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	67535	S_MI_MF_NB07_S_07_C
IDLEWOOD IN-LINE STORAGE	IOAP	28984	S_CC_CC_70158_M_09A_C

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
IDLEWOOD IN-LINE STORAGE	IOAP	28985	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	IOAP	28998	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	IOAP	63094	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	IOAP	63095	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	IOAP	70158	S_CC_CC_70158_M_09A_C
JEFFERSONTOWN WQTC ELIMINATION	IOAP	28173	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	28390	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	28391	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	28551	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	64505	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	MSD0255	S_JT_JT_NB01_M_01_C_A
KAVANAUGH RD PS IMPROVEMENTS	IOAP	MSD1085-PS	S_HC_HC_MSD1085_S_03_A

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
KLONDIKE INTERCEPTOR	IOAP	20644	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	25676	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	26650	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	26651	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	49513	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	66232	S_SD_MF_NB04_S_01_B_A
LAKE FOREST PS SSO INVESTIGATION	IOAP	MSD1169-LS	S_FF_LF_NB01_S_13_C_A
LANTANA #1 PS I/I INVESTIGATION & REHABILITATION	IOAP	25484	S_PO_WC_PC05_M_07_C
LANTANA #1 PS I/I INVESTIGATION & REHABILITATION	IOAP	93719	S_PO_WC_PC05_M_07_C
LANTANA #1 PS I/I INVESTIGATION & REHABILITATION	IOAP	MSD0101-PS	S_PO_WC_PC05_M_07_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	19360	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	19369	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	29933	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	29943	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	29948	S_PO_WC_PC08_M_01_C

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	29949	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	31073	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	31074	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	31083	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	31084	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	57874	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	61266	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	79076	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	MSD1010-PS	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	MSD1200-PS	S_PO_WC_PC08_M_01_C
LELAND RD SSO INVESTIGATION	IOAP	96020	S_OR_MF_NB02_S_13_C
LEVEN PS ELIMINATION	IOAP	36419	S_PO_WC_PC10_M_01_C
LEVEN PS ELIMINATION	IOAP	MSD1019-PS	S_PO_WC_PC10_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	IOAP	67997	S_CC_CC_67997_M_01_C



PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	IOAP	67999	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	IOAP	86423	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	IOAP	86424	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	89197	S_CC_CC_67997_M_01_C
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO091	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO097	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO106	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO110	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO111	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO113	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO137	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO146	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO148	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO149	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO151	L_SO_MF_092_M_09B_B_D_8

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO152	L_SO_MF_092_M_09B_B_D_8
LUCAS LN PS IN-LINE STORAGE	IOAP	MSD0199-LS	S_FF_BT_NB01_S_09A_C_A
MEADOW STREAM PS & FM UPGRADE	IOAP	91087	S_HC_HC_MSD1082_S_09A_C
MEADOW STREAM PS & FM UPGRADE	IOAP	MSD1082-PS	S_HC_HC_MSD1082_S_09A_C
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	24152-W	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	24472	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	26752	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	41374	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	41416	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	MSD0006-PS	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	MSD0007-PS	S_OR_MF_NB01_M_01_B-1

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	MSD0010-PS	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	MSD0023-PS	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	MSD0024-PS	S_OR_MF_NB01_M_01_B-1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	02932	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	02933	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	02935	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	08537	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	08935-SM	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	115183	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	115184	S_MISF_MF_NB01_M_01_C_A1

<b>PROJECT NAME</b>	<b>PROGRAM</b>	<b>ASSET ID</b>	<b>PROJECT ID</b>
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	115185	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	15194	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	15195	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	17618	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	23211	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	23212	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	24553	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	27005	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	27007	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	30376	S_MISF_MF_NB01_M_01_C_A1

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	40471	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	40559	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	43726	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	45796	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	45829	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	45835	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	45900	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	47034	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	47582	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	47583	S_MISF_MF_NB01_M_01_C_A1

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	47593	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	47596	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	47603	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	47604	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	48864	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	51160	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	51161	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	51180	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	51221	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	72288	S_MISF_MF_NB01_M_01_C_A1

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	72289	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	74513	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	84155	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	90700	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	96672	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	96673	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	IS021A-SI	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	IOAP	27012	S_MISF_MF_NB01_M_01_C_A1-2
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
MORRIS FORMAN WQTC HEADWORKS (FORMERLY ALGONQUIN PKWY STORAGE BASIN)	IOAP	CSO211	L_OR_MF_211_M_13_B_A_8_

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
NIGHTINGALE PS REPLACEMENT & STORAGE	IOAP	CSO018	L_SO_MF_018_S_03_A_A
NORTHERN DITCH DIVERSION INTER	ISSDP	MSD0271	NORTHERN DITCH DIVERSION INTER
PARKVIEW ESTATES I&I INVESTIGATION	IOAP	47250	S_SD_MF_NB03_S_07_C
PORTLAND CSO STORAGE BASIN	IOAP	CSO019	L_OR_MF_019_S_13_B_A_8
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	16455	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	22436	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	40870	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	40871	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	40872	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	40879	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	40880	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	42675	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	42680	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	46621	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	46623	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	46627	S_OR_MF_NB04_M_03_B_B-1



PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	65606	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	65610	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	65623	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	65633	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	65635	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	89646	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	89791	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD0123-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD0183-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD0186-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD0192-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD0193-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD0291	S_OR_MF_NB04_M_03_B_B-1

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD0292	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD1044-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD1063-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 3 - ORFM SYSTEM IMPROVEMENTS	IOAP	89641	S_OR_MF_NB04_M_03_B_B-3
RAINTREE DRIVE AND MARIAN COURT SYSTEM IMPROVEMENTS PHASE 1 - PUMP STATION ELIMINATION	IOAP	28729-W	S_JT_JT_NB03_M_01_C-1
RAINTREE DRIVE AND MARIAN COURT SYSTEM IMPROVEMENTS PHASE 1 - PUMP STATION ELIMINATION	IOAP	MSD0149-PS	S_JT_JT_NB03_M_01_C-1
RIDING RIDGE PS IMPROVEMENTS	IOAP	MSD1060-LS	S_HC_HN_NB01_S_03_C_A
RUNNING FOX PS ELIMINATION	IOAP	MSD1080-LS	S_CC_CC_MSD1080_S_01_C
SHAWNEE FPS DWO ELIMINATION	IOAP	MSD0309-FP	L_OR_MF_189_M_03_A_A
SHIVELY INTERCEPTOR	IOAP	04498	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	04542	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	81814-W	S_MC_WC_NB01_M_01_A

