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July 30, 2015

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Subject: Quarterly Report 39  
Civil Action No. 3:08-cv-00608-CRS

Attention Chief:

Please find attached our Quarterly Report, prepared in accordance with Paragraph 29 of our Amended Consent Decree. This report is for the period April 1, 2015 – June 30, 2015, pertaining to Consent Decree compliance activities. Included are sections on Project WIN activities related to: NMC, SORP, Discharge Abatement Plans, Public Outreach, Education, Notification and Participation, CMOM and Performance Overview.

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

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

Sincerely,

Angela Akridge, PE.  
Chief Engineer and MSD Engineering Director

cc: Greg Heitzman, PE

Paula Purifoy



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# Louisville and Jefferson County Wet Weather Consent Decree Quarterly Report #39



**Reporting Period:**

April 1, 2015 through June 30, 2015

**Submitted To:**

Kentucky Department of Environmental Protection

United States Environmental Protection Agency

United States Department of Justice

**Submitted By:**

Louisville and Jefferson County Metropolitan Sewer District

700 W. Liberty Street

Louisville, Kentucky 40203-1911

**Submittal Date:**

July 30, 2015

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## INTRODUCTION

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

### Quarterly Reporting Period

This is the thirty-ninth Quarterly Report submitted in accordance with Paragraph 29 of the Amended Consent Decree. This report covers the time period from April 1, 2015, through June 30, 2015. **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 (April 1, 2015, through June 30, 2015).

**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 (April 1, 2015, through June 30, 2015).

**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, and 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 (April 1, 2015, through June 30, 2015).

**Section 5: Capacity Management, Operations and Maintenance Report** - The CMOM program activities and programmatic activities for WQTCs generating capital projects will be reported in a Gantt chart for the reporting period (April 1, 2015, through June 30, 2015), and include the schedule for activities planned for the next two reporting periods (July 1, 2015, through December 31, 2015), are included in this section for continued compliance with the Amended Consent Decree.

**Section 6: Performance Overview** - This section provides an accounting of unauthorized discharge occurrences from the separate sanitary sewer and combined sewer system and the estimated volumes of each. 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 (WQTC) 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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Performance information on Jeffersontown WQTC blending events, bypasses at WQTCs, DMR information, and phosphorus monitoring at WQTCs is included in this section.

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## SECTION 1: Program Activities for Nine Minimum Controls

### 1.1 Nine Minimum Controls Program Background

Per Paragraph 24.a. of the Amended Consent Decree, the Nine Minimum Controls (NMC) Compliance Report was initially submitted to EPA and KDEP on February 10, 2006. MSD received an approval letter, dated February 22, 2007, for the NMC Compliance Report. The approved NMC Compliance document can be viewed on the MSD Project WIN website <http://www.msdprojectwin.org>. Highlights of the NMC program implementation over this reporting period are outlined below.

### 1.2 NMC 2: Maximization of Storage in the Collection System

MSD has continued operation of Phase 1 and Phase 2 of the Real Time Control system. During this reporting period, approximately 463.40 MG were stored in the system during rain events and routed to the Morris Forman Water Quality Treatment Center (WQTC) once the system was able to handle the flow. See the table at the end of this section for a detailed report.

The gates at SWOR2 have been placed in manual control due to what was diagnosed as a failure of the gate level sensors that are integral to the integration of this site in the RTC schema. The sensors were replaced in the last quarter of 2013, but the problem could not be resolved at that time due to the gate-closed proximity switches also being diagnosed as defective. A description of corrective action progress is included in the Section 1.3 activities associated with Morris Forman WQTC performance.

### 1.3 NMC 4: Maximization of Flow at the Morris Forman Water Quality Treatment Center (WQTC)

The following charts illustrate performance in maximizing flow to the Morris Forman WQTC. The top of the chart shows rainfall inches per day. The middle part of the chart shows Morris Forman WQTC effluent flow and secondary treatment flow. The difference between these is the secondary bypass flow. The bottom of the chart shows days with a CSO activation at the five CSOs in the vicinity of the Morris Forman WQTC (CSOs 015, 016, 191, 210, and 211). Note that the flow meter downstream from CSO 211 is known to be affected by backwater effects of the Ohio River and the ultrasonic signal is sometimes blocked by mist and condensation when air and sewage temperatures are significantly different, so CSO activations at CSO 211 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 CSOs. At times, “blips” representing very small volumes of overflow are indicated by flow meters even though an overflow cannot be verified by level measurements or other indicators. These blips are not reported as overflows, but are noted in the CSO monitoring data reported in Appendix B. There are occasions in which a communications failure with telemetry has led to short-term gaps in the data. In addition, indications of rainfall and CSO activations are shown on the day they happened, but are not aligned with the exact time, so the effluent flow graph (which is tied to actual time) may show peaks that are offset from the indicated rain or CSO events by as much as 24 hours.



On April 8, 2015, Morris Forman WQTC began bypassing the entire treatment system. At 9:35 PM the plant experienced a failure of the electrical station for the incoming 69KV electrical feed. All plant systems shutdown including Final Effluent Pump Station, which was in service due to the elevation of the Ohio River. The main influent flows to Morris Forman, Main Diversion Structure and Southwestern Pump Station, were shutdown to reduce as much as possible the impact of flooding inside the plant boundaries. Flow from Rubbertown industries was also suspended. The plant flow at the time of the failure was approximately 280 MGD. We are unable to verify the total number of gallons which completely bypassed the plant as we had no SCADA, Telemetry, or flow recording capability.

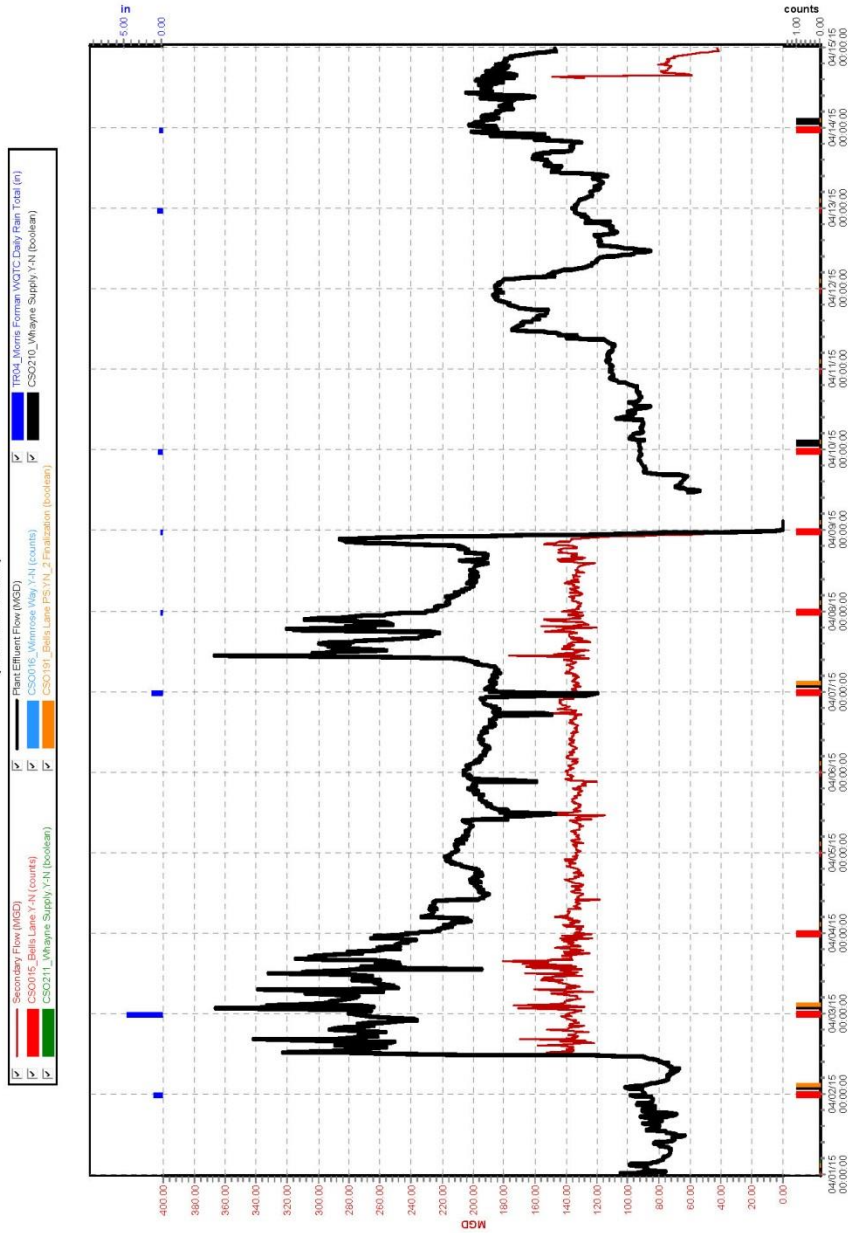
Additionally, prior to power restoration, LG&E mandated a cleaning of, and safety evaluation for, the north side electrical station. Power was restored to Morris Forman at 05:30AM April 9, 2015. Final effluent pumping was restored at 05:47AM with one pump in service, and three pumps in service by 06:00 AM with the primary effort being to drain the flooding from the plant and reestablish normal liquid levels. At 7:30AM a meeting was held to identify: a plan to investigate the cause of the power failure, remove flooding from the plant buildings, an assessment and investigative process to identify equipment replacement needs, a process to re-establish flow through functional plant processes, contractor needs to assist in the recovery process, and a sequence to restore treatment streams to normal operations in the shortest time possible. At approximately 08:30 AM, levels within the plant had been restored to the point where primary settling, chlorination and dechlorination of the plant flow were in effect. By 11:35 AM, April 11, 2015 no bypassing in the collection system was attributable to flow restrictions at Morris Forman. Over the remainder of April 2015, secondary treatment was re-established. At 10:00 AM, April 30, 2015, final effluent pumping was taken out of service and at 12:28 PM, April 30, 2015, all dry weather flow up to normal flow parameters was receiving full treatment at MFWQTC.

For the remainder of the quarter Morris Forman WQTC experienced a few outages in the both East Headworks Grit Chambers and West Headworks Channels that limited the plant capacity. At the end of June, the Sedimentation Basins were experiencing high blanket depths limiting the effective plant capacity to 280 MGD before CSO discharges occurred at CSO015, CSO210 and CSO191.

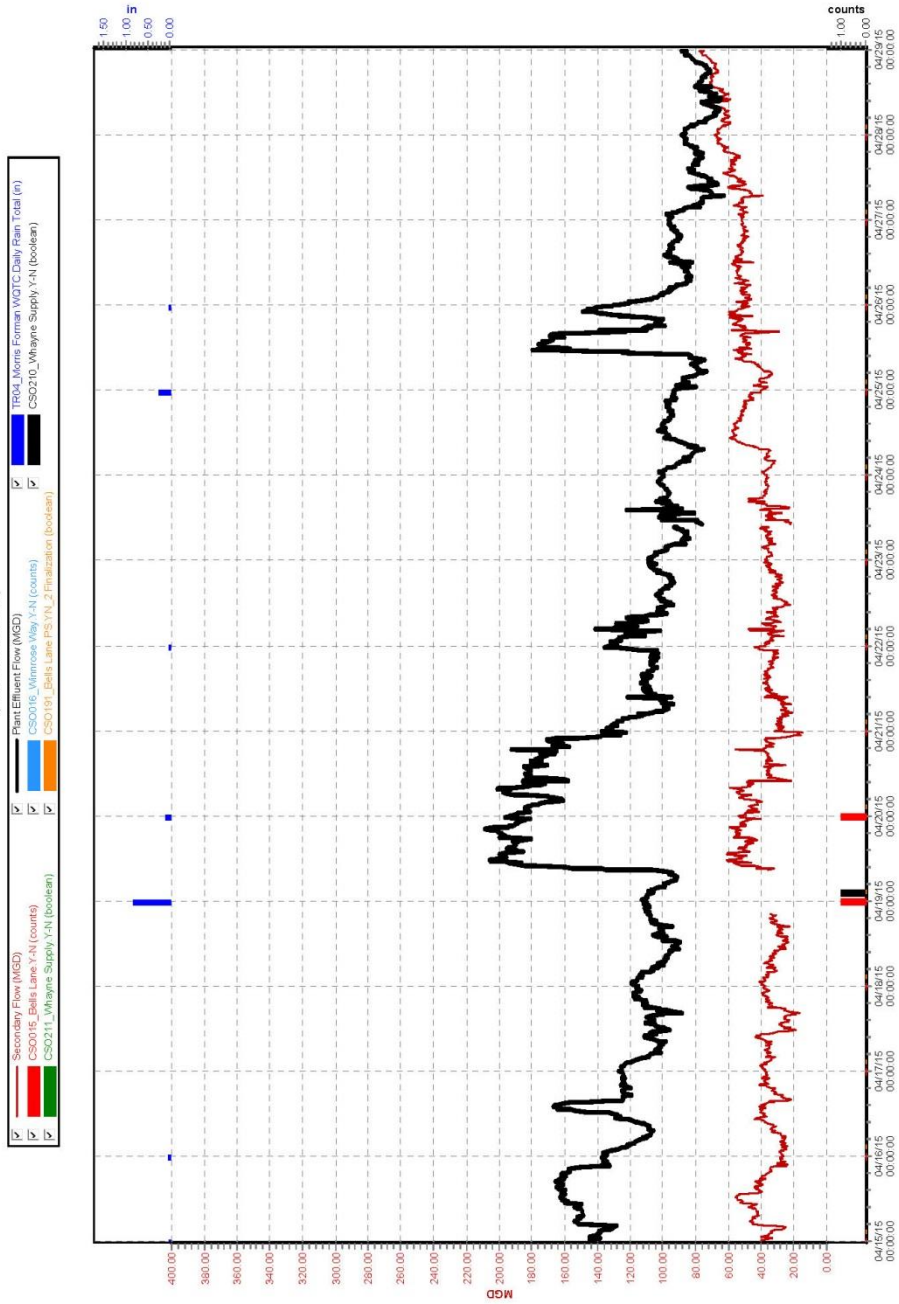
There were a few outages in Secondary Treatment for this period. Clarifiers B-2 and A-5 were out of service for the majority of the quarter. Meanwhile, Clarifier B-8 was out of service at the end of June. During rain events in this quarter, Morris Forman WQTC was able to maintain flows of 120 MGD to 140 MGD and above through the secondary treatment process.

The Morris Forman Headworks Replacement Project has been bid and awarded with construction anticipated to commence 4<sup>th</sup> quarter 2015. Design for replacement of equipment at the Morris Forman WQTC High-Yard Substation is complete and expected to be advertised in July 2015. Additionally, the Final Effluent Pump Station (FEPS) generator project is anticipated to be awarded for construction in July 2015.

Morris Forman WQTC - Bypass vs. Large CSOs  
 (04/01/15 to 04/15/15)

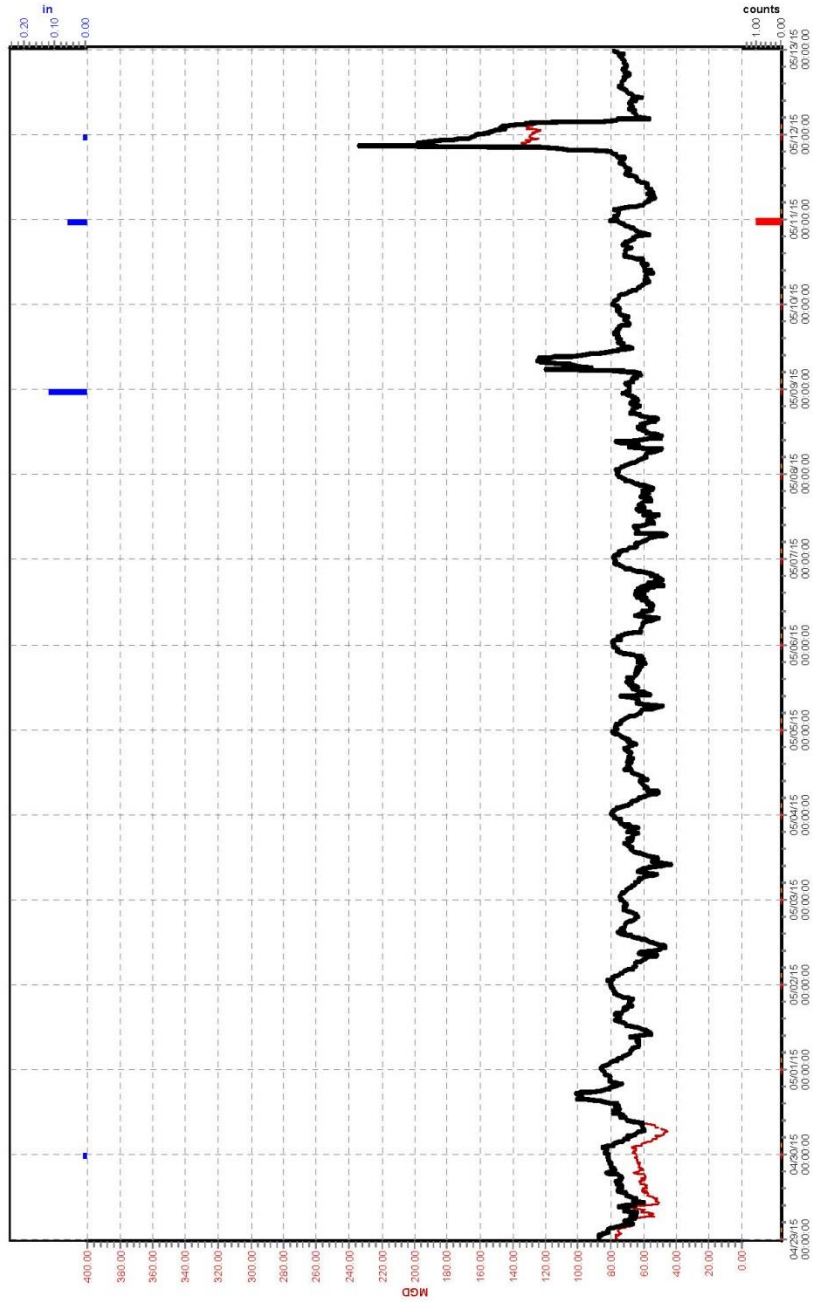


Morris Forman WQTC - Bypass vs. Large CSOs  
 (04/15/15 to 04/29/15)

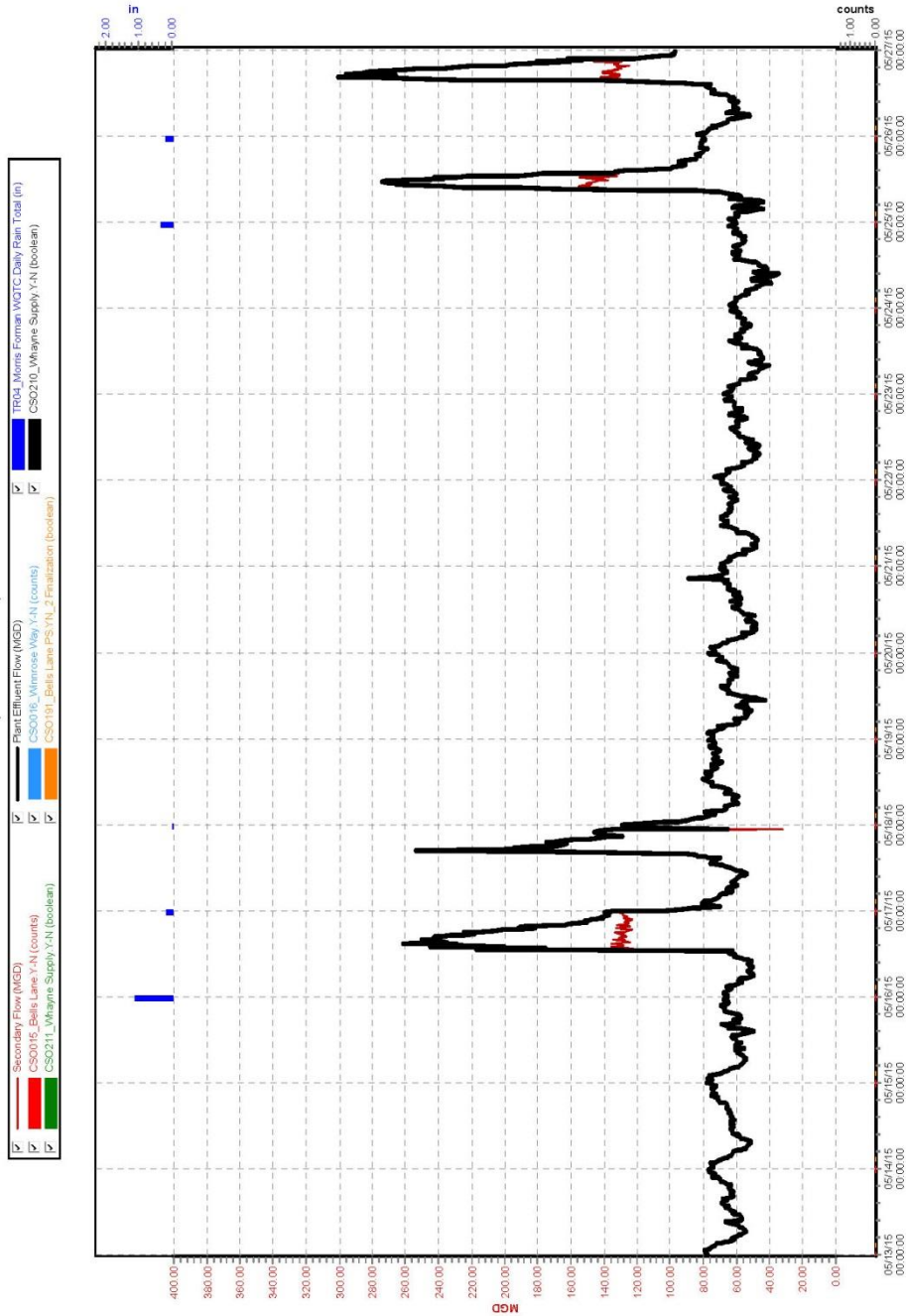


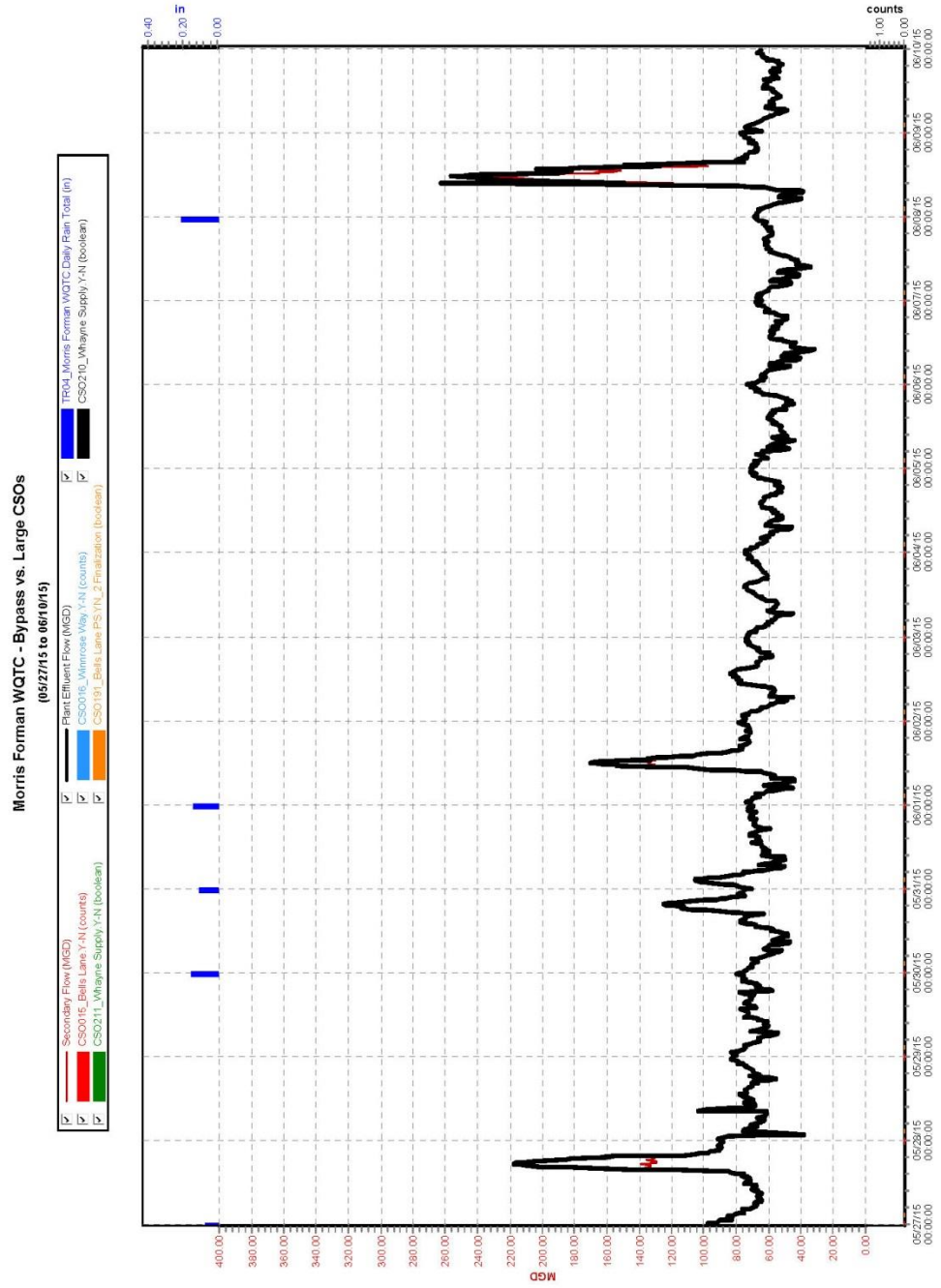
Morris Forman WQTC - Bypass vs. Large CSOs  
 (04/29/15 to 05/13/15)

- Secondary Flow (MGD)
- CS00015\_Balls Larc Y-N (counts)
- CS0211\_Whayne Supply Y-N (boolean)
- Plant Effluent Flow (MGD)
- CS0016\_Wimrose Way Y-N (counts)
- CS0191\_Bells Lake P2 Finalization (boolean)
- TR01\_Morris Forman WQTC Daily Rain Total (in)
- CS0210\_Whayne Supply Y-N (boolean)

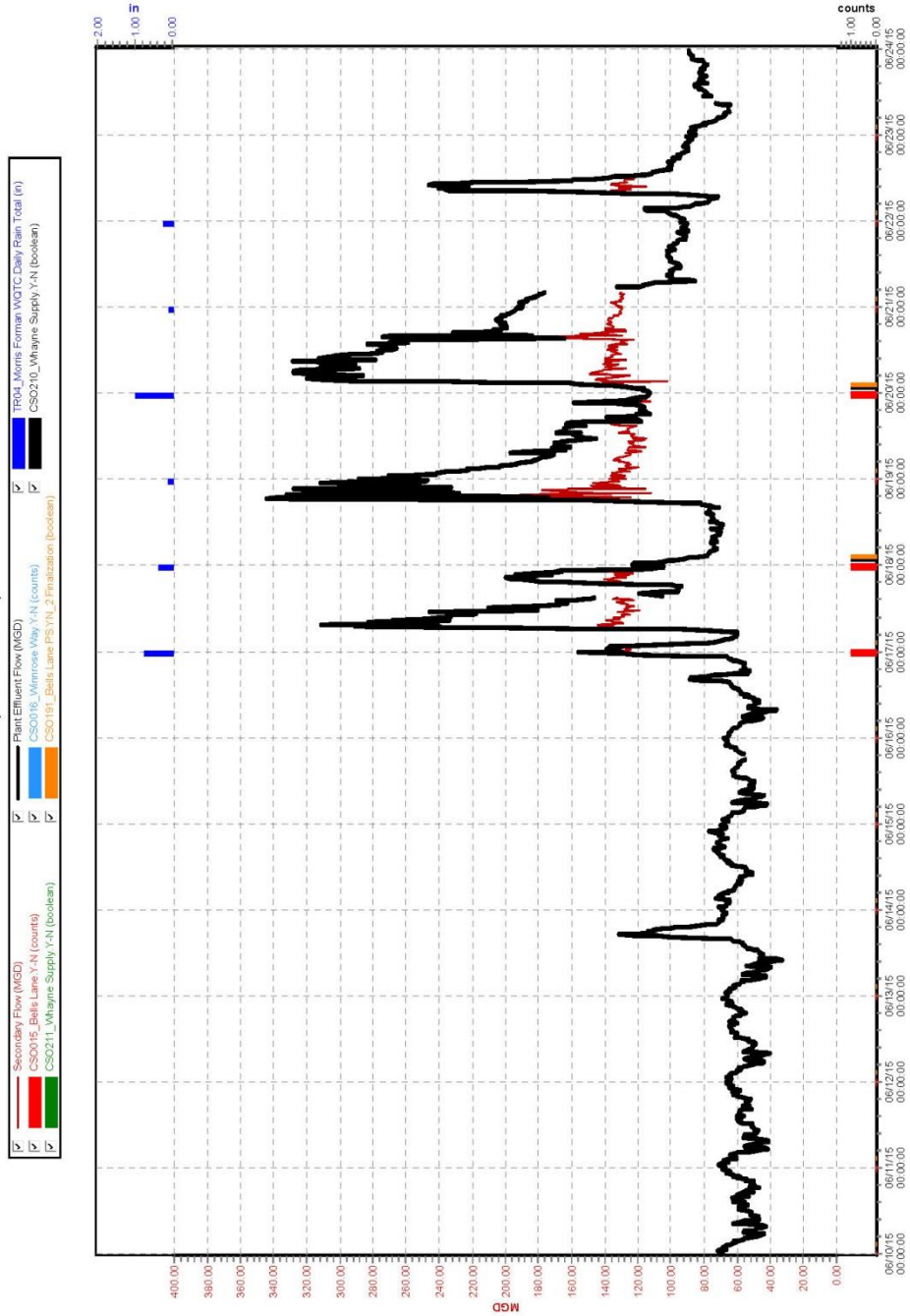


Morris Forman WQTC - Bypass vs. Large CSOs  
 (05/13/15 to 06/27/15)





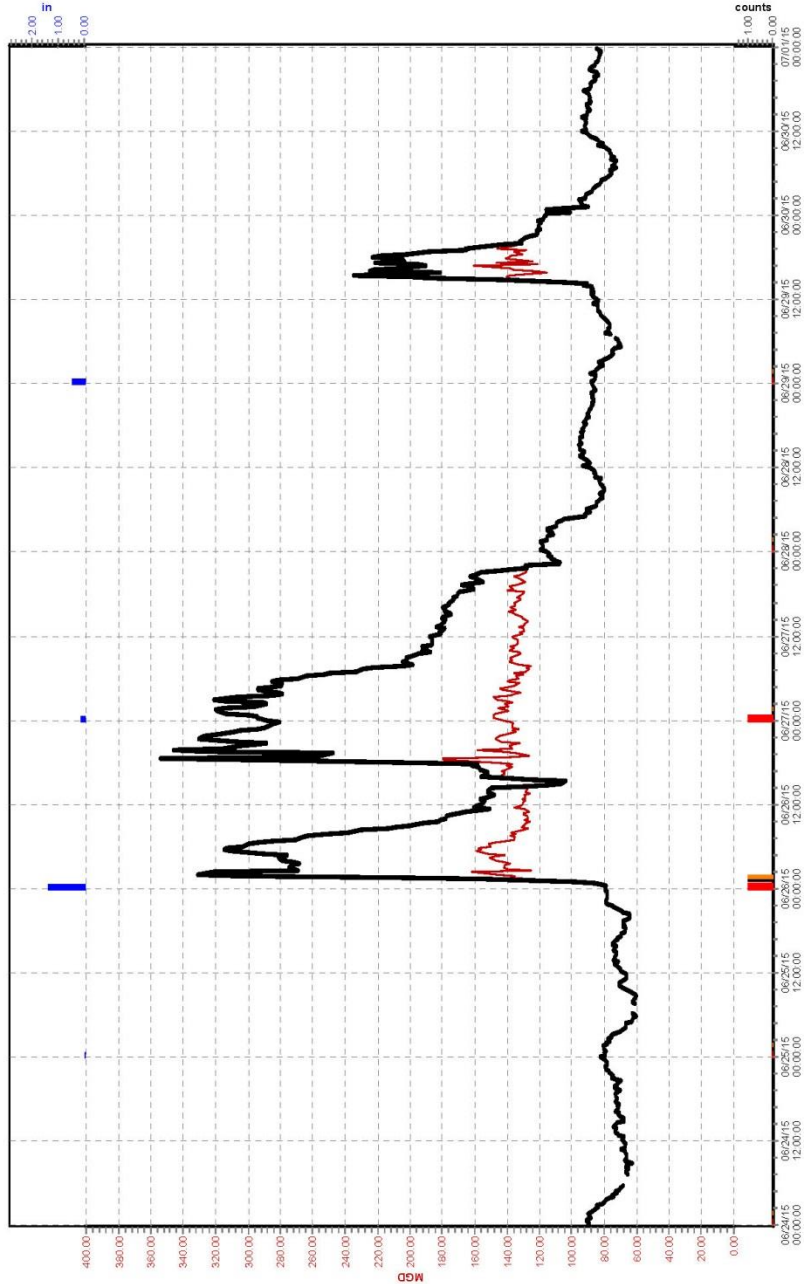
Morris Forman WQTC - Bypass vs. Large CSOs  
 (06/10/15 to 06/24/15)



Morris Forman WQTC - Bypass vs. Large CSOs

(06/24/15 to 07/01/15)

- Secondary Flow (MGD) █
- CSO016\_Edista Lane I+II (counts) █
- CSO211\_Wilgaine Supply I+II (boolean) █
- Plant Effluent Flow (MGD) █
- CSO016\_Vermoreux Way I+II (counts) █
- CSO211\_Belt Lane I+II I+II (boolean) █
- TR04\_Morris Forman WQTC Daily Rain Total (in) █
- CSO210\_Wilgaine Supply I+II (boolean) █





For this reporting period there were two violations in April due to the extensive flooding experienced by the Morris Forman Water Quality Treatment Center (WQTC) on April 8th. For the month of April, Morris Forman was unable to complete a full sampling regimen and the violations were the 7-Day Fecal coliform and the monthly TSS effluent limits. In May, there were no KPDES permit violations at Morris Forman WQTC. There were four violations in June due to the continued recovery from the April event and an extended stretch of hot weather. The violations were the 7-Day Secondary Effluent BOD and TSS, 30-day Secondary Effluent BOD and TSS, 7-day Plant Effluent Fecal and One Daily Plant Effluent Dissolved Oxygen.

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

- RTC Integration – Staff is working with the RTC consultant to review, revise and begin implementing the draft wet weather SOP for the system that also includes the Southeast Diversion Structure, Buechel Basin, Northern Ditch Diversion, and the Derek R Guthrie WQTC Wet Weather Treatment Facility. Full integration in an automated mode will not be achieved until the RTC software (CSoft) is upgraded to the most current version and the hydraulic engine is converted to use MSD's InfoWorks ICM hydraulic model. While this work is being done, the SOP is being implemented incrementally, starting with a period of manual operation to validate the control assumptions, followed by increasing levels of system automation as the automated controls for individual components are implemented, validated, and then incorporated into the overall RTC system. During this reporting period, MSD continued mapping the Csoft Model to the ICM model, troubleshooting and revising the ICM model, and performing calibrations. Staff continued to review and revise SOPs for the Southeast Diversion Structure, Buechel Basin, Northern Ditch Diversion, and the Derek R Guthrie WQTC Wet Weather Treatment Facilities. During next reporting period, MSD anticipates completing ICM model revisions and completing InfoWorks ICM hydraulic model integration. Staff will begin developing RTC process layer controls and SOPs for the Bells Lane, Logan and Breckenridge, and upgraded Nightingale PS facilities. A workshop will be held to review the updated SOPs and operational improvements for the RTC Phase II sites. Based on the outcomes of the workshop, it is anticipated that staff will begin implementing revised SOPs for the Southeast Diversion Structure, Buechel Basin, Northern Ditch Diversion, and the Derek R Guthrie WQTC Wet Weather Treatment Facilities. Full implementation of the revised SOPs will be completed after the CSoft and InfoWorks ICM hydraulic model integration is complete and as new or upgraded facilities are brought into service. The anticipated completion date for full deployment of the latest version of Csoft utilizing the integrated ICM model is summer 2016.
- RTC Performance Assessment – The main objective of the RTC Performance Assessment is to determine whether the available flow and storage capacities within the system are being utilized to their full potential. MSD staff continued to review and prioritize for implementation strategies for performance improvement. During the next reporting period, MSD staff and the RTC consultant will continue to work to implement the hardware, software and set-point changes as applicable on a site-by-site

basis. Work on implementing these improvements will continue through the next reporting period.

- Headworks Replacement Project – MSD advertised and awarded the project for construction. During the next reporting period, construction will begin with the shop drawing reviews and initial site preparation. It is anticipated the the project will be completed spring 2017.
- SWOR2 Modifications – The construction of the project is complete. Project startup and testing is scheduled for July 20<sup>th</sup> 2015.



Louisville/Jefferson County  
Metropolitan Sewer District

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



Period	
From :	04/01/2015
To :	06/30/2015

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 (7.5)	Brady Lake and Executive Inn Storage (13.4)	Southern Outfall (3.5)	Ashland (1.0)	Ohio River Interceptor (4.1)	Sneads Branch (2.5)	Total (46.5)		
				TRFD (in)	TRFD (in)	Rain Gauge										
2015-019	4-2-15 10:05	4-6-15 16:40	102:35:00	6.26	7.29	TR15	25.00	7.90	20.30	10.30	1.30	6.90	2.60	74.40	Yes	Extreme storm cells homogeneously distributed over the service area (up to 200-year return period). Ashland, Brady Lake, Executive Inn, NPS, Sneads Branch, SWOR2 and SWSG had regulator malfunctions due to critical alarms (water level exceeding a given threshold). SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization. SWSG and Brady Lake were mostly manually operated.
2015-020	4-6-15 16:40	4-8-15 23:55	55:15:00	1.07	1.58	TR11	31.20	7.30	5.40	10.40	0.85	6.10	2.00	63.25	Yes	Large storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization. Ashland was partially in manual mode and SWSG and Brady Lake were manually operated.
2015-022	4-9-15 12:00	4-12-15 4:20	64:20:00	0.51	0.65	TR05	20.50	2.50	2.55	4.25	1.05	4.70	2.20	37.75	Yes	Moderate storm cells heterogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization. Brady Lake was manually operated. On April 8th around 9:35 PM, the Morris Forman WWTP was without power for about 9 hours. The Brady Lake and MDS SG1 gates were closed manually during the storm event.
2015-023	4-13-15 18:10	4-15-15 20:50	50:40:00	0.52	0.74	TR15	18.00	0.00	1.40	6.40	1.20	7.40	0.25	34.65	Yes	Moderate storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization. SWSG and Brady Lake were mostly manually operated.
2015-025	4-19-15 7:05	4-20-15 22:20	39:15:00	0.83	0.93	TR04	16.90	0.00	5.25	3.40	0.90	4.80	0.85	32.10	Yes	Moderate storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization. SWSG was manually operated.
2015-026	4-25-15 4:10	4-26-15 5:55	25:45:00	0.23	0.35	TR05	1.90	0.00	0.25	1.80	0.05	3.05	0.05	7.10	No	Small storm cells heterogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-029	5-11-15 18:05	5-12-15 3:45	9:40:00	0.22	0.58	TR11	5.55	1.85	2.35	0.90	0.25	3.40	0.15	14.45	No	Small storm cells heterogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-030	5-16-15 12:00	5-17-15 0:10	12:10:00	0.35	1.12	TR04	7.05	1.05	0.75	3.50	0.30	4.75	0.00	17.40	No	Small storm cells heterogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-031	5-17-15 12:20	5-18-15 4:35	16:15:00	0.14	0.24	TR11	4.10	0.00	0.30	2.70	0.15	3.70	0.65	11.60	No	Small storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-032	5-25-15 3:55	5-29-15 2:15	94:20:00	0.68	0.96	TR11	7.15	0.00	2.00	3.70	0.65	6.60	0.85	20.95	No	Moderate storm cells homogeneously distributed over the service area with back-to-back cells. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization. SWSG and Brady Lake were manually operated.
2015-035	6-8-15 6:20	6-8-15 17:05	10:45:00	0.20	0.38	TR05	4.10	0.00	0.20	1.15	0.00	3.15	0.15	8.75	No	Small storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-037	6-16-15 21:00	6-18-15 7:40	34:40:00	0.78	1.43	TR11	4.60	0.00	3.95	3.50	0.70	4.85	1.15	18.75	No	Moderate storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-038	6-18-15 16:30	6-19-15 21:00	28:30:00	1.01	1.75	TR12	16.00	0.00	10.50	3.45	0.70	4.80	2.50	37.95	No	Large storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-039	6-19-15 21:30	6-21-15 11:55	38:25:00	0.96	1.18	TR11	14.50	0.00	6.95	3.50	0.90	5.40	2.00	33.25	No	Large storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-041	6-26-15 0:20	6-27-15 21:55	45:35:00	1.53	2.21	TR11	18.50	0.00	7.50	10.00	1.35	10.50	3.20	51.05	No	Very large storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
<b>TOTAL</b>							<b>195.05</b>	<b>20.60</b>	<b>69.65</b>	<b>68.95</b>	<b>10.35</b>	<b>80.10</b>	<b>18.60</b>	<b>463.40</b>		

## SECTION 2: Program Activities for Sewer Overflow Response Protocol

### 2.1 SORP 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 the EPA and KDEP were received and addressed, and the document was resubmitted October 28, 2011. Final approval of the updated SORP document was received February 21, 2012. A hard copy of the approved document has been distributed to each division throughout MSD and a viewable, downloadable electronic version has been posted to the MSD Project WIN website [www.msprojectwin.org](http://www.msprojectwin.org).

The current approved SORP document is dated February 21, 2012, and can be viewed on the MSD Project WIN website ([www.msprojectwin.org](http://www.msprojectwin.org)). Updates to the SORP document were submitted in August 2012, with confirmation of approvals on October 25, 2012. These updates are posted on the Project WIN website. The following activities were performed during this reporting period.

### 2.2 Overflow Management and Field Documentation

- Monitored approximately 155 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, Engineering staff documented 117 unauthorized discharges through route reconnaissance. Inspection routes were run during rain events as described in the following table:

Route Description	04/02/2015	04/07/2015	06/18/2015	06/20/2015	06/26/2015
ENGINEERING RAIN EVENT SSO INSPECTION ROUTE	X			X	
RS JEFFERSONTOWN RAIN EVENT SSO INSPECTION ROUTE (JTOWN MANHOLES WITHIN 2000 LF OF HEADWORKS)	X	X	X	X	X
RS JEFFERSONTOWN/FERN CREEK RAIN EVENT SSO INSPECTION ROUTE	X	X	X	X	X
RS MIDDLE/MUDDY FORK RAIN EVENT SSO INSPECTION ROUTE	X	X	X	X	X
RS HIKES POINT RAIN EVENT SSO INSPECTION ROUTE	X	X	X	X	X

- Due to capacity-related issues during this reporting period, MSD Operations staff hauled 311,401 gallons of sewage. MSD also hauled due to other issues as indicated in the following table:

<b>MSD Hauled Volumes In Gallons (April 1, 2015 - June 30, 2015)</b>				
<b>Problem</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>Total</b>
LACK OF SYSTEM CAPACITY	250,300	15,301	-	265,601
POWER FAILURE	-	42,800	-	42,800
ELECTRICAL FAILURE	-	-	3,000	3,000
<b>Grand Total</b>	<b>250,300</b>	<b>58,101</b>	<b>3,000</b>	<b>311,401</b>

### 2.3 Staff Training and Communication

- Reviewed and updated the training documentation for the 2015 second quarter SORP training that included Overflow Assessment, Establishing Control Zones, Mitigation and Documentation.
- Commenced planning for the 2015 second quarter SORP training that will focus on Public Notification and Overflow Cleanup.
- Conducted the following SORP Quarterly training sessions which were attended by 251 employees.