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
SHIVELY INTERCEPTOR	IOAP	MSD0016-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0043-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0044-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0047-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0049-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0050-PS	S_MC_WC_NB01_M_01_A
SINKING FORK INTERCEPTOR	IOAP	21103	SINKING FORK RELIEF SEWER
SINKING FORK INTERCEPTOR	IOAP	25012	SINKING FORK RELIEF SEWER
SINKING FORK INTERCEPTOR	IOAP	63319	SINKING FORK RELIEF SEWER
SONNE PS I&I INVESTIGATION & REHABILITATION	IOAP	MSD0042-PS	S_OR_MF_42007_S_07_C
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	08426	SOUTHEASTERN DIVERSION STRUCT

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	08427	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	08430	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	08431	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	18654	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	30680	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	30681	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	30701	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	30702	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	30704	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	49647	SOUTHEASTERN DIVERSION STRUCT

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	63779	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	72571-X	SOUTHEASTERN DIVERSION STRUCT
SOUTHERN OUTFALL IN-LINE STORAGE AT 43RD STREET (SOR1) (FORMERLY ALGONQUIN PKWY STORAGE BASIN)	IOAP	CSO016	L_OR_MF_211_M_13_B_A_8__
SOUTHERN OUTFALL IN-LINE STORAGE AT 43RD STREET (SOR1) (FORMERLY ALGONQUIN PKWY STORAGE BASIN)	IOAP	CSO210	L_OR_MF_211_M_13_B_A_8__
SOUTHWESTERN PKWY CSO BASIN	IOAP	CSO104	L_OR_MF_105_M_13_B_A_0
SOUTHWESTERN PKWY CSO BASIN	IOAP	CSO105	L_OR_MF_105_M_13_B_A_0
SOUTHWESTERN PKWY CSO BASIN	IOAP	CSO189	L_OR_MF_105_M_13_B_A_0
ST RENE RD PS IN-LINE STORAGE	IOAP	94187	S_FF_CH_NB01_S_09A_C_A
SUTHERLAND INTERCEPTOR	IOAP	16649	S_SD_MF_NB05_M_01_A
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO022	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO023	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO050	L_OR_MF_155_M_09B_B_B_4

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO051	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO052	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO053	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO054	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO055	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO056	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO150	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO155	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY I-64 & GRINSTEAD DRIVE CSO BASIN)	IOAP	CSO125	L_MI_MF_127_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY I-64 & GRINSTEAD DRIVE CSO BASIN)	IOAP	CSO126	L_MI_MF_127_M_09B_B_A_8

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
WATERWAY PROTECTION TUNNEL (FORMERLY I-64 & GRINSTEAD DRIVE CSO BASIN)	IOAP	CSO127	L_MI_MF_127_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY I-64 & GRINSTEAD DRIVE CSO BASIN)	IOAP	CSO166	L_MI_MF_127_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO082	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO084	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO118	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO119	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO120	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO121	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO141	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO153	L_SO_MF_083_M_09B_B_A_8

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
WATERWAY PROTECTION TUNNEL (FORMERLY STORY & MAIN ST STORAGE BASIN)	IOAP	CSO020	L_OR_MF_020_S_09B_B_A_8
WOODLAND HILLS PS DIVERSION	IOAP	33003	S_FF_FF_NB01_S_01_C_A
WOODLAND HILLS PS DIVERSION	IOAP	65516	S_FF_FF_NB01_S_01_C_A
WOODLAND HILLS PS DIVERSION	IOAP	65531	S_FF_FF_NB01_S_01_C_A



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**Appendix F            CSO Flow Monitoring Quality Improvement**

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**Table F.1. Phase 1 CSOs**

CSO	FINAL SOP COMPLETED	HISTORICAL VOLUME REVISED	PROGRAMMING CHANGES COMPLETED	EQUIPMENT CHANGES COMPLETED	TESTING / VERIFICATION COMPLETED
015	6/30/2017	6/30/2017	UNDER CONSTRUCTION	UNDER CONSTRUCTION	UNDER CONSTRUCTION
016	7/1/2019	N/A	7/30/2018	N/A	9/10/2018
018	7/1/2019	N/A	9/13/2017	N/A	3/11/2019
020	7/1/2019	6/30/2017	9/21/2017	N/A	10/10/2017
036	7/1/2019	6/30/2017	8/23/2017	UNDER CONSTRUCTION	9/14/2017
054	7/1/2019	6/30/2017	9/8/2017	N/A	9/12/2017
058	7/1/2019	6/30/2017	3/4/2019	N/A	2/16/2019
088	6/30/2017	6/30/2017	8/23/2017	N/A	2/22/2019
093	7/1/2019	6/30/2017	11/19/2018	N/A	1/1/2018
104	7/1/2019	6/30/2017	8/16/2017	N/A	9/12/2017
105	7/1/2019	6/30/2017	8/16/2017	N/A	9/12/2017
106	7/1/2019	6/30/2017	N/A	N/A	N/A
108	7/1/2019	6/30/2017	11/21/2017	10/17/2017	12/1/2018
109	7/1/2019	6/30/2017	11/21/2017	10/13/2017	10/8/2018
110	6/30/2017	6/30/2017	11/19/2018	UNDER CONSTRUCTION	4/5/2019
118	7/1/2019	N/A	N/A	UNDER CONSTRUCTION	9/12/2017
121	7/1/2019	6/30/2017	9/12/2017	10/13/2017	12/21/2017
125	7/1/2019	6/30/2017	9/8/2017	8/7/2017	9/8/2017
126	7/1/2019	6/30/2017	9/14/2017	Completed	12/21/2017
127	7/1/2019	N/A	N/A	N/A	N/A
130	7/1/2019	6/30/2017	8/16/2017	N/A	3/11/2019
132	7/1/2019	6/30/2017	9/8/2017	Completed	9/21/2017
140	7/1/2019	6/30/2017	11/21/2017	10/13/2017	3/16/2019
146	6/30/2017	N/A	11/19/2018	UNDER CONSTRUCTION	3/12/2019
149	6/30/2017	N/A	11/19/2018	UNDER CONSTRUCTION	3/12/2019
154	7/1/2019	6/30/2017	12/1/2017	UNDER CONSTRUCTION	3/21/2018
160	7/1/2019	6/30/2017	8/23/2017	9/20/2017	12/22/2017
166	7/1/2019	6/30/2017	9/12/2017	10/9/2017	12/21/2017
167	7/1/2019	6/30/2017	9/8/2017	N/A	12/21/2017
189	7/1/2019	6/30/2017	8/16/2017	N/A	9/21/2017
190	7/1/2019	6/30/2017	1/26/2018	N/A	1/26/2018
191	6/30/2017	6/30/2017	UNDER CONSTRUCTION	UNDER CONSTRUCTION	UNDER CONSTRUCTION
206	7/1/2019	6/30/2017	N/A	UNDER CONSTRUCTION	12/6/2017
210	7/1/2019	N/A	1/23/2019	N/A	1/23/2019
211	7/1/2019	6/30/2017	8/16/2017	N/A	3/1/2019