<b>Staff Training Participation - April 1, 2015 - June 30, 2015</b>				
<b>Date</b>	<b>Dept./Area</b>	<b>Location</b>	<b>Module</b>	<b>Attendees</b>
6/3/2015	Central OPS	CCWQTC	Overflow Assessment, Establishing Control Zones, Mitigation and Documentation	20
6/3/2015	East OPS	FFWQTC	Overflow Assessment, Establishing Control Zones, Mitigation and Documentation	27
6/9/2015	Morris Foreman Staff	MFWQTC	Overflow Assessment, Establishing Control Zones, Mitigation and Documentation	13
6/10/2015	Morris Foreman Staff	MFWQTC	Overflow Assessment, Establishing Control Zones, Mitigation and Documentation	37
6/10/2015	Morris Foreman Staff	MFWQTC	Overflow Assessment, Establishing Control Zones, Mitigation and Documentation	10
6/11/2015	RMS/ENG Staff	CMF A & B	Overflow Assessment, Establishing Control Zones, Mitigation and Documentation	34
6/12/2015	I&FP Staff	CMF A	Overflow Assessment, Establishing Control Zones, Mitigation and Documentation	18
6/16/2015	Morris Foreman Staff	MFWQTC	Overflow Assessment, Establishing Control Zones, Mitigation and Documentation	7
6/17/2015	Morris Foreman Staff	MFWQTC	Overflow Assessment, Establishing Control Zones, Mitigation and Documentation	9
6/17/2015	Morris Foreman Staff	MFWQTC	Overflow Assessment, Establishing Control Zones, Mitigation and Documentation	6
6/18/2015	RMS/ENG Staff	CMF A & B	Overflow Assessment, Establishing Control Zones, Mitigation and Documentation	55
6/20/2015	I&FP Staff	CMF A	Overflow Assessment, Establishing Control Zones, Mitigation and Documentation	6
6/24/2015	West OPS	DRGWQTC	Overflow Assessment, Establishing Control Zones, Mitigation and Documentation	9
<b>Total</b>				<b>251</b>

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## SECTION 3: Program Activities for Discharge Abatement Plans

### 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 sewer system and the combined sewer system, 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 and the Final CSO Long Term Control Plan were submitted concurrently and certified on December 19, 2008, under the title of the Integrated Overflow Abatement Plan (IOAP). The IOAP was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by an Order signed February 12, 2010, that was entered into public record 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 will result in a higher level of overflow control to be completed faster than originally proposed for approximately the same overall budget.

### 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 Implementation

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

#### 3.2.2 Interim Sanitary Sewer Discharge Plan

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

All projects required by the ISSDP have been completed and certified, with the exception of

the Derek R. Guthrie WQTC expansion. During this reporting period the Derek R. Guthrie WQTC was operational in accordance with information previously submitted. The project has achieved overflow reduction performance as planned and designed. No treatment capacity related sanitary sewer overflows have occurred with the exception of the discharges related to the bar screen failure previously reported in the February 20, 2013, DMR (January – March 2013 reporting period) for Derek R. Guthrie WQTC, and one discharge October 6, 2013, related to a grit system problem that reduced plant capacity to 150 MGD for a short time. MSD is currently working with KDEP and EPA to move towards certification. Representatives from each organization met May 14, 2015. During this meeting, minor changes to language in the certification letter were discussed and agreed to. A revised certification letter will be submitted during the next reporting period.

### **3.2.3 Final Sanitary Sewer Discharge Plan**

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

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

- Prospect WQTC Elimination Projects Easement Status - A total of 54 easements have been identified, and all 54 easements have been acquired.
- Project Status Details:
  - River Road Interceptor – project complete.
  - River Road Interceptor Phase 1A – project complete.
  - Harrods Creek Pump Station – project complete.
  - Harrods Creek Interceptor and Force Main Phase 1 – project complete.
  - Harrods Creek Interceptor and Force Main Phase 2 – project complete.
  - Harrods Creek Force Main Phase 3A – project complete.
  - Harrods Creek Force Main Phase 3B – project complete.
  - Shadow Wood WQTC Elimination – project under construction
  - Hunting Creek North WQTC Elimination - project under construction.
  - Timberlake and Hunting Creek South WQTC Elimination – project under construction.
  - Ken Carla WQTC Elimination – project under construction.

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### 3.3 CSO Long Term Control Plan

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

#### 3.3.1 Interim CSO Long Term Control Plan

The Interim CSO LTCP was initially submitted to EPA and KDEP on February 10, 2006. MSD received an approval letter dated February 22, 2007, for the Interim LTCP. The approved Interim LTCP can be viewed on the MSD Project WIN website ([www.msdpwin.org](http://www.msdpwin.org)).

This plan includes an overview of the MSD program, efforts taken to reduce/eliminate discharges from the CSS and the list of proposed improvements to be accomplished by December 31, 2008. All projects associated with this plan have been completed.

#### 3.3.2 Final CSO Long Term Control Plan

MSD submitted for approval the Final CSO LTCP on December 19, 2008, as Volume 2 of the Integrated Overflow Abatement Plan (IOAP). The IOAP was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by an Order signed February 12, 2010, that was entered into public record February 15, 2010. A revised LTCP was included in the IOAP revision, submitted June 14, 2013. On June 19, 2014, MSD received approval of the 2012 IOAP Modification from EPA/KDEP.

#### 3.3.3 Green Program Update

MSD continued program activities to provide incentives to private property owners to reduce the amount of impervious surface that drains to the combined sewer system.

During the reporting period, MSD updated the green infrastructure website (<http://www.msddgreen.org>). Through this website, information on high profile projects, program activities, forms and documents outlining participation in incentive programs (green infrastructure, downspout disconnection, urban reforestation) is provided in an accessible format.

The green program incentives are being applied to reflect the values of green projects in CSO areas or regions based on the latest modeling results. This application ties incentives directly to overflow reductions in various CSO regions to promote green projects in the areas that provide the most value. Project opportunities are optimized to best use available funding and provide additional overflow volume reduction benefits to complement LTCP projects.

Qualified Post Construction Inspector (QPCI) training for property owners with green infrastructure on private property was administered during the reporting period, and will continue to be administered in the next reporting period. These inspectors submit reports to MSD for review and enforcement. This training promotes consistency in inspections and provides regulatory updates to attendees, allowing MSD to effectively manage green infrastructure.



MSD continues to administer an urban reforestation program to intercept rainwater and reduce stormwater entering the sewer system. Urban reforestation proposals require a Memorandum of Understanding for reporting tree location, condition, and maintenance plan. Partners participating in the program are responsible for ongoing maintenance of the trees.

Continued coordination with the green and MS4 program is on-going to optimize resources and regulations to improve water quality.

### **3.4 Activity Progress Chart**

A Gantt chart showing the previous and Proposed IOAP Modification schedules (Refer to IOAP, Volume 1 – Figure 6.3.1 for the previous) for the entire program is provided below.

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

Activity Name	Scheduled Finish	2009 IOAP Completion	2012 IOAP Modification	2009				2010				2011				2012				2013				2014				2015				2016				2017				2018				2019				2020				2021				2022				2023				2024			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4																
<b>MSD IOAP SCHEDULE</b>	31-Dec-24	31-Dec-24	31-Dec-24																																																																
<b>LONG TERM CONTROL PLAN</b>	01-Jan-21	31-Dec-20	31-Dec-20																																																																
<b>GREEN DEMONSTRATION PROJECTS</b>	31-Dec-20	31-Dec-20	31-Dec-20																																																																
GREEN INFRASTRUCTURE DEMONSTRATION PROJECTS	31-Dec-11 A	31-Dec-11	31-Dec-11																																																																
GREEN INFRASTRUCTURE DEMONSTRATION PROJECTS	31-Dec-11 A	31-Dec-11	31-Dec-11																																																																
GREEN INFRASTRUCTURE PROGRAM	31-Dec-20	31-Dec-20	31-Dec-20																																																																
GREEN INFRASTRUCTURE PROGRAM	31-Dec-20	31-Dec-20	31-Dec-20																																																																
<b>GRAY INFRASTRUCTURE PROJECTS</b>	01-Jan-21	31-Dec-20	31-Dec-20																																																																
CSO 123 DOWNSPOUT DISCONNECTION	31-Dec-12	31-Dec-12	31-Dec-12																																																																
CSO 123 DOWNSPOUT DISCONNECTION	31-Dec-12	31-Dec-12	31-Dec-12																																																																
I-64 AND GRINSTEAD DRIVE STORAGE BASIN	31-Dec-20	21-Dec-14	31-Dec-20																																																																
I-64 AND GRINSTEAD DRIVE STORAGE BASIN	31-Dec-20	21-Dec-14	31-Dec-20																																																																
CSO 140 INCREASE PIPE CONVEYANCE	31-Dec-15	31-Dec-15	31-Dec-15																																																																
CSO 140 INCREASE PIPE CONVEYANCE	31-Dec-15	31-Dec-15	31-Dec-15																																																																
CSO 206 SEWER SEPARATION	30-Dec-13	31-Dec-13	30-Dec-13																																																																
CSO 206 SEWER SEPARATION	30-Dec-13	31-Dec-13	30-Dec-13																																																																
CLIFTON HEIGHTS STORAGE BASIN	31-Dec-18	31-Dec-18	31-Dec-18																																																																
CLIFTON HEIGHTS STORAGE BASIN	31-Dec-18	31-Dec-18	31-Dec-18																																																																
PADDY'S RUN WET WEATHER TREATMENT FACILITY AND OFF LINE I	31-Dec-16	31-Dec-14	31-Dec-16																																																																
PADDY'S RUN WET WEATHER TREATMENT FACILITY	31-Dec-16	31-Dec-14	31-Dec-16																																																																
PORTLAND WHARF STORAGE BASIN	31-Dec-19	31-Dec-19	31-Dec-19																																																																
PORTLAND WHARF STORAGE BASIN	31-Dec-19	31-Dec-19	31-Dec-19																																																																
STORY AVENUE AND MAIN STREET STORAGE BASIN	31-Dec-20	31-Dec-13	31-Dec-20																																																																
STORY AVENUE AND MAIN STREET STORAGE BASIN	31-Dec-20	31-Dec-13	31-Dec-20																																																																
CSO 058 IN-LINE STORAGE AND GREEN INFRASTRUCTURE CONTROL	31-Dec-14	31-Dec-14	31-Dec-14																																																																
CSO 058 IN-LINE STORAGE AND GREEN INFRASTRUCTURE CONTROLS	31-Dec-14	31-Dec-14	31-Dec-14																																																																
SOUTHWESTERN PARKWAY STORAGE BASIN	31-Dec-18	31-Dec-18	31-Dec-18																																																																
SOUTHWESTERN PARKWAY STORAGE BASIN	31-Dec-18	31-Dec-18	31-Dec-18																																																																
13TH STREET AND ROWAN STREET STORAGE BASIN	01-Jan-21	31-Dec-20	31-Dec-20																																																																
13TH STREET AND ROWAN STREET STORAGE BASIN	31-Dec-20	31-Dec-20	31-Dec-20																																																																
13TH STREET AND ROWAN STREET STORAGE BASIN	31-Dec-20	31-Dec-20	31-Dec-20																																																																
CENTRAL RELIEF DRAIN IN-LINE STORAGE, GREEN INFRASTRUCTURE AND DISTRIBUTED STORAGE	01-Jan-21	31-Dec-18	31-Dec-18																																																																
CENTRAL RELIEF DRAIN IN-LINE STORAGE, GREEN INFRASTRUCTURE AND DISTRIBUTED STORAGE	01-Jan-21	31-Dec-18	31-Dec-18																																																																
CSO 160 IN-LINE STORAGE AND GREEN INFRASTRUCTURE CONTROL	31-Dec-15	31-Dec-15	31-Dec-15																																																																
CSO 160 IN-LINE STORAGE AND GREEN INFRASTRUCTURE CONTROLS	31-Dec-15	31-Dec-15	31-Dec-15																																																																
ADAMS STREET SEWER SEPARATION	31-Dec-12	31-Dec-12	31-Dec-12																																																																
ADAMS STREET SEWER SEPARATION	31-Dec-12	31-Dec-12	31-Dec-12																																																																
18TH AND NORTHWESTERN PKY STORAGE BASIN	31-Dec-17	31-Dec-17	31-Dec-17																																																																
18TH AND NORTHWESTERN PKY STORAGE BASIN	31-Dec-17	31-Dec-17	31-Dec-17																																																																
ALGONQUIN PARKWAY STORAGE BASIN	01-Jan-19	31-Dec-18	31-Dec-18																																																																
ALGONQUIN PARKWAY STORAGE BASIN	31-Dec-18	31-Dec-18	31-Dec-18																																																																
SOUTHERN OUTFALL IN-LINE STORAGE (SOR 1)	31-Dec-18	31-Dec-18	31-Dec-18																																																																
SOUTHERN OUTFALL IN-LINE STORAGE AT 43RD ST.	31-Dec-18	31-Dec-18	31-Dec-18																																																																
SOUTHERN OUTFALL IN-LINE RETENTION (SOR 2)	01-Jan-19	31-Dec-18	31-Dec-18																																																																
SOUTHERN OUTFALL IN-LINE RETENTION AT 13TH AND WILSON AVE. (SOR 2)	01-Jan-19	31-Dec-18	31-Dec-18																																																																
NIGHTINGALE PUMP STATION REPLACEMENT AND STORAGE	31-Dec-15	31-Dec-16	31-Dec-15																																																																
NIGHTINGALE PUMP STATION REPLACEMENT AND STORAGE	31-Dec-15	31-Dec-16	31-Dec-15																																																																
LEXINGTON ROAD AND PAYNE STREET STORAGE BASIN	31-Dec-20	31-Dec-20	31-Dec-20																																																																
LEXINGTON ROAD AND PAYNE STREET STORAGE BASIN	31-Dec-20	31-Dec-20	31-Dec-20																																																																
LOGAN STREET AND BRECKENRIDGE ST STORAGE BASIN	31-Dec-17	31-Dec-17	31-Dec-17																																																																
LOGAN STREET AND BRECKENRIDGE ST STORAGE BASIN	31-Dec-17	31-Dec-17	31-Dec-17																																																																
CSO 085 STRUCTURAL MODIFICATIONS AND GREEN INFRASTRUCTURE CONTROLS	31-Dec-15	31-Dec-15	31-Dec-15																																																																
CSO 085 STRUCTURAL MODIFICATIONS AND GREEN INFRASTRUCTURE CONTROLS	31-Dec-15	31-Dec-15	31-Dec-15																																																																
CSO 108 DAM MODIFICATIONS	31-Dec-10 A	31-Dec-10	31-Dec-10																																																																
CSO 108 DAM MODIFICATIONS	31-Dec-10 A	31-Dec-10	31-Dec-10																																																																
STORY AVENUE AND SPRING STREET GREEN INFRASTRUCTURE CONTROL	31-Dec-16	31-Dec-16	31-Dec-16																																																																
STORY AVENUE AND SPRING STREET GREEN INFRASTRUCTURE CONTROLS	31-Dec-16	31-Dec-16	31-Dec-16																																																																
<b>FLOOD PUMP STATION PROJECTS</b>	31-Dec-14	31-Dec-14	31-Dec-14																																																																
27TH STREET FLOOD PUMP STATION	30-Jun-13	30-Jun-13	30-Jun-13																																																																
27TH STREET FLOOD PUMP STATION	30-Jun-13	30-Jun-13	30-Jun-13																																																																

Approved 2009 IOAP   
  Remaining Work  
 Completed Work





MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009- 31 Dec 2024 )																																																																			
Activity Name	Scheduled Finish	2009 IOAP Completion	2012 IOAP Modification	2009				2010				2011				2012				2013				2014				2015				2016				2017				2018				2019				2020				2021				2022				2023				2024			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4																
<b>HITE CREEK AREA</b>																																																																			
MEADOW STREAM PS AND FORCE MAIN	31-Dec-12	31-Dec-16	31-Dec-16	[Gantt bar: 2010 Q1-Q4, 2011 Q1-Q4, 2012 Q1-Q4]																																																															
MEADOW STREAM PS AND FORCE MAIN	31-Dec-12	31-Dec-16	31-Dec-16	[Gantt bar: 2010 Q1-Q4, 2011 Q1-Q4, 2012 Q1-Q4]																																																															
KAVANAUGH RD PS IMPROVEMENTS	31-Dec-24	31-Dec-24	31-Dec-24	[Gantt bar: 2022 Q1-Q4, 2023 Q1-Q4, 2024 Q1-Q4]																																																															
KAVANAUGH RD PS IMPROVEMENTS	31-Dec-24	31-Dec-24	31-Dec-24	[Gantt bar: 2022 Q1-Q4, 2023 Q1-Q4, 2024 Q1-Q4]																																																															
FLOYDSBURG RD SSES, REHAB AND PUMP STATION UPGRADE	17-Dec-10 A	31-Dec-10	31-Dec-10	[Gantt bar: 2010 Q1-Q4]																																																															
FLOYDSBURG RD SSES, REHAB AND PUMP STATION UPGRADE	17-Dec-10 A	31-Dec-10	31-Dec-10	[Gantt bar: 2010 Q1-Q4]																																																															
<b>INTERIM SSSDP PROJECTS</b>																																																																			
ISSDP BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT	29-Sep-10 A	27-Apr-11	27-Apr-11	[Gantt bar: 2010 Q3, 2011 Q1-Q2]																																																															
ISSDP BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT	29-Sep-10 A	27-Apr-11	27-Apr-11	[Gantt bar: 2010 Q3, 2011 Q1-Q2]																																																															
BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT (WEST)	29-Sep-10 A	27-Apr-11	27-Apr-11	[Gantt bar: 2010 Q3, 2011 Q1-Q2]																																																															
BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT (EAST)	29-Sep-10 A	27-Apr-11	27-Apr-11	[Gantt bar: 2010 Q3, 2011 Q1-Q2]																																																															
BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT	29-Sep-10 A	27-Apr-11	27-Apr-11	[Gantt bar: 2010 Q3, 2011 Q1-Q2]																																																															
SINKING FORK RELIEF SEWER	23-Dec-09 A	30-Dec-10	23-Dec-09	[Gantt bar: 2009 Q4, 2010 Q1-Q2]																																																															
SINKING FORK RELIEF SEWER	23-Dec-09 A	30-Dec-10	23-Dec-09	[Gantt bar: 2009 Q4, 2010 Q1-Q2]																																																															
ISSDP DEREK R GUTHRIE WATER QUALITY TREATMENT CENTER	30-Jul-12	31-Dec-11	31-Oct-12	[Gantt bar: 2011 Q3, 2012 Q1-Q4]																																																															
ISSDP DEREK R GUTHRIE WATER QUALITY TREATMENT CENTER	30-Jul-12	31-Dec-11	31-Oct-12	[Gantt bar: 2011 Q3, 2012 Q1-Q4]																																																															
DEREK R GUTHRIE WQTC WET WEATHER TREATMENT FACILITY	20-May-12 A	31-Oct-12	31-Oct-12	[Gantt bar: 2012 Q1-Q4]																																																															
DEREK R GUTHRIE WQTC WET WEATHER TREATMENT FACILITY	20-May-12 A	31-Oct-12	31-Oct-12	[Gantt bar: 2012 Q1-Q4]																																																															
WCWTP: WW FLOW EQU & TMT	30-Sep-12	31-Oct-12	31-Oct-12	[Gantt bar: 2012 Q3, 2013 Q1-Q2]																																																															
WCWTP: WW FLOW EQU & TMT	30-Sep-12	31-Oct-12	31-Oct-12	[Gantt bar: 2012 Q3, 2013 Q1-Q2]																																																															
DRGWQTC: BLOWER PACKAGE	03-Mar-11 A	31-Oct-12	31-Oct-12	[Gantt bar: 2011 Q1, 2012 Q1-Q4]																																																															
DRGWQTC: BLOWER PACKAGE	03-Mar-11 A	31-Oct-12	31-Oct-12	[Gantt bar: 2011 Q1, 2012 Q1-Q4]																																																															
DRGWQTC: WET WEATHER EQUALIZATION BASIN	31-Jul-12	31-Oct-12	31-Oct-12	[Gantt bar: 2012 Q3, 2013 Q1-Q2]																																																															
DRGWQTC: WET WEATHER EQUALIZATION BASIN	31-Jul-12	31-Oct-12	31-Oct-12	[Gantt bar: 2012 Q3, 2013 Q1-Q2]																																																															
ISSDP HIKES LANE INTERCEPTOR /HIGHGATE SPRING	30-Oct-12	27-Nov-12	27-Nov-12	[Gantt bar: 2012 Q4, 2013 Q1-Q2]																																																															
ISSDP HIKES LANE INTERCEPTOR /HIGHGATE SPRING	30-Oct-12	27-Nov-12	27-Nov-12	[Gantt bar: 2012 Q4, 2013 Q1-Q2]																																																															
HIKES POINT INTERCEPTOR	30-Nov-11 A	27-Nov-12	27-Nov-12	[Gantt bar: 2011 Q4, 2012 Q1-Q4]																																																															
HIKES POINT INTERCEPTOR	30-Nov-11 A	27-Nov-12	27-Nov-12	[Gantt bar: 2011 Q4, 2012 Q1-Q4]																																																															
HIKES POINT INTERCEPTOR PHASE 2	27-Nov-12	27-Nov-12	27-Nov-12	[Gantt bar: 2012 Q4]																																																															
HIKES POINT INTERCEPTOR PHASE 2	27-Nov-12	27-Nov-12	27-Nov-12	[Gantt bar: 2012 Q4]																																																															
CARSON & RIBBLE RELIEF	20-Nov-09 A	27-Nov-12	27-Nov-12	[Gantt bar: 2009 Q4, 2010 Q1-Q2]																																																															
CARSON & RIBBLE RELIEF	20-Nov-09 A	27-Nov-12	27-Nov-12	[Gantt bar: 2009 Q4, 2010 Q1-Q2]																																																															
HIKES POINT RELIEF EFFORT	31-Oct-12	27-Nov-12	27-Nov-12	[Gantt bar: 2012 Q4, 2013 Q1-Q2]																																																															
HIKES POINT RELIEF EFFORT	31-Oct-12	27-Nov-12	27-Nov-12	[Gantt bar: 2012 Q4, 2013 Q1-Q2]																																																															
ISSDP NORTHERN DITCH DIVERSION INTERCEPTOR	16-Feb-11 A	31-Jul-11	31-Jul-11	[Gantt bar: 2011 Q1, 2012 Q1-Q4]																																																															
ISSDP NORTHERN DITCH DIVERSION INTERCEPTOR	16-Feb-11 A	31-Jul-11	31-Jul-11	[Gantt bar: 2011 Q1, 2012 Q1-Q4]																																																															
NORTHERN DITCH DIVERSION INTERCEPTOR	16-Feb-11 A	31-Jul-11	31-Jul-11	[Gantt bar: 2011 Q1, 2012 Q1-Q4]																																																															
NORTHERN DITCH DIVERSION INTERCEPTOR PH 2	16-Feb-11 A	31-Jul-11	31-Jul-11	[Gantt bar: 2011 Q1, 2012 Q1-Q4]																																																															
NORTHERN DITCH DIVERSION INTERCEPTOR PH 2	16-Feb-11 A	31-Jul-11	31-Jul-11	[Gantt bar: 2011 Q1, 2012 Q1-Q4]																																																															
ISSDP SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR	28-Sep-12	27-Nov-12	30-Sep-12	[Gantt bar: 2012 Q4, 2013 Q1-Q2]																																																															
ISSDP SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR	28-Sep-12	27-Nov-12	30-Sep-12	[Gantt bar: 2012 Q4, 2013 Q1-Q2]																																																															
SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR	12-May-12 A	12-May-12	12-May-12	[Gantt bar: 2012 Q1-Q2]																																																															
SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR	12-May-12 A	12-May-12	12-May-12	[Gantt bar: 2012 Q1-Q2]																																																															
SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR Phase 2	30-Sep-12	30-Sep-12	30-Sep-12	[Gantt bar: 2012 Q4]																																																															
SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR Phase 2	30-Sep-12	30-Sep-12	30-Sep-12	[Gantt bar: 2012 Q4]																																																															
<b>JEFFERSONTOWN AREA</b>																																																																			
JEFFERSONTOWN WQTC ELIMINATION	01-Jan-15	31-Dec-15	31-Dec-15	[Gantt bar: 2015 Q1-Q4]																																																															
JEFFERSONTOWN WQTC ELIMINATION	01-Jan-15	31-Dec-15	31-Dec-15	[Gantt bar: 2015 Q1-Q4]																																																															
JEFFERSONTOWN WQTC ELIMINATION	31-Dec-15	31-Dec-15	31-Dec-15	[Gantt bar: 2015 Q4]																																																															
JEFFERSONTOWN WQTC ELIMINATION	31-Dec-15	31-Dec-15	31-Dec-15	[Gantt bar: 2015 Q4]																																																															
JEFFERSONTOWN FORCE MAIN	31-Dec-15	31-Dec-15	31-Dec-15	[Gantt bar: 2015 Q4]																																																															
JEFFERSONTOWN FORCE MAIN	31-Dec-15	31-Dec-15	31-Dec-15	[Gantt bar: 2015 Q4]																																																															
GRAND AVENUE PUMP STATION	31-Dec-15	31-Dec-15	31-Dec-15	[Gantt bar: 2015 Q4]																																																															
GRAND AVENUE PUMP STATION	31-Dec-15	31-Dec-15	31-Dec-15	[Gantt bar: 2015 Q4]																																																															
UPPER BILTOWN RD INTERCEPTOR	31-Dec-15	31-Dec-15	31-Dec-15	[Gantt bar: 2015 Q4]																																																															
UPPER BILTOWN RD INTERCEPTOR	31-Dec-15	31-Dec-15	31-Dec-15	[Gantt bar: 2015 Q4]																																																															
BILTOWN RD INTERCEPTOR SS	01-Jan-16	31-Dec-15	31-Dec-15	[Gantt bar: 2016 Q1, 2015 Q4]																																																															
BILTOWN RD INTERCEPTOR SS	01-Jan-16	31-Dec-15	31-Dec-15	[Gantt bar: 2016 Q1, 2015 Q4]																																																															
BILTOWN RD PS, FM & INT	31-Dec-12	31-Dec-12	31-Dec-12	[Gantt bar: 2012 Q4]																																																															
BILTOWN RD PS, FM & INT	31-Dec-12	31-Dec-12	31-Dec-12	[Gantt bar: 2012 Q4]																																																															
CHENOWETH HILLS WQTC ELIMINATION & PS IMPROVEMENTS	31-Dec-15	31-Dec-15	31-Dec-15	[Gantt bar: 2015 Q4]																																																															

Approved 2009 IOAP
  Remaining Work  
 Completed Work





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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 how to lessen the risks associated with coming into contact with sewage overflows.

### **4.2 Public Education Programs**

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

During the reporting period, MetroTV aired programs detailing the IOAP Public Input Meetings. Additionally, MSD is in the process of creating water quality sampling videos and partnering with educational organizations to assist with watershed videos. These efforts will be underway in FY16 and ultimately available to the public.

### **4.3 Public Outreach Programs**

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

#### **4.3.1 IOAP Project and Program Meetings**

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

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

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Public Involvement Process and meetings held during this reporting period may be found at the Project WIN Public Input Website (<http://www.msdpwin.org/Public-Input.aspx>).

During the reporting period, MSD facilitated and planned for the following meetings:

- A Concept Design input meeting to incorporate Structured Public Involvement for the Portland Green Infrastructure at CSO 190 project, originally scheduled for March 5, 2015, was held on April 14, 2015 due to snow. MSD staff spoke on green infrastructure, provided general designs, and gathered input using the Structured Public Involvement Process.
- The Advanced Design Stage of the Portland Green Infrastructure at CSO 190 project was held on May 12, 2015, at Western Middle School. MSD staff discussed project plans, provided design illustrations and maps, and gathered input using the Structured Public Involvement Process.
- A Concept Design Stage public input meeting for the Clifton Heights Storage Basin project was held on May 19, 2015 at the American Printing House for the Blind. MSD staff discussed and provided general designs as well as gathered input using the Structured Public Involvement Process.
- A Pardon Our Dust public meeting for the Logan Street Basin was held on June 9, 2015. MSD staff explained the project plans, offered tips to the public, and provided a construction schedule.
- An Initial input meeting for the Story Avenue and Main Street Basin was held on June 16, 2015. MSD Staff spoke on the history of the sewer system, explained the purpose of this basin, and gathered input using the Structured Public Involvement Process.
- Facilitated a Wet Weather Team Stakeholder meeting on June 23, 2015, at the Metropolitan Sewer District (700 West Liberty Street) to provide updates on MSD's IOAP progress and activities to date, planned activities for 2015, and an update of activities for MSD's 20-year Comprehensive Facility Plan, including detailed presentations on the Stormwater and Wastewater Service Areas.

During the next reporting period, the following meetings are planned.

- A planned Advanced Design input meeting to incorporate Structured Public Involvement for the Clifton Heights Storage Basin project is scheduled for August 2015.
- A planned Advanced Design input meeting to incorporate Structured Public Involvement for the Southwestern Parkway Storage Basin project is scheduled for August 2015.
- A Wet Weather Team Stakeholder meeting is scheduled for August and September 22, 2015.



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## SECTION 5: Capacity Management Operations and Maintenance Report

Per Paragraph 24.c of the Amended Consent Decree, the Capacity Management Operations and Maintenance (CMOM) Self Assessment Report was submitted to EPA and KDEP on February 10, 2006. MSD received a letter of approval on August 22, 2006. The approved CMOM document can be viewed on the MSD Project WIN website ([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 continued to enhance the activities listed below during this reporting period. Highlights of the CMOM program implementation over this reporting period are outlined below.

### 5.1 Management Programs

#### M-E-9 Infrastructure Rehabilitation

Activity details are provided in the CMOM schedule provided as **Section 5.4 – CMOM Activity Schedule**.

#### M-E-10 System Capacity Assurance Program

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

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

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## 5.2 Operations Programs

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

Activity details are provided in the CMOM schedule provided as **Section 5.4 – CMOM Activity Schedule**.

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

Activity details are provided in the CMOM schedule provided as **Section 5.4 – CMOM Activity Schedule**.

## 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 water quality treatment centers (WQTCs). Although the IOAP CPE assessments defined specific WQTC improvements to be completed by December 31, 2011, MSD will continue to implement CPE/CCP activities as part of the District's CMOM Program. This section will list such activities per WQTC as they occur each reporting period and will be outlined below.

### 5.3.1 Hite Creek Water Quality Treatment Center

During this reporting period, the following Hite Creek WQTC activities occurred.

- Construction began for the Hite Creek WQTC Hydraulic Improvements Project.
- MSD staff continued to work with the consultant to complete an alternative solids and tertiary filter replacement study.
- MSD received KDOW final comments and a June 3, 2015, approval letter for the Hite Creek WQTC Facilities Plan Update.

During the next reporting period, the following Hite Creek WQTC activities are planned.

- Construction will continue on the Hite Creek WQTC Hydraulic Improvements Project. It is anticipated that all work will be complete late spring 2016.
- MSD staff will continue to work with the consultant to complete an alternative solids and tertiary filter replacement study.

Schedules for CPE/CCP related capital projects are provided in **Section 5.4 – CMOM Activity Schedule**.

### 5.3.2 Floyds Fork Water Quality Treatment Center

During this reporting period there were no activities to report for this facility.

Schedules for CPE/CCP related capital projects are provided in **Section 5.4 – CMOM Activity Schedule**.

### 5.3.3 Derek R. Guthrie Water Quality Treatment Center

During this reporting period, the following Derek R. Guthrie WQTC activities occurred.

- Design was completed and construction contract bid for the Secondary Clarifiers 1, 2 & 3 collection mechanism replacement.
- Design was completed for the removal and upgrade of Return Activated Sludge (RAS) Pumps 1 and 4, including replacement of pumps 1 through 4 variable frequency drives. This will be on hold in anticipation of the results of the Facilities Plan document.
- The draft Facilities Plan document was reviewed by MSD staff.

During the next reporting period, the following Derek R. Guthrie WQTC activities are planned.

- The draft Facilities Plan document will be reviewed by MSD staff and draft KDOW submittal will occur.
- Completion of the repairs to the power system of the Wet Weather Pump Station so that the Wet Weather Pumps can be tested for compliance with specifications.
- Construction will continue on the replacement of the Secondary Clarifiers 1, 2, & 3 mechanisms.

Schedules for CPE/CCP related capital projects are provided in **Section 5.4 – CMOM Activity Schedule**.

### 5.3.4 Cedar Creek Water Quality Treatment Center

During this reporting period, MSD staff and Consultant completed a feasibility study of automation alternatives and tertiary filter replacement study. The studies have resulted in recommendations for improvements in phases. The first project under design is for improvements to the ultraviolet (UV) gate which will be under construction in the last quarter of 2015.

During the next reporting period, MSD expects to execute a design contract for the final design of repairs to the Influent Pump Station Gate. MSD will also evaluate and prioritize recommended improvements to the automation system at Cedar Creek.

Schedules for CPE/CCP related capital projects are provided in **Section 5.4 – CMOM Activity Schedule**.

### 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 and KDEP on March 31, 2009. Approval of this plan was received on September 24, 2009, and work is

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proceeding on the projects defined in the IOAP. See **Section 3 – Program Activities for Discharge Abatement Plans** for an update on the design and construction of the projects that make up the elimination plan for the Prospect Area WQTCs.

#### **5.3.5.1 Timberlake Water Quality Treatment Center**

Schedules for CPE/CCP related capital projects are provided in **Section 5.4 – CMOM Activity Schedule**.

#### **5.3.5.2 Hunting Creek North Water Quality Treatment Center**

Schedules for CPE/CCP related capital projects are provided in **Section 5.4 – CMOM Activity Schedule**.

#### **5.3.5.3 Hunting Creek South Water Quality Treatment Center**

Schedules for CPE/CCP related capital projects are provided in **Section 5.4 – CMOM Activity Schedule**.

#### **5.3.5.4 Ken Carla Water Quality Treatment Center**

Schedules for CPE/CCP related capital projects are provided in **Section 5.4 – CMOM Activity Schedule**.

#### **5.3.5.5 Shadow Wood Water Quality Treatment Center**

Schedules for CPE/CCP related capital projects are provided in **Section 5.4 – CMOM Activity Schedule**.

#### **5.3.6 Jeffersontown Water Quality Treatment Center**

Schedules for CPE/CCP related capital projects are provided in **Section 5.4 – CMOM Activity Schedule**.

#### **5.3.7 Starview Water Quality Treatment Center**

During this reporting period, the Middletown Sanitary Recapture Phase II-Section C and Chenoweth Run Interceptor Section 1 project was advertised for construction and bids were received by MSD. The bids received were all significantly higher than both the MSD estimate and available budget. MSD entered into competitive negotiations with the two lowest, responsible bidders. Based on the negotiations, MSD re-bid the project to the two low bidders. During the next reporting period, it is anticipated that bids will be received and the project will be awarded for construction by MSD, with construction beginning August 2015. Due to the negotiations and the re-bid delays, the construction schedule has been extended three months. The Starview WQTC is scheduled to be off-line prior to March 31, 2016.

Schedules for CPE/CCP related capital projects are provided in **Section 5.4 – CMOM Activity Schedule**.

### 5.3.8 Berrytown Water Quality Treatment Center

During this reporting period, MSD awarded the Middletown Sanitary Recapture Phase II - Section D Project (Budget ID E93353) for the elimination of the Berrytown WQTC to Flynn Contracting. Construction has started and the project is currently 50% complete and scheduled for completion in November 2015. The plant flows will be diverted to the Floyds Fork WQTC. The gravity portion of this project is approximately 25% of the total length of gravity line required to eliminate the Starview WQTC. The Berrytown WQTC is scheduled to be off-line prior to December 31, 2015.

Schedules for CPE/CCP related capital projects are provided in **Section 5.4 – CMOM Activity Schedule**.

### 5.3.9 Other Water Quality Treatment Centers

CMOM related capital projects will be provided in the schedule provided as **Section 5.4 – CMOM Activity Schedule**.

- McNeely Lake – The McNeely Lake Sanitary Sewer and Force Main project is currently in construction phase and is scheduled for completion in July 2015. This gravity portion is approximately 75% of the total length of gravity line required to eliminate the McNeely Lake WQTC. A private developer is responsible for extending the remaining gravity sewer through a future residential development to within 600 feet of the McNeely Lake WQTC. The design of the interceptor that will serve to eliminate the McNeely Lake WQTC and the Brookbend Way PS is complete. MSD advertised, bid and awarded a construction contract for the decommissioning of the McNeely Lake WQTC and Brookbend PS. During the next reporting period, construction will continue for the decommissioning of the McNeely Lake WQTC and Brookbend PS. MSD anticipates completing the elimination of the McNeely Lake WQTC by December 31, 2015, but is dependent on the private developer portion being completed.
- Bancroft WQTC – The scope of this project has been modified from storage at Devondale PS to eliminating the Devondale PS as part of the IOAP and conveying flow to a 0.33 MGD Pump Station and a 0.25 MG Storage Basin at the Bancroft site. Construction continued for the excavation for the basin and work began on the construction of the gravity sewer and force main required for the project. During the next reporting period, it is anticipated that the earthwork for the basin will be complete as well as the gravity sewer and force main required by the project. The Bancroft WQTC and Devondale Pump Station are scheduled to be off-line by spring 2016 well ahead of the Consent Decree December 2021 date.
- Middletown Industrial Park WQTC – MSD's Board approved the acquisition of the Middletown Industrial Park WQTC system on January 26, 2015. The City of Middletown will continue to operate and maintain the sewer system until December 31, 2015. It is anticipated that flow will be diverted and the WQTC will be offline by that date. At that time, MSD will take over full operations and maintenance of the system. MSD initiated a design project to eliminate the plant. A private developer was responsible for the Middletown Sanitary Recapture Phase I Project which constructed a portion of the Chenoweth Run Interceptor to eliminate the Starview and Berrytown plants. This interceptor will also

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provide a gravity outlet for the Middletown Industrial Park WQTC. MSD completed the design to construct an approximately 800 linear foot collector line for the elimination. MSD advertised the project and accepted bids. During the next reporting period, MSD will award a construction contract and construction will begin. The Middletown Industrial Park WQTC is scheduled to be off-line by December 31, 2015.

#### **5.4 CMOM Activity Schedule**

CMOM capital project milestones for the period of January 1, 2015, through March 31, 2015, as well as a look-ahead for the period of April 1, 2015, through June 30, 2015, are provided in the schedule below.

MSD CMOM FY14 Annual Commitments Schedule (01 April 2015 - 31 December 2015)					2015								
Activity ID	Activity Name	Physical % Complete	Start	Finish	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>CMOM FY ANNUAL REPORT COMMITMENTS FINAL</b>													
<b>M-E-9 Infrastructure Rehabilitation</b>													
<b>Annual I/I FY13 Project (H09206)</b>													
A5100	Warranty	100%	30-Mar-14 A	30-Mar-15 A									
<b>Prospect Phase I Sanitary Sewer Rehabilitation Project (H11311)</b>													
A6470	Warranty	50%	23-Jan-13 A	23-Jan-16									
A3240	Construction	100%	20-Sep-13 A	23-Jan-15 A									
<b>Lea Ann Way East - Fegenbush Rehabilitation Project (C08433)</b>													
A4010	Warranty	100%	28-Feb-14 A	28-Feb-15 A									
<b>Middle Fork Beargrass Creek SSR Phase 1 (H11306)</b>													
A5370	Design	0%	01-Aug-15*	01-Aug-15									
<b>Annual I/I FY14 Project (H14184)</b>													
A5730	Construction	100%	28-Jan-14 A	28-Feb-15 A									
A6190	LAW Quad3 Whispering Hills Phase I	100%	28-Jan-14 A	28-Feb-15 A									
<b>Goose Creek PS SSES (H11407)</b>													
A4950	Planning	100%	01-Apr-13 A	31-Jan-15 A									
<b>Nightingale PS SSES (H11313)</b>													
A5110	Planning	100%	15-Jul-13 A	31-May-15 A									
<b>FY15 Annual Sewer Rehabilitation (H09208)</b>													
A5530	Construction	70%	01-Feb-15 A	01-Feb-16									
A5540	LAW Quad 3 - Whispering Hills Phase3 2	85%	15-Feb-15 A	31-Dec-15									
A5650	LAW Quad 4	50%	15-Feb-15 A	31-Dec-15									
<b>Melco Basin Tree Removal (F14171)</b>													
A6250	Design	100%	01-Nov-14 A	09-Apr-15 A									
A6260	Ad	100%	19-May-15 A										
A6270	Bid Open	100%	09-Jun-15 A										
A6280	Award	0%	14-Jul-15*										
A6290	Construction	0%	01-Aug-15*	30-Jun-16									
<b>Pump Station Operations Programs</b>													
<b>Lea Ann Way West Quads 1 &amp; 2 (H15125)</b>													
A6480	Ad	100%	09-Apr-15 A	31-Dec-15									
A6490	Bid	100%	04-May-15 A										
A6500	Award	100%	26-May-15 A										
A6510	Construction	3%	22-Jun-15 A	31-Dec-15									
<b>34th Street Flood Pump Station Gate 71 Replacement (F15008)</b>													
A6520	Ad	100%	17-Jun-15 A										
A6530	Bid	0%	08-Jul-15*										
A6540	Award	0%	14-Jul-15*										
A6550	Construction	0%	01-Aug-15*	01-Nov-15									
<b>O-A-2 Emergency Operation Programs</b>													
<b>Royster Basin Generator Project (H12163)</b>													
A4840	Construction	100%	28-Aug-14 A	18-Jan-15 A									
<b>St. Matthews #4 Pump Station Modification Project (H14211)</b>													
A5840	Warranty	55%	29-Aug-14 A	29-Aug-15									
<b>4th Street FPS Gate and Switch Gear Replacement Project (F12095)</b>													
A5150	Design	95%	04-Jan-13 A	22-Jul-15									
A5160	Ad	0%	01-Aug-15*										
A5170	Bid Open	0%	01-Sep-15*										

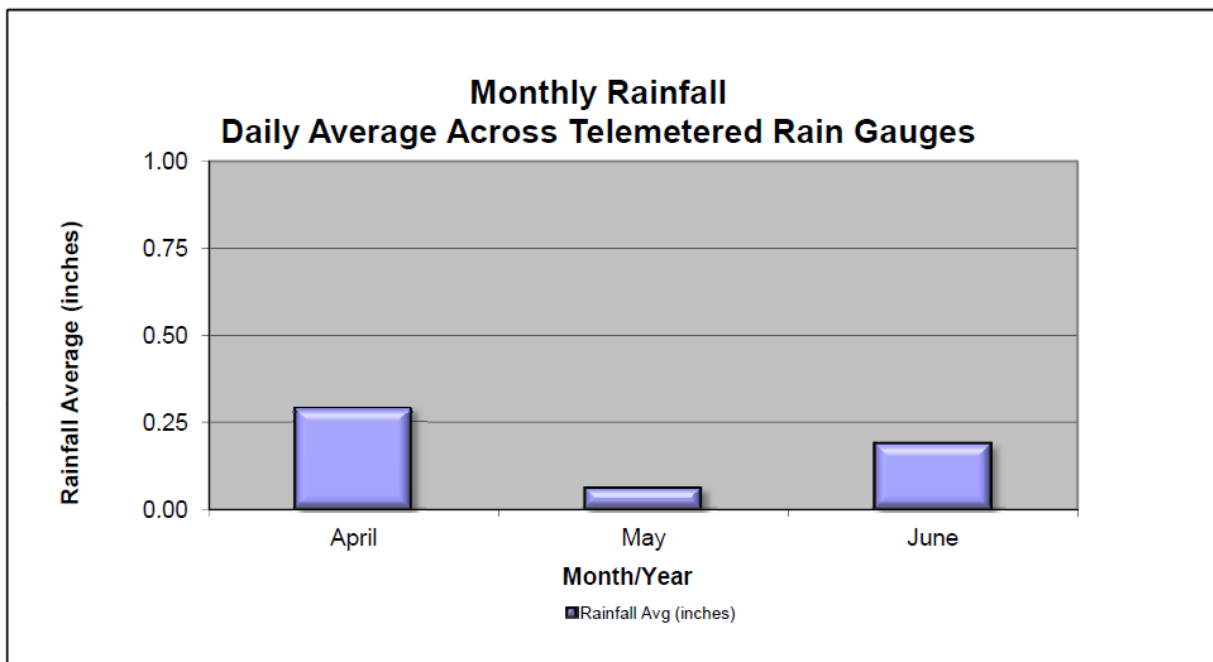
MSD CMOM FY14 Annual Commitments Schedule (01 April 2015 - 31 December 2015)						2015							
Activity ID	Activity Name	Physical % Complete	Start	Finish	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A5180	Award	0%	28-Sep-15*										
A5190	Construction	0%	01-Nov-15*	01-Nov-16									
<b>Melco Basin Crane (F14170)</b>			01-Dec-14 A	01-Jul-16									
A6200	Design	100%	01-Dec-14 A	10-Apr-15 A									
A6210	Ad	100%	24-Apr-15 A										
A6220	Bid Open	100%	19-May-15 A										
A6230	Award	0%	27-Jul-15*										
A6240	Construction	0%	01-Sep-15*	01-Jul-16									
<b>Starkey Flood Pump Station Rooftop A/C (F15006)</b>			15-Dec-14 A	17-Mar-16									
A5660	Construction	100%	15-Dec-14 A	17-Mar-15 A									
A6560	Warranty	30%	18-Mar-15 A	17-Mar-16									
<b>Bridgepointe Pump Station Access Road</b>			24-Mar-15 A	01-Jun-16									
A6310	Ad	100%	24-Mar-15 A										
A6330	Award	100%	17-Apr-15 A										
A6320	Bid Open	100%	17-Apr-15 A										
A6300	Construction	100%	20-Apr-15 A	01-Jun-15 A									
A6570	Warranty	10%	02-Jun-15 A	01-Jun-16									
<b>Fairway View Pump Station Upgrade (H09177)</b>			31-Dec-14 A	06-May-16									
A6350	Warranty	50%	31-Dec-14 A	06-May-16									
<b>Riding Ridge Pump Station Improvements (H09175)</b>			15-Nov-14 A	15-Nov-15									
A6370	Warranty	10%	15-Nov-14 A	15-Nov-15									
<b>Rosa Terrace Pump Station Improvement</b>			03-Nov-14 A	10-Jul-16									
A6450	Construction	95%	03-Nov-14 A	10-Jul-15									
A6460	Warranty	0%	10-Jul-15	10-Jul-16									
<b>CPE/CPE Treatment Plant Activities</b>			20-Jun-14 A	31-Dec-15									
<b>West County Force Main Assessment (H09519)</b>			20-Jun-14 A	28-Feb-15 A									
A5340	Planning	100%	20-Jun-14 A	28-Feb-15 A									
<b>West County Water Quality Treatment Center Gate 145 Electrical Service &amp; Actuator (F14164)</b>			15-Jan-15 A	31-Dec-15									
A6380	Design	100%	15-Jan-15 A	31-May-15 A									
A6580	Ad	100%	16-Jun-15 A										
A6590	Bid Open	0%	22-Jul-15*										
A6600	Award	0%	28-Jul-15*										
A6610	Construction	0%	01-Aug-15*	31-Dec-15									
<b>SWOR 2 Improvements</b>			15-Sep-14 A	22-Jul-15									
A6620	Construction	95%	15-Sep-14 A	22-Jul-15									



## SECTION 6: Project WIN Performance Overview

### 6.1 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. The following graph shows the Jefferson County average rainfall amounts for the last quarter. Data was pulled from MSD’s Rain Gauge Network.



A storm frequency analysis for CSOs is included as **Appendix B**.

### 6.2 Collection System Unauthorized Discharges

#### 6.2.1 Collection System Overflows to Waters of the United States (WUS)

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 will be included in the Annual Report for the period of July 1, 2014, through June 30, 2015, and will be posted on the Project WIN website. During this quarter, 208 unauthorized discharges to the Waters of the United States (WUS) have been reported.

Unauthorized Discharges (Waters of the United States)			
Problem	Dry Weather	Wet Weather	Total
Blending at Jtown WQTC	0	7	7
Bypass at WQTC	0	4	4
Lack of System Capacity	0	184	184
Mechanical Failure	1	0	1
Structural Failure	1	0	1
Utility Damaged MSD Asset	1	0	1
Pumped Overflow	1	1	2
Grease Blockage	3	0	3
Roots	2	2	4
Power Outage (LG&E)	1	0	1
<b>Total</b>	<b>10</b>	<b>198</b>	<b>208</b>

### April, May and June Weather Event Summary

April was a significant month for wet weather related overflow reporting. According to the National Weather Service, April was the third wettest on record for Louisville. Most of the wet weather activity occurred at the beginning of the month. On April 2nd and April 3rd, several rounds of thunderstorms and much higher than normal precipitation occurred. Similar patterns of rainfall occurred again on April 7th and 8th. By the middle of the month wet weather activity settled down and no significant wet weather events were recorded in the second half of the month. The photo below shows KY 22 washed out from heavy rainfall and flooding along Goose Creek in Louisville.



KY 22 washed out by floods April 3, 2015. National Weather Service Photo:  
[http://www.weather.gov/lmk/april\\_2015\\_summary](http://www.weather.gov/lmk/april_2015_summary)

By comparison May was very quiet. Temperatures were warm and the weather was dry with the exception of a few small thunderstorms. There were no significant rain events and no wet weather related overflow events to report.

In June there were two small weather events centered around the remnants of Tropical Storm Bill. These events occurred June 18th and June 20th. Some wet weather related overflows were reported as a result of these storms. Otherwise, June was a quiet month for weather activity.

### 6.2.2 Overflows to Ground (EXT)

MSD recorded information related to overflows to the ground that did not reach Waters of the United States for the reporting period. This information is entered and maintained in Hansen utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. These overflows will be included in the Annual Report for the period of July 1, 2014, through June 30, 2015.

### 6.2.3 Overflows to Interior (INT)

MSD recorded information related to overflows to building interiors for the reporting period. This information is entered and maintained in Hansen utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. These overflows, that are the result of an issue in the main line, will be included in the Annual Report for the period of July 1, 2014, through June 30, 2015.

### 6.2.4 Dry Weather CSOs

MSD recorded information related to dry weather overflows from permitted combined sewer overflow outfalls. This information is entered and maintained in Hansen utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. A detailed report of these overflows will be included in the Annual Report for the period of July 1, 2014, through June 30, 2015. The table below summarizes dry weather CSOs that occurred during the quarter. **Appendix A-1** includes details on the dry weather overflows that occurred in the quarter.

There was one dry weather overflow recorded at CSOs with a volume of 1,000 gallons.

Dry Weather CSO - April 1, 2015 - June 30, 2015					
CSO	Type of Discharge	Date/Time	Problem	Cause	Volume (GAL)
CSO137	DISDW	4/22/15 12:11 PM	PUMPED OVERFLOW	POSSIBLE BREAK DOWN OF PIPE	1,000

### 6.3 CSO Reductions

Included in **Appendix B** is the CSO data for this quarter. A summary of any data anomalies and the CSO data for each monitored overflow has been graphed along with rainfall information from the nearest rain gauge to facilitate review of the overflows that occurred.

- No CSO reduction projects were completed during the reporting period.

### 6.4 SSO Reductions

Estimation of SSO volume is not available in the same manner as it is for the CSO locations. The SSO volume reductions are estimates based on actual observations or from flow monitoring information.

- No SSO reduction projects were completed during the reporting period.

### 6.5 Gravity Line Preventive Maintenance

Each quarter, data and statistics relating to the cleaning, inspection, and maintenance of sewer assets performed under the Gravity Line Preventive Maintenance (GLPM) are reported. The following data was compiled for the period of April 1, 2015, through June 30, 2015. The first table includes data and targets. The second table includes unplanned maintenance and other maintenance activities that are performed in response to inspection.

Rolling Quarterly GLPM Performance With Targets							
	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Total	Target/ qtr	% of Annual Target
<b>Combined Sewer Area</b>							
Catch Basins Cleaned CSO Area - PM	3,097	6,741	6,015	<b>5,943</b>	21,796	4,460	33%
CSO Inspections	1,288	1,790	1,239	<b>1,301</b>	5,618	1,272	26%
<b>Sanitary Sewer Area</b>							
Catch Basins Cleaned SSO Area - PM	685	1,397	45	<b>188</b>	2,315	1,144	4%
<b>County Wide</b>							
Sewer Main Inspections MSD Crews (LF)	334,927	184,384	166,228	<b>33,463</b>	719,002	198,000	4%
Sewer Main Inspections Contractor (LF)	124,237	141,872	272,606	<b>186,018</b>	724,733	198,000	23%
Total Inspections (LF)	459,164	326,256	438,834	<b>219,480</b>	1,443,735	396,000	14%

Rolling quarterly GLPM performance is related to unplanned maintenance; therefore no targets have been developed.

Rolling Quarterly GLPM Performance					
	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Total
<b>Combined Sewer Area</b>					
Catch Basins Cleaned CSO Area - UM	256	500	194	<b>319</b>	1,269
CSO Debris Removal WO	168	168	78	<b>169</b>	583
Chemical Root Treatment CSO Area (LF)	0	0	0	<b>0</b>	0
Root Cutting CSO Area (LF)	15,758	740	475	<b>1,804</b>	18,776
Flushing and Cleaning of Sewer Mains CSO Area (LF)	457,624	4,822	5,798	<b>7,112</b>	475,356
<b>Sanitary Sewer Area</b>					
Catch Basins Cleaned SSO Area - UM	67	71	42	<b>105</b>	285
Chemical Root Treatment SSO Area (LF)	0	48,803	178,302	<b>49,808</b>	276,913
Root Cutting SSO Area (LF)	48,289	24,253	15,057	<b>19,004</b>	106,603
Flushing and Cleaning of Sewer Mains SSO Area (LF)	496,040	53,352	23,000	<b>30,170</b>	602,563

## **6.6 Water Quality Treatment Center Bypasses**

### **6.6.1 Bypass Events**

The table below summarizes the bypasses that occurred during this reporting period.

### **6.6.2 Bypass Corrective Actions**

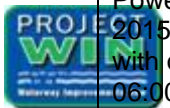
Each quarter, an assessment of bypasses is conducted to determine the root cause of the bypass, the failure category, corrective actions to be taken, possible programmatic solutions, and corrective action completion date. Refer to the table below for causes of bypasses and respective corrective actions that occurred April 1, 2015 through June 30, 2015.

Bypass Summary – April 1, 2015 to June 30, 2015					
DATE	WQTC	WORK ORDER	FAILURE CODE	BYPASS DESCRIPTION	FAILURE RESOLUTION
<b>Capacity (CAP)</b>					
4/3/2015	BERRYTOWN	2337674	CAP	The treatment plant experienced a bypass when a heavy rain event caused elevated water levels in plant clarifier weirs and aeration tanks. The bypassed flow received preliminary and some secondary treatment. Because of the elevated levels in the tanks, water flowed over and out of clarifiers and aeration tanks. Air to aeration tanks was shut off prior to bypass. Approximately 760,000 gallons overflowed. This plant is designed for 0.075 MGD. We are unable to determine the exact flow rate at the time of bypass because the plant flow meter was maxed at a rate of 0.430 MGD.	Plant is to be eliminated in 2015. Disinfected and cleaned by MSD staff.
4/8/2015	BERRYTOWN	2340559	CAP	On April 8, 2015, Berrytown WQTC bypassed disinfection and dechlorination treatment due to heavy rain. Because of elevated levels in the aeration tank, approximately 5,220 gallons were bypassed. As a precaution, MSD turned off plant aeration to minimize the loss of biosolids. The design flow at Berrytown WQTC is 0.075 MG. The exact flow rate at the time of the bypass cannot be calculated because the plant flow exceeded the plant flow meter maximum readings.	Plant is to be eliminated in 2015. Disinfected and cleaned by MSD staff.
<b>Human Error (OPN)</b>					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A

Bypass Summary – April 1, 2015 to June 30, 2015					
DATE	WQTC	WORK ORDER	FAILURE CODE	BYPASS DESCRIPTION	FAILURE RESOLUTION
<b>Facility Failure ( Mechanical - MCH, Electrical - ELE, Structural - SRT)</b>					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A



Bypass Summary – April 1, 2015 to June 30, 2015					
DATE	WQTC	WORK ORDER	FAILURE CODE	BYPASS DESCRIPTION	FAILURE RESOLUTION
<b>External Power failures (LGE Related-PWR)</b>					

Bypass Summary – April 1, 2015 to June 30, 2015					
DATE	WQTC	WORK ORDER	FAILURE CODE	BYPASS DESCRIPTION	FAILURE RESOLUTION
4/9/2015	MORRIS FORMAN	2341530	ELE	<p>Description of the noncompliance and its cause: On April 8, 2015 Morris Forman WQTC began bypassing the entire treatment system. At 9:35 PM, the plant experienced a failure of the electrical station for the incoming 69KV electrical feed. All plant systems shutdown including Final Effluent Pumping, which was in service due to the elevation of the Ohio River. The main influent flows to Morris Forman, Main Diversion Structure and Southwestern Pump Station, were shutdown to reduce as much as possible the impact of flooding inside the plant boundaries. Flow from Rubbertown industries was also suspended. The plant flow at the time of the failure was approximately 280 MGD. We are unable to verify the total number of gallons which completely bypassed the plant because, due to the electrical system failure, the plant had no SCADA, Telemetry, or flow recording capability. Period of noncompliance: Beginning at 9:40PM on April 8, 2015, Morris Forman continues to bypassing secondary clarification. All flow entering the plant is currently receiving Preliminary and Primary Treatment, Chlorination and Dechlorination. A portion of the flow is receiving treatment through one Bioroughing tower with some secondary treatment prior to discharge to the Ohio River. As of the date of this letter, the bypass event is on-going and a total number of gallons not receiving full treatment will have to be estimated due to the scope of the event. Remedial actions: Power was restored to Morris Forman at 05:30AM April 9, 2015, and Final Effluent Pumping was restored at 05:47AM with one pump in service, and three pumps in service by 06:00 AM with the primary effort being to drain the flooding from the plant and reestablish normal liquid levels.</p>	<p>On April 9th, at 7:30AM, a meeting was held to identify: a plan to investigate the cause of the power failure; remove flooding from the plant buildings; an assessment and investigative process to identify equipment replacement needs; a process to re-establish flow through functional plant processes; contractor needs to assist in the recovery process, and a sequence to restore treatment streams to normal operations in the shortest time possible. Additional comments: Operations and maintenance staffs are working around the clock to restore equipment and processes, and briefings are conducted at 7:30AM and 2:30PM</p>
July 30, 2015					

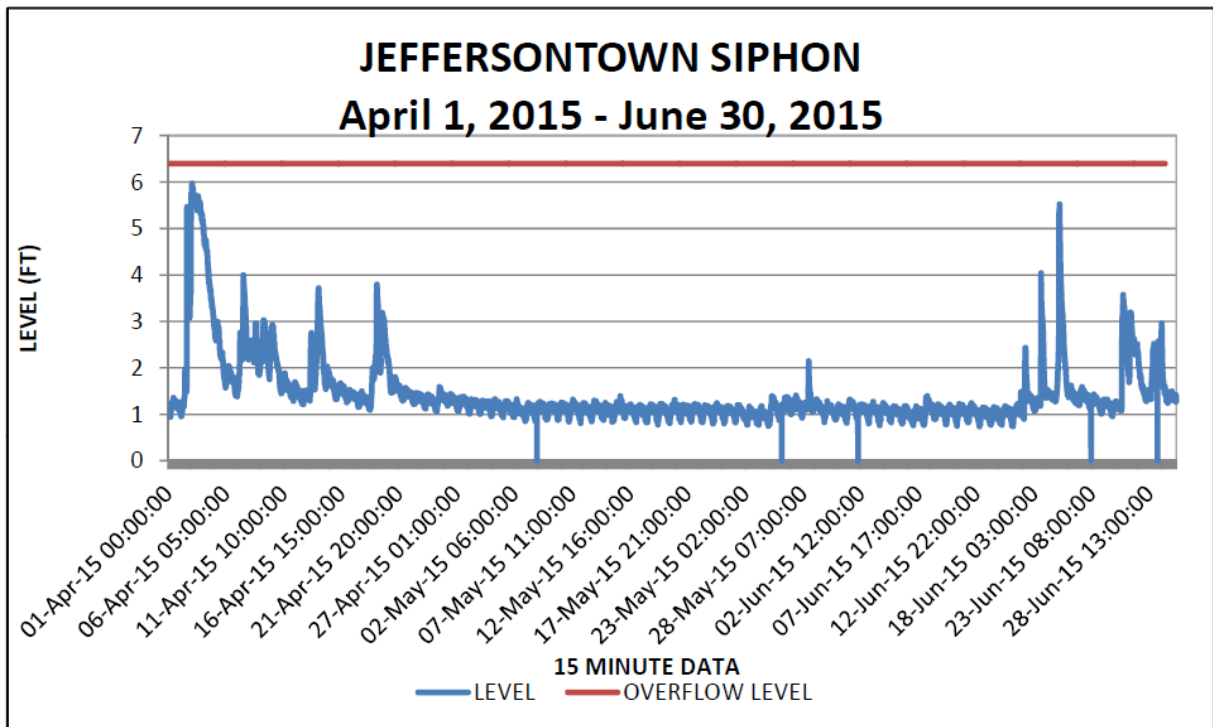
Bypass Summary – April 1, 2015 to June 30, 2015					
DATE	WQTC	WORK ORDER	FAILURE CODE	BYPASS DESCRIPTION	FAILURE RESOLUTION
<b>Utility Damage</b>					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A

### 6.6.3 Jeffersontown Water Quality Treatment Center

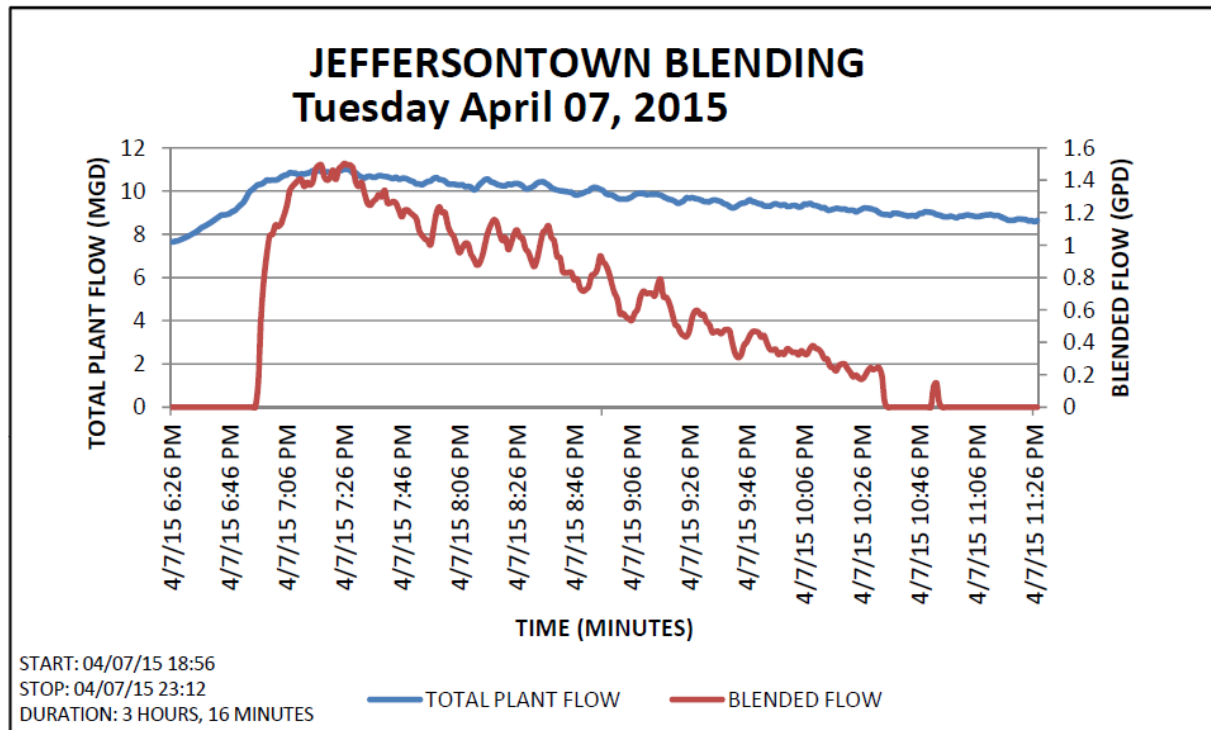
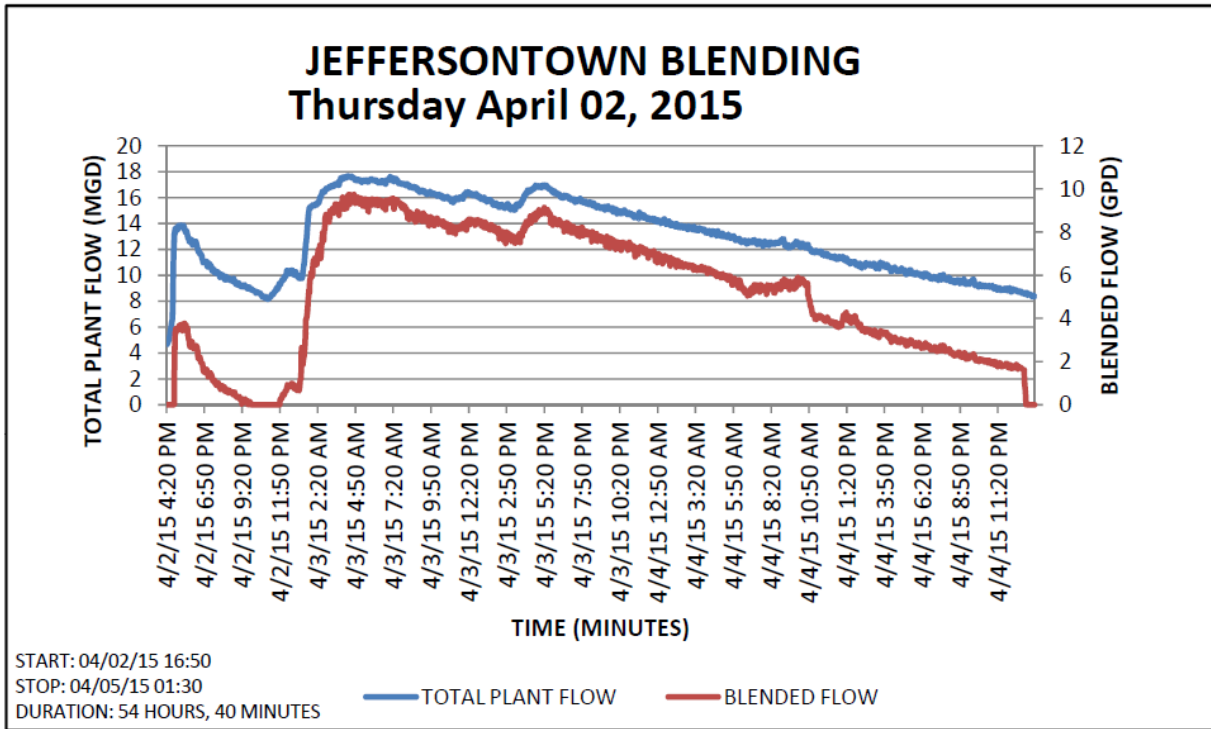
MSD submitted a Jeffersontown WQTC Process Control Plan on October 31, 2008, as required by paragraph 26.a of the Amended Consent Decree. MSD received comments on December 12, 2008, and resubmitted the plan January 16, 2009, and again on February 20, 2009. MSD received conditional approval of this document from EPA on April 1, 2009, pending finalization of the Amended Consent Decree that was under consideration by the Federal Court at the time the Process Control Plan was submitted. The Process Control Plan was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by an Order signed February 12, 2010, that was entered into public record February 15, 2010.

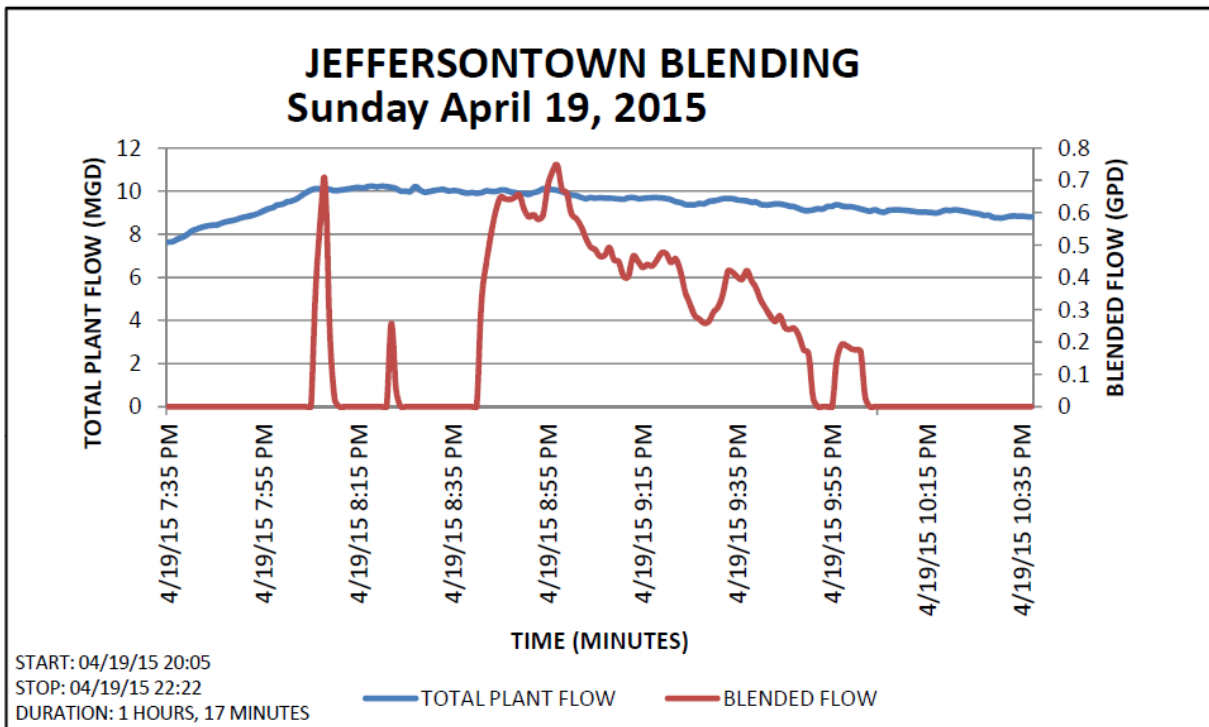
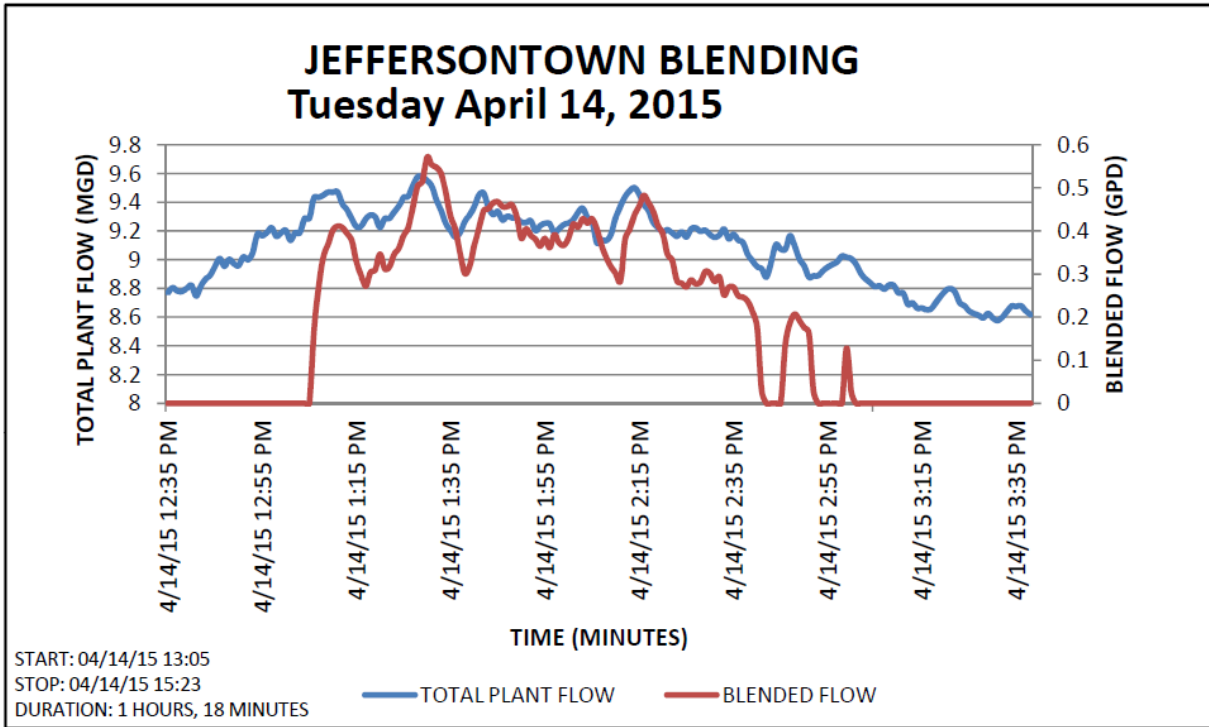
The following activities occurred at the Jeffersontown WQTC during the reporting period:

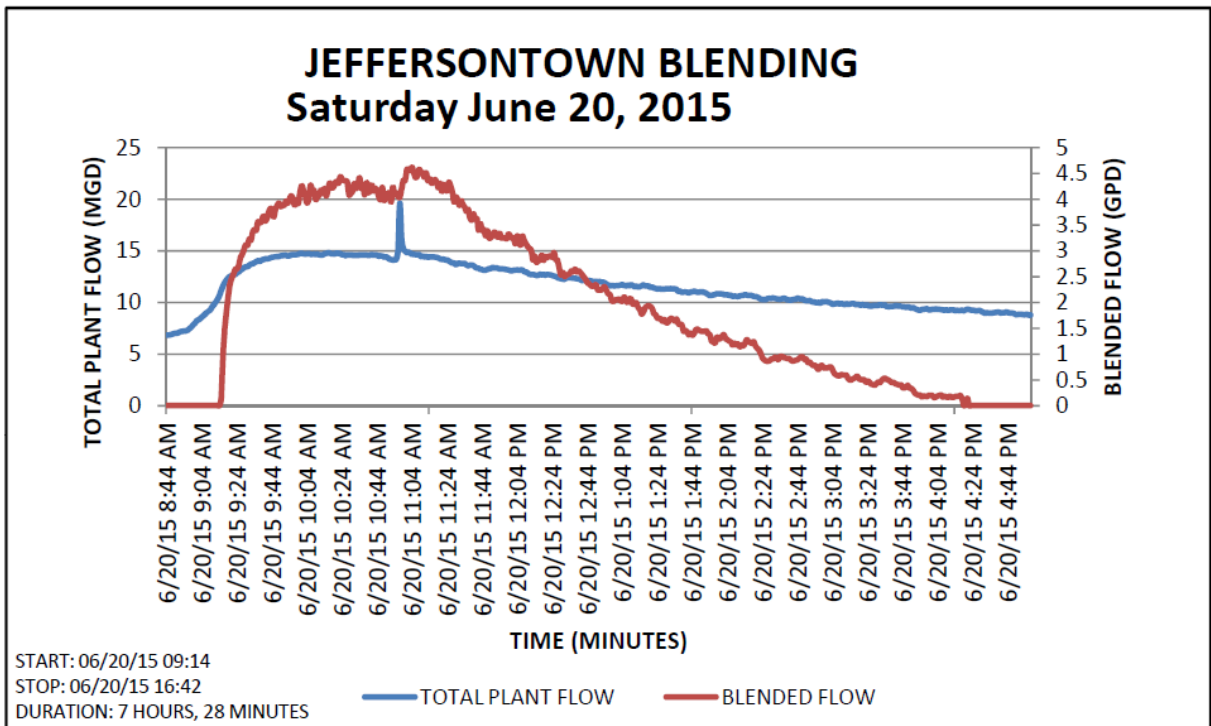
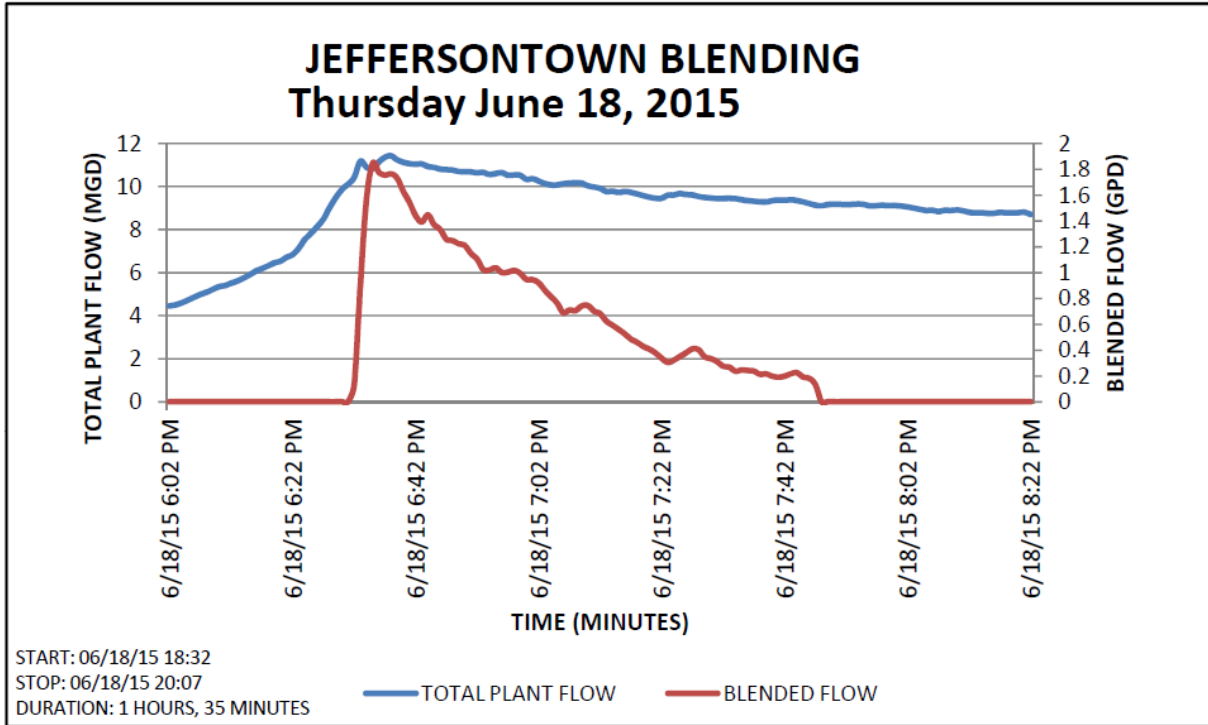
- Inspections were conducted upstream of the Jeffersontown WQTC Headworks five times. Refer to Section 2 for SSO Route information. Overflows were reported up stream of the siphon at manhole 28173 two times, once on April 2<sup>nd</sup> and once on June 20<sup>th</sup>.

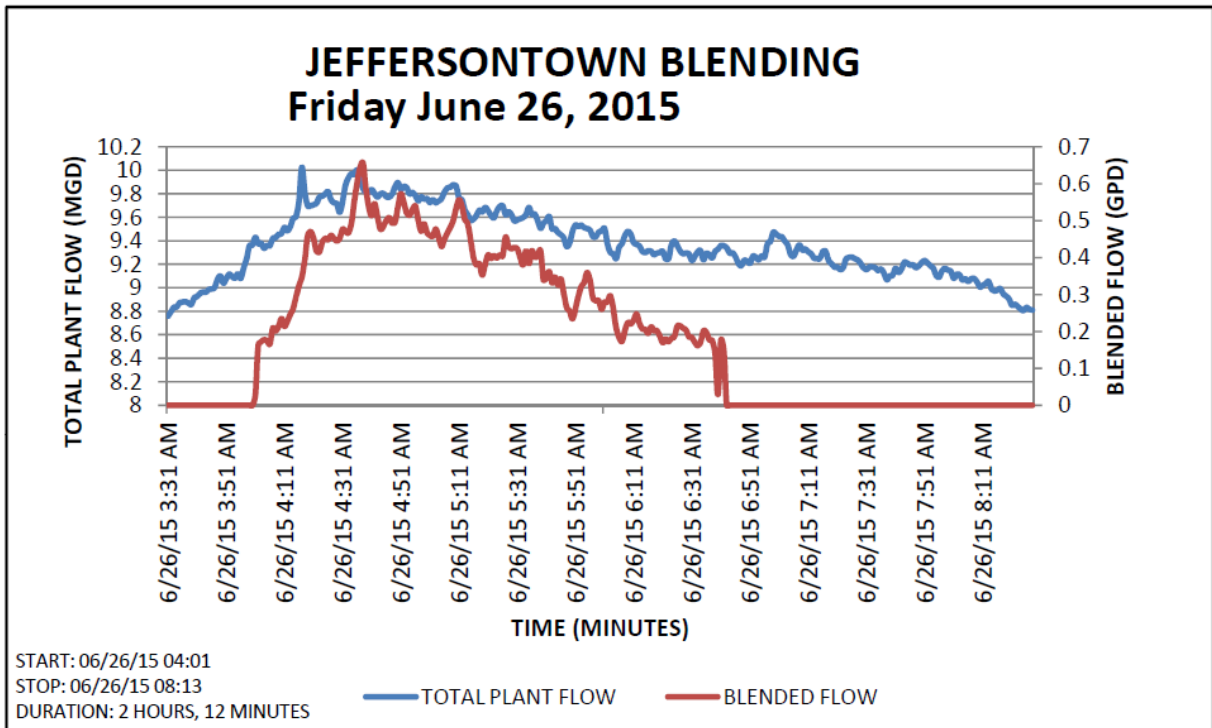


- There were seven blending events during the reporting period. Below are charts for each blending event that show total plant flow during the blending event.



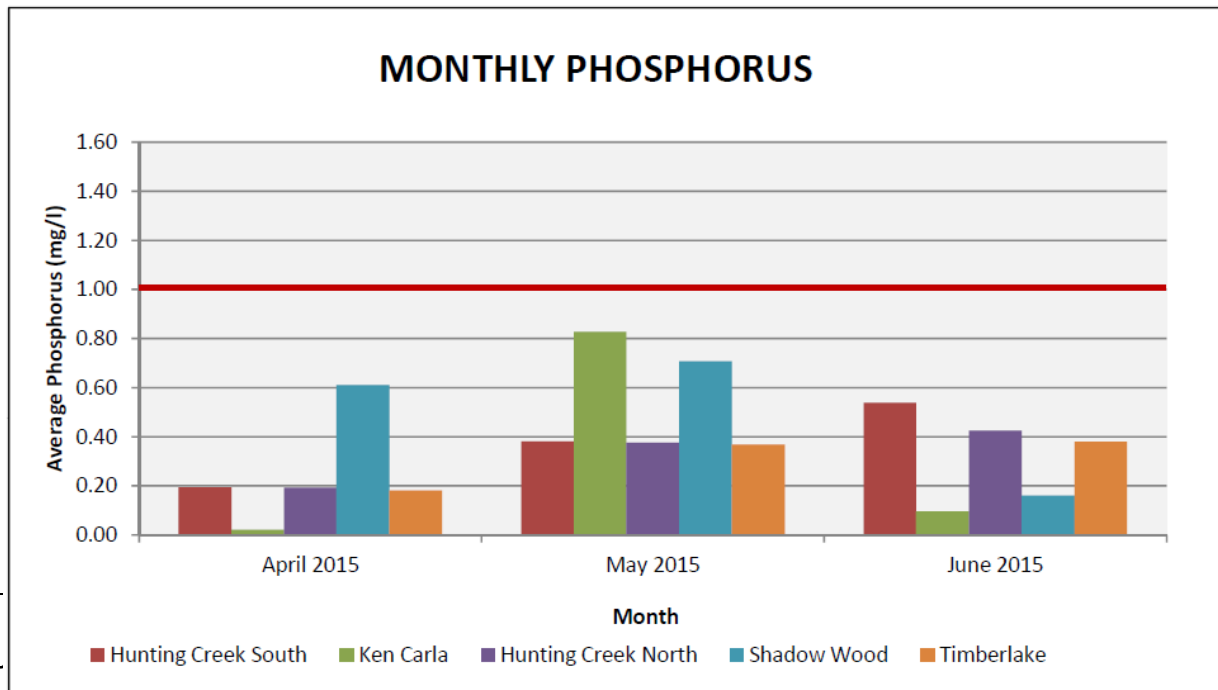






### 6.7 Phosphorus Monitoring at the Prospect WQTCs

As part of the Amended Consent Decree, MSD has agreed to submit phosphorus monitoring data including the calculations of monthly averages with the quarterly reports. MSD WQTCs were under the 1mg/l limit during the reporting period, per the Amended Consent Decree requirement. The following chart displays monthly average phosphorus results for the Prospect WQTCs.