**Table F.2. Phase 2 CSOs**

CSO	FINAL SOP COMPLETED	HISTORICAL VOLUME REVISED	PROGRAMMING CHANGES COMPLETED	EQUIPMENT CHANGES COMPLETED	TESTING / VERIFICATION COMPLETED
019	6/28/2019	COMPLETED	NOT STARTED	N/A	NOT STARTED
022	6/28/2019	COMPLETED	12/17/2018	N/A	NOT STARTED
023	6/28/2019	COMPLETED	12/17/2018	N/A	NOT STARTED
027	STARTED	COMPLETED	1/14/2019	6/6/2019	NOT STARTED
028	6/28/2019	COMPLETED	5/3/2019	2/4/2019	NOT STARTED
029	6/28/2019	COMPLETED	5/3/2019	3/22/2019	NOT STARTED
031	STARTED	COMPLETED	3/11/2019	2/24/2019	NOT STARTED
034	6/28/2019	COMPLETED	5/30/2019	2/5/2019	NOT STARTED
035	6/28/2019	NOT COMPLETED	4/12/2019	NOT STARTED	NOT STARTED
038	6/28/2019	COMPLETED	4/22/2019	N/A	NOT STARTED
050	6/28/2019	COMPLETED	6/12/2018	N/A	NOT STARTED
051	6/28/2019	NOT COMPLETED	6/12/2018	N/A	NOT STARTED
052	6/28/2019	COMPLETED	3/25/2019	NOT STARTED	NOT STARTED
053	6/28/2019	COMPLETED	6/20/2018	N/A	NOT STARTED
055	6/28/2019	COMPLETED	6/18/2018	N/A	NOT STARTED
056	6/28/2019	N/A	10/24/2017	10/24/2017	NOT STARTED
057	6/28/2019	N/A	6/12/2018	N/A	NOT STARTED
062	6/28/2019	N/A	4/17/2019	3/16/2019	NOT STARTED
082	6/28/2019	COMPLETED	6/26/2018	N/A	NOT STARTED
083	6/28/2019	COMPLETED	6/26/2018	N/A	NOT STARTED
084	6/28/2019	COMPLETED	6/27/2018	12/7/2018	NOT STARTED
091	STARTED	NOT COMPLETED	12/21/2018	11/19/2018	NOT STARTED
092	6/28/2019	COMPLETED	6/20/2018	N/A	NOT STARTED
097	STARTED	COMPLETED	1/7/2019	1/1/2018	NOT STARTED
111	STARTED	COMPLETED	3/12/2019	1/1/2018	NOT STARTED
113	STARTED	COMPLETED	12/21/2018	11/19/2018	NOT STARTED
117	STARTED	COMPLETED	12/21/2018	11/19/2018	NOT STARTED
119	6/28/2019	COMPLETED	6/26/2018	N/A	NOT STARTED
120	6/28/2019	COMPLETED	6/26/2018	N/A	NOT STARTED
131	6/28/2019	NOT COMPLETED	10/2/2018	10/2/2018	NOT STARTED
137	STARTED	COMPLETED	12/21/2018	NOT STARTED	NOT STARTED
141	6/28/2019	NOT COMPLETED	5/30/2018	5/30/2018	NOT STARTED
144	6/28/2019	COMPLETED	6/26/2018	TO BE DETERMINED	NOT STARTED
148	STARTED	COMPLETED	3/12/2019	1/1/2018	NOT STARTED
150	6/28/2019	NOT COMPLETED	6/12/2018	N/A	NOT STARTED