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



**APPENDIX A-1**  
**UNAUTHORIZED DISCHARGES**  
**TO WATERS OF UNITED STATES**  
**APRIL 1, 2015 THROUGH JUNE 30, 2015**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	1258 ROYAL AVE	4/22/15 12:11 PM	04/22/15 03:31 PM	1,000	SEWER MANHOLE	CSO137	STREAM	SOUTH FORK BEARGRASS CREEK	POSSIBLE BREAK DOWN OF PIPE	PUMPED OVERFLOW	2346433	NONE NOTED. THERE IS NO DISCHARGE TO GROUND. SEWAGE DISCHARGING TO CREEK THROUGH OVERFLOW PIPE	WILL REQUIRE DIGGING ROOT CUTTER UP PIPE

Appendix A-2 - Discharge Work Orders – Bypass

**APPENDIX A-2**  
**UNAUTHORIZED DISCHARGES**  
**TO WATERS OF UNITED STATES**  
**APRIL 1, 2015 THROUGH JUNE 30, 2015**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
BERRYTOWN	KY0036501	1203 HEAFER RD	04/03/15 9:00: AM	04/04/15 10:20 AM	760,000	SEWER TREATMENT PLANT	MSD0209	STREAM	FLOYDS FORK	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY AND CLARIFIERS OVERFLOWED	BYPASS AT WQTC	2337674	MSD CLEANED & SANITIZED THE AREA	THE SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
BERRYTOWN	KY0036501	1203 HEAFER RD	04/08/15 4:40: AM	04/08/15 10:58 AM	5,220	SEWER TREATMENT PLANT	MSD0209	STREAM	FLOYDS FORK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	BYPASS AT WQTC	2340559	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
STARVIEW	KY0031712	423 BERMUDA WAY	04/09/15 9:40: PM	04/30/15 12:28 PM	9,999	SEWER TREATMENT PLANT	MSD0278	STREAM	OHIO RIVER	A TRANSFORMER EXPLODED ON THE NORTH FEED. THIS ELIMINATED ALL POWER TO THE PLANT.	BYPASS AT WQTC	2341530	MSD CREWS PUMPING AND VACTORING FLOODED AREAS.	POWER HAS BEEN RESTORED TO THE SOUTH FEED 04/09/2015 05:30 AM. SOME FLOW HAS BEEN DIVERTED TO THE DRG WQTC THROUGH THE NORTHERN DITCH PS.
MORRIS FORMAN	KY0022411	4522 ALGONQUIN PKY	06/29/15 4:29: PM	06/29/15 05:54 PM	665	SEWER TREATMENT PLANT	MSD0247	STREAM	CHENOWETH RUN	LG&E POWER FAIL	BYPASS AT WQTC	2379495	MSD CLEANED & SANITIZED THE AREA	INSTALLED GENERATOR UNTIL POWER RESTORED

Appendix A-3 - Discharge Work Orders – Blending

**APPENDIX A-3**  
**UNAUTHORIZED DISCHARGES**  
**TO WATERS OF UNITED STATES**  
**APRIL 1, 2015 THROUGH JUNE 30, 2015**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	04/02/15 4:50 PM	04/05/15 01:30 AM	12,588,944	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	BLENDING AT JTOWN WQTC	2337464	PIPE DISCHARGE SUBMERGED- NO CLEANUP	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	04/07/15 6:56 PM	04/07/15 11:12 PM	123,042	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	BLENDING AT JTOWN WQTC	2340538	PIPE DISCHARGE SUBMERGED- NO CLEAN UP	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	04/14/15 1:05: PM	04/14/15 03:23 PM	25,254	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	BLENDING AT JTOWN WQTC	2342968	PIPE DISCHARGED SUBMERGED- NO CLEAN UP	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	04/19/15 8:05: PM	04/19/15 10:22 PM	24,216	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	BLENDING AT JTOWN WQTC	2344718	NO DEBRIS	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	06/18/15 6:32: PM	06/18/15 08:07 PM	39,878	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	HEAVY RAIN, LACK OF SYSTEM CAPACITY	BLENDING AT JTOWN WQTC	2373849	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	06/20/15 9:14: AM	06/20/15 04:42 PM	682,245	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	BLENDING AT JTOWN WQTC	2374338	NO DEBRIS	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	06/26/15 4:01: AM	06/26/15 08:13 AM	39,579	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	BLENDING AT JTOWN WQTC	2375942	NO CLEAN UP	TEMPORARY BLENDING HAS BEEN NEGOTIATED FOR THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER

Appendix A-4 - Discharge Work Orders – Waters of the United States

**APPENDIX A-4**  
**UNAUTHORIZED DISCHARGES**  
**TO WATERS OF UNITED STATES**  
APRIL 1, 2015 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	4/2/15 4:50 PM	04/05/15 01:30 AM	12,588,944	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	BLENDING AT JTOWN WQTC	2337464	PIPE DISCHARGE SUBMERGED- NO CLEANUP	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER
MORRIS FORMAN	KY0022411	9732 BOXFORD WAY	4/2/15 6:04 PM	04/02/15 07:00 PM	26	SEWER MANHOLE	22950	GROUND	GOOSE CREEK	ROOTS IN THE MAIN SEWER	ROOTS	2337481	MSD WILL CLEAN IMPACTED AREA	ROOT CUT MAIN #2337488
MORRIS FORMAN	KY0022411	9731 BOXFORD WAY	4/2/15 6:13 PM	04/02/15 07:30 PM	15	SEWER MANHOLE	22949	DITCH	GOOSE CREEK	ROOTS IN MAIN	ROOTS	2337486	MSD WILL CLEAN IMPACTED AREA	ROOT CUT MAIN #2337488
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	4/2/15 4:20 PM	04/04/15 10:19 AM	1,000	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337490	WO# 2338551	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4108 LEE AVE	4/2/15 4:02 PM	04/04/15 09:33 AM	1,000	SEWER SERVICE LINE	KK14815019	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337491	WO# 2338556	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1600 BELMAR DR	4/2/15 4:03 PM	04/04/15 09:45 AM	1,000	SEWER MANHOLE	13946	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337494	WO# 2338569	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	4/2/15 4:15 PM	04/05/15 03:10 PM	1,000	SEWER MANHOLE	66349	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337495	WO# 2338782	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	4/2/15 4:14 PM	04/05/15 03:11 PM	10,000	SEWER MANHOLE	08717	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337497	WO# 2338783	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1726 FRASER DR	4/2/15 4:14 PM	04/06/15 02:15 PM	50,000	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337498	WO# 2339347	LOCATION INCLUDED IN IOAP.
DEREK R. GUTHRIE	KY0078956	6102 COOPER CHAPEL RD	4/2/15 5:20 PM	04/04/15 02:30 AM	9,500	SEWER LIFT STATION	MSD0130-PS	DITCH	FISHPOOL CREEK	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337502	MSD CLEANED & SANITIZED THE AREA	THIS LOCATION IS INCLUDED IN THE IOAP
DEREK R. GUTHRIE	KY0078956	6102 COOPER CHAPEL RD	4/2/15 5:20 PM	04/04/15 02:30 AM	99,500	SEWER MANHOLE	25479	CATCH BASIN	PENNSYLVANIA RUN	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337505	MSD CLEANED & SANITIZED THE AREA	THIS LOCATION IS INCLUDED IN THE IOAP
DEREK R. GUTHRIE	KY0078956	10304 CAVEN AVE	4/2/15 5:42 PM	04/04/15 06:48 AM	55,500	SEWER MANHOLE	27116	STREAM	MUD CREEK	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337526	MSD TO CLEAN AND SANITIZE AFFECTED AREA	INCLUDED IN IOAP
DEREK R. GUTHRIE	KY0078956	5006 LEA ANN WAY	4/3/15 4:10 AM	04/04/15 07:40 AM	4,966,000	SEWER LIFT STATION	MSD1010-PS	STREAM	NORTHERN DITCH	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	PUMPED OVERFLOW	2337552	NO DEBRIS	AUXILIARY PUMPS SET UP TO PREVENT BASEMENT FLOODING
MORRIS FORMAN	KY0022411	7404 ARROWWOOD RD	4/3/15 3:24 AM	04/05/15 08:20 AM	238,200	SEWER MANHOLE	21628-W	DITCH	GOOSE CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337553	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP
DEREK R. GUTHRIE	KY0078956	9317 LANTANA DR	4/3/15 2:00 AM	04/04/15 02:45 AM	37,125	SEWER MANHOLE	25484	STREAM	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337554	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP
DEREK R. GUTHRIE	KY0078956	9114 CINDERELLA LN	4/3/15 2:22 AM	04/04/15 03:10 AM	74,400	SEWER MANHOLE	102339	GROUND	FISHPOOL CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337555	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
DEREK R. GUTHRIE	KY0078956	4005 KIRBY LN	4/3/15 2:25 AM	04/05/15 10:59 PM	196,700	SEWER MANHOLE	61266	DITCH	FERN CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337556	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
MORRIS FORMAN	KY0022411	8410 SAUREL DR	4/3/15 4:00 AM	04/04/15 12:27 PM	146,025	SEWER MANHOLE	91624	GROUND	GOOSE CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337557	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
JEFFERSONTOWN	KY0025194	3406 DELL RD	4/3/15 4:07 AM	04/05/15 10:59 PM	203,600	SEWER MANHOLE	28415	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337559	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP



**APPENDIX A-4**  
**UNAUTHORIZED DISCHARGES**  
**TO WATERS OF UNITED STATES**  
APRIL 1, 2015 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
JEFFERSONTOWN	KY0025194	3501 MARLIN DR	4/3/15 4:07 AM	04/05/15 10:59 PM	203,600	SEWER MANHOLE	28416	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337560	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
JEFFERSONTOWN	KY0025194	3506 DELL RD	4/3/15 4:07 AM	04/05/15 10:59 PM	203,600	SEWER MANHOLE	28417	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337561	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
CEDAR CREEK	KY0098540	11306 WOODSONG CT	4/3/15 7:12 AM	04/04/15 08:03 PM	19,275	SEWER MANHOLE	94955	GROUND	HAWKINS RILL	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337576	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
MORRIS FORMAN	KY0022411	7713 WESTPORT RD	4/3/15 4:32 AM	04/04/15 01:46 AM	1,000	SEWER MANHOLE	105936	GROUND	GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337585	WO# 2338561	LOCATION INCLUDED IN IOAP.
HITE CREEK	KY0022420	5500 HITT RD	4/3/15 7:30 AM	04/04/15 06:15 AM	9,999	SEWER MANHOLE	102447A	GROUND	HITE CREEK	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337588	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	4/3/15 2:03 AM	04/05/15 02:17 PM	21,042,883	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337592	NO CLEAN UP PERFORMED - PIPE DISCHARGING UNDERWATER, DIRECTLY INTO STREAM.	LOCATION INCLUDED IN IOAP.
HITE CREEK	KY0022420	5500 HITT RD	4/3/15 7:30 AM	04/04/15 06:15 AM	9,999	SEWER MANHOLE	11877	STREAM	HITE CREEK	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337597	NO DEBRIS	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
JEFFERSONTOWN	KY0025194	11401 GRAND AVE	4/3/15 1:33 AM	04/04/15 03:26 PM	100	SEWER MANHOLE	28551	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337604	WO# 2338632	LOCATION INCLUDED IN IOAP.
HITE CREEK	KY0022420	5500 HITT RD	4/3/15 7:30 AM	04/04/15 06:15 AM	9,999	SEWER MANHOLE	11877A	STREAM	HITE CREEK	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337607	NO DEBRIS	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
CEDAR CREEK	KY0098540	9905 FAIRMOUNT RD	4/3/15 7:45 AM	04/06/15 10:59 PM	114,425	SEWER MANHOLE	81710	GROUND	BIG RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337611	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
CEDAR CREEK	KY0098540	9601 HARVARD COMMONS CT	4/3/15 7:57 AM	04/05/15 10:59 PM	576,300	SEWER MANHOLE	88545	GROUND	BIG RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337613	MSD CLEANED & SANITIZED THE AREA	SITE FOUND DURING RAIN EVENT RECON- WILL MONITOR & EVALUATE FOR REPAIR
DEREK R. GUTHRIE	KY0078956	10807 ORELAND MILL RD	4/3/15 8:15 AM	04/04/15 05:00 AM	62,250	SEWER LIFT STATION	MSD0164-LS	DITCH	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337636	MSD CLEANED & SANITIZED THE AREA	THE SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
MORRIS FORMAN	KY0022411	4640 BARBOUR LN	4/3/15 8:05 AM	04/04/15 10:00 AM	143,000	SEWER MANHOLE	42680	STREAM	LITTLE GOOSE CREEK	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337643	MSD CLEANED & SANITIZED THE AREA	THE SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
DEREK R. GUTHRIE	KY0078956	10601 LEVEN BLVD	4/3/15 8:25 AM	04/04/15 04:30 AM	12,050	SEWER MANHOLE	103958	GROUND	FISHPOOL CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337647	MSD CLEANED & SANITIZED THE AREA	THE SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
MORRIS FORMAN	KY0022411	2630 PHOENIX HILL DR	4/3/15 7:50 AM	04/04/15 12:10 AM	52,000	SEWER LIFT STATION	MSD1044-PS	GROUND	MUDDY FORK BEARGRASS CREEK	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337650	MSD CLEANED & SANITIZED THE AREA	SITE FOUND DURING RAIN EVENT RECON- WILL MONITOR & EVALUATE FOR REPAIR
BERRYTOWN	KY0036501	1203 HEAFER RD	4/3/15 9:00 AM	04/04/15 10:20 AM	760,000	SEWER TREATMENT PLANT	MSD0209	STREAM	FLOYDS FORK	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY AND CLARIFIERS OVERFLOWED	BYPASS AT WQTC	2337674	MSD CLEANED & SANITIZED THE AREA	THE SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
JEFFERSONTOWN	KY0025194	3258 RUCKRIEGEL PKY	4/3/15 7:46 AM	04/04/15 08:38 AM	54,000	SEWER MANHOLE	28173	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337677	WO# 2338636	LOCATION INCLUDED IN IOAP.
CEDAR CREEK	KY0098540	9719 COLLIER LN	4/3/15 8:30 AM	04/03/15 07:00 PM	126,000	SEWER MANHOLE	98022	STREAM	CEDAR CREEK	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337678	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
JEFFERSONTOWN	KY0025194	3317 DELL RD	4/3/15 7:50 AM	04/04/15 10:43 PM	18,000	SEWER MANHOLE	28413	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337680	WO# 2338641	LOCATION INCLUDED IN IOAP.

**APPENDIX A-4**  
**UNAUTHORIZED DISCHARGES**  
**TO WATERS OF UNITED STATES**  
APRIL 1, 2015 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
BERRYTOWN	KY0036501	1203 HEAFER RD	4/3/15 9:00 AM	04/04/15 10:20 AM	228,000	SEWER MANHOLE	24012	DITCH	CHENOWETH RUN,UPPER	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337681	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
DEREK R. GUTHRIE	KY0078956	4511 ST RITA DR	4/3/15 9:00 AM	04/03/15 05:50 PM	5,300	SEWER MANHOLE	17446	GROUND	ROBERSON RUN	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337683	WATER HAS NOT RECEDED	NO FURTHER ACTION NEEDED BY MSD PERSONNEL
JEFFERSONTOWN	KY0025194	3400 DELL RD	4/3/15 7:52 AM	04/04/15 07:45 AM	18,000	SEWER MANHOLE	28414	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337686	WO# 2338644	LOCATION INCLUDED IN IOAP.
HUNTING CREEK NORTH	KY0029106	7501 HUNTING CREEK DR	4/3/15 8:03 AM	04/03/15 05:05 PM	13,550	SEWER LIFT STATION	MSD1060-LS	DITCH	HARRODS CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337689	MSD CLEANED & SANITIZED THE AREA	SITE FOUND DURING RAIN EVENT RECON- WILL MONITOR & EVALUATE FOR REPAIR
HUNTING CREEK SOUTH	KY0029114	8619 WESTOVER DR	4/3/15 8:40 AM	04/03/15 05:30 PM	13,250	SEWER LIFT STATION	MSD1064-PS	DITCH	HARRODS CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337692	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
MORRIS FORMAN	KY0022411	2120 INDIAN HILLS TRL	4/3/15 8:55 AM	04/04/15 05:35 AM	124,000	SEWER LIFT STATION	MSD0186-PS	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337695	MSD CLEANED & SANITIZED THIS LOCATION	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
MORRIS FORMAN	KY0022411	5 RIO VISTA DR	4/3/15 8:55 AM	04/04/15 05:30 AM	310,000	SEWER MANHOLE	40879	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337696	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
MORRIS FORMAN	KY0022411	2 RIO VISTA DR	4/3/15 9:00 AM	04/04/15 05:30 AM	217,875	SEWER MANHOLE	40880	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337698	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
DEREK R. GUTHRIE	KY0078956	3706 NOBEL CT	4/3/15 9:45 AM	04/04/15 05:00 PM	9,999	SEWER LIFT STATION	MSD0049-PS	GROUND	MILL CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337702	NO DEBRIS	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
JEFFERSONTOWN	KY0025194	3406 CHARLANE PKY	4/3/15 8:00 AM	04/04/15 07:57 AM	36,000	SEWER MANHOLE	28451	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337730	WO# 2338650	LOCATION INCLUDED IN IOAP.
JEFFERSONTOWN	KY0025194	3506 CHARLANE PKY	4/3/15 8:05 AM	04/04/15 08:00 AM	18,000	SEWER MANHOLE	28250	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337733	WO# 2338652	LOCATION INCLUDED IN IOAP.
JEFFERSONTOWN	KY0025194	3620 CHARLANE PKY	4/3/15 8:20 AM	04/04/15 08:11 AM	72,000	SEWER MANHOLE	104289	GROUND	BEATTY BROOK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337736	WO# 2338656	LOCATION INCLUDED IN IOAP.
JEFFERSONTOWN	KY0025194	3620 CHARLANE PKY	4/3/15 8:30 AM	04/04/15 08:11 AM	18,000	SEWER MANHOLE	28340	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337753	WO# 2338658	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	804 N ARBOR DR	4/3/15 10:00 AM	04/04/15 11:40 AM	115,500	SEWER MANHOLE	00746	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF CAPACITY DUE TO RAIN EVENT IN THE AREA	LACK OF SYSTEM CAPACITY	2337759	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
MORRIS FORMAN	KY0022411	804 N ARBOR DR	4/3/15 10:00 AM	04/04/15 11:40 AM	38,500	SEWER MANHOLE	00056-W	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT IN THE AREA	LACK OF SYSTEM CAPACITY	2337761	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
MORRIS FORMAN	KY0022411	806 PINE WAY	4/3/15 9:55 AM	04/04/15 01:25 PM	82,500	SEWER LIFT STATION	MSD0057-LS	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337764	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
JEFFERSONTOWN	KY0025194	3500 ST EDWARDS DR	4/3/15 9:00 AM	04/04/15 08:04 AM	18,000	SEWER MANHOLE	28249	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337765	WO# 2338660	LOCATION INCLUDED IN IOAP.
DEREK R. GUTHRIE	KY0078956	7014 JOHN PAUL LN	4/3/15 10:00 AM	04/04/15 03:00 AM	102,000	SEWER MANHOLE	64054	GROUND	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT IN THE AREA	LACK OF SYSTEM CAPACITY	2337772	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
JEFFERSONTOWN	KY0025194	2711 GRASSLAND DR	4/3/15 9:14 AM	04/04/15 03:14 PM	36,000	SEWER MANHOLE	31733	DITCH	BEATTY BROOK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337777	WO# 2338661	LOCATION INCLUDED IN IOAP.

**APPENDIX A-4**  
**UNAUTHORIZED DISCHARGES**  
**TO WATERS OF UNITED STATES**  
APRIL 1, 2015 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
JEFFERSONTOWN	KY0025194	9514 TAYLORSVILLE RD	4/3/15 9:50 AM	04/04/15 06:45 AM	16,000	SEWER MANHOLE	28711	DITCH	BEATTY BROOK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337786	WO# 2338664	LOCATION INCLUDED IN IOAP.
JEFFERSONTOWN	KY0025194	2901 LIVINGSTON AVE	4/3/15 9:50 AM	04/04/15 07:32 AM	16,000	SEWER MANHOLE	28395	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337789	WO# 2338665	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	7900 SHELBYVILLE RD	4/3/15 7:19 AM	04/04/15 11:28 AM	22,500	SEWER MANHOLE	02935	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337791	WO# 2338666	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	7900 SHELBYVILLE RD	4/3/15 7:28 AM	04/06/15 06:10 AM	288,000	SEWER MANHOLE	02933	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337793	WO# 2339296	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	8021 CHRISTIAN CT	4/3/15 7:35 AM	04/04/15 11:33 AM	1,000	SEWER MANHOLE	90700	CATCH BASIN	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337794	WO# 2338667	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	8021 CHRISTIAN CT	4/3/15 7:45 AM	04/04/15 11:38 AM	150,000	SEWER MANHOLE	47593	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337795	WO# 2338701	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	9 MUIRFIELD PL	4/3/15 8:31 AM	04/04/15 11:54 AM	900,000	SEWER MANHOLE	01793	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337796	WO# 2338702	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	9 MUIRFIELD PL	4/3/15 8:31 AM	04/04/15 11:54 AM	39,000	SEWER MANHOLE	67535	GROUND	HURSTBOURNE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337797	WO# 2338704	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	8113 SHELBYVILLE RD	4/3/15 9:02 AM	04/04/15 12:17 PM	216,000	SEWER MANHOLE	30376	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337799	WO# 2338708	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	7913 SHELBYVILLE RD	4/3/15 8:10 AM	04/06/15 06:22 AM	432,000	SEWER MANHOLE	84155	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337800	WO# 2339285	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	207 BRUNSWICK RD	4/3/15 9:44 AM	04/04/15 12:39 PM	9,000	SEWER MANHOLE	21089A	DITCH	UPPER MILL CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337803	WO# 2339787	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	208 BRUNSWICK RD	4/3/15 9:44 AM	04/04/15 12:39 PM	9,000	SEWER MANHOLE	115183	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337805	WO# 2339795	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4609 BLENHEIM RD	4/3/15 9:38 AM	04/04/15 12:42 PM	100	SEWER MANHOLE	21170	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337807	NO DISCLEAN NEEDED, DUE TO MAGNITUDE OF STORM.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4609 BLENHEIM RD	4/3/15 9:38 AM	04/04/15 12:42 PM	100	SEWER MANHOLE	21171	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337809	NO DISCLEAN, DUE TO MAGNITUDE OF STORM.	LOCATION INCLUDED IN IOAP.
DEREK R. GUTHRIE	KY0078956	6615 MOORMAN RD	4/3/15 11:30 AM	04/04/15 10:10 AM	465,500	SEWER MANHOLE	22370	GROUND	MILL CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337813	CLEAN UP NOT POSSIBLE AT THIS TIME DUE TO AREA FLOODING. MSD WILL CLEAN AS SOON AS POSSIBLE. DISCLN #2339908	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
CEDAR CREEK	KY0098540	7702 CEDAR CREEK RD	4/3/15 2:30 AM	04/05/15 10:00 AM	9,999	SEWER MANHOLE	83011	GROUND	CEDAR CREEK	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337820	MSD TO CLEAN AND SANITIZE AFFECTED AREA	AREA INCLUDED IN IOAP
CEDAR CREEK	KY0098540	7906 GAINSBOROUGH CT	4/3/15 2:30 AM	04/03/15 04:00 PM	99,999	SEWER MANHOLE	67997	STREAM	LITTLE CEDAR CREEK	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337822	MSD TO CLEAN AND SANITIZE AFFECTED AREA	AREA INCLUDED IN IOAP
DEREK R. GUTHRIE	KY0078956	6810 SANDSTONE BLVD	4/3/15 2:30 AM	04/04/15 08:00 AM	9,999	SEWER MANHOLE	29948	GROUND	FERN CREEK	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337826	MSD TO CLEAN AND SANITIZE AFFECTED AREA	INCLUDED IN IOAP
DEREK R. GUTHRIE	KY0078956	6808 SANDSTONE BLVD	4/3/15 2:30 AM	04/03/15 11:00 AM	9,999	SEWER MANHOLE	31073	DITCH	FERN CREEK	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337831	MSD TO CLEAN AND SANITIZE AFFECTED AREA	AREA INCLUDED IN IOAP

**APPENDIX A-4**  
**UNAUTHORIZED DISCHARGES**  
**TO WATERS OF UNITED STATES**  
APRIL 1, 2015 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
DEREK R. GUTHRIE	KY0078956	6808 SANDSTONE BLVD	4/3/15 2:30 AM	04/03/15 11:00 AM	9,999	SEWER MANHOLE	31074	DITCH	FERN CREEK	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337836	MSD TO CLEAN AND SANITIZE AFFECTED AREA	AREA LOCATED IN IOAP
DEREK R. GUTHRIE	KY0078956	8304 CLOVERPORT DR	4/3/15 2:30 AM	04/03/15 04:00 PM	9,999	SEWER MANHOLE	29239	GROUND	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337846	MSD TO CLEAN AND SANITIZE AFFECTED	AREA INCLUDED IN MSD'S IOAP
DEREK R. GUTHRIE	KY0078956	5109 MARJORIE DR	4/3/15 2:30 AM	04/03/15 04:00 PM	9,999	SEWER MANHOLE	35309	GROUND	MANSLICK BRANCH	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337851	MSD TO CLEAN AND SANITIZE AFFECTED AREA	AREA INCLUDED IN IOAP
BERRYTOWN	KY0036501	1203 HEAFER RD	4/3/15 12:42 PM	04/04/15 10:20 AM	64,900	SEWER LIFT STATION	MSD0209A-PS	GROUND	FLOYDS FORK	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2337876	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
MORRIS FORMAN	KY0022411	3542 FINCASTLE RD	4/3/15 5:34 AM	04/04/15 09:56 AM	1,000	SEWER SERVICE LINE	34093542	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337886	WO# 2338711	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3530 FINCASTLE RD	4/3/15 5:31 AM	04/04/15 10:00 AM	10,000	SEWER MANHOLE	36763	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337894	WO# 2339745	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3536 FINCASTLE RD	4/3/15 5:32 AM	04/04/15 09:57 AM	10,000	SEWER MANHOLE	99259	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337896	WO# 2338717	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4103 LEE AVE	4/3/15 5:05 AM	04/04/15 09:39 AM	10,000	SEWER MANHOLE	104223	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337899	WO# 2339751	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4119 LEE AVE	4/3/15 10:42 AM	04/04/15 09:39 AM	10,000	SEWER MANHOLE	104231	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337903	WO# 2339764	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4119 LEE AVE	4/3/15 6:02 AM	04/04/15 08:15 AM	3,000	SEWER MANHOLE	13943	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337906	WO# 2339771	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1562 MCKAY AVE	4/3/15 4:51 AM	04/04/15 09:31 AM	10,000	SEWER MANHOLE	13931	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337909	WO# 2338719	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	2216 FAIRLAND AVE	4/3/15 9:22 AM	04/04/15 07:12 AM	10,000	SEWER MANHOLE	49445	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337912	WO# 2338720	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1568 MCKAY AVE	4/3/15 4:50 AM	04/04/15 09:30 AM	10,000	SEWER SERVICE LINE	KK14849419	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337916	WO# 2338721	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4313 PRUITT CT	4/3/15 4:39 AM	04/04/15 08:00 AM	10,000	SEWER MANHOLE	08427	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337920	WO# 2338722	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4315 PRUITT CT	4/3/15 8:25 AM	04/04/15 08:00 AM	10,000	SEWER MANHOLE	08426	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337922	WO# 2338724	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4339 PRUITT CT	4/3/15 8:30 AM	04/04/15 08:04 AM	10,000	SEWER MANHOLE	08431	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337928	WO# 2338726	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4341 PRUITT CT	4/3/15 12:11 PM	04/04/15 08:05 AM	10,000	SEWER SERVICE LINE	85097	GROUND	PADDY RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337930	WO# 2338727	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4345 PRUITT CT	4/3/15 12:10 PM	04/04/15 08:03 AM	10,000	SEWER SERVICE LINE	85055	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337931	WO# 2338728	LOCATION INCLUDED IN IOAP
JEFFERSONTOWN	KY0025194	3416 TUCKER WOOD LN	4/3/15 1:30 PM	04/03/15 08:35 PM	4,240	SEWER LIFT STATION	MSD1115-PS	GROUND	POPE LICK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337935	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP

**APPENDIX A-4**  
**UNAUTHORIZED DISCHARGES**  
**TO WATERS OF UNITED STATES**  
APRIL 1, 2015 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	4332 PRUITT CT	4/3/15 8:28 AM	04/04/15 08:10 AM	10,000	SEWER SERVICE LINE	085100290046 A	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337937	WO# 2338729	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4327 PRUITT CT	4/3/15 8:24 AM	04/04/15 08:01 AM	1,000	SEWER SERVICE LINE	135273	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337938	WO# 2338730	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4103 LEE AVE	4/3/15 5:00 AM	04/06/15 09:38 AM	16,000	SEWER MANHOLE	104224	GROUND	UNNAMED TRIBUTARY	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337941	WO# 2339303	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4119 LEE AVE	4/3/15 2:34 PM	04/04/15 09:43 AM	10,000	SEWER MANHOLE	13944	GROUND	UNNAMED TRIBUTARY	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337945	WO# 2338731	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	2219 RICHLAND AVE	4/3/15 11:20 AM	04/04/15 07:10 AM	10,000	SEWER MANHOLE	49446	STREAM	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337948	WO# 2338732	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1619 NIGHTINGALE RD	4/3/15 6:31 AM	04/04/15 10:03 AM	10,000	SEWER MANHOLE	13833	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2337950	WO# 2338733	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1707 EAGLE NEST WAY	4/3/15 1:45 PM	04/04/15 08:30 AM	166,500	SEWER MANHOLE	62418	GROUND	GOOSE CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337962	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
MORRIS FORMAN	KY0022411	1707 EAGLE NEST WAY	4/3/15 1:45 PM	04/04/15 08:30 AM	222,000	SEWER MANHOLE	62417	STREAM	GOOSE CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2337964	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
DEREK R. GUTHRIE	KY0078956	1081 SPRINGVIEW DR	4/3/15 4:00 PM	04/03/15 10:10 PM	9,000	SEWER MANHOLE	27628	GROUND	FILSON FORK	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2338298	MSD TO CLEAN AND SANITIZE AFFECTED AREA	AREA INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	5423 TRACY WAY	4/3/15 4:05 PM	04/04/15 06:00 AM	12,525	SEWER LIFT STATION	MSD0002-PS	DITCH	MILL CREEK	RAIN EVENT CAUSED LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2338302	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
MORRIS FORMAN	KY0022411	1910 CHARBDIN PL	4/3/15 1:15 PM	04/04/15 02:15 PM	132,000	SEWER MANHOLE	65606	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338312	WO# 2338734	LOCATION INCLUDED IN IOAP.
DEREK R. GUTHRIE	KY0078956	6926 SANDSTONE BLVD	4/3/15 5:00 PM	04/03/15 08:20 PM	20,000	SEWER MANHOLE	29933	GROUND	FERN CREEK	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2338314	MSD TO CLEAN AND SANITIZE AFFECTED AREA	INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1804 ROUND RIDGE RD	4/3/15 1:03 PM	04/06/15 06:44 AM	72,000	SEWER MANHOLE	65623	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338318	WO# 2339309	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	37 ARROWHEAD RD	4/3/15 1:59 PM	04/04/15 02:38 PM	10,000	SEWER MANHOLE	89791	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338322	WO# 2338735	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3317 BROWNSBORO RD	4/3/15 2:08 PM	04/04/15 02:53 PM	36,000	SEWER MANHOLE	26752	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338328	WO# 2338737	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4002 BROOKFIELD AVE	4/3/15 2:25 PM	04/04/15 02:53 PM	36,000	SEWER MANHOLE	24448	GROUND	CHERRYWOOD CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338330	WO# 2338738	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1913 CHARBDIN PL	4/3/15 1:32 PM	04/04/15 02:15 PM	99,000	SEWER MANHOLE	16455	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338339	WO# 2338739	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4801 CASSIA CT	4/3/15 7:19 PM	04/06/15 06:44 AM	360,000	SEWER MANHOLE	46623	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338347	WO# 2339312	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1910 CHARBDIN PL	4/3/15 1:20 PM	04/04/15 02:15 PM	78,000	SEWER MANHOLE	46627	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338356	WO# 2338740	LOCATION INCLUDED IN IOAP.

**APPENDIX A-4**  
**UNAUTHORIZED DISCHARGES**  
**TO WATERS OF UNITED STATES**  
APRIL 1, 2015 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	1802 ROUND RIDGE RD	4/3/15 1:20 PM	04/04/15 02:15 PM	39,000	SEWER MANHOLE	65610	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338365	WO# 2338743	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	2504 WYETH CT	4/3/15 4:33 PM	04/04/15 07:23 AM	10,000	SEWER MANHOLE	66232	STREAM	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338369	WO# 2338746	LOCATION INCLUDED IN IOAP.
DEREK R. GUTHRIE	KY0078956	9718 TITAN DR	4/3/15 7:23 PM	04/03/15 10:25 PM	4,500	SEWER MANHOLE	61667	GROUND	MUD CREEK	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2338375	MSD TO CLEAN AND SANITIZE AFFECTED AREA	INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	3305 INDIAN CREEK CT	4/3/15 1:28 PM	04/05/15 05:53 PM	10,000	SEWER MANHOLE	51160	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338436	WO# 2338784	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3302 TROUT CREEK DR	4/3/15 1:25 PM	04/05/15 05:58 PM	10,000	SEWER MANHOLE	23211	STREAM	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338439	WO# 2338786	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3305 BENT CREEK CT	4/3/15 1:15 PM	04/04/15 11:32 AM	10,000	SEWER SERVICE LINE	BU05074039	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338442	WO# 2338748	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3303 TROUT CREEK DR	4/3/15 1:22 PM	04/05/15 05:50 PM	10,000	SEWER SERVICE LINE	BU05091039	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338446	WO# 2338789	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1122 ROSTREVOR CIR	4/3/15 2:20 PM	04/04/15 07:26 AM	600,000	SEWER MANHOLE	45900	DITCH	HAWKINS RILL	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338449	WO# 2338749	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1700 SULGRAVE RD	4/3/15 3:15 PM	04/04/15 07:47 AM	24,000	SEWER MANHOLE	15195	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338452	WO# 2338753	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3920 DUTCHMANS LN	4/3/15 5:04 PM	04/04/15 03:22 PM	825,000	SEWER MANHOLE	96673	STREAM	WEICHER CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338460	WO# 2338757	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1552 CHEROKEE RD	4/3/15 4:24 PM	04/06/15 05:45 AM	144,000	SEWER MANHOLE	40471	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338465	WO# 2339320	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1106 BROADFIELDS DR	4/3/15 5:14 PM	04/04/15 03:17 PM	30,000	SEWER MANHOLE	74513	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338469	WO# 2338758	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1108 DUPONT CIR	4/3/15 4:58 PM	04/04/15 03:24 PM	9,000	SEWER MANHOLE	43726	GROUND	WEICHER CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338470	WO# 2338759	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1700 SULGRAVE RD	4/3/15 3:15 PM	04/04/15 07:52 AM	180,000	SEWER MANHOLE	72289	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338472	WO# 2338761	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	4/3/15 2:30 PM	04/06/15 05:30 AM	18,000	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338474	WO# 2339323	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	202 OXMOOR LN	4/3/15 7:13 AM	04/06/15 06:00 AM	10,000	SEWER MANHOLE	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338475	WO# 2339330	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	201 BULLITT LN	4/3/15 7:13 AM	04/04/15 11:20 AM	10,000	SEWER MANHOLE	47582	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338477	WO# 2338763	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1000 N HURSTBOURNE PKY	4/3/15 8:48 AM	04/03/15 08:58 AM	10	SEWER MANHOLE	71004	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338478	SITE FLOODED, IT ONLY APPEARED TO HAVE DISCHARGED.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1012 ALTA CIR	4/3/15 3:15 PM	04/04/15 07:52 AM	10,000	SEWER MANHOLE	40559	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338479	WO# 2338765	LOCATION INCLUDED IN IOAP.

**APPENDIX A-4**  
**UNAUTHORIZED DISCHARGES**  
**TO WATERS OF UNITED STATES**  
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Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	1013 ALTA CIR	4/3/15 3:10 PM	04/06/15 05:39 AM	10,000	SEWER MANHOLE	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338480	WO# 2339334	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	4/3/15 3:10 PM	04/06/15 05:39 AM	1,000	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338481	WO# 2339341	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1012 ALTA CIR	4/3/15 3:10 PM	04/03/15 03:20 PM	10	SEWER MANHOLE	27005	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338482	SITE FLOODED, IT ONLY APPEARED TO HAVE DISCHARGED.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	2002 MILLVALE RD	4/3/15 2:30 PM	04/03/15 02:40 PM	10	SEWER MANHOLE	45829	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338483	SITE WAS FLOODED, IT ONLY APPEARED TO HAVE DISCHARGED.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	7401 SIX MILE LN	4/3/15 3:00 PM	04/04/15 07:15 AM	10,000	SEWER MANHOLE	32461	CATCH BASIN	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338484	WO# 2338713	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	7400 SIX MILE LN	4/3/15 3:00 PM	04/04/15 07:14 AM	10,000	SEWER MANHOLE	20491	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338485	WO# 2338715	LOCATION INCLUDED IN IOAP.
JEFFERSONTOWN	KY0025194	3402 CHARLANE PKY	4/3/15 7:55 AM	04/04/15 07:55 AM	1,000	SEWER MANHOLE	28453	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338521	WO# 2338526	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	2500 WYETH CT	4/3/15 4:29 PM	04/04/15 07:20 AM	1,000	SEWER MANHOLE	49514	STREAM	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338541	WO# 2338543	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	911 BROADFIELDS DR	4/3/15 4:38 AM	04/04/15 03:10 AM	1,000	SEWER MANHOLE	24507	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2338625	WO# 2338628	LOCATION INCLUDED IN IOAP.
HITE CREEK	KY0022420	10723 COPPER RIDGE DR	4/7/15 12:50 PM	04/07/15 02:30 PM	35,000	SEWER MANHOLE	108674	GROUND	HITE CREEK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2340198	MSD CLEANED & SANITIZED THE AREA	SITE FOUND DURING RAIN EVENT RECON- WILL MONITOR & EVALUATE FOR REPAIR
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	4/7/15 6:56 PM	04/07/15 11:12 PM	123,042	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	BLENDING AT JTOWN WQTC	2340538	PIPE DISCHARGE SUBMERGED- NO CLEAN UP	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	4/7/15 6:07 PM	04/07/15 07:35 PM	2,500	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2340542	WO# 2340638	LACK OF SYSTEM CAPACITY-HEAVY RAIN.
MORRIS FORMAN	KY0022411	1600 BELMAR DR	4/7/15 6:00 PM	04/07/15 07:30 PM	2,000	SEWER MANHOLE	13946	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2340544	WO# 2340639	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	4/7/15 7:13 PM	04/08/15 01:45 AM	558,009	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2340545	NO CLEAN UP PERFORMED - PIPE DISCHARGING UNDERWATER, DIRECTLY INTO STREAM	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1726 FRASER DR	4/7/15 7:41 PM	04/07/15 10:45 PM	2,000	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2340546	WO# 2340649	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1013 ALTA CIR	4/7/15 9:37 AM	04/08/15 09:13 AM	1,500	SEWER MANHOLE	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2340547	WO# 2340661	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	4/7/15 9:36 AM	04/08/15 09:18 AM	1,500	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2340548	WO# 2340670	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	4/7/15 9:30 AM	04/08/15 09:11 AM	4,500	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2340550	WO# 2340665	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	202 OXMOOR LN	4/7/15 10:41 AM	04/08/15 08:53 AM	4,500	SEWER MANHOLE	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2340551	WO# 2340602	LOCATION INCLUDED IN IOAP.