**Table F.2. Phase 2 CSOs**

CSO	FINAL SOP COMPLETED	HISTORICAL VOLUME REVISED	PROGRAMMING CHANGES COMPLETED	EQUIPMENT CHANGES COMPLETED	TESTING / VERIFICATION COMPLETED
151	STARTED	COMPLETED	3/12/2019	1/1/2018	NOT STARTED
152	STARTED	COMPLETED	3/12/2019	1/1/2018	NOT STARTED
153	6/28/2019	COMPLETED	6/26/2018	N/A	NOT STARTED
155	6/28/2019	COMPLETED	6/12/2018	N/A	NOT STARTED
161	6/28/2019	N/A	6/12/2018	N/A	NOT STARTED
172	6/28/2019	NOT COMPLETED	1/1/2018	1/1/2018	NOT STARTED
178	6/28/2019	COMPLETED	4/17/2019	3/16/2019	NOT STARTED
179	STARTED	COMPLETED	UNDER CONSTRUCTION	1/1/2018	NOT STARTED
181	6/28/2019	COMPLETED	4/17/2019	3/16/2019	NOT STARTED
193	6/28/2019	COMPLETED	6/20/2018	N/A	NOT STARTED
195	6/28/2019	COMPLETED	6/22/2018	N/A	NOT STARTED
196	6/28/2019	COMPLETED	6/22/2018	N/A	NOT STARTED
197	6/28/2019	COMPLETED	4/9/2019	N/A	NOT STARTED
198	6/28/2019	COMPLETED	6/26/2018	N/A	NOT STARTED
199	6/28/2019	COMPLETED	6/18/2018	N/A	NOT STARTED
200	6/28/2019	COMPLETED	6/22/2018	12/12/2018	NOT STARTED
201	6/28/2019	COMPLETED	6/22/2018	5/31/2019	NOT STARTED
202	6/28/2019	COMPLETED	6/15/2018	N/A	NOT STARTED
203	6/28/2019	COMPLETED	6/15/2018	N/A	NOT STARTED
207	6/28/2019	COMPLETED	6/22/2018	N/A	NOT STARTED
208	6/28/2019	COMPLETED	6/25/2018	N/A	NOT STARTED
SBR 142	6/28/2019	COMPLETED	6/8/2018	N/A	NOT STARTED
SBR 174	6/28/2019	COMPLETED	6/8/2018	N/A	NOT STARTED
SBR 180	6/28/2019	COMPLETED	6/8/2018	12/7/2018	NOT STARTED
SBR 182	6/28/2019	COMPLETED	6/8/2018	N/A	NOT STARTED
SBR 183	6/28/2019	COMPLETED	6/4/2018	N/A	NOT STARTED
SBR 184	6/28/2019	COMPLETED	6/4/2018	N/A	NOT STARTED
SBR 185	6/28/2019	COMPLETED	6/4/2018	N/A	NOT STARTED
SBR 186	6/28/2019	COMPLETED	6/8/2018	N/A	NOT STARTED
SBR 187	6/28/2019	COMPLETED	6/8/2018	N/A	NOT STARTED
SBR 188	6/28/2019	COMPLETED	6/8/2018	12/7/2018	NOT STARTED
SBR 205	6/28/2019	COMPLETED	6/8/2018	N/A	NOT STARTED

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**Appendix G            CSO108 Semi-Annual Report**



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

July 22, 2019

Josh Lillpop  
Natural Areas Branch Manager  
Office of Kentucky Nature Preserves  
Kentucky Energy and Environment Cabinet  
300 Sower Boulevard, 4<sup>th</sup> Floor  
Frankfort, KY 40601

Subject: CSO108 Semi-Annual Report #22

Dear Mr. Lillpop,

As required in Paragraph #2 of the document titled "Memorandum of Understanding by and between the Commonwealth of Kentucky, Office of Kentucky Nature Preserves and the Louisville and Jefferson County Metropolitan Sewer District", MSD submits to you the MOU Semi-Annual Report #22. This report summarizes activities at the CSO108 CDS Site during the reporting period of January 1, 2019 to June 30, 2019.

Should you have any questions or comments, please feel free to contact me via email at [heather.dodds@louisvillemad.org](mailto:heather.dodds@louisvillemad.org) or phone at (502) 540-6961.

Sincerely,

Heather Dodds, PE  
Regulatory Compliance & Asset Management 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 31, 2018, and by the Commission on August 10, 2018. This MOU is effective for the period starting August 1, 2018, and ending on August 1, 2028.

This is the 22nd Semi-Annual Report submitted in accordance with Paragraph 2 of the MOU. This report covers the time period of January 1, 2019 to June 30, 2019.

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 for additional information not found within this document.

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

### 1.1. PARAGRAPH #2 OF THE MOU

MSD shall be diligent of this ten-year period in supplying the Commission with timely 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 January 30 and July 30 of each year.

### 1.2. MSD RESPONSE

This document is the 22nd semi-annual report to the Commission since the completion of the Project.

#### 1.2.1 CLEANING AND INSPECTION ACTIVITIES

The CSO108 CDS unit is inspected weekly and cleaned on an as-needed basis. During the reporting period, 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 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: CSO108 CDS Unit Debris Removal**

ACTIVITY	QUANTITY	COMMENTS	COMPLETED DATE
Debris	Unknown	Cleaned medium debris off rack bars	1/8/2019
Debris	Unknown	Cleaned medium debris off rack bars	1/29/2019
Debris	Unknown	Cleaned medium debris off rack bars	3/19/2019
Debris	Unknown	Cleaned medium debris off rack bars	3/26/2019
Debris	Unknown	Cleaned medium debris off rack bars	5/14/2019
Debris	Unknown	Cleaned medium debris off rack bars	5/24/2019

### **1.2.2 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.

### **1.2.3 CAPTURED FLOW**

The CDS unit 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 (WQTC).

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 54.4 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 Morris Forman WQTC for treatment.



**ATTACHMENT “A” – PHOTOS OF AREA ADJACENT TO  
CSO 108 AND THE CDS UNIT  
(DATED JULY 2, 2019)**



**Figure 1. Entrance to CDS Unit**



**Figure 2. Entrance to CDS Unit**





**Figure 3. Area Adjacent to the CDS Unit**



**Figure 4. Area Adjacent to the CDS Unit**





**Figure 5. Area Adjacent to the Creek**



**Figure 6. Area Adjacent to the Creek**



## **ATTACHMENT “B” –CDS UNIT PUMP RUN TIMES**

**CDS Unit Pump Runtimes**

DATE	PUMP 1 RUN HOURS	PUMP 2 RUN HOURS	PUMP 3 RUN HOURS
January 1, 2019	0.00	0.00	0.08
January 2, 2019	0.00	0.00	0.42
January 3, 2019	0.00	0.00	0.25
January 4, 2019	0.00	0.00	0.18
January 5, 2019	0.00	0.00	0.12
January 6, 2019	0.00	0.00	0.18
January 7, 2019	0.00	0.00	0.17
January 8, 2019	0.00	0.00	0.17
January 9, 2019	0.00	0.00	0.13
January 10, 2019	0.00	0.00	0.12
January 11, 2019	0.00	0.00	0.13
January 12, 2019	0.00	0.00	0.08
January 13, 2019	0.00	0.00	0.05
January 14, 2019	0.00	0.00	0.03
January 15, 2019	0.00	0.00	0.08
January 16, 2019	0.00	0.00	0.08
January 17, 2019	0.00	0.00	0.05
January 18, 2019	0.00	0.00	0.00
January 19, 2019	0.00	0.00	0.03
January 20, 2019	0.00	0.00	0.05
January 21, 2019	0.00	0.00	0.17
January 22, 2019	0.00	0.00	0.22
January 23, 2019	0.00	0.00	0.13
January 24, 2019	0.00	0.00	0.17
January 25, 2019	0.00	0.00	0.25
January 26, 2019	0.00	0.00	0.27
January 27, 2019	0.00	0.00	0.17
January 28, 2019	0.00	0.00	0.17
January 29, 2019	0.00	0.00	0.17
January 30, 2019	0.00	0.00	0.13
January 31, 2019	0.00	0.00	0.08
February 1, 2019	0.00	0.00	0.05
February 2, 2019	0.00	0.00	0.03
February 3, 2019	0.00	0.00	0.05

**CDS Unit Pump Runtimes**

DATE	PUMP 1 RUN HOURS	PUMP 2 RUN HOURS	PUMP 3 RUN HOURS
February 4, 2019	0.00	0.00	0.03
February 5, 2019	0.00	0.00	0.00
February 6, 2019	0.00	0.00	0.05
February 7, 2019	0.00	0.00	0.03
February 8, 2019	0.00	0.00	0.32
February 9, 2019	0.00	0.00	1.43
February 10, 2019	0.00	0.00	0.00
February 11, 2019	0.00	0.00	0.32
February 12, 2019	0.00	0.00	0.22
February 13, 2019	0.00	0.00	0.48
February 14, 2019	0.00	0.00	10.92
February 15, 2019	0.00	0.00	0.62
February 16, 2019	0.00	0.00	0.32
February 17, 2019	0.00	0.00	0.25
February 18, 2019	0.00	0.00	0.22
February 19, 2019	0.00	0.00	0.22
February 20, 2019	0.00	0.00	0.18
February 21, 2019	0.00	0.00	0.12
February 22, 2019	0.00	0.00	3.15
February 23, 2019	0.00	0.00	0.43
February 24, 2019	0.00	0.00	0.27
February 25, 2019	0.00	0.00	0.30
February 26, 2019	0.00	0.00	0.40
February 27, 2019	0.00	0.00	0.30
February 28, 2019	0.00	0.00	0.22
March 1, 2019	0.00	0.00	0.22
March 2, 2019	0.00	0.00	0.17
March 3, 2019	0.00	0.00	0.22
March 4, 2019	0.00	0.00	0.13
March 5, 2019	0.00	0.00	0.18
March 6, 2019	0.00	0.00	0.12
March 7, 2019	0.00	0.00	0.13
March 8, 2019	0.00	0.00	0.05
March 9, 2019	0.00	0.00	0.23

**CDS Unit Pump Runtimes**

DATE	PUMP 1 RUN HOURS	PUMP 2 RUN HOURS	PUMP 3 RUN HOURS
March 10, 2019	0.00	0.00	0.00
March 11, 2019	0.00	0.00	0.92
March 12, 2019	0.00	0.00	0.27
March 13, 2019	0.00	0.00	0.22
March 14, 2019	0.00	0.00	0.18
March 15, 2019	0.00	0.00	0.12
March 16, 2019	0.15	0.18	1.03
March 17, 2019	0.00	0.00	0.25
March 18, 2019	0.00	0.00	0.18
March 19, 2019	0.00	0.00	0.17
March 20, 2019	0.00	0.00	0.13
March 21, 2019	0.00	0.00	0.13
March 22, 2019	0.00	0.00	0.12
March 23, 2019	0.00	0.00	0.13
March 24, 2019	0.00	0.00	0.08
March 25, 2019	0.00	0.00	0.05
March 26, 2019	0.00	0.00	0.05
March 27, 2019	0.00	0.00	0.12
March 28, 2019	0.00	0.00	0.10
March 29, 2019	0.00	0.00	0.00
March 30, 2019	0.00	0.00	0.03
March 31, 2019	0.00	0.00	0.05
April 1, 2019	0.00	0.00	0.48
April 2, 2019	0.00	0.00	0.22
April 3, 2019	0.00	0.00	0.18
April 4, 2019	0.00	0.00	0.13
April 5, 2019	0.00	0.00	0.08
April 6, 2019	0.00	0.00	0.08
April 7, 2019	0.00	0.00	0.13
April 8, 2019	0.00	0.00	0.08
April 9, 2019	0.00	0.00	0.13
April 10, 2019	0.00	0.00	0.17
April 11, 2019	0.00	0.00	0.08
April 12, 2019	0.00	0.00	0.08