**APPENDIX A-4**  
**UNAUTHORIZED DISCHARGES**  
**TO WATERS OF UNITED STATES**  
APRIL 1, 2015 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	7404 ARROWWOOD RD	4/7/15 11:25 PM	04/08/15 01:06 AM	1,010	SEWER MANHOLE	21628-W	DITCH	GOOSE CREEK	RAIN EVENT CAUSED LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2340555	MSD CLEANED & SANITIZED THE AREA	STATION HAULED TO PREVENT DISCHARGE
BERRYTOWN	KY0036501	1203 HEAFER RD	4/8/15 4:40 AM	04/08/15 10:58 AM	5,220	SEWER TREATMENT PLANT	MSD0209	STREAM	FLOYDS FORK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	BYPASS AT WQTC	2340559	MSD CLEANED & SANITIZED THE AREA	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	4/8/15 10:31 PM	04/09/15 06:30 AM	3,000	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2341367	WO#2341411	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	4/8/15 10:38 PM	04/09/15 06:30 AM	3,000	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2341369	WO# 2341412	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	4/8/15 8:25 PM	04/09/15 07:26 PM	574,686	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2341381	NO CLEAN UP PERFORMED – PIPE DISCHARGING UNDERWATER, DIRECTLY INTO STREAM	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1726 FRASER DR	4/8/15 5:15 PM	04/10/15 02:05 PM	5,000	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2341382	WO# 2342126	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4522 ALGONQUIN PKY	4/9/15 9:40 PM	04/30/15 12:28 PM	9,999	SEWER TREATMENT PLANT	MSD0278	STREAM	OHIO RIVER	A TRANSFORMER EXPLODED ON THE NORTH FEED. THIS ELIMINATED ALL POWER TO THE PLANT.	BYPASS AT WQTC	2341530	MSD CREWS PUMPING AND VACTORING FLOODED AREAS.	POWER HAS BEEN RESTORED TO THE SOUTH FEED 04/09/2015 05:30 AM. SOME FLOW HAS BEEN DIVERTED TO THE DRG WQTC THROUGH THE NORTHERN DITCH PS.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	4/9/15 1:18 PM	04/09/15 05:02 PM	1,500	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2341733	WO# 2341762	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	4/9/15 1:05 PM	04/09/15 05:12 PM	2,000	SEWER MANHOLE	66349	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2341734	WO# 2341764	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	4/9/15 1:06 PM	04/09/15 05:18 PM	4,500	SEWER MANHOLE	08717	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2341735	WO# 2341766	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1600 BELMAR DR	4/9/15 1:01 PM	04/09/15 05:15 PM	2,500	SEWER MANHOLE	13946	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2341739	WO# 2341767	LOCATION INCLUDED IN IOAP.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	4/14/15 1:05 PM	04/14/15 03:23 PM	25,254	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	BLENDING AT JTOWN WQTC	2342968	PIPE DISCHARGED SUBMERGED- NO CLEAN UP	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	4/19/15 8:05 PM	04/19/15 10:22 PM	24,216	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	BLENDING AT JTOWN WQTC	2344718	NO DEBRIS	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER
MORRIS FORMAN	KY0022411	1258 ROYAL AVE	4/22/15 12:11 PM	04/22/15 03:31 PM	1,000	SEWER MANHOLE	CSO137	STREAM	SOUTH FORK BEARGRASS CREEK	POSSIBLE BREAK DOWN OF PIPE	PUMPED OVERFLOW	2346433	NONE NOTED. THERE IS NO DISCHARGE TO GROUND. SEWAGE DISCHARGING TO CREEK THROUGH OVERFLOW PIPE	WILL REQUIRE DIGGING ROOT CUTTER UP
STARVIEW	KY0031712	423 BERMUDA WAY	4/26/15 10:10 AM	04/26/15 11:30 AM	200	SEWER MANHOLE	31122	GROUND	CHENOWETH RUN	RAG AND GREASE BLOCKAGE CAUSING DISCHARGE AT MANHOLE RATE 2.5 GPM REPORTED	GREASE BLOCKAGE	2347483	MSD CLEANED AND SANITIZED AREA	INVESTIGATING CAUSE OF BLOCKAGE
STARVIEW	KY0031712	423 BERMUDA WAY	4/26/15 10:12 AM	04/26/15 11:30 AM	195	SEWER MANHOLE	31123	DITCH	CHENOWETH RUN, UPPER	RAG AND GREASE BLOCKAGE CAUSING DISCHARGE AT MANHOLE RATE 2.5 GPM REPORTED	GREASE BLOCKAGE	2347484	MSD CLEANED AND SANITIZED AREA	INVESTIGATING CAUSE OF BLOCKAGE
STARVIEW	KY0031712	423 BERMUDA WAY	4/26/15 10:45 AM	04/26/15 11:30 AM	1,125	SEWER MANHOLE	31124	GROUND	CHENOWETH RUN, UPPER	RAG AND GREASE BLOCKAGE CAUSING DISCHARGE AT MANHOLE RATE 2.5 GPM REPORTED	GREASE BLOCKAGE	2347485	MSD CLEANED AND SANITIZED AREA	INVESTIGATING CAUSE OF BLOCKAGE
DEREK R. GUTHRIE	KY0078956	6500 MOUNT WASHINGTON RD	4/26/15 7:50 PM	04/26/15 08:00 PM	750	SEWER LIFT STATION	MSD1147-PS	DITCH	PENNSYLVANIA RUN	CONTRACTOR WORKING AT PUMP STATION CONDUCTING A PUMP AROUND AND THE DISCHARGE HOSE ON THE CONTRACTORS PUMP HAD A HOLE IN IT.	MECHANICAL FAILURE	2347523	CONTRACTOR CLEANED AND SANITIZED AREA	CONTRACTOR REPLACED FAILED DISCHARGE HOSE ON PUMP
FLOYDS FORK	KY0102784	817 GILLILAND RD	4/24/15 2:50 PM	04/27/15 09:45 AM	68,100	SEWER MAIN	96911B-V	GROUND	LONG RUN	FORCE MAIN BREAK	STRUCTURAL FAILURE	2347658	CLEAN UP WO#2351295	SWITCH FORCE MAINS WHILE CONTRACTOR REPAIRS



**APPENDIX A-4**  
**UNAUTHORIZED DISCHARGES**  
**TO WATERS OF UNITED STATES**  
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Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	6600 SEMINARY WOODS PL	4/29/15 10:40 AM	04/29/15 10:50 AM	500	SEWER LIFT STATION	MSD0123-PS	DITCH	GOOSE CREEK	THE GENERATOR DID NOT COME BACK ON AFTER AN LG&E POWER FAIL	POWER OUTAGE (LG&E)	2349857	CLEAN UP WO#2349918	CONTRACTOR TESTED & REPAIRED THE GENERATOR
MORRIS FORMAN	KY0022411	1535 POPLAR LEVEL RD	5/7/15 4:15 PM	05/07/15 08:00 PM	4,200	SEWER MAIN	75014	STREAM	SOUTH FORK BEARGRASS CREEK	ROOTS IN THE MAIN	ROOTS	2356068	MSD WILL CLEAN	ROOT CUT LINE #2356189
MORRIS FORMAN	KY0022411	2501 ALEXANDER RD	5/11/15 3:13 PM	05/11/15 03:45 PM	1,500	SEWER MANHOLE	72267	GROUND	MIDDLE FORK BEARGRASS CREEK	WHILE DOING PREVENTATIVE MAINTENANCE ROOT CUTTING ON MAIN SEWER, MANHOLE DISCHARGED.	ROOTS	2358004	NO CLEAN UP PERFORMED, MANHOLE DISCHARGED DIRECTLY TO STREAM.	ROOT CUTTING MAIN SEWER TO GET TREE ROOTS OUT. ROOT CUT WORK ORDER# 2356423
TIMBERLAKE	KY0043087	1001 HARRODS LANDING DR	5/29/15 1:00 PM	05/29/15 03:10 PM	910	SEWER SERVICE LINE	103681001	GROUND	HUNTING CREEK	UTILITY WORKER BROKE THE FORCE MAIN AS THEY WERE MAKING A REPAIR	UTILITY DAMAGED MSD ASSET	2365539	MSD CLEANED & SANITIZED THE AREA	CONTRACTOR HAS REPAIRED THE FORCE MAIN
MORRIS FORMAN	KY0022411	1726 FRASER DR	6/18/15 6:18 PM	06/18/15 08:15 PM	1,000	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2373830	WO# 2373943	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1013 ALTA CIR	6/18/15 7:35 PM	06/18/15 05:30 AM	3,500	SEWER MANHOLE	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2373831	WO# 2373932	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1011 ALTA CIR	6/18/15 7:35 PM	06/18/15 05:30 AM	3,500	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2373839	WO# 2373935	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	6/18/15 8:01 PM	06/18/15 08:15 PM	1,223	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2373841	CLEANUP NOT POSSIBLE DUE TO ELEVATED CREEK LEVEL	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	6/18/15 5:50 PM	06/18/15 07:43 PM	1,200	SEWER MANHOLE	66349	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2373842	WO# 2373864	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	6/18/15 5:51 PM	06/18/15 07:44 PM	5,000	SEWER MANHOLE	08717	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2373843	WO# 2373865	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4119 LEE AVE	6/18/15 5:40 PM	06/18/15 07:26 PM	7,500	SEWER MANHOLE	104231	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2373844	WO# 2373867	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4119 LEE AVE	6/18/15 5:41 PM	06/18/15 07:27 PM	1,000	SEWER MANHOLE	13943	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2373845	WO# 2373870	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4108 LEE AVE	6/18/15 5:43 PM	06/18/15 07:28 PM	300	SEWER SERVICE LINE	KK14815019	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2373847	WO# 2373872	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1600 BELMAR DR	6/18/15 5:45 PM	06/18/15 07:30 PM	3,500	SEWER MANHOLE	13946	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2373848	WO# 2373878	LOCATION INCLUDED IN IOAP
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	6/18/15 6:32 PM	06/18/15 08:07 PM	39,878	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	HEAVY RAIN, LACK OF SYSTEM CAPACITY	BLENDING AT JTOWN WQTC	2373849	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP
MORRIS FORMAN	KY0022411	4107 LEE AVE	6/18/15 5:35 PM	06/18/15 07:24 PM	1,500	SEWER SERVICE LINE	KK14855239	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2373900	WO# 2373918	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	4103 LEE AVE	6/18/15 5:46 PM	06/18/15 07:32 PM	4,500	SEWER MANHOLE	104223	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2373923	WO# 2373926	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	6/18/15 5:59 PM	06/18/15 08:11 PM	10,500	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2373945	WO# 2373946	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1700 SULGRAVE RD	6/20/15 9:35 AM	06/20/15 04:02 PM	18,000	SEWER MANHOLE	72289	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2374315	DISCLN WO# 2374361	LOCATION INCLUDED IN IOAP

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**UNAUTHORIZED DISCHARGES**  
**TO WATERS OF UNITED STATES**  
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Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	1013 ALTA CIR	6/20/15 9:25 AM	06/20/15 03:58 PM	14,500	SEWER MANHOLE	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2374317	DISCLN WO# 2374362	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1011 ALTA CIR	6/20/15 9:25 AM	06/20/15 03:58 PM	14,000	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2374318	DISCLN WO# 2374363	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	6/20/15 9:20 AM	06/20/15 03:47 PM	18,000	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2374320	DISCLN WO# 2374364	LOCATION INCLUDED IN IOAP
JEFFERSONTOWN	KY0025194	3258 RUCKRIEGEL PKY	6/20/15 9:44 AM	06/20/15 11:11 AM	2,750	SEWER MANHOLE	28173	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2374321	DISCLN WO# 2374359	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1726 FRASER DR	6/20/15 9:30 AM	06/20/15 01:45 PM	475	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2374322	DISCLN WO# 2374365	LOCATION INCLUDED IN IOAP
JEFFERSONTOWN	KY0025194	11401 GRAND AVE	6/20/15 9:18 AM	06/20/15 11:30 AM	3,100	SEWER MANHOLE	28551	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2374323	DISCLN WO# 2374360	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	6/20/15 10:00 AM	06/20/15 03:10 PM	439,691	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	2374325	NO CLEAN UP PERFORMED - PIPE DISCHARGING UNDERWATER, DIRECTLY INTO STREAM	LOCATION INCLUDED IN IOAP
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	6/20/15 9:14 AM	06/20/15 04:42 PM	682,245	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	BLENDING AT JTOWN WQTC	2374338	NO DEBRIS	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	6/20/15 9:12 AM	06/20/15 11:25 AM	1,000	SEWER MANHOLE	66349	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN	LACK OF SYSTEM CAPACITY	2374351	DISCLN WO# 2374352	LOCATION INCLUDED IN THE IOAP
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	6/20/15 9:13 AM	06/20/15 11:26 AM	2,500	SEWER MANHOLE	08717	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN	LACK OF SYSTEM CAPACITY	2374353	DISCLN WO# 2374354	LOCATION INCLUDED IN THE IOAP
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	6/20/15 8:45 AM	06/20/15 11:45 AM	2,500	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN	LACK OF SYSTEM CAPACITY	2374355	DISCLN WO# 2374356	LOCATION INCLUDED IN THE IOAP
MORRIS FORMAN	KY0022411	1600 BELMAR DR	6/20/15 9:04 AM	06/20/15 11:23 AM	1,000	SEWER MANHOLE	13946	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN	LACK OF SYSTEM CAPACITY	2374357	DISCLN WO# 2374358	LOCATION INCLUDED IN THE IOAP
DEREK R. GUTHRIE	KY0078956	10304 CAVEN AVE	6/20/15 12:00 PM	06/20/15 02:15 PM	3,300	SEWER MANHOLE	27116	STREAM	MUD CREEK	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2374366	MSD TO CLEAN AND SANITIZE AFFECTED AREA	AREA INCLUDED IN IOAP
DEREK R. GUTHRIE	KY0078956	6808 SANDSTONE BLVD	6/20/15 10:00 AM	06/20/15 10:45 AM	200	SEWER MANHOLE	31073	DITCH	FERN CREEK	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	2374367	MSD TO CLEAN AND SANITIZE AFFECTED AREA	AREA INCLUDED IN IOAP
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	6/26/15 4:01 AM	06/26/15 08:13 AM	39,579	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT	BLENDING AT JTOWN WQTC	2375942	NO CLEAN UP	TEMPORARY BLENDING HAS BEEN NEGOTIATED FOR THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER
DEREK R. GUTHRIE	KY0078956	10304 CAVEN AVE	6/26/15 1:00 AM	06/26/15 02:00 PM	20,325	SEWER MANHOLE	27116	STREAM	MUD CREEK	LACK OF SYSTEM CAPACITY DUE TO HEAVY RAIN	LACK OF SYSTEM CAPACITY	2376059	MSD TO CLEAN AND SANITIZE AFFECTED AREA	AREA INCLUDED IN IOAP
HITE CREEK	KY0022420	7520 KAVANAUGH RD	6/26/15 8:00 PM	06/27/15 02:30 AM	3,800	SEWER LIFT STATION	MSD1085-PS	GROUND	HITE CREEK	POWER OUTAGE DUE TO RAIN EVENT	LACK OF SYSTEM CAPACITY	2376587	NO DEBRIS	GENERATOR PLACED UNTIL POWER RESTORED #2378792
STARVIEW	KY0031712	423 BERMUDA WAY	6/29/15 4:29 PM	06/29/15 05:54 PM	665	SEWER TREATMENT PLANT	MSD0247	STREAM	CHENOWETH RUN	LG&E POWER FAIL	BYPASS AT WQTC	2379495	MSD CLEANED & SANITIZED THE AREA	INSTALLED GENERATOR UNTIL POWER RESTORED

Appendix B – CSO Flow Monitoring Data

There are known problems with some flow monitor locations that may be inflating actual overflow volumes (for example storm water flows).  
MSD is currently working on a plan to fully identify and correct these issues.

CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB Ret
CSO015	4/2/15 12:00 PM	4/4/15 10:45 PM	72,426,048.78	2.45	6.2	11,681,620.77	6.32	36.46	6	Cloudburst	
CSO015	4/7/15 12:15 PM	4/8/15 4:15 AM	10,220,301.83	0.67	0.88	11,613,979.36	7.09	0.39	1	Atlas	
CSO015	4/8/15 6:45 PM	4/10/15 5:30 AM	43,035,886.41	1.45	0.08	537,948,580.10	7.51	0.04	6	Atlas	
CSO015	4/14/15 12:00 PM	4/14/15 7:30 PM	412,100.01	0.31	0.47	876,808.53	1.36	0.18	24	Atlas	
CSO015	4/19/15 2:30 PM	4/20/15 5:00 AM	2,144,926.47	0.60	0.85	2,523,442.90	1.49	0.36	12	Atlas	
CSO015	5/11/15 6:15 PM	5/11/15 6:15 PM	24,289.80	0.00	0.05	485,796.02	0.15	0.04	1	Atlas	
CSO015	6/17/15 5:15 AM	6/17/15 8:45 AM	6,024,252.45	0.15	0.67	8,991,421.56	0.68	0.36	3	Atlas	
CSO015	6/18/15 5:00 PM	6/18/15 9:00 PM	5,406,161.20	0.17	0.6	9,010,268.66	1.34	0.28	3	Atlas	
CSO015	6/20/15 4:30 AM	6/20/15 11:45 AM	2,679,738.32	0.30	1.09	2,458,475.52	2.53	0.43	12	Atlas	
CSO015	6/26/15 12:00 AM	6/26/15 4:15 AM	2,459,745.30	0.18	0.9	2,733,050.33	2.36	0.49	6	Atlas	
CSO015	6/26/15 5:15 PM	6/27/15 11:00 AM	2,475,110.12	0.74	1.12	2,209,919.75	3.39	0.60	1	Atlas	
<b>CSO015 Total Volume (Gal)</b>			147,308,560.67								
<b>CSO015 Events</b>			11.00								
CSO016	4/2/15 11:15 AM	4/3/15 7:00 PM	27,896,808.28	1.32	5.44	5,128,089.76	5.57	18.39	6	Cloudburst	
CSO016	4/7/15 9:15 AM	4/7/15 7:30 PM	3,496,993.58	0.43	0.89	3,929,206.27	6.34	0.37	12	Atlas	
CSO016	4/8/15 11:00 PM	4/11/15 10:30 AM	45,273,513.19	2.48	0.12	377,279,276.60	6.86	0.09	1	Atlas	
CSO016	4/13/15 9:00 PM	4/14/15 1:00 AM	2,043,185.63	0.17	0.55	3,714,882.96	1.62	0.21	24	Atlas	
CSO016	4/14/15 9:15 AM	4/14/15 3:30 PM	3,017,029.44	0.26	0.55	5,485,508.07	1.43	0.21	24	Atlas	
CSO016	4/19/15 8:45 AM	4/19/15 11:00 PM	10,787,456.20	0.59	0.81	13,317,847.16	1.43	0.33	12	Atlas	
CSO016	5/16/15 12:15 PM	5/16/15 3:45 PM	1,817,060.80	0.15	0.95	1,912,695.58	1.08	0.58	3	Atlas	
CSO016	6/17/15 5:45 AM	6/17/15 8:30 AM	2,477,843.72	0.11	0.63	3,933,085.27	0.65	0.34	3	Atlas	
CSO016	6/18/15 5:30 PM	6/18/15 8:45 PM	3,961,321.47	0.14	0.62	6,389,228.18	1.3	0.36	1	Atlas	
CSO016	6/20/15 4:15 AM	6/20/15 11:00 AM	5,941,141.91	0.28	1.19	4,992,556.23	2.59	0.49	12	Atlas	
CSO016	6/26/15 12:45 AM	6/26/15 2:45 AM	708,738.86	0.08	0.77	920,440.07	2.31	0.42	6	Atlas	
CSO016	6/26/15 5:15 PM	6/27/15 2:00 AM	2,747,056.32	0.36	0.99	2,774,804.36	3.28	0.55	1	Atlas	
<b>CSO016 Total Volume (Gal)</b>			110,168,149.39								
<b>CSO016 Events</b>			12.00								
CSO018	4/2/15 3:15 PM	4/5/15 9:45 AM	4,182,915.98	2.77	6.05	691,391.07	6.1	50.00	6	Cloudburst	
CSO018	4/7/15 9:30 AM	4/7/15 9:00 PM	123,808.18	0.48	0.68	182,070.85	6.74	0.30	1	Atlas	
CSO018	4/8/15 6:15 PM	4/8/15 10:45 PM	137,422.53	0.19	0.28	490,794.74	7.02	0.19	1	Atlas	
CSO018	4/9/15 11:45 AM	4/9/15 3:15 PM	125,535.94	0.15	0.59	212,772.78	7.16	0.51	1	Atlas	
CSO018	4/10/15 2:30 AM	4/10/15 3:00 AM	13,701.87	0.02	0.15	91,345.77	4.04	0.09	3	Atlas	
CSO018	6/18/15 5:00 PM	6/18/15 11:00 PM	81,120.69	0.25	1.37	59,212.19	2.19	0.79	3	Atlas	
CSO018	6/20/15 8:00 AM	6/20/15 11:30 AM	74,877.28	0.15	1.28	58,497.87	3.6	0.56	12	Atlas	
CSO018	6/26/15 12:15 AM	6/26/15 4:30 AM	9,558.66	0.18	0.65	14,705.63	2.24	0.35	6	Atlas	
CSO018	6/26/15 5:30 PM	6/27/15 1:30 AM	12,490.20	0.33	0.7	17,843.15	2.78	0.35	1	Atlas	
<b>CSO018 Total Volume (Gal)</b>			4,761,431.33								
<b>CSO018 Events</b>			9.00								
CSO019	4/2/15 10:15 AM	4/4/15 3:45 AM	54,080,415.56	1.73	4.19	12,907,020.42	4.32	5.65	24	Cloudburst	
CSO019	4/7/15 5:15 AM	4/8/15 8:15 PM	17,227,678.83	1.63	1.48	11,640,323.53	5.71	0.70	1	Atlas	
CSO019	4/9/15 11:30 AM	4/10/15 4:45 PM	3,164,571.47	1.22	0.5	6,329,142.93	6.38	0.42	1	Atlas	
CSO019	4/12/15 6:00 PM	4/14/15 4:00 PM	11,437,404.50	1.92	Discharge		3.24	FLOOD			
CSO019	4/19/15 6:30 AM	4/20/15 9:00 AM	2,578,642.88	1.10	0.71	3,631,891.38	1.7	0.29	12	Atlas	
CSO019	4/25/15 5:30 AM	4/26/15 7:00 AM	408,231.28	1.06	0.43	949,375.08	1.24	0.17	1	Atlas	
CSO019	4/30/15 12:30 PM	4/30/15 2:15 PM	54,389.19	0.07	0.01	5,438,919.40	0.44	0.01	1	Atlas	
CSO019	5/16/15 11:45 AM	5/16/15 7:15 PM	4,136,222.36	0.31	1.14	3,628,265.23	1.32	0.62	3	Atlas	
CSO019	5/17/15 2:00 PM	5/17/15 5:15 PM	57,134.70	0.14	0.17	336,086.45	1.46	0.11	1	Atlas	
CSO019	5/25/15 6:45 AM	5/25/15 11:00 AM	322,881.45	0.18	0.24	1,345,339.37	0.27	0.12	6	Atlas	

There are known problems with some flow monitor locations that may be inflating actual overflow volumes (for example storm water flows).  
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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB Ret
CSO019	5/26/15 1:30 PM	5/26/15 3:45 PM	76,973.87	0.09	0.19	405,125.66	0.37	0.10	1	Atlas	
CSO019	6/17/15 4:45 AM	6/17/15 9:15 AM	2,554,472.21	0.19	0.53	4,819,758.88	0.54	0.30	3	Atlas	
CSO019	6/18/15 5:15 PM	6/18/15 11:00 PM	4,845,255.88	0.24	0.7	6,921,794.11	1.21	0.42	1	Atlas	
CSO019	6/20/15 12:15 AM	6/20/15 2:15 PM	6,557,132.97	0.58	1.02	6,428,561.73	2.34	0.43	12	Atlas	
CSO019	6/21/15 11:45 PM	6/22/15 9:30 AM	322,570.76	0.41	0.21	1,536,051.24	2.54	0.10	12	Atlas	
CSO019	6/25/15 11:30 PM	6/26/15 7:45 AM	983,124.05	0.34	0.49	2,006,375.61	1.82	0.25	6	Atlas	
CSO019	6/26/15 5:00 PM	6/27/15 8:45 AM	10,817,199.55	0.66	1.22	8,866,557.01	2.94	0.81	1	Atlas	
CSO019	6/29/15 1:30 PM	6/29/15 4:45 PM	836,780.11	0.14	0.1	8,367,801.09	1.81	0.05	3	Atlas	
<b>CSO019 Total Volume (Gal)</b>			120,461,081.61								
<b>CSO019 Events</b>			18.00								
CSO020	4/2/15 10:45 AM	4/5/15 11:45 AM	233,185,649.60	3.04	4.46	52,283,777.93	4.59	6.29	24	Cloudburst	
CSO020	4/7/15 9:15 AM	4/7/15 10:45 PM	66,753,101.33	0.56	0.97	68,817,630.23	5.43	0.47	1	Atlas	
CSO020	4/8/15 6:30 PM	4/8/15 10:30 PM	13,172,305.86	0.17	0.21	62,725,265.98	5.63	0.17	1	Atlas	
CSO020	4/9/15 11:30 AM	4/9/15 2:45 PM	9,022,349.52	0.14	0.12	75,186,245.97	5.47	0.10	1	Atlas	
CSO020	4/10/15 2:30 AM	4/10/15 5:45 AM	7,767,086.05	0.14	0.18	43,150,478.06	3.09	0.12	3	Atlas	
CSO020	4/13/15 8:45 PM	4/14/15 12:00 AM	10,873,944.78	0.14	0.42	25,890,344.70	1.6	0.16	24	Atlas	
CSO020	4/14/15 9:00 AM	4/14/15 3:00 PM	21,121,484.75	0.25	0.42	50,289,249.41	1.64	0.16	24	Atlas	
CSO020	4/19/15 8:00 AM	4/20/15 5:45 AM	38,290,559.39	0.91	0.65	58,908,552.91	1.21	0.28	12	Atlas	
CSO020	5/26/15 2:15 PM	5/26/15 3:15 PM	357,552.82	0.04	0.31	1,153,396.18	0.5	0.23	1	Atlas	
CSO020	6/17/15 5:30 AM	6/17/15 7:30 AM	1,614,736.21	0.08	0.64	2,523,025.33	0.67	0.36	3	Atlas	
CSO020	6/18/15 5:00 PM	6/18/15 10:00 PM	8,949,610.86	0.21	0.62	14,434,856.23	1.26	0.34	1	Atlas	
CSO020	6/20/15 2:00 AM	6/20/15 1:15 PM	15,515,205.34	0.47	0.87	17,833,569.35	2.22	0.38	12	Atlas	
CSO020	6/26/15 1:15 AM	6/26/15 1:30 AM	16,743.15	0.01	0.47	35,623.71	1.45	0.25	6	Atlas	
CSO020	6/26/15 5:15 PM	6/27/15 2:30 AM	7,497,323.98	0.39	1.05	7,140,308.55	2.61	0.55	1	Atlas	
<b>CSO020 Total Volume (Gal)</b>			434,137,653.64								
<b>CSO020 Events</b>			14.00								
CSO027	4/3/15 1:45 AM	4/3/15 2:30 AM	13,834.36	0.03	5.47	2,529.13	3.5	15.85	6	Cloudburst	
CSO027	6/26/15 5:45 PM	6/26/15 5:45 PM	1,476.65	0.00	0.86	1,717.03	2.17	0.48	1	Atlas	
<b>CSO027 Total Volume (Gal)</b>			15,311.01								
<b>CSO027 Events</b>			2.00								
CSO028	4/3/15 12:15 AM	4/3/15 3:30 AM	20,661.86	0.14	5.47	3,777.31	3.9	15.85	6	Cloudburst	
CSO028	4/7/15 9:15 AM	4/7/15 9:30 AM	933.79	0.01	0.87	1,073.32	6.07	0.38	1	Atlas	
CSO028	6/18/15 5:15 PM	6/18/15 5:15 PM	3,790.44	0.00	1.55	2,445.44	1.29	0.50	48	Atlas	
CSO028	6/26/15 5:15 PM	6/26/15 5:15 PM	43,932.98	0.00	0.86	51,084.86	2.17	0.48	1	Atlas	
<b>CSO028 Total Volume (Gal)</b>			69,319.07								
<b>CSO028 Events</b>			4.00								
CSO029	4/2/15 10:30 AM	4/2/15 3:15 PM	252,067.70	0.20	5.47	46,081.85	1.1	15.85	6	Cloudburst	
CSO029	4/3/15 12:15 AM	4/3/15 5:00 PM	10,020,033.98	0.70	5.47	1,831,816.08	5.5	15.85	6	Cloudburst	
CSO029	4/7/15 9:15 AM	4/7/15 5:15 PM	308,560.04	0.33	0.87	354,666.71	6.34	0.38	1	Atlas	
CSO029	4/9/15 11:30 AM	4/9/15 11:30 AM	10,530.80	0.00	0.1	105,308.02	6.06	0.09	1	Atlas	
CSO029	4/10/15 2:15 AM	4/10/15 2:30 AM	35,689.52	0.01	0.27	132,183.40	3.6	0.18	3	Atlas	
CSO029	5/16/15 11:45 AM	5/16/15 11:45 AM	16,443.73	0.00	0.5	32,887.46	0.42	0.29	3	Atlas	
CSO029	5/17/15 2:15 PM	5/17/15 2:15 PM	20,673.67	0.00	0.07	295,338.09	0.68	0.03	1	Atlas	
CSO029	5/26/15 2:00 PM	5/26/15 2:00 PM	11,616.35	0.00	0.21	55,315.97	0.41	0.14	1	Atlas	
CSO029	6/17/15 4:45 AM	6/17/15 5:00 AM	627.23	0.01	0.7	896.04	0.57	0.39	3	Atlas	
CSO029	6/18/15 5:15 PM	6/18/15 5:15 PM	205,227.83	0.00	1.55	132,405.05	1.29	0.50	48	Atlas	
CSO029	6/20/15 3:30 AM	6/20/15 8:00 AM	17,041.16	0.19	1.55	10,994.29	2.42	0.50	48	Atlas	
CSO029	6/26/15 12:00 AM	6/26/15 12:00 AM	3,883.85	0.00	0.53	7,328.03	1.42	0.28	6	Atlas	

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB.Ret
CSO029	6/26/15 5:00 PM	6/26/15 5:15 PM	269,316.31	0.01	0.86	313,158.49	2.17	0.48	1	Atlas	
<b>CSO029 Total Volume (Gal)</b>			11,171,712.16								
<b>CSO029 Events</b>			13.00								
CSO031	4/2/15 9:45 AM	4/3/15 10:00 AM	471,099.27	1.01	5.47	86,124.18	4.99	15.85	6	Cloudburst	
CSO031	4/7/15 5:15 AM	4/7/15 9:30 AM	5,166.74	0.18	0.87	5,938.78	6.07	0.38	1	Atlas	
CSO031	6/17/15 6:00 AM	6/17/15 6:45 AM	9,653.13	0.03	0.7	13,790.18	0.81	0.39	3	Atlas	
CSO031	6/19/15 6:30 PM	6/20/15 8:00 AM	98,284.49	0.56	1.55	63,409.35	2.42	0.50	48	Atlas	
CSO031	6/21/15 11:15 PM	6/22/15 7:45 AM	7,329.43	0.35	0.24	30,539.28	2.59	0.11	3	Atlas	
CSO031	6/25/15 11:45 PM	6/26/15 4:15 AM	9,014.40	0.19	0.53	17,008.30	1.72	0.28	6	Atlas	
CSO031	6/26/15 5:15 PM	6/27/15 12:15 AM	5,329.52	0.29	0.86	6,197.12	2.46	0.48	1	Atlas	
CSO031	6/29/15 1:30 PM	6/29/15 2:15 PM	18,546.65	0.03	0.26	71,333.25	1.64	0.18	1	Atlas	
CSO031	6/30/15 7:30 PM	6/30/15 8:00 PM	3,033.29	0.02	0.02	151,664.60	1.66	0.01	6	Atlas	
<b>CSO031 Total Volume (Gal)</b>			627,456.92								
<b>CSO031 Events</b>			9.00								
CSO034	4/2/15 10:30 AM	4/2/15 3:00 PM	37,705.89	0.19	5.47	6,893.22	1.09	15.85	6	Cloudburst	
CSO034	4/3/15 12:15 AM	4/3/15 2:30 AM	77,611.87	0.09	5.47	14,188.64	3.5	15.85	6	Cloudburst	
CSO034	4/7/15 9:15 AM	4/7/15 9:30 AM	30,677.62	0.01	0.87	35,261.64	6.07	0.38	1	Atlas	
CSO034	6/18/15 5:00 PM	6/18/15 5:15 PM	29,888.60	0.01	1.55	19,282.97	1.29	0.50	48	Atlas	
CSO034	6/25/15 11:45 PM	6/25/15 11:45 PM	1,805.21	0.00	0.53	3,406.05	1.41	0.28	6	Atlas	
CSO034	6/26/15 5:00 PM	6/26/15 5:00 PM	153,366.05	0.00	0.86	178,332.61	2.12	0.48	1	Atlas	
<b>CSO034 Total Volume (Gal)</b>			331,055.25								
<b>CSO034 Events</b>			6.00								
CSO036	4/2/15 10:30 AM	4/2/15 3:15 PM	122,481.08	0.20	5.34	22,936.53	0.99	15.08	6	Cloudburst	
CSO036	4/3/15 12:00 AM	4/3/15 4:45 PM	269,875.88	0.70	5.34	50,538.55	5.35	15.08	6	Cloudburst	
CSO036	4/7/15 9:15 AM	4/7/15 5:00 PM	14,501.07	0.32	0.97	14,949.56	6.27	0.43	1	Atlas	
CSO036	4/8/15 6:00 PM	4/8/15 6:00 PM	1,028.00	0.00	0.16	6,425.00	6.47	0.09	3	Atlas	
CSO036	4/10/15 2:00 AM	4/10/15 2:15 AM	7,558.20	0.01	0.22	34,355.44	3.86	0.15	3	Atlas	
CSO036	4/13/15 8:15 PM	4/13/15 8:30 PM	2,833.26	0.01	0.41	6,910.39	1.6	0.16	6	Atlas	
CSO036	5/16/15 11:45 AM	5/16/15 11:45 AM	4,168.40	0.00	0.41	10,166.82	0.33	0.23	3	Atlas	
CSO036	5/17/15 2:15 PM	5/17/15 2:15 PM	793.04	0.00	0.05	15,860.83	0.56	0.02	12	Atlas	
CSO036	5/26/15 2:00 PM	5/26/15 2:00 PM	293.71	0.00	0.28	1,048.96	0.53	0.21	1	Atlas	
CSO036	5/27/15 4:45 PM	5/27/15 4:45 PM	17,968.09	0.00	0.09	199,645.49	0.66	0.08	1	Atlas	
CSO036	6/1/15 4:45 AM	6/1/15 6:00 PM	171,209.63	0.55	0.1	1,712,096.34	0.72	0.05	6	Atlas	
CSO036	6/8/15 8:15 AM	6/8/15 8:15 AM	689.88	0.00	0.34	2,029.04	0.35	0.18	6	Atlas	
CSO036	6/17/15 5:00 AM	6/17/15 5:30 AM	23,503.66	0.02	0.55	42,733.92	0.48	0.30	3	Atlas	
CSO036	6/18/15 5:15 PM	6/22/15 5:45 PM	4,106,046.11	4.02	1.42	2,891,581.77	2.37	0.46	48	Atlas	
CSO036	6/26/15 5:00 PM	6/27/15 7:30 AM	1,344,545.59	0.60	0.9	1,493,939.54	2.39	0.49	1	Atlas	
<b>CSO036 Total Volume (Gal)</b>			6,087,495.59								
<b>CSO036 Events</b>			15.00								
CSO038	4/3/15 12:15 AM	4/3/15 12:15 AM	39,364.61	0.00	5.47	7,196.46	1.78	15.85	6	Cloudburst	
CSO038	4/7/15 5:15 AM	4/7/15 12:15 PM	54,998.08	0.29	0.87	63,216.19	6.09	0.38	1	Atlas	
CSO038	4/14/15 7:00 AM	4/14/15 12:00 PM	137,791.32	0.21	0.41	336,076.40	1.77	0.16	6	Atlas	
CSO038	6/18/15 5:15 PM	6/18/15 6:15 PM	135,564.98	0.04	1.55	87,461.27	1.4	0.50	48	Atlas	
CSO038	6/20/15 1:30 AM	6/20/15 5:30 AM	27,734.61	0.17	1.55	17,893.29	2.08	0.50	48	Atlas	
CSO038	6/22/15 6:45 AM	6/22/15 7:00 AM	10,942.88	0.01	0.24	45,595.31	2.57	0.11	3	Atlas	
CSO038	6/26/15 5:15 PM	6/28/15 10:00 PM	3,496,998.17	2.20	0.86	4,066,276.95	2.5	0.48	1	Atlas	
<b>CSO038 Total Volume (Gal)</b>			3,903,394.65								
<b>CSO038 Events</b>			7.00								

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB.Ret
CSO050	4/2/15 9:30 AM	4/3/15 5:30 PM	3,729,245.89	1.33	4.74	786,760.74	4.9	7.98	24	Cloudburst	
CSO050	4/7/15 7:30 AM	4/7/15 8:45 PM	706,425.35	0.55	1.08	654,097.55	5.83	0.53	1	Atlas	
CSO050	4/8/15 3:45 PM	4/8/15 3:45 PM	987.08	0.00	0.05	19,741.67	5.87	0.03	1	Atlas	
CSO050	4/9/15 11:30 AM	4/10/15 10:30 AM	961,679.09	0.96	0.17	5,656,935.84	5.89	0.15	1	Atlas	
CSO050	4/13/15 8:15 PM	4/13/15 10:00 PM	34,970.45	0.07	0.78	44,833.91	1.88	0.30	24	Atlas	
CSO050	4/14/15 6:45 AM	4/14/15 12:45 PM	57,995.77	0.25	0.78	74,353.56	2.26	0.30	24	Atlas	
CSO050	4/19/15 6:45 AM	4/19/15 6:30 PM	138,379.71	0.49	0.67	206,536.88	1.51	0.28	12	Atlas	
CSO050	4/20/15 3:30 AM	4/20/15 3:30 AM	2,334.31	0.00	0.1	23,343.13	1.6	0.08	1	Atlas	
CSO050	4/25/15 9:00 AM	4/25/15 9:15 AM	13,850.53	0.01	0.3	46,168.44	0.97	0.12	24	Atlas	
CSO050	4/25/15 6:45 PM	4/25/15 6:45 PM	8,502.29	0.00	0.3	28,340.97	1.05	0.12	24	Atlas	
CSO050	4/30/15 12:45 PM	4/30/15 12:45 PM	7,702.94	0.00	0.14	55,020.98	0.44	0.11	1	Atlas	
CSO050	5/9/15 4:00 AM	5/9/15 4:00 AM	1,321.74	0.00	0.08	16,521.74	0.08	0.05	3	Atlas	
CSO050	5/16/15 11:15 AM	5/16/15 2:00 PM	208,977.28	0.11	0.7	298,538.97	0.81	0.41	3	Atlas	
CSO050	5/17/15 2:15 PM	5/17/15 2:15 PM	5,204.91	0.00	0.09	57,832.29	0.91	0.04	12	Atlas	
CSO050	5/25/15 7:00 AM	5/25/15 8:30 AM	10,506.62	0.06	0.3	35,022.08	0.27	0.14	12	Atlas	
CSO050	5/26/15 1:45 PM	5/26/15 2:15 PM	33,921.12	0.02	0.17	199,536.00	0.43	0.10	1	Atlas	
CSO050	5/27/15 1:45 PM	5/27/15 1:45 PM	107.94	0.00	0.09	1,199.31	0.56	0.08	1	Atlas	
CSO050	5/30/15 3:00 PM	5/30/15 4:00 PM	4,541.68	0.04	0.15	30,277.85	0.65	0.07	12	Atlas	
CSO050	6/8/15 7:00 AM	6/8/15 8:15 AM	40,945.62	0.05	0.16	255,910.10	0.23	0.10	3	Atlas	
CSO050	6/17/15 4:30 AM	6/17/15 7:00 AM	149,267.57	0.10	0.67	222,787.42	0.67	0.37	3	Atlas	
CSO050	6/18/15 5:00 PM	6/18/15 7:45 PM	268,078.83	0.11	0.76	352,735.30	1.41	0.43	1	Atlas	
CSO050	6/20/15 1:15 AM	6/20/15 9:30 AM	528,784.70	0.34	1.04	508,446.82	2.55	0.41	12	Atlas	
CSO050	6/22/15 5:45 AM	6/22/15 6:45 AM	12,543.56	0.04	0.23	54,537.23	2.76	0.11	3	Atlas	
CSO050	6/25/15 11:45 PM	6/26/15 2:45 AM	57,504.20	0.13	0.61	94,269.18	1.92	0.33	6	Atlas	
CSO050	6/26/15 5:00 PM	6/27/15 12:15 AM	549,853.97	0.30	1.04	528,705.74	2.91	0.55	1	Atlas	
CSO050	6/29/15 1:15 PM	6/29/15 2:45 PM	37,664.83	0.06	0.22	171,203.75	1.87	0.12	1	Atlas	
<b>CSO050 Total Volume (Gal)</b>			7,571,297.98								
<b>CSO050 Events</b>			26.00								
CSO051	4/2/15 10:30 AM	4/2/15 3:00 PM	26,125.88	0.19	4.74	5,511.79	1.13	7.98	24	Cloudburst	
CSO051	4/3/15 12:15 AM	4/3/15 3:30 PM	369,653.18	0.64	4.74	77,985.90	4.73	7.98	24	Cloudburst	
CSO051	4/7/15 9:15 AM	4/7/15 5:00 PM	29,854.48	0.32	1.08	27,643.04	5.79	0.53	1	Atlas	
CSO051	4/9/15 11:30 AM	4/9/15 11:30 AM	4,920.28	0.00	0.17	28,942.83	5.64	0.15	1	Atlas	
CSO051	4/10/15 2:15 AM	4/10/15 3:15 AM	8,415.04	0.04	0.24	35,062.68	3.61	0.16	3	Atlas	
CSO051	4/13/15 8:45 PM	4/13/15 8:45 PM	623.81	0.00	0.78	799.76	1.86	0.30	24	Atlas	
CSO051	4/19/15 6:15 PM	4/19/15 6:15 PM	1,497.73	0.00	0.67	2,235.42	1.5	0.28	12	Atlas	
CSO051	4/30/15 12:45 PM	4/30/15 12:45 PM	7,222.22	0.00	0.14	51,587.28	0.44	0.11	1	Atlas	
CSO051	5/16/15 11:45 AM	5/16/15 12:00 PM	9,649.53	0.01	0.7	13,785.04	0.54	0.41	3	Atlas	
CSO051	5/17/15 2:15 PM	5/17/15 2:15 PM	744.43	0.00	0.09	8,271.41	0.91	0.04	12	Atlas	
CSO051	5/25/15 8:15 AM	5/25/15 8:15 AM	875.07	0.00	0.3	2,916.91	0.25	0.14	12	Atlas	
CSO051	5/26/15 2:00 PM	5/26/15 2:00 PM	5,495.04	0.00	0.17	32,323.77	0.43	0.10	1	Atlas	
CSO051	6/8/15 7:00 AM	6/8/15 8:15 AM	8,585.27	0.05	0.16	53,657.94	0.23	0.10	3	Atlas	
CSO051	6/17/15 4:45 AM	6/17/15 6:00 AM	11,654.77	0.05	0.67	17,395.18	0.61	0.37	3	Atlas	
CSO051	6/18/15 5:15 PM	6/18/15 5:45 PM	8,320.89	0.02	0.76	10,948.53	1.27	0.43	1	Atlas	
CSO051	6/20/15 1:30 AM	6/20/15 5:15 AM	13,432.71	0.16	1.04	12,916.07	2.23	0.41	12	Atlas	
CSO051	6/26/15 5:00 PM	6/26/15 5:30 PM	17,116.51	0.02	1.04	16,458.18	2.5	0.55	1	Atlas	
CSO051	6/29/15 1:45 PM	6/29/15 1:45 PM	1,530.60	0.00	0.22	6,957.29	1.87	0.12	1	Atlas	
<b>CSO051 Total Volume (Gal)</b>			525,717.45								
<b>CSO051 Events</b>			18.00								

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB Ret
CSO053	4/2/15 9:45 AM	4/3/15 5:00 PM	1,457,692.35	1.30	4.94	295,079.42	5.1	9.44	24	Cloudburst	
CSO053	4/7/15 9:15 AM	4/7/15 5:15 PM	341,681.16	0.33	1.11	307,820.86	6.04	0.54	1	Atlas	
CSO053	4/9/15 11:30 AM	4/9/15 11:30 AM	47,239.26	0.00	0.26	181,689.45	5.99	0.23	1	Atlas	
CSO053	4/10/15 2:15 AM	4/10/15 2:45 AM	65,366.12	0.02	0.22	297,118.74	3.74	0.14	3	Atlas	
CSO053	4/13/15 8:15 PM	4/13/15 9:00 PM	27,753.73	0.03	0.66	42,051.10	1.88	0.25	24	Atlas	
CSO053	4/14/15 7:00 AM	4/14/15 7:00 AM	6,051.90	0.00	0.66	9,169.54	1.97	0.25	24	Atlas	
CSO053	4/19/15 7:00 AM	4/19/15 6:15 PM	45,386.55	0.47	0.68	66,744.92	1.4	0.28	12	Atlas	
CSO053	4/20/15 3:30 AM	4/20/15 3:30 AM	2,104.99	0.00	0.1	21,049.90	1.5	0.09	1	Atlas	
CSO053	4/25/15 9:00 AM	4/25/15 9:15 AM	7,004.46	0.01	0.17	41,202.70	0.98	0.08	12	Atlas	
CSO053	4/30/15 12:45 PM	4/30/15 12:45 PM	15,497.75	0.00	0.17	91,163.24	0.42	0.15	1	Atlas	
CSO053	5/16/15 11:30 AM	5/16/15 1:15 PM	116,329.19	0.07	0.6	193,881.98	0.61	0.35	3	Atlas	
CSO053	5/17/15 2:15 PM	5/17/15 2:15 PM	70,251.23	0.00	0.08	878,140.43	0.76	0.04	12	Atlas	
CSO053	5/25/15 8:15 AM	5/25/15 8:15 AM	9,720.02	0.00	0.28	34,714.36	0.24	0.13	12	Atlas	
CSO053	5/26/15 2:00 PM	5/26/15 2:00 PM	50,130.92	0.00	0.16	313,318.24	0.4	0.10	1	Atlas	
CSO053	6/8/15 7:00 AM	6/8/15 8:15 AM	72,654.35	0.05	0.18	403,635.27	0.23	0.11	3	Atlas	
CSO053	6/17/15 4:45 AM	6/17/15 6:15 AM	146,457.41	0.06	0.64	228,839.71	0.65	0.35	3	Atlas	
CSO053	6/18/15 5:15 PM	6/18/15 5:45 PM	184,004.63	0.02	0.67	274,633.77	1.19	0.38	1	Atlas	
CSO053	6/20/15 1:30 AM	6/20/15 8:15 AM	244,975.12	0.28	0.95	257,868.55	2.33	0.39	12	Atlas	
CSO053	6/22/15 6:00 AM	6/22/15 6:15 AM	961.54	0.01	0.24	4,006.42	2.51	0.11	3	Atlas	
CSO053	6/25/15 11:45 PM	6/26/15 1:00 AM	47,101.16	0.05	0.57	82,633.61	1.63	0.31	6	Atlas	
CSO053	6/26/15 5:00 PM	6/27/15 12:00 AM	327,390.24	0.29	1.05	311,800.23	2.79	0.54	1	Atlas	
CSO053	6/29/15 1:15 PM	6/29/15 2:45 PM	21,326.34	0.06	0.25	85,305.36	1.87	0.12	1	Atlas	
<b>CSO053 Total Volume (Gal)</b>			3,307,080.40								
<b>CSO053 Events</b>			22.00								
CSO054	4/2/15 9:15 AM	4/3/15 4:45 PM	511,889.74	1.31	4.94	103,621.41	5.1	9.44	24	Cloudburst	
CSO054	4/7/15 4:15 AM	4/7/15 5:15 PM	64,863.91	0.54	1.11	58,435.96	6.04	0.54	1	Atlas	
CSO054	4/8/15 3:30 PM	4/8/15 3:30 PM	136.93	0.00	0.06	2,282.12	6.1	0.04	1	Atlas	
CSO054	4/9/15 11:30 AM	4/9/15 12:15 PM	483.19	0.03	0.26	1,858.41	5.99	0.23	1	Atlas	
CSO054	4/10/15 1:45 AM	4/10/15 3:00 AM	29,909.36	0.05	0.22	135,951.63	4.11	0.14	3	Atlas	
CSO054	4/13/15 7:45 PM	4/13/15 9:00 PM	1,498.42	0.05	0.66	2,270.33	1.88	0.25	24	Atlas	
CSO054	4/14/15 6:30 AM	4/14/15 11:30 AM	762.78	0.21	0.66	1,155.73	2.24	0.25	24	Atlas	
CSO054	4/19/15 6:15 AM	4/19/15 6:00 PM	4,325.26	0.49	0.68	6,360.68	1.39	0.28	12	Atlas	
CSO054	4/20/15 3:15 AM	4/20/15 3:15 AM	252.50	0.00	0.1	2,525.00	1.49	0.09	1	Atlas	
CSO054	4/25/15 8:45 AM	4/25/15 9:15 AM	732.43	0.02	0.17	4,308.39	0.98	0.08	12	Atlas	
CSO054	4/25/15 6:45 PM	4/25/15 6:45 PM	73.11	0.00	0.08	913.93	1.01	0.05	3	Atlas	
CSO054	4/30/15 12:30 PM	4/30/15 1:45 PM	3,125.67	0.05	0.17	18,386.27	0.42	0.15	1	Atlas	
CSO054	5/9/15 3:15 AM	5/9/15 4:00 AM	1,154.22	0.03	0.09	12,824.65	0.08	0.05	3	Atlas	
CSO054	5/11/15 5:30 PM	5/11/15 5:30 PM	1,359.99	0.00	0.06	22,666.49	0.15	0.05	1	Atlas	
CSO054	5/16/15 11:15 AM	5/16/15 3:15 PM	33,359.43	0.17	0.6	55,599.05	0.7	0.35	3	Atlas	
CSO054	5/17/15 2:00 PM	5/17/15 3:00 PM	13,597.02	0.04	0.08	169,962.75	0.76	0.04	12	Atlas	
CSO054	5/25/15 6:15 AM	5/25/15 10:00 AM	4,761.63	0.16	0.28	17,005.80	0.29	0.13	12	Atlas	
CSO054	5/26/15 2:00 PM	5/26/15 2:45 PM	2,073.86	0.03	0.16	12,961.65	0.4	0.10	1	Atlas	
CSO054	5/27/15 1:45 PM	5/27/15 2:00 PM	718.20	0.01	0.1	7,181.98	0.54	0.09	1	Atlas	
CSO054	6/8/15 7:00 AM	6/8/15 9:30 AM	7,062.67	0.10	0.18	39,237.04	0.25	0.11	3	Atlas	
CSO054	6/17/15 4:45 AM	6/17/15 7:30 AM	6,218.99	0.11	0.64	9,717.17	0.66	0.35	3	Atlas	
CSO054	6/17/15 5:15 PM	6/17/15 5:15 PM	41.95	0.00	0.07	599.26	0.72	0.05	1	Atlas	
CSO054	6/18/15 4:15 PM	6/18/15 8:45 PM	11,746.93	0.19	0.67	17,532.73	1.3	0.38	1	Atlas	
CSO054	6/20/15 12:30 AM	6/20/15 9:45 AM	27,964.62	0.39	0.95	29,436.44	2.35	0.39	12	Atlas	