**CDS Unit Pump Runtimes**

DATE	PUMP 1 RUN HOURS	PUMP 2 RUN HOURS	PUMP 3 RUN HOURS
April 13, 2019	0.00	0.00	0.10
April 14, 2019	0.00	0.00	0.08
April 15, 2019	0.00	0.00	0.03
April 16, 2019	0.12	0.00	1.12
April 17, 2019	0.00	0.00	0.13
April 18, 2019	0.00	0.00	0.15
April 19, 2019	0.00	0.00	0.13
April 20, 2019	0.00	0.02	0.20
April 21, 2019	2.68	0.17	3.35
April 22, 2019	0.13	7.23	8.35
April 23, 2019	0.00	0.00	0.62
April 24, 2019	0.00	0.00	0.35
April 25, 2019	0.27	0.02	0.68
April 26, 2019	0.00	0.00	0.22
April 27, 2019	0.20	0.47	1.00
April 28, 2019	0.00	0.00	0.35
April 29, 2019	0.00	0.00	0.25
April 30, 2019	0.00	0.00	0.22
May 1, 2019	0.00	0.00	0.18
May 2, 2019	0.00	0.00	0.17
May 3, 2019	0.00	0.00	0.13
May 4, 2019	0.00	0.00	0.32
May 5, 2019	0.00	0.00	0.33
May 6, 2019	0.00	0.00	0.27
May 7, 2019	0.00	0.00	0.22
May 8, 2019	0.00	0.00	0.17
May 9, 2019	0.00	0.00	0.13
May 10, 2019	0.00	0.00	0.13
May 11, 2019	0.00	0.00	0.13
May 12, 2019	0.00	0.00	0.08
May 13, 2019	0.00	0.00	0.08
May 14, 2019	0.00	0.00	0.08
May 15, 2019	0.00	0.00	0.10
May 16, 2019	0.00	0.00	0.03



**CDS Unit Pump Runtimes**

DATE	PUMP 1 RUN HOURS	PUMP 2 RUN HOURS	PUMP 3 RUN HOURS
May 17, 2019	0.00	0.00	0.05
May 18, 2019	0.00	0.00	0.00
May 19, 2019	0.00	0.00	0.03
May 20, 2019	0.00	0.00	0.00
May 21, 2019	0.00	0.00	0.05
May 22, 2019	0.00	0.00	0.03
May 23, 2019	0.00	0.00	0.05
May 24, 2019	0.00	0.00	0.00
May 25, 2019	0.00	0.00	0.05
May 26, 2019	0.00	0.00	0.00
May 27, 2019	0.00	0.00	0.03
May 28, 2019	0.00	0.00	0.05
May 29, 2019	0.00	0.00	0.03
May 30, 2019	0.00	0.00	0.05
May 31, 2019	0.00	0.00	0.13
June 1, 2019	0.00	0.00	0.08
June 2, 2019	0.00	0.00	0.05
June 3, 2019	0.00	0.00	0.03
June 4, 2019	0.00	0.00	0.05
June 5, 2019	0.00	0.00	0.00
June 6, 2019	0.00	0.00	0.03
June 7, 2019	0.00	0.00	0.20
June 8, 2019	0.00	0.00	0.03
June 9, 2019	0.00	0.00	0.00
June 10, 2019	0.00	0.00	0.05
June 11, 2019	0.70	1.33	2.32
June 12, 2019	0.00	0.00	0.25
June 13, 2019	0.00	0.00	0.13
June 14, 2019	0.00	0.00	0.12
June 15, 2019	0.00	0.00	0.08
June 16, 2019	0.00	0.00	0.10
June 17, 2019	0.00	0.00	0.03
June 18, 2019	0.40	0.52	1.22
June 19, 2019	0.00	0.00	0.25

**CDS Unit Pump Runtimes**

DATE	PUMP 1 RUN HOURS	PUMP 2 RUN HOURS	PUMP 3 RUN HOURS
June 20, 2019	0.00	0.00	0.30
June 21, 2019	0.00	0.00	0.18
June 22, 2019	0.00	0.00	0.17
June 23, 2019	0.00	0.00	0.13
June 24, 2019	0.00	0.00	0.20
June 25, 2019	0.28	0.03	0.70
June 26, 2019	0.08	0.43	0.92
June 27, 2019	0.00	0.00	0.18
June 28, 2019	0.00	0.00	0.12
June 29, 2019	0.00	0.00	0.13
June 30, 2019	0.00	0.00	0.13



**CSO108 Underflow Pump Flow Meter Data**

<b>DATE</b>	<b>DAILY VOLUME (MG)</b>	<b>DAILY VOLUME (CF)</b>	<b>DAILY VOLUME (GAL)</b>	<b>DAILY VOLUME DEBRIS (GAL)</b>
January 1, 2019	0.0460	6,144.17	45,961.56	45.96
January 2, 2019	0.0778	10,402.83	77,818.56	77.82
January 3, 2019	0.0609	8,137.45	60,872.33	60.87
January 4, 2019	0.0545	7,281.84	54,471.98	54.47
January 5, 2019	0.0488	6,527.96	48,832.53	48.83
January 6, 2019	0.0540	7,222.43	54,027.52	54.03
January 7, 2019	0.0490	6,552.88	49,018.96	49.02
January 8, 2019	0.0541	7,233.27	54,108.59	54.11
January 9, 2019	0.0494	6,602.58	49,390.73	49.39
January 10, 2019	0.0474	6,330.17	47,352.95	47.35
January 11, 2019	0.0495	6,618.80	49,512.06	49.51
January 12, 2019	0.0453	6,058.33	45,319.46	45.32
January 13, 2019	0.0426	5,693.64	42,591.36	42.59
January 14, 2019	0.0420	5,613.77	41,993.92	41.99
January 15, 2019	0.0454	6,071.17	45,415.47	45.42
January 16, 2019	0.0460	6,154.37	46,037.88	46.04
January 17, 2019	0.0420	5,619.70	42,038.25	42.04
January 18, 2019	0.0377	5,034.53	37,660.92	37.66
January 19, 2019	0.0410	5,480.86	40,999.68	41.00
January 20, 2019	0.0418	5,583.38	41,766.57	41.77
January 21, 2019	0.0524	6,998.82	52,354.85	52.35
January 22, 2019	0.0586	7,829.00	58,565.01	58.57
January 23, 2019	0.0520	6,951.77	52,002.85	52.00
January 24, 2019	0.0547	7,314.57	54,716.78	54.72
January 25, 2019	0.0622	8,310.11	62,163.91	62.16
January 26, 2019	0.0624	8,336.34	62,360.13	62.36
January 27, 2019	0.0541	7,234.00	54,114.10	54.11
January 28, 2019	0.0530	7,084.27	52,994.03	52.99
January 29, 2019	0.0538	7,197.02	53,837.47	53.84
January 30, 2019	0.0503	6,720.09	50,269.73	50.27
January 31, 2019	0.0469	6,267.55	46,884.52	46.88
February 1, 2019	0.0440	5,887.82	44,043.93	44.04
February 2, 2019	0.0432	5,772.50	43,181.27	43.18
February 3, 2019	0.0417	5,574.37	41,699.20	41.70