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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB.Ret
CSO054	6/22/15 6:00 AM	6/22/15 6:45 AM	678.06	0.03	0.24	2,825.26	2.55	0.11	3	Atlas	
CSO054	6/25/15 11:45 PM	6/26/15 4:30 AM	3,428.86	0.20	0.57	6,015.55	1.85	0.31	6	Atlas	
CSO054	6/26/15 5:00 PM	6/27/15 1:15 AM	65,154.71	0.34	1.05	62,052.11	2.81	0.54	1	Atlas	
CSO054	6/29/15 3:45 AM	6/29/15 3:45 AM	1,641.17	0.00	0.25	6,564.67	1.81	0.12	1	Atlas	
CSO054	6/29/15 1:30 PM	6/29/15 3:00 PM	2,395.08	0.06	0.25	9,580.33	1.87	0.12	1	Atlas	
<b>CSO054 Total Volume (Gal)</b>			801,410.68								
<b>CSO054 Events</b>			29.00								
CSO055	4/3/15 12:15 AM	4/3/15 4:45 AM	36,390.90	0.19	4.94	7,366.58	3.77	9.44	24	Cloudburst	
CSO055	4/7/15 9:15 AM	4/7/15 9:30 AM	4,637.49	0.01	1.11	4,177.92	5.69	0.54	1	Atlas	
CSO055	5/16/15 11:45 AM	5/16/15 11:45 AM	5,477.39	0.00	0.6	9,128.98	0.44	0.35	3	Atlas	
CSO055	5/17/15 2:15 PM	5/17/15 2:15 PM	9,261.21	0.00	0.08	115,765.10	0.76	0.04	12	Atlas	
CSO055	6/17/15 4:45 AM	6/17/15 4:45 AM	3,581.83	0.00	0.64	5,596.61	0.38	0.35	3	Atlas	
CSO055	6/18/15 5:15 PM	6/18/15 5:15 PM	11,480.37	0.00	0.67	17,134.87	1.07	0.38	1	Atlas	
CSO055	6/20/15 1:30 AM	6/20/15 5:15 AM	1,698.21	0.16	0.95	1,787.59	2.04	0.39	12	Atlas	
CSO055	6/26/15 5:15 PM	6/26/15 5:30 PM	10,731.03	0.01	1.05	10,220.03	2.38	0.54	1	Atlas	
<b>CSO055 Total Volume (Gal)</b>			83,258.42								
<b>CSO055 Events</b>			8.00								
CSO057	4/2/15 2:45 PM	4/2/15 3:00 PM	4,331.71	0.01	5.15	841.11	1.09	10.13	24	Cloudburst	
CSO057	4/3/15 12:15 AM	4/3/15 4:30 AM	6,303.43	0.18	5.15	1,223.97	3.9	10.13	24	Cloudburst	
CSO057	4/7/15 9:15 AM	4/7/15 9:15 AM	7,679.92	0.00	0.9	8,532.25	5.73	0.45	1	Atlas	
CSO057	4/10/15 2:15 AM	4/10/15 2:15 AM	3,537.07	0.00	0.21	16,843.20	3.37	0.13	3	Atlas	
CSO057	5/16/15 11:45 AM	5/16/15 11:45 AM	6.39	0.00	0.54	11.82	0.43	0.30	3	Atlas	
CSO057	5/26/15 2:00 PM	5/26/15 2:00 PM	124.78	0.00	0.16	779.88	0.4	0.10	1	Atlas	
CSO057	6/18/15 5:15 PM	6/18/15 5:15 PM	3,317.32	0.00	1.53	2,168.18	1.05	0.50	48	Atlas	
CSO057	6/25/15 11:45 PM	6/25/15 11:45 PM	342.17	0.00	0.5	684.33	1.48	0.26	6	Atlas	
CSO057	6/26/15 5:00 PM	6/26/15 5:00 PM	4,300.15	0.00	0.89	4,831.62	2.07	0.46	1	Atlas	
<b>CSO057 Total Volume (Gal)</b>			29,942.03								
<b>CSO057 Events</b>			9.00								
CSO058	4/2/15 10:30 AM	4/2/15 3:15 PM	2,770.84	0.20	5.08	545.44	1.12	9.60	24	Cloudburst	
CSO058	4/3/15 12:15 AM	4/3/15 5:00 PM	21,397.30	0.70	5.08	4,212.07	5.1	9.60	24	Cloudburst	
CSO058	4/7/15 9:15 AM	4/7/15 5:45 PM	4,363.67	0.35	0.89	4,903.00	5.97	0.43	1	Atlas	
CSO058	4/9/15 11:30 AM	4/9/15 11:45 AM	761.51	0.01	0.11	6,922.82	5.81	0.10	1	Atlas	
CSO058	4/10/15 2:15 AM	4/10/15 2:30 AM	600.65	0.01	0.21	2,860.22	3.41	0.13	3	Atlas	
CSO058	4/13/15 8:45 PM	4/13/15 9:15 PM	1,001.00	0.02	0.4	2,502.50	1.53	0.15	24	Atlas	
CSO058	4/19/15 7:30 AM	4/19/15 2:30 PM	359.78	0.29	0.73	492.85	1.06	0.31	12	Atlas	
CSO058	4/30/15 12:45 PM	4/30/15 12:45 PM	323.94	0.00	0.19	1,704.93	0.39	0.17	1	Atlas	
CSO058	5/16/15 11:45 AM	5/16/15 11:45 AM	264.03	0.00	0.56	471.48	0.4	0.28	3	Atlas	
CSO058	5/17/15 2:15 PM	5/17/15 2:15 PM	223.58	0.00	0.04	5,589.58	0.64	0.02	12	Atlas	
CSO058	5/26/15 2:00 PM	5/26/15 2:00 PM	976.72	0.00	0.16	6,104.49	0.42	0.10	1	Atlas	
CSO058	6/8/15 7:00 AM	6/8/15 8:15 AM	314.29	0.05	0.25	1,257.17	0.29	0.13	6	Atlas	
CSO058	6/17/15 4:45 AM	6/17/15 6:00 AM	528.17	0.05	0.65	812.56	0.61	0.37	3	Atlas	
CSO058	6/18/15 5:15 PM	6/18/15 5:45 PM	5,608.56	0.02	1.48	3,789.57	1.14	0.48	48	Atlas	
CSO058	6/20/15 1:30 AM	6/20/15 8:00 AM	1,090.74	0.27	1.48	736.99	2.2	0.48	48	Atlas	
CSO058	6/25/15 11:45 PM	6/25/15 11:45 PM	1,241.60	0.00	0.5	2,483.21	1.45	0.26	6	Atlas	
CSO058	6/26/15 5:00 PM	6/27/15 12:00 AM	6,984.52	0.29	0.92	7,591.87	2.5	0.49	1	Atlas	
CSO058	6/29/15 1:45 PM	6/29/15 1:45 PM	93.50	0.00	0.24	389.58	1.65	0.14	1	Atlas	
<b>CSO058 Total Volume (Gal)</b>			48,904.41								
<b>CSO058 Events</b>			18.00								

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB.Ret
CSO083	4/2/15 3:15 PM	4/2/15 3:15 PM	20,850.56	0.00	4.71	4,426.87	0.88	8.02	6	Cloudburst	
CSO083	4/3/15 12:30 AM	4/3/15 11:15 AM	415,074.65	0.45	4.71	88,126.25	4.36	8.02	6	Cloudburst	
CSO083	4/7/15 5:00 PM	4/7/15 5:00 PM	10,817.83	0.00	0.86	12,578.88	5.55	0.39	1	Atlas	
CSO083	4/9/15 11:30 AM	4/9/15 11:30 AM	17,946.68	0.00	0.26	69,025.68	5.53	0.23	1	Atlas	
CSO083	5/17/15 2:15 PM	5/17/15 2:15 PM	24,024.00	0.00	0.08	300,300.00	0.5	0.05	1	Atlas	
CSO083	5/26/15 1:45 PM	5/26/15 2:00 PM	75,339.74	0.01	0.28	269,070.50	0.48	0.20	1	Atlas	
CSO083	6/17/15 4:45 AM	6/17/15 4:45 AM	2,238.79	0.00	0.54	4,145.91	0.33	0.29	3	Atlas	
CSO083	6/18/15 5:30 PM	6/18/15 5:30 PM	9,878.28	0.00	1.61	6,135.58	1.15	0.52	48	Atlas	
CSO083	6/26/15 12:00 AM	6/26/15 12:00 AM	1,625.15	0.00	0.5	3,250.29	1.52	0.27	6	Atlas	
CSO083	6/26/15 5:15 PM	6/26/15 5:15 PM	62,705.89	0.00	0.9	69,673.22	2.24	0.52	1	Atlas	
<b>CSO083 Total Volume (Gal)</b>			640,501.57								
<b>CSO083 Events</b>			10.00								
CSO084	4/2/15 11:00 AM	4/2/15 11:15 AM	2,670.91	0.01	4.71	567.07	0.49	8.02	6	Cloudburst	
CSO084	4/3/15 2:15 AM	4/3/15 6:30 PM	149,857.40	0.68	4.71	31,816.86	4.73	8.02	6	Cloudburst	
CSO084	4/7/15 4:45 PM	4/7/15 5:30 PM	1,444.59	0.03	0.86	1,679.76	5.58	0.39	1	Atlas	
CSO084	4/8/15 6:30 PM	4/8/15 6:30 PM	1,306.82	0.00	0.11	11,880.21	5.68	0.06	3	Atlas	
CSO084	4/9/15 12:00 PM	4/9/15 12:00 PM	1,234.40	0.00	0.26	4,747.68	5.6	0.23	1	Atlas	
CSO084	4/10/15 2:45 AM	4/10/15 2:45 AM	4.50	0.00	0.17	26.47	3.08	0.10	3	Atlas	
CSO084	4/13/15 8:30 PM	4/13/15 8:45 PM	2,095.66	0.01	0.37	5,663.94	1.48	0.15	6	Atlas	
CSO084	4/19/15 2:45 PM	4/19/15 2:45 PM	426.35	0.00	0.7	609.08	1.08	0.29	12	Atlas	
CSO084	5/27/15 1:45 PM	5/27/15 1:45 PM	914.88	0.00	0.1	9,148.75	0.63	0.09	1	Atlas	
CSO084	6/8/15 8:15 AM	6/8/15 8:30 AM	999.32	0.01	0.22	4,542.38	0.24	0.12	6	Atlas	
CSO084	6/17/15 5:15 AM	6/17/15 6:00 AM	3,745.67	0.03	0.54	6,936.42	0.54	0.29	3	Atlas	
CSO084	6/18/15 5:00 PM	6/18/15 6:15 PM	873.00	0.05	1.61	542.24	1.17	0.52	48	Atlas	
CSO084	6/20/15 1:30 AM	6/20/15 8:30 AM	6,127.98	0.29	1.61	3,806.20	2.3	0.52	48	Atlas	
CSO084	6/26/15 12:15 AM	6/26/15 12:15 AM	309.86	0.00	0.5	1,619.73	1.53	0.27	6	Atlas	
CSO084	6/26/15 5:30 PM	6/26/15 5:45 PM	3,152.95	0.01	0.9	3,503.28	2.26	0.52	1	Atlas	
<b>CSO084 Total Volume (Gal)</b>			175,164.29								
<b>CSO084 Events</b>			15.00								
CSO088	4/2/15 11:00 AM	4/2/15 3:45 PM	40,085.80	0.20	3.87	10,358.09	0.97	3.28	24	Cloudburst	
CSO088	4/3/15 12:30 AM	4/3/15 10:30 PM	2,269,577.36	0.92	3.87	586,454.10	3.89	3.28	24	Cloudburst	
CSO088	5/17/15 2:45 PM	5/17/15 2:45 PM	9,730.58	0.00	0.1	97,305.85	0.6	0.05	1	Atlas	
CSO088	5/26/15 2:15 PM	5/26/15 2:30 PM	16,886.30	0.01	0.41	41,186.10	0.61	0.31	1	Atlas	
CSO088	6/17/15 5:15 AM	6/17/15 5:30 AM	8,309.14	0.01	0.62	13,401.84	0.5	0.36	3	Atlas	
CSO088	6/18/15 5:30 PM	6/18/15 6:15 PM	143,137.05	0.03	1.47	97,372.14	1.13	0.48	48	Atlas	
CSO088	6/20/15 2:00 AM	6/20/15 9:00 AM	58,492.67	0.29	1.47	39,790.93	2.19	0.48	48	Atlas	
CSO088	6/26/15 5:30 PM	6/26/15 6:00 PM	47,386.50	0.02	0.95	49,880.53	2.11	0.51	1	Atlas	
<b>CSO088 Total Volume (Gal)</b>			2,593,605.40								
<b>CSO088 Events</b>			8.00								
CSO091	4/2/15 10:45 AM	4/2/15 3:30 PM	108,642.80	0.20	5.12	21,219.30	0.97	13.81	6	Cloudburst	
CSO091	4/3/15 12:15 AM	4/3/15 5:00 PM	694,759.20	0.70	5.12	135,695.16	5.13	13.81	6	Cloudburst	
CSO091	4/7/15 9:15 AM	4/7/15 5:30 PM	47,318.47	0.34	0.78	60,664.70	5.91	0.33	12	Atlas	
CSO091	4/8/15 6:15 PM	4/8/15 6:30 PM	27,444.92	0.01	0.16	171,530.73	6.06	0.09	3	Atlas	
CSO091	4/9/15 11:30 AM	4/9/15 12:00 PM	16,409.21	0.02	0.25	65,636.83	5.95	0.22	1	Atlas	
CSO091	4/10/15 2:15 AM	4/10/15 2:30 AM	12,533.65	0.01	0.14	89,526.08	3.56	0.09	3	Atlas	
CSO091	4/13/15 8:30 PM	4/13/15 9:00 PM	5,776.35	0.02	0.38	15,200.93	1.41	0.16	6	Atlas	
CSO091	4/19/15 2:15 PM	4/19/15 2:30 PM	21,983.01	0.01	0.75	29,310.68	1.14	0.31	12	Atlas	
CSO091	4/25/15 9:15 AM	4/25/15 9:15 AM	111.58	0.00	0.12	929.86	0.94	0.06	6	Atlas	

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB.Ret
CSO091	5/17/15 2:15 PM	5/17/15 2:30 PM	2,226.75	0.01	0.1	22,267.50	0.5	0.06	1	Atlas	
CSO091	5/26/15 1:45 PM	5/26/15 2:15 PM	64,234.78	0.02	0.24	267,644.93	0.42	0.16	1	Atlas	
CSO091	5/27/15 1:45 PM	5/27/15 1:45 PM	608.07	0.00	0.14	4,343.38	0.61	0.12	1	Atlas	
CSO091	6/8/15 8:30 AM	6/8/15 8:30 AM	16.25	0.00	0.32	50.78	0.32	0.19	3	Atlas	
CSO091	6/17/15 4:45 AM	6/17/15 6:15 AM	32,910.38	0.06	0.6	54,850.63	0.64	0.33	3	Atlas	
CSO091	6/18/15 4:15 PM	6/18/15 5:45 PM	115,630.38	0.06	1.84	62,842.60	1.54	0.60	48	Atlas	
CSO091	6/20/15 1:30 AM	6/20/15 8:15 AM	26,820.70	0.28	1.84	14,576.47	2.62	0.60	48	Atlas	
CSO091	6/26/15 12:00 AM	6/26/15 12:00 AM	33,991.89	0.00	0.62	54,825.64	1.59	0.34	6	Atlas	
CSO091	6/26/15 5:00 PM	6/27/15 12:30 AM	21,333.05	0.31	0.81	26,337.09	2.52	0.38	1	Atlas	
CSO091	6/29/15 1:30 PM	6/29/15 1:30 PM	1,702.54	0.00	0.18	9,458.56	1.6	0.11	1	Atlas	
<b>CSO091 Total Volume (Gal)</b>			1,234,453.99								
<b>CSO091 Events</b>			19.00								
CSO092	4/2/15 9:45 AM	4/2/15 3:15 PM	25,395.70	0.23	5.12	4,960.10	0.99	13.81	6	Cloudburst	
CSO092	4/3/15 12:15 AM	4/3/15 5:15 PM	512,205.89	0.71	5.12	100,040.21	5.13	13.81	6	Cloudburst	
CSO092	4/7/15 9:15 AM	4/7/15 5:30 PM	21,678.80	0.34	0.78	27,793.33	5.91	0.33	12	Atlas	
CSO092	4/8/15 6:15 PM	4/8/15 6:15 PM	11,181.45	0.00	0.16	69,884.05	6.06	0.09	3	Atlas	
CSO092	4/9/15 11:30 AM	4/9/15 12:00 PM	6,628.37	0.02	0.25	26,513.46	5.95	0.22	1	Atlas	
CSO092	4/10/15 2:15 AM	4/10/15 3:00 AM	4,258.28	0.03	0.14	30,416.29	3.59	0.09	3	Atlas	
CSO092	4/13/15 8:30 PM	4/13/15 9:00 PM	1,498.91	0.02	0.38	3,944.49	1.41	0.16	6	Atlas	
CSO092	4/19/15 6:30 AM	4/19/15 2:15 PM	10,201.43	0.32	0.75	13,601.91	1.14	0.31	12	Atlas	
CSO092	4/25/15 9:15 AM	4/25/15 9:15 AM	612.88	0.00	0.12	5,107.29	0.94	0.06	6	Atlas	
CSO092	4/25/15 7:00 PM	4/25/15 7:00 PM	246.08	0.00	0.1	2,460.83	1	0.06	3	Atlas	
CSO092	5/9/15 3:15 AM	5/9/15 4:45 AM	158.41	0.06	0.11	1,440.06	0.11	0.06	3	Atlas	
CSO092	5/11/15 1:45 PM	5/11/15 5:30 PM	127.04	0.16	0.09	1,411.57	0.21	0.08	1	Atlas	
CSO092	5/16/15 11:30 AM	5/16/15 1:15 PM	75.19	0.07	0.33	227.84	0.36	0.15	3	Atlas	
CSO092	5/25/15 6:15 AM	5/25/15 6:45 AM	188.20	0.02	0.23	818.25	0.13	0.11	12	Atlas	
CSO092	5/26/15 1:30 PM	5/26/15 2:00 PM	29,979.45	0.02	0.24	124,914.37	0.42	0.16	1	Atlas	
CSO092	5/27/15 1:30 PM	5/27/15 1:30 PM	1,014.46	0.00	0.14	7,246.13	0.59	0.12	1	Atlas	
CSO092	6/8/15 6:30 AM	6/8/15 8:15 AM	198.46	0.07	0.32	620.18	0.39	0.19	3	Atlas	
CSO092	6/17/15 4:30 AM	6/17/15 5:30 AM	37,324.54	0.04	0.6	62,207.57	0.53	0.33	3	Atlas	
CSO092	6/18/15 4:00 PM	6/18/15 5:30 PM	151,457.20	0.06	1.84	82,313.69	1.52	0.60	48	Atlas	
CSO092	6/19/15 1:00 PM	6/19/15 1:00 PM	914.63	0.00	1.84	497.08	1.74	0.60	48	Atlas	
CSO092	6/20/15 1:30 AM	6/20/15 8:45 AM	41,897.67	0.30	1.84	22,770.48	2.64	0.60	48	Atlas	
CSO092	6/22/15 5:45 AM	6/22/15 6:00 AM	115.77	0.01	0.22	526.23	2.72	0.10	12	Atlas	
CSO092	6/25/15 11:30 PM	6/25/15 11:45 PM	41,607.05	0.01	0.62	67,108.15	1.58	0.34	6	Atlas	
CSO092	6/26/15 5:00 PM	6/27/15 12:45 AM	26,090.52	0.32	0.81	32,210.52	2.55	0.38	1	Atlas	
CSO092	6/29/15 1:15 PM	6/29/15 1:30 PM	13,106.03	0.01	0.18	72,811.28	1.6	0.11	1	Atlas	
<b>CSO092 Total Volume (Gal)</b>			938,162.38								
<b>CSO092 Events</b>			25.00								
CSO093	5/16/15 11:45 AM	5/16/15 1:30 PM	2,190.48	0.07	0.34	6,442.59	0.4	0.19	3	Atlas	
CSO093	5/17/15 2:30 PM	5/17/15 2:30 PM	456.34	0.00	0.16	2,852.15	0.6	0.12	1	Atlas	
CSO093	5/25/15 7:15 AM	5/25/15 8:30 AM	549.34	0.05	0.27	2,034.61	0.23	0.12	12	Atlas	
CSO093	5/27/15 1:45 PM	5/27/15 1:45 PM	324.42	0.00	0.09	3,604.63	0.71	0.08	1	Atlas	
CSO093	5/30/15 4:15 PM	5/30/15 4:15 PM	761.42	0.00	0.04	19,035.42	0.73	0.03	1	Atlas	
CSO093	6/8/15 7:15 AM	6/8/15 7:30 AM	517.07	0.01	0.2	2,585.36	0.19	0.12	3	Atlas	
CSO093	6/17/15 5:30 AM	6/17/15 6:30 AM	5,790.77	0.04	0.65	8,908.88	0.69	0.37	3	Atlas	

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CSO093	6/18/15 4:30 PM	6/18/15 5:45 PM	21,576.43	0.05	1.48	14,578.67	1.17	0.48	48	Atlas	
CSO093	6/20/15 4:00 AM	6/20/15 11:00 AM	1,506.58	0.29	1.48	1,017.96	2.23	0.48	48	Atlas	
CSO093	6/22/15 6:15 AM	6/22/15 6:30 AM	849.96	0.01	0.21	4,047.42	2.36	0.10	3	Atlas	
CSO093	6/26/15 1:15 AM	6/26/15 3:00 AM	536.74	0.07	0.45	1,192.75	1.57	0.24	6	Atlas	
CSO093	6/26/15 5:15 PM	6/27/15 1:00 AM	2,646.59	0.32	0.88	3,007.49	2.41	0.52	1	Atlas	
CSO093	6/29/15 3:45 AM	6/29/15 3:45 AM	172.20	0.00	0.34	506.46	1.54	0.19	1	Atlas	
CSO093	6/29/15 1:30 PM	6/29/15 2:45 PM	364.93	0.05	0.34	1,073.32	1.67	0.19	1	Atlas	
<b>CSO093 Total Volume (Gal)</b>			38,243.28								
<b>CSO093 Events</b>			14.00								
CSO097	4/2/15 10:45 AM	4/6/15 2:30 PM	3,769,701.67	4.16	5.54	680,451.57	5.68	28.12	6	Cloudburst	
CSO097	4/7/15 7:30 AM	4/10/15 11:30 PM	879,590.52	3.67	0.69	1,274,768.87	6.92	0.29	12	Atlas	
CSO097	4/13/15 8:30 PM	4/13/15 10:45 PM	45,008.73	0.09	0.49	91,854.55	1.49	0.19	6	Atlas	
CSO097	4/14/15 8:15 AM	4/14/15 1:00 PM	29,281.14	0.20	0.49	59,757.42	1.73	0.19	6	Atlas	
CSO097	4/19/15 2:00 PM	4/19/15 4:30 PM	64,404.14	0.10	0.72	89,450.20	1.25	0.31	12	Atlas	
CSO097	4/20/15 3:30 AM	4/20/15 4:15 AM	47.27	0.03	0.07	675.30	1.38	0.06	1	Atlas	
CSO097	5/11/15 6:00 PM	5/11/15 6:45 PM	832.04	0.03	0.14	5,943.15	0.3	0.12	1	Atlas	
CSO097	5/17/15 3:00 PM	5/17/15 3:15 PM	484.00	0.01	0.11	4,400.00	0.52	0.08	1	Atlas	
CSO097	5/26/15 2:00 PM	5/26/15 3:15 PM	13,201.18	0.05	0.25	52,804.71	0.47	0.15	1	Atlas	
CSO097	6/17/15 5:00 AM	6/17/15 7:45 AM	27,500.77	0.11	0.6	45,834.62	0.92	0.33	3	Atlas	
CSO097	6/18/15 4:15 PM	6/19/15 1:15 AM	322,880.42	0.38	2.28	141,614.22	2.06	0.74	48	Atlas	
CSO097	6/20/15 2:15 AM	6/20/15 4:15 PM	341,035.19	0.58	2.28	149,576.84	3.31	0.74	48	Atlas	
CSO097	6/26/15 12:00 AM	6/26/15 6:30 AM	185,981.57	0.27	0.63	295,208.84	2.1	0.34	6	Atlas	
CSO097	6/26/15 5:00 PM	6/27/15 5:15 AM	216,844.11	0.51	0.75	289,125.48	2.68	0.35	1	Atlas	
CSO097	6/29/15 1:30 PM	6/29/15 5:15 PM	50,359.83	0.16	0.14	359,713.10	1.52	0.10	1	Atlas	
<b>CSO097 Total Volume (Gal)</b>			5,947,152.58								
<b>CSO097 Events</b>			15.00								
CSO104	4/2/15 3:00 PM	4/2/15 4:00 PM	59,580.92	0.04	4.8	12,412.69	0.9	10.76	6	Cloudburst	
CSO104	4/3/15 12:15 AM	4/3/15 7:15 AM	1,751,467.72	0.29	4.8	364,889.11	4.38	10.76	6	Cloudburst	
CSO104	4/7/15 9:15 AM	4/7/15 10:30 AM	70,076.16	0.05	1.03	68,035.10	5.5	0.45	1	Atlas	
CSO104	5/16/15 11:45 AM	5/16/15 1:45 PM	47,369.07	0.08	0.94	50,392.63	0.98	0.50	3	Atlas	
CSO104	6/8/15 8:00 AM	6/8/15 8:45 AM	1,952.53	0.03	0.14	13,946.65	0.18	0.08	3	Atlas	
CSO104	6/17/15 5:15 AM	6/17/15 3:15 PM	6,049.56	0.42	0.66	9,166.00	0.67	0.37	3	Atlas	
CSO104	6/20/15 12:15 AM	6/20/15 4:45 AM	1,861.08	0.19	1.14	1,632.53	2.33	0.46	12	Atlas	
CSO104	6/21/15 9:15 PM	6/22/15 9:45 AM	96,857.02	0.52	0.25	387,428.10	2.96	0.11	12	Atlas	
CSO104	6/26/15 12:15 AM	6/26/15 4:15 AM	3,854.55	0.17	0.85	4,534.77	2.32	0.46	6	Atlas	
CSO104	6/26/15 5:00 PM	6/27/15 2:30 AM	276,929.78	0.40	0.89	311,157.06	3.13	0.50	1	Atlas	
CSO104	6/29/15 2:30 PM	6/29/15 2:45 PM	1,747.16	0.01	0.29	6,024.68	2.03	0.14	1	Atlas	
<b>CSO104 Total Volume (Gal)</b>			2,317,745.56								
<b>CSO104 Events</b>			11.00								
CSO105	4/2/15 9:15 AM	4/3/15 7:45 PM	65,979,022.85	1.44	4.8	13,745,629.76	4.95	10.76	6	Cloudburst	
CSO105	4/7/15 9:00 AM	4/7/15 7:45 PM	9,593,798.09	0.45	1.03	9,314,367.08	5.83	0.45	1	Atlas	
CSO105	4/8/15 3:45 PM	4/8/15 4:15 PM	1,357.57	0.02	0.05	27,151.46	5.87	0.03	1	Atlas	
CSO105	4/10/15 2:00 AM	4/10/15 5:00 AM	2,888,296.47	0.13	0.28	10,315,344.54	3.91	0.19	1	Atlas	
CSO105	4/13/15 7:00 PM	4/13/15 11:00 PM	1,604,452.94	0.17	0.87	1,844,198.78	2.04	0.33	24	Atlas	
CSO105	4/19/15 6:45 AM	4/19/15 8:15 PM	825,244.85	0.56	0.83	994,270.91	1.76	0.34	12	Atlas	
CSO105	5/16/15 11:30 AM	5/16/15 3:15 PM	5,050,586.55	0.16	0.94	5,372,964.41	1.02	0.50	3	Atlas	
CSO105	5/17/15 2:00 PM	5/17/15 4:15 PM	12,039.35	0.09	0.09	133,770.60	1.11	0.04	1	Atlas	
CSO105	5/25/15 6:15 AM	5/25/15 9:30 AM	8,838.14	0.14	0.3	29,460.45	0.32	0.15	6	Atlas	

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CSO105	5/31/15 6:15 AM	5/31/15 6:30 AM	1,029.31	0.01	0.1	10,293.13	0.8	0.05	1	Atlas	
CSO105	6/1/15 7:15 AM	6/1/15 9:30 AM	5,064.99	0.09	0.16	31,656.19	0.81	0.09	3	Atlas	
CSO105	6/8/15 6:45 AM	6/8/15 10:00 AM	84,765.00	0.14	0.14	605,464.90	0.26	0.08	3	Atlas	
CSO105	6/17/15 4:45 AM	6/17/15 8:15 AM	3,302,171.89	0.15	0.66	5,003,290.74	0.67	0.37	3	Atlas	
CSO105	6/18/15 5:15 PM	6/18/15 8:15 PM	3,188,822.97	0.13	0.83	3,841,955.38	1.48	0.54	1	Atlas	
CSO105	6/19/15 5:45 PM	6/19/15 6:15 PM	2,876.13	0.02	1.14	2,522.92	1.71	0.46	12	Atlas	
CSO105	6/21/15 9:30 PM	6/22/15 7:45 AM	7,601.72	0.43	0.25	30,406.88	2.96	0.11	12	Atlas	
CSO105	6/25/15 11:45 PM	6/26/15 4:15 AM	1,035,664.32	0.19	0.85	1,218,428.62	2.33	0.46	6	Atlas	
CSO105	6/26/15 5:00 PM	6/27/15 2:15 AM	9,320,273.46	0.39	0.89	10,472,217.37	3.13	0.50	1	Atlas	
CSO105	6/29/15 5:00 AM	6/29/15 3:45 PM	799,214.50	0.45	0.29	2,755,912.06	2.18	0.14	1	Atlas	
<b>CSO105 Total Volume (Gal)</b>			103,711,121.19								
<b>CSO105 Events</b>			19.00								
CSO106	4/2/15 10:30 AM	4/3/15 7:30 PM	665,046.18	1.38	5.54	120,044.44	5.68	28.12	6	Cloudburst	
CSO106	4/7/15 9:15 AM	4/8/15 9:30 PM	61,668.00	1.51	0.69	89,373.91	6.41	0.29	12	Atlas	
CSO106	4/9/15 11:30 AM	4/9/15 2:30 PM	11,389.98	0.13	0.36	31,638.83	6.39	0.31	1	Atlas	
CSO106	4/10/15 2:15 AM	4/10/15 2:15 AM	169.94	0.00	0.15	1,132.92	3.75	0.09	3	Atlas	
CSO106	4/19/15 2:00 PM	4/19/15 2:30 PM	23,637.74	0.02	0.72	32,830.19	1.25	0.31	12	Atlas	
CSO106	4/20/15 3:15 AM	4/20/15 3:15 AM	262.17	0.00	0.07	3,745.24	1.37	0.06	1	Atlas	
CSO106	4/25/15 6:45 PM	4/25/15 6:45 PM	1,157.51	0.00	0.05	23,150.21	0.92	0.03	3	Atlas	
CSO106	5/11/15 5:30 PM	5/11/15 5:30 PM	12,512.46	0.00	0.14	89,374.70	0.29	0.12	1	Atlas	
CSO106	5/17/15 2:15 PM	5/17/15 2:15 PM	772.43	0.00	0.11	7,022.06	0.51	0.08	1	Atlas	
CSO106	5/26/15 1:30 PM	5/26/15 2:00 PM	2,752.56	0.02	0.25	11,010.25	0.47	0.15	1	Atlas	
CSO106	5/27/15 1:30 PM	5/27/15 1:30 PM	915.51	0.00	0.27	3,390.78	0.79	0.23	1	Atlas	
CSO106	6/8/15 8:15 AM	6/8/15 8:15 AM	4,443.96	0.00	0.35	12,697.02	0.38	0.19	3	Atlas	
CSO106	6/17/15 4:30 AM	6/17/15 5:30 AM	16,009.66	0.04	0.6	26,682.76	0.78	0.33	3	Atlas	
CSO106	6/18/15 4:00 PM	6/18/15 5:30 PM	91,581.62	0.06	2.28	40,167.38	1.94	0.74	48	Atlas	
CSO106	6/19/15 2:45 AM	6/19/15 2:45 AM	65.75	0.00	2.28	28.84	2.07	0.74	48	Atlas	
CSO106	6/20/15 1:30 AM	6/20/15 8:45 AM	51,566.71	0.30	2.28	22,616.98	3.3	0.74	48	Atlas	
CSO106	6/25/15 11:45 PM	6/26/15 1:45 AM	8,768.06	0.08	0.63	13,917.56	1.94	0.34	6	Atlas	
CSO106	6/26/15 5:00 PM	6/27/15 2:45 AM	24,709.43	0.41	0.75	32,945.90	2.68	0.35	1	Atlas	
CSO106	6/29/15 1:15 PM	6/29/15 1:45 PM	8,905.13	0.02	0.14	63,608.04	1.52	0.10	1	Atlas	
<b>CSO106 Total Volume (Gal)</b>			986,334.78								
<b>CSO106 Events</b>			19.00								
CSO108	4/2/15 11:00 AM	4/5/15 9:15 AM	65,973,083.03	2.93	6.12	10,779,915.53	6.25	46.87	6	Cloudburst	
CSO108	4/7/15 9:45 AM	4/7/15 6:00 PM	62,355.84	0.34	0.84	74,233.14	6.96	0.35	12	Atlas	
CSO108	4/8/15 6:15 PM	4/8/15 7:30 PM	50,412.88	0.05	0.36	140,035.77	7.33	0.26	1	Atlas	
CSO108	4/9/15 11:45 AM	4/9/15 12:45 PM	38,318.00	0.04	0.43	89,111.63	7.17	0.37	1	Atlas	
CSO108	4/20/15 7:45 PM	4/21/15 3:45 AM	18,638.80	0.33	0.1	186,388.02	1.37	0.08	1	Atlas	
CSO108	5/11/15 6:00 PM	5/11/15 6:15 PM	14,565.79	0.01	0.38	38,331.03	0.57	0.33	1	Atlas	
CSO108	5/12/15 5:45 AM	5/12/15 9:15 AM	8,312.42	0.15	0.38	21,874.78	0.57	0.33	1	Atlas	
CSO108	5/12/15 11:45 PM	5/13/15 5:00 AM	3,687.81	0.22	0.38	9,704.77	0.57	0.33	1	Atlas	
CSO108	6/18/15 4:30 PM	6/18/15 11:15 PM	3,613,056.78	0.28	3	1,204,352.26	2.38	0.99	3	Atlas	
CSO108	6/20/15 8:00 AM	6/20/15 9:00 AM	159,411.00	0.04	3	53,137.00	3.83	0.99	3	Atlas	
CSO108	6/26/15 12:15 AM	6/26/15 12:30 AM	65,871.48	0.01	0.71	92,776.73	2.08	0.38	6	Atlas	
CSO108	6/26/15 5:30 PM	6/26/15 5:45 PM	47,071.80	0.01	0.68	69,223.24	2.57	0.31	1	Atlas	
CSO108	6/29/15 2:00 PM	6/29/15 2:15 PM	52,864.15	0.01	0.23	229,844.14	1.62	0.17	1	Atlas	
<b>CSO108 Total Volume (Gal)</b>			70,107,649.79								
<b>CSO108 Events</b>			13.00								

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CSO110	4/2/15 11:00 AM	4/5/15 3:45 AM	11,374,818.22	2.70	5.83	1,951,083.74	5.96	36.46	6	Cloudburst	
CSO110	4/7/15 8:00 AM	4/7/15 9:00 PM	886,920.01	0.54	0.74	1,198,540.55	6.58	0.31	12	Atlas	
CSO110	4/8/15 6:15 PM	4/8/15 8:30 PM	704,741.64	0.09	0.24	2,936,423.52	6.82	0.17	1	Atlas	
CSO110	4/9/15 11:45 AM	4/9/15 2:00 PM	503,578.27	0.09	0.23	2,189,470.76	6.64	0.20	1	Atlas	
CSO110	4/10/15 2:45 AM	4/10/15 4:15 AM	106,550.21	0.06	0.15	710,334.73	3.32	0.10	3	Atlas	
CSO110	4/13/15 9:00 PM	4/13/15 10:00 PM	89,601.33	0.04	0.45	199,114.07	1.47	0.18	6	Atlas	
CSO110	4/14/15 10:00 AM	4/14/15 12:15 PM	106,900.96	0.09	0.45	237,557.70	1.37	0.18	6	Atlas	
CSO110	4/19/15 2:15 PM	4/19/15 4:00 PM	378,736.02	0.07	0.75	504,981.36	1.22	0.32	12	Atlas	
CSO110	4/20/15 3:30 AM	4/20/15 4:00 AM	19,365.05	0.02	0.07	276,643.57	1.38	0.06	1	Atlas	
CSO110	5/17/15 2:30 PM	5/17/15 2:45 PM	112,312.80	0.01	0.17	660,663.51	0.59	0.12	1	Atlas	
CSO110	5/26/15 2:15 PM	5/26/15 3:00 PM	143,131.03	0.03	0.42	340,788.16	0.64	0.30	1	Atlas	
CSO110	6/17/15 5:00 AM	6/17/15 7:15 AM	543,792.01	0.09	0.7	776,845.72	1.04	0.37	3	Atlas	
CSO110	6/18/15 4:15 PM	6/19/15 12:15 AM	1,322,200.60	0.33	2.11	626,635.36	2.08	0.69	48	Atlas	
CSO110	6/20/15 2:00 AM	6/20/15 12:45 PM	833,229.04	0.45	2.11	394,895.28	3.28	0.69	48	Atlas	
CSO110	6/26/15 12:15 AM	6/26/15 4:45 AM	338,420.90	0.19	0.51	663,570.38	1.93	0.27	6	Atlas	
CSO110	6/26/15 5:15 PM	6/27/15 2:15 AM	736,287.78	0.38	0.77	956,217.90	2.48	0.37	1	Atlas	
CSO110	6/29/15 1:45 PM	6/29/15 2:45 PM	153,804.30	0.04	0.17	904,731.19	1.45	0.10	1	Atlas	
<b>CSO110 Total Volume (Gal)</b>			18,354,390.18								
<b>CSO110 Events</b>			17.00								
CSO111	4/9/15 11:45 AM	4/9/15 12:00 PM	24,643.32	0.01	0.23	107,144.88	6.64	0.20	1	Atlas	
CSO111	4/19/15 2:15 PM	4/19/15 2:30 PM	21,988.27	0.01	0.75	29,317.69	1.22	0.32	12	Atlas	
CSO111	4/20/15 3:15 AM	4/20/15 3:15 AM	5,031.57	0.00	0.07	71,879.61	1.37	0.06	1	Atlas	
CSO111	5/17/15 2:15 PM	5/17/15 2:15 PM	6,293.39	0.00	0.17	37,019.92	0.59	0.12	1	Atlas	
CSO111	5/26/15 1:45 PM	5/26/15 2:00 PM	4,186.67	0.01	0.42	9,968.25	0.64	0.30	1	Atlas	
CSO111	6/18/15 6:00 PM	6/18/15 6:15 PM	3,772.69	0.01	2.11	1,788.00	2.01	0.69	48	Atlas	
CSO111	6/20/15 7:30 AM	6/20/15 8:30 AM	10,194.35	0.04	2.11	4,831.45	3.26	0.69	48	Atlas	
<b>CSO111 Total Volume (Gal)</b>			76,110.26								
<b>CSO111 Events</b>			7.00								
CSO113	4/2/15 10:45 AM	4/2/15 4:00 PM	315,285.52	0.22	5.12	61,579.20	0.97	13.81	6	Cloudburst	
CSO113	4/3/15 12:15 AM	4/4/15 7:15 AM	4,019,056.64	1.29	5.12	784,972.00	5.14	13.81	6	Cloudburst	
CSO113	4/7/15 8:30 AM	4/7/15 7:00 PM	115,855.68	0.44	0.78	148,532.92	5.91	0.33	12	Atlas	
CSO113	4/8/15 6:15 PM	4/8/15 7:45 PM	31,403.13	0.06	0.16	196,269.59	6.06	0.09	3	Atlas	
CSO113	4/9/15 11:45 AM	4/9/15 1:30 PM	36,384.52	0.07	0.25	145,538.08	5.95	0.22	1	Atlas	
CSO113	4/10/15 2:30 AM	4/10/15 4:45 AM	21,510.41	0.09	0.14	153,645.76	3.4	0.09	3	Atlas	
CSO113	4/13/15 8:30 PM	4/13/15 10:15 PM	26,395.26	0.07	0.38	69,461.22	1.41	0.16	6	Atlas	
CSO113	4/14/15 7:30 AM	4/14/15 12:45 PM	34,272.56	0.22	0.38	90,190.96	1.62	0.16	6	Atlas	
CSO113	4/16/15 10:30 AM	4/16/15 11:15 AM	3,996.94	0.03	0.04	99,923.43	0.87	0.03	1	Atlas	
CSO113	4/19/15 6:30 AM	4/20/15 4:30 AM	174,809.82	0.92	0.75	233,079.76	1.29	0.31	12	Atlas	
CSO113	4/25/15 9:15 AM	4/25/15 10:30 AM	14,408.97	0.05	0.12	120,074.74	0.94	0.06	6	Atlas	
CSO113	4/25/15 7:00 PM	4/25/15 8:00 PM	14,756.27	0.04	0.1	147,562.71	1.01	0.06	3	Atlas	
CSO113	4/30/15 1:00 PM	4/30/15 1:30 PM	2,309.40	0.02	0.02	115,469.80	0.23	0.01	6	Atlas	
CSO113	5/9/15 3:30 AM	5/9/15 5:15 AM	3,650.37	0.07	0.11	33,185.23	0.11	0.06	3	Atlas	
CSO113	5/11/15 5:45 PM	5/11/15 6:15 PM	6,149.28	0.02	0.09	68,325.35	0.21	0.08	1	Atlas	
CSO113	5/16/15 12:45 PM	5/16/15 2:15 PM	9,166.49	0.06	0.33	27,777.24	0.4	0.15	3	Atlas	
CSO113	5/17/15 2:15 PM	5/17/15 3:00 PM	34,037.66	0.03	0.1	340,376.56	0.5	0.06	1	Atlas	
CSO113	5/25/15 7:00 AM	5/25/15 8:30 AM	4,847.89	0.06	0.23	21,077.76	0.19	0.11	12	Atlas	
CSO113	5/26/15 1:45 PM	5/26/15 2:45 PM	138,793.74	0.04	0.24	578,307.26	0.42	0.16	1	Atlas	
CSO113	5/27/15 1:45 PM	5/27/15 2:30 PM	13,827.03	0.03	0.14	98,764.51	0.62	0.12	1	Atlas	