**CSO108 Underflow Pump Flow Meter Data**

DATE	DAILY VOLUME (MG)	DAILY VOLUME (CF)	DAILY VOLUME (GAL)	DAILY VOLUME DEBRIS (GAL)
February 4, 2019	0.0411	5,499.23	41,137.11	41.14
February 5, 2019	0.0374	4,995.28	37,367.27	37.37
February 6, 2019	0.0410	5,486.47	41,041.65	41.04
February 7, 2019	0.0413	5,514.88	41,254.16	41.25
February 8, 2019	0.0483	6,451.13	48,257.84	48.26
February 9, 2019	0.1128	15,079.71	112,804.05	112.80
February 10, 2019	0.0383	5,123.70	38,327.95	38.33
February 11, 2019	0.0491	6,569.62	49,144.20	49.14
February 12, 2019	0.0606	8,104.51	60,625.92	60.63
February 13, 2019	0.0844	11,279.40	84,375.75	84.38
February 14, 2019	0.3463	46,291.20	346,282.24	346.28
February 15, 2019	0.0929	12,415.05	92,871.06	92.87
February 16, 2019	0.0630	8,420.34	62,988.51	62.99
February 17, 2019	0.0574	7,676.62	57,425.07	57.43
February 18, 2019	0.0564	7,539.20	56,397.15	56.40
February 19, 2019	0.0580	7,752.52	57,992.87	57.99
February 20, 2019	0.0534	7,136.02	53,381.15	53.38
February 21, 2019	0.0490	6,551.88	49,011.49	49.01
February 22, 2019	0.1032	13,789.91	103,155.70	103.16
February 23, 2019	0.0715	9,554.00	71,468.90	71.47
February 24, 2019	0.0564	7,538.90	56,394.89	56.39
February 25, 2019	0.0640	8,548.97	63,950.75	63.95
February 26, 2019	0.0728	9,734.57	72,819.63	72.82
February 27, 2019	0.0643	8,593.30	64,282.39	64.28
February 28, 2019	0.0548	7,326.77	54,808.07	54.81
March 1, 2019	0.0552	7,384.78	55,241.97	55.24
March 2, 2019	0.0525	7,012.99	52,460.82	52.46
March 3, 2019	0.0546	7,296.97	54,585.16	54.59
March 4, 2019	0.0481	6,436.37	48,147.37	48.15
March 5, 2019	0.0508	6,792.80	50,813.67	50.81
March 6, 2019	0.0500	6,685.06	50,007.74	50.01
March 7, 2019	0.0488	6,522.35	48,790.57	48.79
March 8, 2019	0.0413	5,520.46	41,295.94	41.30
March 9, 2019	0.0552	7,380.64	55,211.05	55.21

**CSO108 Underflow Pump Flow Meter Data**

DATE	DAILY VOLUME (MG)	DAILY VOLUME (CF)	DAILY VOLUME (GAL)	DAILY VOLUME DEBRIS (GAL)
March 10, 2019	0.0377	5,043.19	37,725.69	37.73
March 11, 2019	0.0958	12,801.59	95,762.54	95.76
March 12, 2019	0.0644	8,612.31	64,424.57	64.42
March 13, 2019	0.0569	7,600.57	56,856.24	56.86
March 14, 2019	0.0542	7,250.32	54,236.13	54.24
March 15, 2019	0.0478	6,393.17	47,824.27	47.82
March 16, 2019	0.0988	13,211.67	98,830.15	98.83
March 17, 2019	0.0617	8,246.55	61,688.47	61.69
March 18, 2019	0.0554	7,402.52	55,374.73	55.37
March 19, 2019	0.0531	7,097.37	53,091.99	53.09
March 20, 2019	0.0494	6,599.02	49,364.09	49.36
March 21, 2019	0.0492	6,582.87	49,243.27	49.24
March 22, 2019	0.0494	6,603.32	49,396.25	49.40
March 23, 2019	0.0493	6,596.05	49,341.91	49.34
March 24, 2019	0.0449	6,004.83	44,919.24	44.92
March 25, 2019	0.0409	5,462.79	40,864.48	40.86
March 26, 2019	0.0403	5,387.55	40,301.69	40.30
March 27, 2019	0.0486	6,499.75	48,621.51	48.62
March 28, 2019	0.0451	6,034.22	45,139.08	45.14
March 29, 2019	0.0375	5,011.93	37,491.81	37.49
March 30, 2019	0.0402	5,369.37	40,165.64	40.17
March 31, 2019	0.0405	5,414.01	40,499.62	40.50
April 1, 2019	0.0620	8,293.28	62,038.07	62.04
April 2, 2019	0.0585	7,825.44	58,538.39	58.54
April 3, 2019	0.0531	7,096.04	53,082.07	53.08
April 4, 2019	0.0475	6,354.83	47,537.40	47.54
April 5, 2019	0.0439	5,863.38	43,861.12	43.86
April 6, 2019	0.0441	5,896.21	44,106.70	44.11
April 7, 2019	0.0491	6,569.83	49,145.77	49.15
April 8, 2019	0.0457	6,102.77	45,651.86	45.65
April 9, 2019	0.0503	6,727.04	50,321.75	50.32
April 10, 2019	0.0528	7,059.50	52,808.74	52.81
April 11, 2019	0.0438	5,859.97	43,835.64	43.84
April 12, 2019	0.0451	6,033.31	45,132.27	45.13

**CSO108 Underflow Pump Flow Meter Data**

DATE	DAILY VOLUME (MG)	DAILY VOLUME (CF)	DAILY VOLUME (GAL)	DAILY VOLUME DEBRIS (GAL)
April 13, 2019	0.0436	5,823.29	43,561.27	43.56
April 14, 2019	0.0449	6,000.18	44,884.47	44.88
April 15, 2019	0.0412	5,506.76	41,193.44	41.19
April 16, 2019	0.0930	12,431.20	92,991.83	92.99
April 17, 2019	0.0483	6,458.27	48,311.22	48.31
April 18, 2019	0.0497	6,644.10	49,701.35	49.70
April 19, 2019	0.0472	6,307.44	47,182.93	47.18
April 20, 2019	0.0531	7,095.35	53,076.93	53.08
April 21, 2019	0.0613	8,189.28	61,260.10	61.26
April 22, 2019	0.1907	25,492.21	190,695.00	190.70
April 23, 2019	0.0926	12,380.05	92,609.24	92.61
April 24, 2019	0.0705	9,425.63	70,508.58	70.51
April 25, 2019	0.0696	9,301.03	69,576.57	69.58
April 26, 2019	0.0558	7,464.03	55,834.84	55.83
April 27, 2019	0.1136	15,190.19	113,630.49	113.63
April 28, 2019	0.0665	8,887.14	66,480.45	66.48
April 29, 2019	0.0621	8,295.33	62,053.39	62.05
April 30, 2019	0.0585	7,813.68	58,450.42	58.45
May 1, 2019	0.0536	7,158.63	53,550.26	53.55
May 2, 2019	0.0542	7,239.03	54,151.72	54.15
May 3, 2019	0.0481	6,428.54	48,088.82	48.09
May 4, 2019	0.0686	9,171.61	68,608.40	68.61
May 5, 2019	0.0683	9,131.09	68,305.34	68.31
May 6, 2019	0.0616	8,235.07	61,602.62	61.60
May 7, 2019	0.0575	7,690.58	57,529.54	57.53
May 8, 2019	0.0548	7,326.59	54,806.70	54.81
May 9, 2019	0.0477	6,372.07	47,666.42	47.67
May 10, 2019	0.0503	6,722.39	50,287.00	50.29
May 11, 2019	0.0500	6,687.92	50,029.15	50.03
May 12, 2019	0.0448	5,993.54	44,834.77	44.83
May 13, 2019	0.0452	6,041.47	45,193.33	45.19
May 14, 2019	0.0455	6,082.74	45,502.04	45.50
May 15, 2019	0.0461	6,157.70	46,062.81	46.06
May 16, 2019	0.0413	5,515.03	41,255.27	41.26

**CSO108 Underflow Pump Flow Meter Data**

DATE	DAILY VOLUME (MG)	DAILY VOLUME (CF)	DAILY VOLUME (GAL)	DAILY VOLUME DEBRIS (GAL)
May 17, 2019	0.0409	5,462.87	40,865.13	40.87
May 18, 2019	0.0369	4,938.32	36,941.21	36.94
May 19, 2019	0.0392	5,244.53	39,231.78	39.23
May 20, 2019	0.0370	4,940.08	36,954.37	36.95
May 21, 2019	0.0410	5,474.67	40,953.40	40.95
May 22, 2019	0.0410	5,480.81	40,999.32	41.00
May 23, 2019	0.0411	5,493.61	41,095.02	41.10
May 24, 2019	0.0369	4,936.63	36,928.52	36.93
May 25, 2019	0.0410	5,481.11	41,001.58	41.00
May 26, 2019	0.0369	4,936.62	36,928.49	36.93
May 27, 2019	0.0416	5,558.76	41,582.41	41.58
May 28, 2019	0.0415	5,548.26	41,503.89	41.50
May 29, 2019	0.0415	5,543.57	41,468.80	41.47
May 30, 2019	0.0410	5,483.55	41,019.82	41.02
May 31, 2019	0.0494	6,601.69	49,384.10	49.38
June 1, 2019	0.0449	6,002.13	44,899.09	44.90
June 2, 2019	0.0411	5,495.47	41,109.01	41.11
June 3, 2019	0.0416	5,559.87	41,590.75	41.59
June 4, 2019	0.0406	5,422.23	40,561.14	40.56
June 5, 2019	0.0369	4,936.88	36,930.40	36.93
June 6, 2019	0.0407	5,446.46	40,742.33	40.74
June 7, 2019	0.0490	6,554.72	49,032.69	49.03
June 8, 2019	0.0394	5,269.59	39,419.24	39.42
June 9, 2019	0.0369	4,936.62	36,928.49	36.93
June 10, 2019	0.0415	5,544.89	41,478.63	41.48
June 11, 2019	0.0962	12,864.44	96,232.72	96.23
June 12, 2019	0.0540	7,223.03	54,032.00	54.03
June 13, 2019	0.0497	6,645.39	49,710.98	49.71
June 14, 2019	0.0472	6,303.50	47,153.48	47.15
June 15, 2019	0.0452	6,043.21	45,206.39	45.21
June 16, 2019	0.0452	6,047.27	45,236.70	45.24
June 17, 2019	0.0409	5,469.92	40,917.81	40.92
June 18, 2019	0.1165	15,579.24	116,540.84	116.54
June 19, 2019	0.0524	7,005.93	52,408.00	52.41

**CSO108 Underflow Pump Flow Meter Data**

<b>DATE</b>	<b>DAILY VOLUME (MG)</b>	<b>DAILY VOLUME (CF)</b>	<b>DAILY VOLUME (GAL)</b>	<b>DAILY VOLUME DEBRIS (GAL)</b>
June 20, 2019	0.0610	8,152.04	60,981.49	60.98
June 21, 2019	0.0544	7,271.50	54,394.58	54.39
June 22, 2019	0.0517	6,909.85	51,689.31	51.69
June 23, 2019	0.0496	6,628.08	49,581.46	49.58
June 24, 2019	0.0567	7,578.30	56,689.63	56.69
June 25, 2019	0.0823	11,003.40	82,311.18	82.31
June 26, 2019	0.0777	10,384.04	77,678.02	77.68
June 27, 2019	0.0506	6,761.58	50,580.15	50.58
June 28, 2019	0.0471	6,298.83	47,118.53	47.12
June 29, 2019	0.0467	6,238.67	46,668.52	46.67
June 30, 2019	0.0472	6,307.68	47,184.74	47.18

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