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CSO113	6/8/15 8:30 AM	6/8/15 8:30 AM	2,410.51	0.00	0.32	7,532.85	0.32	0.19	3	Atlas	
CSO113	6/17/15 4:45 AM	6/17/15 6:45 AM	26,644.33	0.08	0.6	44,407.22	0.68	0.33	3	Atlas	
CSO113	6/18/15 4:15 PM	6/18/15 7:00 PM	560,995.15	0.11	1.84	304,888.67	1.58	0.60	48	Atlas	
CSO113	6/19/15 1:15 PM	6/19/15 1:45 PM	6,462.62	0.02	1.84	3,512.30	1.74	0.60	48	Atlas	
CSO113	6/20/15 1:30 AM	6/20/15 9:15 AM	194,380.37	0.32	1.84	105,641.50	2.64	0.60	48	Atlas	
CSO113	6/25/15 11:45 PM	6/26/15 3:15 AM	147,039.73	0.15	0.62	237,160.86	1.82	0.34	6	Atlas	
CSO113	6/26/15 5:00 PM	6/27/15 3:15 AM	356,550.72	0.43	0.81	440,186.08	2.56	0.38	1	Atlas	
CSO113	6/29/15 1:30 PM	6/29/15 2:15 PM	66,685.88	0.03	0.18	370,477.10	1.6	0.11	1	Atlas	
<b>CSO113 Total Volume (Gal)</b>			6,382,086.90								
<b>CSO113 Events</b>			28.00								
CSO117	4/2/15 10:45 AM	4/3/15 10:30 PM	27,841,377.45	1.49	5.14	5,416,610.40	5.29	12.54	6	Cloudburst	
CSO117	4/7/15 9:15 AM	4/7/15 6:45 PM	1,617,419.50	0.40	0.93	1,739,160.75	6.07	0.41	1	Atlas	
CSO117	4/8/15 6:15 PM	4/8/15 7:30 PM	412,442.91	0.05	0.14	2,946,020.78	6.2	0.09	3	Atlas	
CSO117	4/9/15 11:45 AM	4/9/15 1:00 PM	467,847.76	0.05	0.19	2,462,356.61	5.96	0.17	1	Atlas	
CSO117	4/10/15 2:30 AM	4/10/15 3:45 AM	414,481.61	0.05	0.2	2,072,408.07	3.45	0.13	3	Atlas	
CSO117	4/13/15 9:00 PM	4/13/15 9:45 PM	152,961.60	0.03	0.39	392,209.23	1.56	0.15	24	Atlas	
CSO117	4/14/15 10:15 AM	4/14/15 12:15 PM	78,470.79	0.08	0.39	201,207.15	1.22	0.15	24	Atlas	
CSO117	4/19/15 7:45 AM	4/19/15 3:45 PM	754,548.50	0.33	0.67	1,126,191.79	1.05	0.28	12	Atlas	
CSO117	4/25/15 9:30 AM	4/25/15 9:45 AM	20,006.19	0.01	0.1	200,061.90	0.87	0.05	6	Atlas	
CSO117	5/16/15 12:00 PM	5/16/15 2:00 PM	143,040.15	0.08	0.43	332,651.51	0.45	0.21	3	Atlas	
CSO117	5/17/15 2:15 PM	5/17/15 3:15 PM	284,435.09	0.04	0.06	4,740,584.76	0.53	0.03	12	Atlas	
CSO117	5/25/15 6:45 AM	5/25/15 9:00 AM	11,429.10	0.09	0.27	42,330.01	0.26	0.12	12	Atlas	
CSO117	5/26/15 1:45 PM	5/26/15 3:00 PM	136,850.17	0.05	0.27	506,852.47	0.49	0.19	1	Atlas	
CSO117	5/27/15 1:45 PM	5/27/15 2:00 PM	764.10	0.01	0.08	9,551.30	0.62	0.07	1	Atlas	
CSO117	6/8/15 7:30 AM	6/8/15 9:15 AM	188,201.92	0.07	0.3	627,339.75	0.35	0.16	3	Atlas	
CSO117	6/17/15 5:00 AM	6/17/15 7:15 AM	920,159.75	0.09	0.55	1,673,017.73	0.61	0.29	3	Atlas	
CSO117	6/18/15 4:15 PM	6/18/15 11:15 PM	2,360,429.82	0.29	1.48	1,594,885.01	1.22	0.48	48	Atlas	
CSO117	6/20/15 1:45 AM	6/20/15 9:30 AM	2,147,642.30	0.32	1.48	1,451,109.66	2.19	0.48	48	Atlas	
CSO117	6/22/15 6:30 AM	6/22/15 7:15 AM	62,663.86	0.03	0.21	298,399.34	2.33	0.10	3	Atlas	
CSO117	6/26/15 12:00 AM	6/26/15 1:45 AM	530,327.05	0.07	0.44	1,205,288.75	1.47	0.23	6	Atlas	
CSO117	6/26/15 5:00 PM	6/27/15 1:45 AM	1,434,686.25	0.36	0.89	1,612,007.02	2.41	0.49	1	Atlas	
CSO117	6/29/15 1:45 PM	6/29/15 2:30 PM	226,055.90	0.03	0.19	1,189,767.91	1.52	0.10	1	Atlas	
<b>CSO117 Total Volume (Gal)</b>			40,206,241.77								
<b>CSO117 Events</b>			22.00								
CSO118	4/2/15 9:30 AM	4/3/15 5:15 PM	18,873,527.41	1.32	4.71	4,007,118.35	4.87	8.02	6	Cloudburst	
CSO118	4/7/15 9:15 AM	4/7/15 7:15 PM	4,364,556.91	0.42	0.86	5,075,066.18	5.58	0.39	1	Atlas	
CSO118	4/8/15 6:15 PM	4/8/15 7:15 PM	373,880.76	0.04	0.11	3,398,915.96	5.68	0.06	3	Atlas	
CSO118	4/9/15 11:30 AM	4/9/15 12:45 PM	745,122.04	0.05	0.26	2,865,853.99	5.6	0.23	1	Atlas	
CSO118	4/10/15 2:15 AM	4/10/15 3:45 AM	844,567.03	0.06	0.17	4,968,041.34	3.42	0.10	3	Atlas	
CSO118	4/13/15 8:15 PM	4/13/15 10:00 PM	490,531.81	0.07	0.37	1,325,761.64	1.48	0.15	6	Atlas	
CSO118	4/14/15 7:15 AM	4/14/15 12:30 PM	229,079.24	0.22	0.37	619,133.08	1.68	0.15	6	Atlas	
CSO118	4/16/15 10:15 AM	4/16/15 10:15 AM	74.11	0.00	0.04	1,852.86	0.88	0.03	1	Atlas	
CSO118	4/19/15 6:30 AM	4/19/15 6:30 PM	901,440.38	0.50	0.7	1,287,771.97	1.15	0.29	12	Atlas	
CSO118	4/20/15 3:30 AM	4/20/15 3:30 AM	253.48	0.00	0.07	3,621.13	1.21	0.06	1	Atlas	
CSO118	4/25/15 9:00 AM	4/25/15 9:45 AM	8,980.50	0.03	0.21	42,764.29	0.9	0.08	24	Atlas	
CSO118	4/25/15 7:00 PM	4/25/15 7:00 PM	269.06	0.00	0.21	1,281.25	0.96	0.08	24	Atlas	
CSO118	4/30/15 1:00 PM	4/30/15 1:30 PM	645.67	0.02	0.09	7,174.07	0.3	0.08	1	Atlas	
CSO118	5/9/15 3:30 AM	5/9/15 3:30 AM	317.09	0.00	0.09	3,523.26	0.06	0.05	3	Atlas	

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB.Ret
CSO118	5/11/15 5:45 PM	5/11/15 5:45 PM	221.15	0.00	0.07	3,159.23	0.16	0.06	1	Atlas	
CSO118	5/16/15 11:45 AM	5/16/15 1:45 PM	332,156.44	0.08	0.37	897,720.11	0.39	0.17	3	Atlas	
CSO118	5/17/15 2:15 PM	5/17/15 3:00 PM	473,229.19	0.03	0.08	5,915,364.87	0.5	0.05	1	Atlas	
CSO118	5/25/15 6:30 AM	5/25/15 8:45 AM	14,970.98	0.09	0.25	59,883.94	0.22	0.11	12	Atlas	
CSO118	5/26/15 1:45 PM	5/26/15 3:00 PM	723,294.85	0.05	0.28	2,583,195.91	0.48	0.20	1	Atlas	
CSO118	5/27/15 1:45 PM	5/27/15 1:45 PM	1,170.76	0.00	0.1	11,707.60	0.63	0.09	1	Atlas	
CSO118	5/30/15 4:15 PM	5/30/15 4:15 PM	494.88	0.00	0.1	4,948.75	0.71	0.07	1	Atlas	
CSO118	6/8/15 7:15 AM	6/8/15 9:00 AM	471,926.21	0.07	0.22	2,145,119.12	0.29	0.12	6	Atlas	
CSO118	6/17/15 4:45 AM	6/17/15 7:15 AM	1,584,842.17	0.10	0.54	2,934,892.92	0.61	0.29	3	Atlas	
CSO118	6/17/15 5:15 PM	6/17/15 5:15 PM	189.36	0.00	0.09	2,104.05	0.69	0.07	1	Atlas	
CSO118	6/18/15 4:15 PM	6/18/15 5:15 PM	699,698.95	0.04	1.61	434,595.62	1.07	0.52	48	Atlas	
<b>CSO118 Total Volume (Gal)</b>			31,135,440.43								
<b>CSO118 Events</b>			25.00								
CSO120	4/2/15 10:45 AM	4/2/15 3:15 PM	168,155.36	0.19	4.76	35,326.76	1.07	7.33	6	Cloudburst	
CSO120	4/3/15 12:15 AM	4/3/15 11:15 PM	1,527,055.01	0.96	4.76	320,809.88	4.79	7.33	6	Cloudburst	
CSO120	4/7/15 9:15 AM	4/7/15 5:45 PM	415,025.74	0.35	0.92	451,114.93	5.68	0.46	1	Atlas	
CSO120	4/8/15 6:15 PM	4/8/15 6:15 PM	78,751.23	0.00	0.28	281,254.41	5.96	0.21	1	Atlas	
CSO120	4/9/15 11:30 AM	4/9/15 12:00 PM	75,116.92	0.02	0.18	417,316.22	5.71	0.16	1	Atlas	
CSO120	4/10/15 2:15 AM	4/10/15 3:00 AM	67,565.46	0.03	0.19	355,607.71	3.47	0.12	3	Atlas	
CSO120	4/13/15 8:45 PM	4/13/15 9:15 PM	43,527.01	0.02	0.37	117,640.56	1.66	0.15	6	Atlas	
CSO120	4/19/15 2:15 PM	4/19/15 2:45 PM	92,170.68	0.02	0.76	121,277.22	1.1	0.32	12	Atlas	
CSO120	4/25/15 9:15 AM	4/25/15 9:15 AM	17,935.42	0.00	0.13	137,964.74	0.99	0.06	12	Atlas	
CSO120	5/16/15 11:45 AM	5/16/15 11:45 AM	3,256.66	0.00	0.46	7,079.69	0.33	0.23	3	Atlas	
CSO120	5/17/15 2:30 PM	5/17/15 2:30 PM	31,516.64	0.00	0.08	393,957.96	0.58	0.05	1	Atlas	
CSO120	5/26/15 1:45 PM	5/26/15 2:15 PM	53,477.28	0.02	0.23	232,509.91	0.49	0.17	1	Atlas	
CSO120	5/27/15 1:45 PM	5/27/15 1:45 PM	19,529.65	0.00	0.13	150,228.05	0.65	0.11	1	Atlas	
CSO120	6/8/15 8:30 AM	6/8/15 8:30 AM	129.79	0.00	0.22	589.96	0.24	0.13	3	Atlas	
CSO120	6/17/15 4:45 AM	6/17/15 6:15 AM	192,802.44	0.06	0.63	306,035.62	0.67	0.36	3	Atlas	
CSO120	6/18/15 4:15 PM	6/18/15 6:00 PM	178,095.33	0.07	1.38	129,054.59	1.11	0.45	48	Atlas	
CSO120	6/20/15 1:45 AM	6/20/15 8:30 AM	336,144.05	0.28	1.38	243,582.64	2.13	0.45	48	Atlas	
CSO120	6/26/15 12:00 AM	6/26/15 12:00 AM	102,179.38	0.00	0.49	208,529.34	1.39	0.26	6	Atlas	
CSO120	6/26/15 5:15 PM	6/27/15 12:00 AM	130,984.62	0.28	0.93	140,843.68	2.45	0.53	1	Atlas	
<b>CSO120 Total Volume (Gal)</b>			3,533,418.66								
<b>CSO120 Events</b>			19.00								
CSO121	4/2/15 9:15 AM	4/2/15 3:30 PM	165,140.20	0.26	4.76	34,693.32	1.09	7.33	6	Cloudburst	
CSO121	4/3/15 12:00 AM	4/3/15 5:30 PM	2,300,528.47	0.73	4.76	483,304.30	4.79	7.33	6	Cloudburst	
CSO121	4/7/15 7:30 AM	4/7/15 7:15 PM	71,416.44	0.49	0.92	77,626.56	5.68	0.46	1	Atlas	
CSO121	4/8/15 6:00 PM	4/8/15 6:15 PM	10,734.98	0.01	0.28	38,339.21	5.96	0.21	1	Atlas	
CSO121	4/9/15 12:00 PM	4/9/15 12:00 PM	13,723.01	0.00	0.18	76,238.95	5.71	0.16	1	Atlas	
CSO121	4/10/15 2:15 AM	4/10/15 2:30 AM	67,139.06	0.01	0.19	353,363.49	3.44	0.12	3	Atlas	
CSO121	4/13/15 8:30 PM	4/13/15 9:00 PM	11,664.96	0.02	0.37	31,526.91	1.66	0.15	6	Atlas	
CSO121	4/14/15 7:15 AM	4/14/15 7:45 AM	130.32	0.02	0.37	352.22	1.69	0.15	6	Atlas	
CSO121	4/19/15 6:45 AM	4/19/15 2:45 PM	54,911.88	0.33	0.76	72,252.48	1.1	0.32	12	Atlas	
CSO121	5/16/15 11:45 AM	5/16/15 11:45 AM	5,742.47	0.00	0.46	12,483.63	0.33	0.23	3	Atlas	
CSO121	5/17/15 2:15 PM	5/17/15 2:15 PM	6,522.58	0.00	0.08	81,532.29	0.58	0.05	1	Atlas	
CSO121	6/8/15 8:15 AM	6/8/15 8:15 AM	29,744.42	0.00	0.22	135,201.89	0.24	0.13	3	Atlas	
CSO121	6/17/15 4:45 AM	6/17/15 6:00 AM	3,951.69	0.05	0.63	6,272.52	0.61	0.36	3	Atlas	
CSO121	6/18/15 5:15 PM	6/18/15 5:45 PM	68,901.65	0.02	1.38	49,928.73	1.1	0.45	48	Atlas	



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CSO121	6/20/15 12:30 AM	6/20/15 8:15 AM	189,908.24	0.32	1.38	137,614.67	2.12	0.45	48	Atlas	
CSO121	6/25/15 11:45 PM	6/26/15 12:00 AM	24,899.18	0.01	0.49	50,814.65	1.4	0.26	6	Atlas	
CSO121	6/26/15 5:00 PM	6/27/15 12:00 AM	258,466.58	0.29	0.93	277,921.05	2.45	0.53	1	Atlas	
<b>CSO121 Total Volume (Gal)</b>			3,283,526.12								
<b>CSO121 Events</b>			17.00								
CSO125	4/2/15 10:45 AM	4/4/15 4:30 AM	57,315,632.78	1.74	4.31	13,298,290.67	4.46	4.56	24	Cloudburst	
CSO125	4/7/15 9:30 AM	4/7/15 6:15 PM	1,143,344.34	0.36	0.77	1,484,862.78	5.08	0.37	1	Atlas	
CSO125	4/8/15 6:15 PM	4/8/15 6:45 PM	271,993.35	0.02	0.12	2,266,611.25	5.21	0.08	1	Atlas	
CSO125	4/9/15 11:45 AM	4/9/15 12:15 PM	289,503.12	0.02	0.26	1,113,473.53	5.11	0.22	1	Atlas	
CSO125	4/10/15 2:30 AM	4/10/15 3:15 AM	110,468.34	0.03	0.14	789,059.58	2.92	0.09	3	Atlas	
CSO125	4/13/15 9:15 PM	4/13/15 9:30 PM	167,267.12	0.01	0.12	1,393,892.70	1.41	0.07	3	Atlas	
CSO125	4/19/15 6:45 AM	4/19/15 3:15 PM	507,562.74	0.35	0.83	611,521.37	1.25	0.33	12	Atlas	
CSO125	4/25/15 7:15 PM	4/25/15 7:15 PM	29,282.99	0.00	0.15	195,219.93	1.17	0.10	1	Atlas	
CSO125	5/11/15 6:00 PM	5/11/15 6:00 PM	25,591.89	0.00	0.07	365,598.49	0.22	0.06	1	Atlas	
CSO125	5/26/15 2:00 PM	5/26/15 2:30 PM	182,463.46	0.02	0.36	506,842.95	0.63	0.23	1	Atlas	
CSO125	5/27/15 2:00 PM	5/27/15 2:00 PM	48,082.15	0.00	0.09	534,246.09	0.82	0.08	1	Atlas	
CSO125	6/5/15 12:45 AM	6/5/15 1:30 AM	46,575.66	0.03	Discharge		0.17	Water Main Break			
CSO125	6/17/15 5:00 AM	6/17/15 6:00 AM	68,403.32	0.04	0.61	112,136.59	0.63	0.35	3	Atlas	
CSO125	6/18/15 2:00 AM	6/18/15 5:45 AM	3,649,395.76	0.16	0.06	60,823,262.70	0.74	0.04	1	Atlas	
CSO125	6/18/15 4:30 PM	6/20/15 8:45 AM	1,123,643.28	1.68	1.94	579,197.56	2.67	0.63	48	Atlas	
CSO125	6/26/15 12:00 AM	6/26/15 7:30 AM	47,174.55	0.31	0.38	124,143.56	1.77	0.21	6	Atlas	
CSO125	6/26/15 5:15 PM	6/27/15 1:15 AM	361,426.30	0.33	0.7	516,323.29	2.34	0.35	1	Atlas	
<b>CSO125 Total Volume (Gal)</b>			65,387,811.16								
<b>CSO125 Events</b>			17.00								
CSO126	4/2/15 3:00 PM	4/2/15 4:00 PM	216,015.99	0.04	4.31	50,119.72	1.14	4.56	24	Cloudburst	
CSO126	4/3/15 12:15 AM	4/5/15 11:15 AM	79,411,410.11	2.46	4.31	18,424,921.14	4.35	4.56	24	Cloudburst	
CSO126	4/7/15 9:30 AM	4/7/15 6:15 PM	86,171.73	0.36	0.77	111,911.34	5.08	0.37	1	Atlas	
CSO126	4/9/15 12:00 PM	4/9/15 12:15 PM	7,114.97	0.01	0.26	27,365.26	5.11	0.22	1	Atlas	
CSO126	4/19/15 2:15 PM	4/19/15 3:00 PM	14,558.01	0.03	0.83	17,539.77	1.25	0.33	12	Atlas	
CSO126	5/17/15 2:15 PM	5/17/15 2:15 PM	22,198.69	0.00	0.11	201,806.25	0.54	0.08	1	Atlas	
CSO126	6/18/15 3:00 AM	6/18/15 4:15 AM	29,092.43	0.05	0.06	484,873.81	0.74	0.04	1	Atlas	
CSO126	6/18/15 5:15 PM	6/18/15 9:15 PM	465,015.28	0.17	1.94	239,698.60	1.45	0.63	48	Atlas	
CSO126	6/20/15 8:15 AM	6/22/15 4:45 AM	2,554,248.42	1.85	1.94	1,316,622.90	2.73	0.63	48	Atlas	
CSO126	6/26/15 12:45 AM	6/28/15 7:15 PM	1,152,221.03	2.77	0.38	3,032,160.60	2.47	0.21	6	Atlas	
CSO126	6/29/15 4:00 PM	6/30/15 10:45 AM	211,943.28	0.78	0.18	1,177,462.67	1.26	0.10	1	Atlas	
<b>CSO126 Total Volume (Gal)</b>			84,169,989.94								
<b>CSO126 Events</b>			11.00								
CSO127	4/2/15 10:00 AM	4/4/15 4:15 AM	17,739,320.94	1.76	4.73	3,750,384.98	4.87	7.44	6	Cloudburst	
CSO127	4/7/15 9:15 AM	4/7/15 6:15 PM	122,078.82	0.38	0.73	167,231.26	5.47	0.33	1	Atlas	
CSO127	4/8/15 6:15 PM	4/8/15 7:00 PM	194,917.03	0.03	0.15	1,299,446.84	5.61	0.08	6	Atlas	
CSO127	4/9/15 11:45 AM	4/9/15 12:30 PM	59,012.13	0.03	0.28	210,757.62	5.52	0.24	1	Atlas	
CSO127	4/10/15 2:30 AM	4/10/15 3:30 AM	100,253.44	0.04	0.13	771,180.33	3.04	0.09	3	Atlas	
CSO127	4/13/15 8:45 PM	4/13/15 9:30 PM	81,332.32	0.03	0.49	165,984.33	1.39	0.20	6	Atlas	
CSO127	4/14/15 10:15 AM	4/14/15 12:00 PM	14,007.90	0.07	0.49	28,587.54	1.27	0.20	6	Atlas	
CSO127	4/19/15 8:00 AM	4/19/15 6:45 PM	218,450.80	0.45	0.94	232,394.47	1.39	0.36	24	Atlas	
CSO127	4/20/15 3:30 AM	4/20/15 3:45 AM	63,569.98	0.01	0.94	67,627.63	1.51	0.36	24	Atlas	
CSO127	4/25/15 9:30 AM	4/25/15 9:30 AM	4,663.52	0.00	0.19	24,544.85	1.05	0.07	24	Atlas	
CSO127	4/25/15 7:00 PM	4/25/15 7:15 PM	34,229.16	0.01	0.19	180,153.46	1.11	0.07	24	Atlas	

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CSO127	5/11/15 5:45 PM	5/11/15 6:00 PM	168,454.43	0.01	0.1	1,684,544.27	0.26	0.09	1	Atlas	
CSO127	5/16/15 1:15 PM	5/16/15 1:30 PM	1,613.44	0.01	0.36	4,481.77	0.41	0.15	3	Atlas	
CSO127	5/17/15 2:30 PM	5/17/15 2:45 PM	124,078.72	0.01	0.15	827,191.49	0.6	0.10	1	Atlas	
CSO127	5/25/15 7:00 AM	5/25/15 8:45 AM	17,897.54	0.07	0.32	55,929.82	0.25	0.15	12	Atlas	
CSO127	5/26/15 1:45 PM	5/26/15 2:30 PM	118,974.96	0.03	0.36	330,485.99	0.57	0.22	1	Atlas	
CSO127	5/27/15 1:45 PM	5/27/15 2:15 PM	112,997.12	0.02	0.07	1,614,244.61	0.75	0.06	1	Atlas	
CSO127	6/8/15 8:30 AM	6/8/15 8:45 AM	81,890.60	0.01	0.19	431,003.13	0.22	0.10	6	Atlas	
CSO127	6/13/15 2:45 PM	6/13/15 2:45 PM	3,759.98	0.00	0.14	26,856.99	0.33	0.12	1	Atlas	
CSO127	6/18/15 4:15 PM	6/18/15 6:45 PM	1,757,512.42	0.10	2.15	817,447.63	1.76	0.70	48	Atlas	
CSO127	6/20/15 1:45 AM	6/20/15 11:15 AM	416,389.09	0.40	2.15	193,669.35	3.09	0.70	48	Atlas	
CSO127	6/22/15 6:30 AM	6/22/15 6:45 AM	17,782.41	0.01	0.18	98,791.14	3.1	0.08	12	Atlas	
CSO127	6/26/15 12:00 AM	6/26/15 1:45 AM	601,832.87	0.07	0.46	1,308,332.33	1.73	0.25	6	Atlas	
CSO127	6/26/15 5:00 PM	6/27/15 1:30 AM	1,106,733.15	0.35	0.77	1,437,315.78	2.51	0.41	1	Atlas	
CSO127	6/29/15 1:30 PM	6/29/15 2:15 PM	135,617.36	0.03	0.2	678,086.80	1.41	0.12	1	Atlas	
<b>CSO127 Total Volume (Gal)</b>			23,297,370.11								
<b>CSO127 Events</b>			25.00								
CSO130	4/2/15 3:00 PM	4/2/15 3:00 PM	85,913.40	0.00	3.87	22,199.84	0.9	3.28	24	Cloudburst	
CSO130	4/3/15 12:15 AM	4/3/15 12:15 AM	43,666.73	0.00	3.87	11,283.39	1.58	3.28	24	Cloudburst	
CSO130	6/18/15 5:15 PM	6/18/15 5:15 PM	80,233.16	0.00	1.47	54,580.38	1.04	0.48	48	Atlas	
CSO130	6/26/15 5:15 PM	6/26/15 5:15 PM	39,051.54	0.00	0.95	41,106.89	2.06	0.51	1	Atlas	
<b>CSO130 Total Volume (Gal)</b>			248,864.84								
<b>CSO130 Events</b>			4.00								
CSO132	4/2/15 10:00 AM	4/5/15 12:45 PM	19,836,070.33	3.11	4.03	4,922,101.82	4.18	3.72	24	Cloudburst	
CSO132	4/6/15 7:30 AM	4/8/15 10:00 PM	7,922,737.47	2.60	0.01	792,273,746.60	4.99	0.01	1	Atlas	
CSO132	4/9/15 11:30 AM	4/9/15 2:45 PM	413,867.53	0.14	0.15	2,759,116.89	4.8	0.12	1	Atlas	
CSO132	4/10/15 2:15 AM	4/10/15 5:15 AM	340,022.38	0.13	0.16	2,125,139.85	2.92	0.11	3	Atlas	
CSO132	4/25/15 9:15 AM	4/25/15 9:45 AM	96,476.47	0.02	0.12	803,970.60	0.91	0.05	12	Atlas	
CSO132	4/25/15 7:00 PM	4/25/15 7:30 PM	153,626.53	0.02	0.25	614,506.12	1.12	0.18	1	Atlas	
CSO132	5/16/15 1:30 PM	5/16/15 1:30 PM	1,467.51	0.00	0.36	4,076.42	0.41	0.21	3	Atlas	
CSO132	5/17/15 2:15 PM	5/17/15 2:45 PM	792,534.21	0.02	0.08	9,906,677.58	0.53	0.05	1	Atlas	
CSO132	5/25/15 7:00 AM	5/25/15 7:15 AM	74,432.16	0.01	0.28	265,829.15	0.2	0.13	3	Atlas	
CSO132	5/26/15 1:45 PM	5/26/15 2:30 PM	2,059,005.38	0.03	0.5	4,118,010.75	0.74	0.39	1	Atlas	
CSO132	5/27/15 1:45 PM	5/27/15 2:15 PM	388,033.28	0.02	0.08	4,850,415.96	0.87	0.07	1	Atlas	
CSO132	6/8/15 8:30 AM	6/8/15 8:45 AM	57,035.78	0.01	0.24	237,649.08	0.24	0.14	3	Atlas	
CSO132	6/17/15 4:45 AM	6/17/15 7:00 AM	2,125,221.33	0.09	0.68	3,125,325.49	0.72	0.39	3	Atlas	
CSO132	6/18/15 4:30 PM	6/18/15 8:15 PM	4,787,234.81	0.16	1.42	3,371,292.12	1.2	0.46	48	Atlas	
CSO132	6/19/15 5:45 PM	6/20/15 11:45 AM	5,691,194.96	0.75	1.42	4,007,883.77	2.2	0.46	48	Atlas	
CSO132	6/26/15 12:00 AM	6/26/15 3:00 AM	487,054.16	0.13	0.36	1,352,928.22	1.51	0.19	6	Atlas	
CSO132	6/26/15 5:00 PM	6/27/15 1:30 AM	2,735,849.51	0.35	0.84	3,256,963.70	2.3	0.47	1	Atlas	
CSO132	6/29/15 2:00 PM	6/29/15 2:00 PM	7,399.76	0.00	0.15	49,331.74	1.35	0.08	1	Atlas	
<b>CSO132 Total Volume (Gal)</b>			47,969,263.54								
<b>CSO132 Events</b>			18.00								
CSO137	4/7/15 9:30 AM	4/7/15 7:45 PM	331,350.75	0.43	0.69	480,218.48	6.24	0.29	12	Atlas	
CSO137	4/7/15 9:30 AM	4/7/15 7:45 PM	331,350.75	0.43	0.69	480,218.48	6.24	0.29	12	Atlas	
CSO137	4/9/15 11:45 AM	4/9/15 5:00 PM	62,327.40	0.22	0.36	173,131.66	6.39	0.31	1	Atlas	
CSO137	4/13/15 8:45 PM	4/14/15 9:15 PM	302,171.81	1.02	0.49	616,677.17	1.86	0.19	6	Atlas	
CSO137	4/16/15 10:30 AM	4/16/15 10:30 AM	899.33	0.00	0.05	17,986.67	1.1	0.04	1	Atlas	
CSO137	4/19/15 6:45 AM	4/19/15 6:45 PM	282,649.44	0.50	0.72	392,568.66	1.31	0.31	12	Atlas	

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB Ret		
CSO137	4/20/15 3:30 AM	4/20/15 4:30 AM	27,528.69	0.04	0.07	393,267.00	1.38	0.06	1	Atlas			
CSO137	4/25/15 7:00 PM	4/25/15 7:15 PM	11,595.46	0.01	0.05	231,909.17	0.93	0.03	3	Atlas			
CSO137	4/25/15 7:00 PM	4/25/15 7:15 PM	11,595.46	0.01	0.05	231,909.17	0.93	0.03	3	Atlas			
CSO137	5/11/15 5:45 PM	5/11/15 5:45 PM	41,181.63	0.00	0.14	294,154.46	0.3	0.12	1	Atlas			
CSO137	5/11/15 5:45 PM	5/11/15 5:45 PM	41,181.63	0.00	0.14	294,154.46	0.3	0.12	1	Atlas			
CSO137	5/17/15 2:30 PM	5/17/15 2:30 PM	8,467.16	0.00	0.11	76,974.15	0.52	0.08	1	Atlas			
CSO137	5/17/15 2:30 PM	5/17/15 2:30 PM	8,467.16	0.00	0.11	76,974.15	0.52	0.08	1	Atlas			
CSO137	5/26/15 2:15 PM	5/26/15 2:15 PM	4,119.16	0.00	0.25	16,476.63	0.47	0.15	1	Atlas			
CSO137	5/26/15 2:15 PM	5/26/15 2:15 PM	4,119.16	0.00	0.25	16,476.63	0.47	0.15	1	Atlas			
CSO137	5/27/15 1:45 PM	5/27/15 1:45 PM	13,253.58	0.00	0.27	49,087.34	0.81	0.23	1	Atlas			
CSO137	5/27/15 1:45 PM	5/27/15 1:45 PM	13,253.58	0.00	0.27	49,087.34	0.81	0.23	1	Atlas			
CSO137	6/8/15 8:30 AM	6/8/15 8:30 AM	2,979.34	0.00	0.35	8,512.41	0.36	0.19	3	Atlas			
CSO137	6/8/15 8:30 AM	6/8/15 8:30 AM	2,979.34	0.00	0.35	8,512.41	0.36	0.19	3	Atlas			
CSO137	6/17/15 5:00 AM	6/17/15 6:15 AM	119,912.25	0.05	0.6	199,853.74	0.89	0.33	3	Atlas			
CSO137	6/17/15 5:00 AM	6/17/15 6:15 AM	119,912.25	0.05	0.6	199,853.74	0.89	0.33	3	Atlas			
CSO137	6/17/15 5:15 PM	6/17/15 5:15 PM	969.28	0.00	0.11	8,811.65	1.03	0.10	1	Atlas			
CSO137	6/17/15 5:15 PM	6/17/15 5:15 PM	969.28	0.00	0.11	8,811.65	1.03	0.10	1	Atlas			
CSO137	6/18/15 4:15 PM	6/18/15 5:45 PM	124,478.71	0.06	2.28	54,595.93	1.96	0.74	48	Atlas			
CSO137	6/18/15 4:15 PM	6/18/15 5:45 PM	124,478.71	0.06	2.28	54,595.93	1.96	0.74	48	Atlas			
CSO137	6/20/15 1:45 AM	6/20/15 8:30 AM	128,095.07	0.28	2.28	56,182.05	3.29	0.74	48	Atlas			
CSO137	6/20/15 1:45 AM	6/20/15 8:30 AM	128,095.07	0.28	2.28	56,182.05	3.29	0.74	48	Atlas			
CSO137	6/26/15 12:00 AM	6/26/15 7:45 AM	49,243.91	0.32	0.63	78,164.93	2.1	0.34	6	Atlas			
CSO137	6/26/15 12:00 AM	6/26/15 7:45 AM	49,243.91	0.32	0.63	78,164.93	2.1	0.34	6	Atlas			
CSO137	6/26/15 5:15 PM	6/27/15 1:15 AM	49,542.78	0.33	0.75	66,057.04	2.68	0.35	1	Atlas			
CSO137	6/26/15 5:15 PM	6/27/15 1:15 AM	49,542.78	0.33	0.75	66,057.04	2.68	0.35	1	Atlas			
CSO137	6/29/15 1:30 PM	6/29/15 1:45 PM	85,531.28	0.01	0.14	610,937.72	1.52	0.10	1	Atlas			
CSO137	6/29/15 1:30 PM	6/29/15 1:45 PM	85,531.28	0.01	0.14	610,937.72	1.52	0.10	1	Atlas			
<b>CSO137 Total Volume (Gal)</b>			<b>2,617,017.38</b>										
<b>CSO137 Events</b>			<b>33.00</b>										
CSO140	4/2/15 10:45 AM	4/3/15 11:45 PM	3,493,395.26	1.54	4.42	790,360.92	4.55	5.24	24	Cloudburst			
CSO140	4/7/15 9:15 AM	4/7/15 6:15 PM	435,380.91	0.38	0.86	506,256.87	5.29	0.42	1	Atlas			
CSO140	4/8/15 6:15 PM	4/8/15 6:15 PM	18,376.88	0.00	0.15	122,512.50	5.43	0.10	1	Atlas			
CSO140	4/9/15 11:30 AM	4/9/15 12:15 PM	215,278.78	0.03	0.29	742,340.62	5.37	0.25	1	Atlas			
CSO140	4/10/15 2:15 AM	4/10/15 2:30 AM	16,844.77	0.01	0.16	105,279.82	3.17	0.11	3	Atlas			
CSO140	4/13/15 8:45 PM	4/13/15 9:00 PM	14,713.03	0.01	0.38	38,718.50	1.56	0.15	6	Atlas			
CSO140	4/19/15 2:15 PM	4/19/15 2:45 PM	86,074.57	0.02	0.78	110,352.02	1.16	0.33	12	Atlas			
CSO140	5/17/15 2:15 PM	5/17/15 2:30 PM	135,459.58	0.01	0.16	846,622.36	0.6	0.12	1	Atlas			
CSO140	5/26/15 1:45 PM	5/26/15 2:00 PM	80,784.38	0.01	0.36	224,401.05	0.57	0.26	1	Atlas			
CSO140	6/8/15 8:15 AM	6/8/15 8:15 AM	29,347.08	0.00	0.2	146,735.42	0.21	0.12	3	Atlas			
CSO140	6/17/15 4:45 AM	6/17/15 6:00 AM	63,251.22	0.05	0.65	97,309.56	0.62	0.37	3	Atlas			
CSO140	6/18/15 4:15 PM	6/18/15 6:45 PM	555,627.76	0.10	1.48	375,424.16	1.2	0.48	48	Atlas			
CSO140	6/19/15 1:00 PM	6/19/15 1:15 PM	10,261.66	0.01	1.48	6,933.55	1.36	0.48	48	Atlas			
CSO140	6/20/15 1:30 AM	6/20/15 11:15 AM	334,109.65	0.41	1.48	225,749.76	2.23	0.48	48	Atlas			
CSO140	6/26/15 12:00 AM	6/26/15 12:00 AM	3,522.43	0.00	0.45	7,827.62	1.39	0.24	6	Atlas			
CSO140	6/26/15 5:00 PM	6/27/15 12:00 AM	232,201.26	0.29	0.88	263,865.07	2.36	0.52	1	Atlas			
<b>CSO140 Total Volume (Gal)</b>			<b>5,724,629.20</b>										
<b>CSO140 Events</b>			<b>16.00</b>										
CSO141	4/2/15 9:15 AM	4/3/15 10:45 PM	786,588.19	1.56	4.76	165,249.62	4.92	7.33	6	Cloudburst			

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB.Ret
CSO141	4/7/15 4:30 PM	4/7/15 11:00 PM	16,738.13	0.27	0.92	18,193.62	5.68	0.46	1	Atlas	
CSO141	4/9/15 11:30 AM	4/9/15 1:30 PM	2,623.22	0.08	0.18	14,573.44	5.71	0.16	1	Atlas	
CSO141	4/10/15 1:45 AM	4/10/15 3:00 AM	9,228.94	0.05	0.19	48,573.36	3.92	0.12	3	Atlas	
CSO141	4/13/15 7:45 PM	4/13/15 9:00 PM	5,501.23	0.05	0.37	14,868.19	1.66	0.15	6	Atlas	
CSO141	4/14/15 6:45 AM	4/14/15 11:45 AM	15,196.52	0.21	0.37	41,071.68	1.87	0.15	6	Atlas	
CSO141	4/16/15 9:45 AM	4/16/15 11:45 AM	3,359.37	0.08	0.04	83,984.37	0.83	0.03	1	Atlas	
CSO141	4/19/15 8:45 AM	4/19/15 5:00 PM	18,424.33	0.34	0.76	24,242.54	1.14	0.32	12	Atlas	
CSO141	5/16/15 11:30 AM	5/16/15 8:00 PM	9,249.83	0.35	0.46	20,108.33	0.52	0.23	3	Atlas	
CSO141	5/17/15 2:15 PM	5/17/15 2:30 PM	300.84	0.01	0.08	3,760.55	0.58	0.05	1	Atlas	
CSO141	5/25/15 6:15 AM	5/25/15 2:15 PM	5,591.64	0.33	0.29	19,281.50	0.34	0.13	12	Atlas	
CSO141	5/26/15 1:45 PM	5/26/15 2:15 PM	2,344.97	0.02	0.23	10,195.52	0.49	0.17	1	Atlas	
CSO141	5/27/15 1:30 PM	5/27/15 1:45 PM	2,521.65	0.01	0.13	19,397.27	0.65	0.11	1	Atlas	
CSO141	6/1/15 7:30 AM	6/1/15 9:30 AM	2,727.91	0.08	0.11	24,799.14	0.66	0.05	6	Atlas	
CSO141	6/17/15 3:00 AM	6/17/15 8:15 AM	19,275.89	0.22	0.63	30,596.64	0.7	0.36	3	Atlas	
CSO141	6/18/15 4:00 PM	6/18/15 6:00 PM	61,238.15	0.08	1.38	44,375.47	1.11	0.45	48	Atlas	
CSO141	6/19/15 1:00 PM	6/19/15 1:15 PM	62.64	0.01	1.38	45.39	1.3	0.45	48	Atlas	
CSO141	6/20/15 1:15 AM	6/20/15 12:30 PM	18,091.56	0.47	1.38	13,109.83	2.14	0.45	48	Atlas	
CSO141	6/22/15 5:15 AM	7/1/15 12:00 AM	2,672,261.73	8.78	0.22	12,146,644.22	4.05	0.10	12	Atlas	
<b>CSO141 Total Volume (Gal)</b>			3,651,326.73								
<b>CSO141 Events</b>			19.00								
CSO144	4/2/15 10:30 AM	4/2/15 3:00 PM	2,257.77	0.19	4.17	541.43	1.22	4.00	24	Cloudburst	
CSO144	4/3/15 12:15 AM	4/3/15 9:00 PM	28,862.30	0.86	4.17	6,921.42	4.21	4.00	24	Cloudburst	
CSO144	4/7/15 9:15 AM	4/7/15 5:00 PM	4,348.71	0.32	0.74	5,876.63	4.88	0.33	1	Atlas	
CSO144	4/8/15 6:00 PM	4/8/15 6:00 PM	17.91	0.00	0.12	149.22	5.02	0.09	1	Atlas	
CSO144	4/9/15 11:30 AM	4/9/15 11:30 AM	717.23	0.00	0.28	2,561.53	4.84	0.24	1	Atlas	
CSO144	4/13/15 9:00 PM	4/13/15 9:00 PM	0.23	0.00	0.11	2.08	1.4	0.07	3	Atlas	
CSO144	4/19/15 2:00 PM	4/19/15 2:15 PM	944.21	0.01	0.82	1,151.47	1.2	0.34	12	Atlas	
CSO144	5/17/15 2:15 PM	5/17/15 2:15 PM	1,300.35	0.00	0.14	9,288.24	0.54	0.10	1	Atlas	
CSO144	6/17/15 4:45 AM	6/17/15 4:45 AM	26.39	0.00	0.62	42.56	0.44	0.36	3	Atlas	
CSO144	6/18/15 4:15 PM	6/18/15 5:15 PM	3,536.79	0.04	1.63	2,169.81	1.15	0.53	48	Atlas	
CSO144	6/26/15 5:00 PM	6/26/15 5:00 PM	1,799.75	0.00	0.78	2,307.37	1.87	0.41	1	Atlas	
<b>CSO144 Total Volume (Gal)</b>			43,811.64								
<b>CSO144 Events</b>			11.00								
CSO146	4/2/15 10:30 AM	4/3/15 11:00 PM	22,355,233.09	1.52	5.36	4,170,752.44	5.5	20.93	6	Cloudburst	
CSO146	4/7/15 9:15 AM	4/7/15 6:45 PM	685,926.82	0.40	0.84	816,579.55	6.2	0.36	12	Atlas	
CSO146	4/8/15 6:30 PM	4/8/15 7:30 PM	134,728.42	0.04	0.16	842,052.62	6.36	0.09	3	Atlas	
CSO146	4/9/15 11:30 AM	4/9/15 1:00 PM	117,530.18	0.06	0.22	534,228.11	6.11	0.19	1	Atlas	
CSO146	4/10/15 2:30 AM	4/10/15 3:45 AM	115,562.14	0.05	0.17	679,777.28	3.49	0.11	3	Atlas	
CSO146	4/13/15 8:45 PM	4/13/15 9:45 PM	67,197.76	0.04	0.37	181,615.57	1.47	0.15	6	Atlas	
CSO146	4/14/15 10:00 AM	4/14/15 12:15 PM	89,913.44	0.09	0.37	243,009.30	1.23	0.15	6	Atlas	
CSO146	4/19/15 7:15 AM	4/19/15 6:45 PM	374,839.35	0.48	0.71	527,942.75	1.17	0.30	12	Atlas	
CSO146	4/20/15 3:30 AM	4/20/15 4:00 AM	90,323.15	0.02	0.07	1,290,330.70	1.23	0.05	1	Atlas	
CSO146	4/25/15 9:30 AM	4/25/15 9:45 AM	10,717.31	0.01	0.12	89,310.94	0.92	0.06	6	Atlas	
CSO146	5/11/15 6:00 PM	5/11/15 6:15 PM	18,598.91	0.01	0.08	232,486.34	0.19	0.07	1	Atlas	
CSO146	5/16/15 1:15 PM	5/16/15 1:45 PM	27,835.05	0.02	0.39	71,371.93	0.43	0.19	3	Atlas	
CSO146	5/17/15 2:15 PM	5/17/15 3:00 PM	165,298.39	0.03	0.12	1,377,486.59	0.58	0.09	1	Atlas	
CSO146	5/25/15 7:15 AM	5/25/15 7:15 AM	6,270.23	0.00	0.24	26,125.95	0.14	0.11	12	Atlas	
CSO146	5/26/15 1:45 PM	5/26/15 2:45 PM	449,795.21	0.04	0.35	1,285,129.18	0.54	0.26	1	Atlas	

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CSO146	5/27/15 1:45 PM	5/27/15 2:00 PM	82,656.00	0.01	0.09	918,399.94	0.68	0.08	1	Atlas	
CSO146	6/8/15 8:30 AM	6/8/15 8:45 AM	19,652.34	0.01	0.26	75,585.91	0.28	0.16	3	Atlas	
CSO146	6/13/15 2:45 PM	6/13/15 2:45 PM	7,896.59	0.00	0.12	65,804.94	0.38	0.10	1	Atlas	
CSO146	6/17/15 4:45 AM	6/17/15 7:00 AM	699,039.21	0.09	0.58	1,205,240.02	0.71	0.31	3	Atlas	
CSO146	6/18/15 4:15 PM	6/18/15 7:00 PM	3,047,804.46	0.11	1.82	1,674,617.83	1.69	0.59	48	Atlas	
CSO146	6/19/15 1:30 PM	6/19/15 1:30 PM	13,297.59	0.00	1.82	7,306.37	1.86	0.59	48	Atlas	
CSO146	6/20/15 1:30 AM	6/20/15 9:30 AM	2,568,147.02	0.33	1.82	1,411,069.79	2.74	0.59	48	Atlas	
CSO146	6/22/15 6:30 AM	6/22/15 7:00 AM	77,251.65	0.02	0.24	321,881.88	2.83	0.11	3	Atlas	
CSO146	6/25/15 11:45 PM	6/26/15 3:00 AM	1,213,867.61	0.14	0.59	2,057,402.73	1.77	0.32	6	Atlas	
CSO146	6/26/15 5:00 PM	6/27/15 1:45 AM	2,464,785.49	0.36	0.89	2,769,421.90	2.6	0.50	1	Atlas	
CSO146	6/29/15 1:30 PM	6/29/15 2:15 PM	485,130.48	0.03	0.19	2,553,318.30	1.65	0.11	1	Atlas	
<b>CSO146 Total Volume (Gal)</b>			35,389,297.88								
<b>CSO146 Events</b>			26.00								
CSO148	4/2/15 9:45 AM	4/2/15 3:30 PM	119,189.05	0.24	5.54	21,514.27	0.92	28.12	6	Cloudburst	
CSO148	4/3/15 12:15 AM	4/3/15 5:15 PM	1,208,887.57	0.71	5.54	218,210.75	5.53	28.12	6	Cloudburst	
CSO148	4/7/15 9:15 AM	4/7/15 5:30 PM	92,222.50	0.34	0.69	133,655.80	6.23	0.29	12	Atlas	
CSO148	4/8/15 6:00 PM	4/8/15 6:30 PM	36,060.22	0.02	0.17	212,118.96	6.41	0.11	1	Atlas	
CSO148	4/9/15 11:30 AM	4/9/15 12:00 PM	17,394.83	0.02	0.36	48,318.98	6.39	0.31	1	Atlas	
CSO148	4/10/15 2:30 AM	4/10/15 2:30 AM	1,909.23	0.00	0.15	12,728.19	3.43	0.09	3	Atlas	
CSO148	4/13/15 9:00 PM	4/13/15 9:00 PM	3,859.55	0.00	0.49	7,876.64	1.49	0.19	6	Atlas	
CSO148	4/14/15 11:45 AM	4/14/15 11:45 AM	171.15	0.00	0.49	349.28	1.45	0.19	6	Atlas	
CSO148	4/19/15 7:30 AM	4/19/15 2:30 PM	56,392.51	0.29	0.72	78,322.94	1.25	0.31	12	Atlas	
CSO148	4/20/15 3:15 AM	4/20/15 3:15 AM	22,105.41	0.00	0.07	315,791.52	1.37	0.06	1	Atlas	
CSO148	4/25/15 9:15 AM	4/25/15 9:15 AM	546.48	0.00	0.1	5,464.79	0.91	0.05	6	Atlas	
CSO148	4/25/15 7:00 PM	4/25/15 7:00 PM	131.74	0.00	0.05	2,634.79	0.92	0.03	3	Atlas	
CSO148	5/11/15 5:30 PM	5/11/15 5:45 PM	2,063.66	0.01	0.14	14,740.40	0.3	0.12	1	Atlas	
CSO148	5/16/15 12:45 PM	5/16/15 12:45 PM	93.73	0.00	0.29	323.20	0.34	0.13	3	Atlas	
CSO148	5/17/15 2:15 PM	5/17/15 2:30 PM	25,654.73	0.01	0.11	233,224.80	0.52	0.08	1	Atlas	
CSO148	5/25/15 7:00 AM	5/25/15 8:15 AM	2,136.72	0.05	0.3	7,122.40	0.22	0.14	12	Atlas	
CSO148	5/26/15 1:45 PM	5/26/15 2:15 PM	26,358.59	0.02	0.25	105,434.35	0.47	0.15	1	Atlas	
CSO148	5/27/15 1:45 PM	5/27/15 1:45 PM	1,100.00	0.00	0.27	4,074.07	0.81	0.23	1	Atlas	
CSO148	6/8/15 8:15 AM	6/8/15 8:30 AM	11,782.26	0.01	0.35	33,663.60	0.38	0.19	3	Atlas	
CSO148	6/13/15 2:15 PM	6/13/15 2:15 PM	3,127.28	0.00	0.31	10,088.00	0.66	0.27	1	Atlas	
CSO148	6/17/15 4:45 AM	6/17/15 6:15 AM	44,554.30	0.06	0.6	74,257.16	0.89	0.33	3	Atlas	
CSO148	6/18/15 4:15 PM	6/18/15 5:45 PM	62,153.50	0.06	2.28	27,260.31	1.96	0.74	48	Atlas	
CSO148	6/20/15 1:30 AM	6/20/15 8:30 AM	100,438.47	0.29	2.28	44,051.96	3.29	0.74	48	Atlas	
CSO148	6/25/15 11:45 PM	6/26/15 12:00 AM	40,189.21	0.01	0.63	63,792.40	1.84	0.34	6	Atlas	
CSO148	6/26/15 5:00 PM	6/27/15 1:15 AM	100,512.83	0.34	0.75	134,017.11	2.68	0.35	1	Atlas	
CSO148	6/29/15 1:30 PM	6/29/15 1:45 PM	30,206.85	0.01	0.14	215,763.24	1.52	0.10	1	Atlas	
<b>CSO148 Total Volume (Gal)</b>			2,009,242.37								
<b>CSO148 Events</b>			26.00								
CSO149	4/3/15 6:30 PM	4/3/15 6:45 PM	6,256.19	0.01	5.36	1,167.20	5.38	20.93	6	Cloudburst	
CSO149	5/16/15 11:45 AM	5/16/15 1:45 PM	211,372.37	0.08	0.39	541,980.44	0.43	0.19	3	Atlas	
CSO149	5/17/15 2:15 PM	5/17/15 3:00 PM	587,674.28	0.03	0.12	4,897,285.64	0.58	0.09	1	Atlas	
CSO149	5/25/15 7:15 AM	5/25/15 8:30 AM	4,160.96	0.05	0.24	17,337.32	0.21	0.11	12	Atlas	
CSO149	5/26/15 2:00 PM	5/26/15 2:45 PM	711,163.10	0.03	0.35	2,031,894.57	0.54	0.26	1	Atlas	
CSO149	5/27/15 2:00 PM	5/27/15 2:00 PM	6,414.98	0.00	0.09	71,277.54	0.68	0.08	1	Atlas	
CSO149	6/8/15 7:15 AM	6/8/15 9:00 AM	132,947.86	0.07	0.26	511,337.92	0.33	0.16	3	Atlas	

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB.Ret
CSO149	6/17/15 4:45 AM	6/17/15 7:00 AM	1,551,705.44	0.09	0.58	2,675,354.21	0.71	0.31	3	Atlas	
CSO149	6/18/15 4:15 PM	6/19/15 12:30 AM	5,532,533.76	0.34	1.82	3,039,853.71	1.75	0.59	48	Atlas	
CSO149	6/20/15 1:30 AM	6/20/15 9:45 AM	2,749,829.08	0.34	1.82	1,510,895.10	2.74	0.59	48	Atlas	
CSO149	6/22/15 6:15 AM	6/22/15 6:45 AM	23,145.41	0.02	0.24	96,439.20	2.82	0.11	3	Atlas	
CSO149	6/26/15 12:00 AM	6/26/15 6:00 AM	1,391,965.23	0.25	0.59	2,359,263.10	1.82	0.32	6	Atlas	
CSO149	6/26/15 5:00 PM	6/27/15 1:30 AM	2,155,637.13	0.35	0.89	2,422,064.19	2.6	0.50	1	Atlas	
CSO149	6/29/15 1:30 PM	6/29/15 2:15 PM	962,483.33	0.03	0.19	5,065,701.76	1.65	0.11	1	Atlas	
<b>CSO149 Total Volume (Gal)</b>			16,027,289.11								
<b>CSO149 Events</b>			14.00								
CSO150	4/2/15 3:00 PM	4/2/15 4:00 PM	11,891.68	0.04	4.94	2,407.22	1.01	9.44	24	Cloudburst	
CSO150	4/3/15 12:15 AM	4/3/15 5:30 PM	715,612.29	0.72	4.94	144,860.79	4.97	9.44	24	Cloudburst	
CSO150	4/7/15 9:15 AM	4/7/15 7:00 PM	170,691.28	0.41	1.11	153,775.93	6.05	0.54	1	Atlas	
CSO150	4/9/15 11:30 AM	4/9/15 5:15 PM	213,202.82	0.24	0.26	820,010.84	5.99	0.23	1	Atlas	
CSO150	4/10/15 2:30 AM	4/10/15 8:00 AM	278,912.22	0.23	0.22	1,267,782.80	3.53	0.14	3	Atlas	
CSO150	4/14/15 11:00 AM	4/14/15 12:30 PM	5,531.29	0.06	0.66	8,380.75	1.49	0.25	24	Atlas	
CSO150	4/19/15 2:30 PM	4/19/15 3:15 PM	23,432.58	0.03	0.68	34,459.68	1.21	0.28	12	Atlas	
CSO150	6/17/15 4:45 AM	6/17/15 7:00 AM	2,726.97	0.09	0.64	4,260.89	0.66	0.35	3	Atlas	
CSO150	6/18/15 5:15 PM	6/18/15 6:45 PM	39,133.73	0.06	0.67	58,408.55	1.21	0.38	1	Atlas	
CSO150	6/20/15 5:15 AM	6/20/15 9:15 AM	121,250.94	0.17	0.95	127,632.57	2.35	0.39	12	Atlas	
CSO150	6/26/15 5:00 PM	6/26/15 6:45 PM	33,840.17	0.07	1.05	32,228.73	2.4	0.54	1	Atlas	
<b>CSO150 Total Volume (Gal)</b>			1,616,225.97								
<b>CSO150 Events</b>			11.00								
CSO151	4/2/15 10:15 AM	4/11/15 9:45 PM	20,297,450.72	9.48	5	4,059,490.14	6.54	12.80	6	Cloudburst	
CSO151	4/13/15 7:30 PM	4/13/15 11:00 PM	172,622.56	0.15	0.43	401,447.80	1.48	0.17	6	Atlas	
CSO151	4/14/15 7:30 AM	4/14/15 1:45 PM	288,373.27	0.26	0.43	670,635.52	1.72	0.17	6	Atlas	
CSO151	4/16/15 10:30 AM	4/16/15 11:00 AM	8,990.65	0.02	0.04	224,766.22	1.04	0.03	1	Atlas	
CSO151	4/19/15 7:00 AM	4/20/15 4:45 AM	417,631.14	0.91	0.81	515,593.99	1.43	0.34	12	Atlas	
CSO151	4/25/15 9:30 AM	4/25/15 10:30 AM	32,023.08	0.04	0.12	266,859.00	1.03	0.06	6	Atlas	
CSO151	4/25/15 7:15 PM	4/25/15 7:30 PM	30,002.03	0.01	0.15	200,013.50	1.14	0.10	1	Atlas	
CSO151	5/9/15 5:15 AM	5/9/15 5:30 AM	7,001.19	0.01	0.12	58,343.28	0.12	0.07	3	Atlas	
CSO151	5/11/15 6:00 PM	5/11/15 6:45 PM	48,031.58	0.03	0.09	533,684.27	0.21	0.08	1	Atlas	
CSO151	5/16/15 1:00 PM	5/16/15 2:45 PM	30,774.75	0.07	0.24	128,228.12	0.38	0.13	3	Atlas	
CSO151	5/17/15 2:30 PM	5/17/15 3:30 PM	59,994.72	0.04	0.12	499,956.02	0.49	0.08	1	Atlas	
CSO151	5/25/15 6:45 AM	5/25/15 9:45 AM	44,146.47	0.13	0.26	169,794.10	0.24	0.12	12	Atlas	
CSO151	5/26/15 2:00 PM	5/26/15 3:30 PM	119,606.35	0.06	0.25	478,425.40	0.44	0.16	1	Atlas	
CSO151	5/27/15 2:00 PM	5/27/15 2:45 PM	42,292.58	0.03	0.22	192,239.01	0.73	0.19	1	Atlas	
CSO151	6/8/15 7:30 AM	6/8/15 9:30 AM	28,526.86	0.08	0.26	109,718.70	0.32	0.14	3	Atlas	
CSO151	6/13/15 2:45 PM	6/13/15 3:00 PM	27,396.66	0.01	0.12	228,305.54	0.38	0.10	1	Atlas	
CSO151	6/17/15 5:00 AM	6/17/15 8:00 AM	362,110.37	0.13	0.56	646,625.66	0.68	0.31	3	Atlas	
CSO151	6/17/15 5:30 PM	6/17/15 5:45 PM	9,466.70	0.01	0.09	105,185.57	0.77	0.08	1	Atlas	
CSO151	6/18/15 4:30 PM	6/19/15 12:15 AM	919,821.30	0.32	2.08	442,221.78	1.67	0.68	48	Atlas	
CSO151	6/20/15 1:45 AM	6/20/15 3:45 PM	799,811.24	0.58	2.08	384,524.64	2.85	0.68	48	Atlas	
CSO151	6/22/15 6:30 AM	6/22/15 7:45 AM	47,812.01	0.05	0.21	227,676.25	2.94	0.10	12	Atlas	
CSO151	6/26/15 12:00 AM	6/26/15 5:30 AM	266,871.20	0.23	0.55	485,220.36	1.95	0.30	6	Atlas	
CSO151	6/26/15 5:15 PM	6/27/15 4:30 AM	509,410.54	0.47	0.81	628,901.90	2.62	0.38	1	Atlas	
CSO151	6/29/15 1:45 PM	6/29/15 3:45 PM	77,204.31	0.08	0.2	386,021.57	1.56	0.12	1	Atlas	
<b>CSO151 Total Volume (Gal)</b>			24,647,372.28								
<b>CSO151 Events</b>			24.00								

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	Sneads5B.Ret
CSO152	4/2/15 10:15 AM	4/4/15 2:45 AM	14,335,084.37	1.69	5.12	2,799,821.17	5.26	13.81	6	Cloudburst	
CSO152	4/7/15 8:00 AM	4/7/15 6:45 PM	438,140.49	0.45	0.78	561,718.57	5.91	0.33	12	Atlas	
CSO152	4/8/15 6:45 PM	4/8/15 7:30 PM	105,566.25	0.03	0.16	659,789.06	6.06	0.09	3	Atlas	
CSO152	4/9/15 11:45 AM	4/9/15 1:00 PM	160,989.12	0.05	0.25	643,956.47	5.95	0.22	1	Atlas	
CSO152	4/10/15 2:30 AM	4/10/15 4:00 AM	157,098.69	0.06	0.14	1,122,133.48	3.4	0.09	3	Atlas	
CSO152	4/13/15 8:45 PM	4/13/15 10:00 PM	256,095.90	0.05	0.38	673,936.57	1.41	0.16	6	Atlas	
CSO152	4/14/15 7:45 AM	4/14/15 12:30 PM	127,716.26	0.20	0.38	336,095.41	1.61	0.16	6	Atlas	
CSO152	4/19/15 7:00 AM	4/19/15 7:00 PM	272,957.67	0.50	0.75	363,943.57	1.23	0.31	12	Atlas	
CSO152	4/20/15 3:30 AM	4/20/15 4:15 AM	103,373.46	0.03	0.06	1,722,890.96	1.29	0.04	1	Atlas	
CSO152	4/25/15 9:30 AM	4/25/15 10:00 AM	59,909.61	0.02	0.12	499,246.77	0.94	0.06	6	Atlas	
CSO152	4/25/15 7:15 PM	4/25/15 7:30 PM	41,133.34	0.01	0.1	411,333.42	1	0.06	3	Atlas	
CSO152	5/11/15 6:00 PM	5/11/15 6:15 PM	44,425.14	0.01	0.09	493,612.63	0.21	0.08	1	Atlas	
CSO152	5/16/15 1:15 PM	5/16/15 2:15 PM	60,763.59	0.04	0.33	184,132.09	0.4	0.15	3	Atlas	
CSO152	5/17/15 2:45 PM	5/17/15 3:15 PM	74,776.28	0.02	0.1	747,762.82	0.5	0.06	1	Atlas	
CSO152	5/25/15 7:15 AM	5/25/15 9:00 AM	87,171.23	0.07	0.23	379,005.34	0.22	0.11	12	Atlas	
CSO152	5/26/15 2:00 PM	5/26/15 3:00 PM	215,669.96	0.04	0.24	898,624.84	0.42	0.16	1	Atlas	
CSO152	5/27/15 2:00 PM	5/27/15 2:30 PM	79,714.90	0.02	0.14	569,392.17	0.62	0.12	1	Atlas	
CSO152	6/8/15 8:45 AM	6/8/15 9:00 AM	76,452.52	0.01	0.32	238,914.13	0.33	0.19	3	Atlas	
CSO152	6/17/15 5:00 AM	6/17/15 7:30 AM	374,196.67	0.10	0.6	623,661.12	0.68	0.33	3	Atlas	
CSO152	6/18/15 4:30 PM	6/18/15 7:30 PM	1,460,011.96	0.13	1.84	793,484.76	1.62	0.60	48	Atlas	
CSO152	6/19/15 1:30 PM	6/19/15 1:45 PM	22,652.27	0.01	1.84	12,311.02	1.74	0.60	48	Atlas	
CSO152	6/20/15 1:45 AM	6/20/15 10:00 AM	1,056,255.88	0.34	1.84	574,052.11	2.64	0.60	48	Atlas	
CSO152	6/22/15 6:30 AM	6/22/15 7:15 AM	64,188.00	0.03	0.22	291,763.63	2.78	0.10	12	Atlas	
CSO152	6/26/15 12:15 AM	6/26/15 3:30 AM	286,591.01	0.14	0.62	462,243.56	1.82	0.34	6	Atlas	
CSO152	6/26/15 5:15 PM	6/27/15 2:00 AM	990,541.75	0.36	0.81	1,222,891.04	2.56	0.38	1	Atlas	
CSO152	6/29/15 1:45 PM	6/29/15 2:30 PM	263,354.57	0.03	0.18	1,463,080.95	1.61	0.11	1	Atlas	
<b>CSO152 Total Volume (Gal)</b>			21,214,830.88								
<b>CSO152 Events</b>			26.00								
CSO153	4/2/15 9:45 AM	4/3/15 5:00 PM	3,161,049.70	1.30	4.76	664,086.07	4.91	7.33	6	Cloudburst	
CSO153	4/7/15 9:15 AM	4/7/15 5:30 PM	599,050.93	0.34	0.92	651,142.31	5.68	0.46	1	Atlas	
CSO153	4/8/15 6:00 PM	4/8/15 9:15 PM	147,089.48	0.14	0.28	525,319.57	5.96	0.21	1	Atlas	
CSO153	4/9/15 11:30 AM	4/9/15 1:45 PM	209,154.25	0.09	0.18	1,161,968.05	5.71	0.16	1	Atlas	
CSO153	4/10/15 2:15 AM	4/10/15 4:15 AM	139,997.84	0.08	0.19	736,830.72	3.48	0.12	3	Atlas	
CSO153	4/13/15 8:45 PM	4/13/15 9:00 PM	84,353.64	0.01	0.37	227,982.81	1.66	0.15	6	Atlas	
CSO153	4/19/15 2:00 PM	4/19/15 2:15 PM	130,993.29	0.01	0.76	172,359.59	1.1	0.32	12	Atlas	
CSO153	4/20/15 3:15 AM	4/20/15 3:15 AM	8,185.49	0.00	0.07	116,935.57	1.28	0.06	1	Atlas	
CSO153	4/25/15 9:00 AM	4/25/15 9:15 AM	10,332.97	0.01	0.13	79,484.38	0.99	0.06	12	Atlas	
CSO153	5/16/15 11:45 AM	5/16/15 1:15 PM	28,529.57	0.06	0.46	62,020.81	0.44	0.23	3	Atlas	
CSO153	5/17/15 2:15 PM	5/17/15 2:30 PM	120,431.07	0.01	0.08	1,505,388.35	0.58	0.05	1	Atlas	
CSO153	5/25/15 7:00 AM	5/25/15 8:15 AM	12,097.60	0.05	0.29	41,715.88	0.25	0.13	12	Atlas	
CSO153	5/26/15 1:45 PM	5/26/15 2:15 PM	187,601.06	0.02	0.23	815,656.79	0.49	0.17	1	Atlas	
CSO153	5/27/15 1:45 PM	5/27/15 1:45 PM	2,292.28	0.00	0.13	17,632.93	0.65	0.11	1	Atlas	
CSO153	5/30/15 4:00 PM	5/30/15 4:00 PM	9,766.94	0.00	0.04	244,173.44	0.66	0.02	3	Atlas	
CSO153	6/8/15 7:00 AM	6/8/15 8:15 AM	57,588.59	0.05	0.22	261,766.33	0.27	0.13	3	Atlas	
CSO153	6/17/15 4:45 AM	6/17/15 6:45 AM	150,274.64	0.08	0.63	238,531.17	0.69	0.36	3	Atlas	
CSO153	6/18/15 4:15 PM	6/18/15 5:45 PM	387,793.46	0.06	1.38	281,009.75	1.1	0.45	48	Atlas	
CSO153	6/20/15 1:30 AM	6/20/15 10:45 AM	395,400.24	0.39	1.38	286,521.91	2.14	0.45	48	Atlas	
CSO153	6/22/15 6:15 AM	6/22/15 6:15 AM	5,238.59	0.00	0.22	23,811.79	2.26	0.10	12	Atlas	

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	Sneads58.Ret
CSO153	6/26/15 12:00 AM	6/26/15 12:00 AM	41,796.14	0.00	0.49	85,298.24	1.39	0.26	6	Atlas	
CSO153	6/26/15 5:00 PM	6/27/15 1:15 AM	425,428.78	0.34	0.93	457,450.30	2.49	0.53	1	Atlas	
CSO153	6/29/15 1:45 PM	6/29/15 1:45 PM	11,987.01	0.00	0.31	38,667.78	1.72	0.17	1	Atlas	
<b>CSO153 Total Volume (Gal)</b>			6,326,433.55								
<b>CSO153 Events</b>			23.00								
CSO154	5/26/15 2:00 PM	5/26/15 2:15 PM	8,254.45	0.01	0.5	16,508.90	0.74	0.39	1	Atlas	
CSO154	6/18/15 5:15 PM	6/19/15 12:15 AM	329,046.64	0.29	1.42	231,722.99	1.21	0.46	48	Atlas	
CSO154	6/20/15 7:45 AM	6/20/15 9:00 AM	31,278.17	0.05	1.42	22,026.88	2.2	0.46	48	Atlas	
CSO154	6/22/15 4:00 PM	6/22/15 8:30 PM	21,170.64	0.19	0.17	124,533.16	2.35	0.09	3	Atlas	
CSO154	6/26/15 5:15 PM	6/26/15 6:00 PM	154,131.25	0.03	0.84	183,489.59	2.03	0.47	1	Atlas	
<b>CSO154 Total Volume (Gal)</b>			543,881.15								
<b>CSO154 Events</b>			5.00								
CSO155	4/2/15 10:30 AM	4/2/15 3:00 PM	39,494.78	0.19	4.74	8,332.23	1.13	7.98	24	Cloudburst	
CSO155	4/3/15 12:15 AM	4/3/15 3:30 PM	197,645.44	0.64	4.74	41,697.35	4.73	7.98	24	Cloudburst	
CSO155	4/7/15 9:15 AM	4/7/15 5:00 PM	66,414.53	0.32	1.08	61,494.94	5.79	0.53	1	Atlas	
CSO155	4/9/15 11:30 AM	4/9/15 11:30 AM	5,212.05	0.00	0.17	30,659.13	5.64	0.15	1	Atlas	
CSO155	4/10/15 2:15 AM	4/10/15 2:15 AM	10,611.59	0.00	0.24	44,214.97	3.57	0.16	3	Atlas	
CSO155	4/13/15 8:45 PM	4/13/15 8:45 PM	181.70	0.00	0.78	232.95	1.86	0.30	24	Atlas	
CSO155	4/19/15 12:45 PM	4/19/15 6:15 PM	2,512.56	0.23	0.67	3,750.09	1.5	0.28	12	Atlas	
CSO155	4/30/15 12:45 PM	4/30/15 12:45 PM	19.29	0.00	0.14	137.80	0.44	0.11	1	Atlas	
CSO155	5/16/15 11:45 AM	5/16/15 12:00 PM	15,511.42	0.01	0.7	22,159.17	0.54	0.41	3	Atlas	
CSO155	5/25/15 8:15 AM	5/25/15 8:15 AM	764.80	0.00	0.3	2,549.34	0.25	0.14	12	Atlas	
CSO155	5/26/15 2:00 PM	5/26/15 2:00 PM	5,283.17	0.00	0.17	31,077.45	0.43	0.10	1	Atlas	
CSO155	6/8/15 7:00 AM	6/8/15 7:00 AM	5,255.23	0.00	0.16	32,845.18	0.19	0.10	3	Atlas	
CSO155	6/17/15 4:45 AM	6/17/15 6:00 AM	7,626.41	0.05	0.67	11,382.70	0.61	0.37	3	Atlas	
CSO155	6/18/15 5:15 PM	6/18/15 5:45 PM	19,915.49	0.02	0.76	26,204.59	1.27	0.43	1	Atlas	
CSO155	6/20/15 1:30 AM	6/20/15 5:15 AM	15,411.23	0.16	1.04	14,818.49	2.23	0.41	12	Atlas	
CSO155	6/25/15 11:45 PM	6/25/15 11:45 PM	1,988.88	0.00	0.61	3,260.45	1.66	0.33	6	Atlas	
CSO155	6/26/15 5:00 PM	6/26/15 11:45 PM	25,349.38	0.28	1.04	24,374.41	2.9	0.55	1	Atlas	
CSO155	6/29/15 1:45 PM	6/29/15 1:45 PM	436.92	0.00	0.22	1,985.98	1.87	0.12	1	Atlas	
<b>CSO155 Total Volume (Gal)</b>			419,634.86								
<b>CSO155 Events</b>			18.00								
CSO160	4/2/15 9:45 AM	4/2/15 3:15 PM	2,401.00	0.23	5.15	466.21	1.17	10.13	24	Cloudburst	
CSO160	4/3/15 12:30 AM	4/3/15 5:45 PM	10,037.55	0.72	5.15	1,949.04	5.17	10.13	24	Cloudburst	
CSO160	4/7/15 4:45 AM	4/7/15 5:15 PM	5,035.61	0.52	0.9	5,595.12	6.04	0.45	1	Atlas	
CSO160	4/9/15 11:45 AM	4/9/15 11:45 AM	514.64	0.00	0.1	5,146.39	5.8	0.08	1	Atlas	
CSO160	4/10/15 2:30 AM	4/10/15 2:30 AM	299.92	0.00	0.21	1,428.20	3.33	0.13	1	Atlas	
CSO160	4/13/15 9:00 PM	4/13/15 9:15 PM	647.74	0.01	0.43	1,506.38	1.49	0.17	24	Atlas	
CSO160	4/19/15 1:00 PM	4/19/15 2:30 PM	317.93	0.06	0.71	447.78	1.06	0.30	12	Atlas	
CSO160	4/20/15 3:45 AM	4/20/15 4:00 AM	916.15	0.01	0.07	13,087.91	1.29	0.05	1	Atlas	
CSO160	5/16/15 12:00 PM	5/16/15 2:00 PM	1,503.17	0.08	0.54	2,783.65	0.61	0.30	3	Atlas	
CSO160	5/17/15 2:30 PM	5/17/15 2:30 PM	170.81	0.00	0.04	4,270.36	0.69	0.03	1	Atlas	
CSO160	5/26/15 2:15 PM	5/26/15 2:15 PM	651.06	0.00	0.16	4,069.10	0.4	0.10	1	Atlas	
CSO160	6/8/15 8:30 AM	6/8/15 8:30 AM	308.62	0.00	0.24	1,285.91	0.25	0.13	6	Atlas	
CSO160	6/17/15 5:00 AM	6/17/15 6:15 AM	319.17	0.05	0.67	476.37	0.66	0.39	3	Atlas	
CSO160	6/18/15 5:30 PM	6/18/15 5:30 PM	1,066.32	0.00	1.53	696.94	1.16	0.50	48	Atlas	
CSO160	6/20/15 1:45 AM	6/20/15 1:45 AM	276.20	0.00	1.53	180.52	1.66	0.50	48	Atlas	
CSO160	6/26/15 5:30 PM	6/26/15 5:30 PM	323.98	0.00	0.89	364.02	2.1	0.46	1	Atlas	



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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB.Ret
CSO160	6/29/15 2:00 PM	6/29/15 2:00 PM	160.11	0.00	0.22	727.77	1.6	0.12	1	Atlas	
<b>CSO160 Total Volume (Gal)</b>			24,949.97								
<b>CSO160 Events</b>			17.00								
CSO161	4/2/15 3:00 PM	4/2/15 3:00 PM	523.69	0.00	5.15	101.69	1.05	10.13	24	Cloudburst	
CSO161	4/3/15 12:15 AM	4/3/15 2:15 AM	19,017.85	0.08	5.15	3,692.79	3.14	10.13	24	Cloudburst	
CSO161	4/7/15 9:15 AM	4/7/15 9:15 AM	2,190.86	0.00	0.9	2,434.29	5.73	0.45	1	Atlas	
CSO161	5/16/15 11:45 AM	5/16/15 11:45 AM	797.47	0.00	0.54	1,476.79	0.43	0.30	3	Atlas	
CSO161	5/17/15 2:15 PM	5/17/15 2:15 PM	6,574.90	0.00	0.04	164,372.40	0.69	0.03	1	Atlas	
CSO161	6/17/15 4:45 AM	6/17/15 4:45 AM	3,171.70	0.00	0.67	4,733.88	0.38	0.39	3	Atlas	
CSO161	6/18/15 5:15 PM	6/18/15 5:15 PM	18,776.44	0.00	1.53	12,272.18	1.05	0.50	48	Atlas	
CSO161	6/20/15 1:30 AM	6/20/15 5:15 AM	2,876.10	0.16	1.53	1,879.81	1.93	0.50	48	Atlas	
CSO161	6/26/15 5:15 PM	6/26/15 5:15 PM	4,472.21	0.00	0.89	5,024.95	2.12	0.46	1	Atlas	
CSO161	6/29/15 1:45 PM	6/29/15 1:45 PM	640.51	0.00	0.22	2,911.41	1.6	0.12	1	Atlas	
<b>CSO161 Total Volume (Gal)</b>			59,041.73								
<b>CSO161 Events</b>			10.00								
CSO166	4/2/15 10:30 AM	4/5/15 5:15 AM	67,421,160.36	2.78	4.73	14,253,945.11	4.86	7.44	6	Cloudburst	
CSO166	4/7/15 9:30 AM	4/7/15 8:30 PM	3,255,308.72	0.46	0.73	4,459,327.01	5.47	0.33	1	Atlas	
CSO166	4/8/15 6:30 PM	4/8/15 7:30 PM	478,636.83	0.04	0.15	3,190,912.22	5.61	0.08	6	Atlas	
CSO166	4/9/15 12:00 PM	4/9/15 1:00 PM	1,002,212.74	0.04	0.28	3,579,331.21	5.52	0.24	1	Atlas	
CSO166	4/10/15 2:45 AM	4/10/15 3:45 AM	204,270.89	0.04	0.13	1,571,314.57	2.82	0.09	3	Atlas	
CSO166	4/13/15 9:15 PM	4/13/15 9:45 PM	91,809.06	0.02	0.49	187,365.43	1.39	0.20	6	Atlas	
CSO166	4/19/15 2:15 PM	4/19/15 4:00 PM	916,654.01	0.07	0.94	975,163.84	1.18	0.36	24	Atlas	
CSO166	4/25/15 7:30 PM	4/25/15 7:45 PM	26,039.65	0.01	0.19	137,050.76	1.12	0.07	24	Atlas	
CSO166	5/11/15 6:00 PM	5/11/15 6:30 PM	374,771.73	0.02	0.1	3,747,717.28	0.26	0.09	1	Atlas	
CSO166	5/26/15 2:00 PM	5/26/15 2:45 PM	467,671.12	0.03	0.36	1,299,086.45	0.57	0.22	1	Atlas	
CSO166	6/13/15 2:45 PM	6/13/15 3:00 PM	306,865.36	0.01	0.14	2,191,895.42	0.33	0.12	1	Atlas	
CSO166	6/17/15 5:15 AM	6/17/15 6:45 AM	958,829.74	0.06	0.71	1,350,464.42	0.86	0.42	3	Atlas	
CSO166	6/18/15 4:30 PM	6/18/15 7:15 PM	2,807,384.47	0.11	2.15	1,305,760.22	1.8	0.70	48	Atlas	
CSO166	6/19/15 5:45 PM	6/19/15 6:15 PM	187,736.24	0.02	2.15	87,319.18	2.03	0.70	48	Atlas	
CSO166	6/20/15 4:00 AM	6/20/15 10:15 AM	2,795,358.30	0.26	2.15	1,300,166.65	3.09	0.70	48	Atlas	
CSO166	6/26/15 12:00 AM	6/26/15 12:45 AM	530,372.26	0.03	0.46	1,152,983.18	1.68	0.25	6	Atlas	
CSO166	6/26/15 5:00 PM	6/27/15 2:00 AM	3,478,874.07	0.38	0.77	4,518,018.27	2.51	0.41	1	Atlas	
CSO166	6/29/15 2:15 PM	6/29/15 2:30 PM	24,885.07	0.01	0.2	124,425.36	1.43	0.12	1	Atlas	
<b>CSO166 Total Volume (Gal)</b>			85,328,840.62								
<b>CSO166 Events</b>			18.00								
CSO167	4/2/15 10:30 AM	4/5/15 10:15 AM	4,683,585.29	2.99	4.03	1,162,179.97	4.16	3.72	24	Cloudburst	
CSO167	4/7/15 9:15 AM	4/7/15 9:15 PM	545,591.14	0.50	0.78	699,475.82	4.82	0.37	1	Atlas	
CSO167	4/8/15 6:15 PM	4/8/15 7:15 PM	87,421.75	0.04	0.17	514,245.58	4.99	0.14	1	Atlas	
CSO167	4/9/15 11:30 AM	4/9/15 12:45 PM	128,889.38	0.05	0.15	859,262.51	4.79	0.12	1	Atlas	
CSO167	4/10/15 2:15 AM	4/10/15 3:45 AM	104,209.76	0.06	0.16	651,310.99	2.92	0.11	3	Atlas	
CSO167	4/25/15 9:30 AM	4/25/15 9:45 AM	11,339.96	0.01	0.12	94,499.66	0.91	0.05	12	Atlas	
CSO167	4/25/15 7:15 PM	4/25/15 7:30 PM	23,578.92	0.01	0.25	94,315.66	1.12	0.18	1	Atlas	
CSO167	5/17/15 2:30 PM	5/17/15 3:00 PM	130,311.31	0.02	0.08	1,628,891.36	0.53	0.05	1	Atlas	
CSO167	5/25/15 7:15 AM	5/25/15 7:30 AM	6,736.98	0.01	0.28	24,060.64	0.2	0.13	3	Atlas	
CSO167	5/26/15 2:00 PM	5/26/15 2:45 PM	125,845.50	0.03	0.5	251,691.00	0.74	0.39	1	Atlas	
CSO167	5/27/15 1:45 PM	5/27/15 2:15 PM	19,888.71	0.02	0.08	248,608.90	0.87	0.07	1	Atlas	
CSO167	6/8/15 8:30 AM	6/8/15 8:45 AM	27,100.95	0.01	0.24	112,920.61	0.24	0.14	3	Atlas	
CSO167	6/17/15 5:00 AM	6/17/15 7:00 AM	291,779.51	0.08	0.68	429,087.52	0.72	0.39	3	Atlas	

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB.Ret
CSO167	6/18/15 4:30 PM	6/18/15 6:45 PM	447,952.41	0.09	1.42	315,459.44	1.15	0.46	48	Atlas	
CSO167	6/19/15 5:45 PM	6/20/15 11:15 AM	527,759.39	0.73	1.42	371,661.54	2.2	0.46	48	Atlas	
CSO167	6/26/15 12:15 AM	6/26/15 12:30 AM	44,597.34	0.01	0.36	123,881.51	1.32	0.19	6	Atlas	
CSO167	6/26/15 5:15 PM	6/27/15 1:30 AM	424,295.31	0.34	0.84	505,113.46	2.3	0.47	1	Atlas	
<b>CSO167 Total Volume (Gal)</b>			7,630,883.59								
<b>CSO167 Events</b>			17.00								
CSO174	4/2/15 10:30 AM	4/2/15 3:30 PM	797,584.70	0.21	5.36	148,803.12	0.94	20.93	6	Cloudburst	
CSO174	4/3/15 12:15 AM	4/3/15 3:30 PM	10,913,811.91	0.64	5.36	2,036,158.94	5.24	20.93	6	Cloudburst	
CSO174	4/7/15 9:15 AM	4/7/15 5:30 PM	442,905.89	0.34	0.84	527,268.91	6.19	0.36	12	Atlas	SB.Ret
CSO174	4/8/15 6:00 PM	4/8/15 6:15 PM	241,091.72	0.01	0.16	1,506,823.25	6.36	0.09	3	Atlas	SB.Ret
CSO174	4/9/15 11:30 AM	4/9/15 12:00 PM	150,433.15	0.02	0.22	683,787.04	6.11	0.19	1	Atlas	SB.Ret
CSO174	4/19/15 2:15 PM	4/19/15 2:30 PM	225,435.49	0.01	0.71	317,514.77	1.1	0.30	12	Atlas	SB.Ret
CSO174	4/20/15 3:30 AM	4/20/15 3:30 AM	1,139.02	0.00	0.07	16,271.73	1.23	0.05	1	Atlas	SB.Ret
CSO174	5/17/15 2:15 PM	5/17/15 2:30 PM	149,047.05	0.01	0.12	1,242,058.78	0.58	0.09	1	Atlas	SB.Ret
CSO174	5/26/15 1:45 PM	5/26/15 2:15 PM	206,493.39	0.02	0.35	589,981.12	0.54	0.26	1	Atlas	SB.Ret
CSO174	5/27/15 1:45 PM	5/27/15 1:45 PM	29,185.77	0.00	0.09	324,286.35	0.68	0.08	1	Atlas	SB.Ret
<b>CSO174 Total Volume (Gal)</b>			13,157,128.09								
<b>CSO174 Events</b>			10.00								
CSO179	4/2/15 10:00 AM	4/2/15 3:15 PM	4,844.54	0.22	5.36	903.83	0.96	20.93	6	Cloudburst	
CSO179	4/3/15 12:30 AM	4/3/15 7:15 PM	2,632,335.85	0.78	5.36	491,107.43	5.38	20.93	6	Cloudburst	
CSO179	6/18/15 5:15 PM	6/18/15 5:30 PM	103,619.20	0.01	1.82	56,933.63	1.63	0.59	48	Atlas	
CSO179	6/26/15 5:15 PM	6/26/15 5:15 PM	7,952.94	0.00	0.89	8,935.88	2.24	0.50	1	Atlas	
<b>CSO179 Total Volume (Gal)</b>			2,748,752.53								
<b>CSO179 Events</b>			4.00								
CSO180	4/2/15 10:30 AM	4/2/15 3:15 PM	351,988.93	0.20	5.36	65,669.58	0.94	20.93	6	Cloudburst	
CSO180	4/3/15 12:15 AM	4/3/15 3:30 PM	1,975,925.47	0.64	5.36	368,642.81	5.24	20.93	6	Cloudburst	
CSO180	4/7/15 9:15 AM	4/7/15 5:00 PM	122,404.88	0.32	0.84	145,720.09	6.16	0.36	12	Atlas	SB.Ret
CSO180	4/8/15 6:00 PM	4/8/15 6:15 PM	38,270.26	0.01	0.16	239,189.13	6.36	0.09	3	Atlas	SB.Ret
CSO180	4/9/15 11:30 AM	4/9/15 11:30 AM	17,350.66	0.00	0.22	78,866.62	6.05	0.19	1	Atlas	SB.Ret
CSO180	4/10/15 2:15 AM	4/10/15 2:15 AM	5,673.23	0.00	0.17	33,371.94	3.7	0.11	3	Atlas	SB.Ret
CSO180	4/19/15 2:15 PM	4/19/15 2:15 PM	5,589.54	0.00	0.71	7,872.59	1.09	0.30	12	Atlas	SB.Ret
CSO180	5/17/15 2:15 PM	5/17/15 2:15 PM	32,864.97	0.00	0.12	273,874.74	0.58	0.09	1	Atlas	SB.Ret
CSO180	5/26/15 2:00 PM	5/26/15 2:00 PM	49,550.06	0.00	0.35	141,571.61	0.54	0.26	1	Atlas	SB.Ret
CSO180	6/8/15 8:15 AM	6/8/15 8:15 AM	12,051.13	0.00	0.26	46,350.48	0.29	0.16	3	Atlas	SB.Ret
CSO180	6/17/15 4:45 AM	6/17/15 5:00 AM	41,945.14	0.01	0.58	72,319.20	0.49	0.31	3	Atlas	SB.Ret
CSO180	6/18/15 4:00 PM	6/18/15 5:45 PM	683,926.19	0.07	1.82	375,783.62	1.64	0.59	48	Atlas	SB.Ret
CSO180	6/20/15 1:30 AM	6/20/15 8:00 AM	51,758.98	0.27	1.82	28,439.00	2.71	0.59	48	Atlas	SB.Ret
CSO180	6/25/15 11:45 PM	6/26/15 12:00 AM	79,486.70	0.01	0.59	134,723.21	1.53	0.32	6	Atlas	SB.Ret
CSO180	6/26/15 5:00 PM	6/26/15 5:15 PM	123,173.16	0.01	0.89	138,396.80	2.24	0.50	1	Atlas	SB.Ret
CSO180	6/29/15 1:15 PM	6/29/15 1:15 PM	42,162.00	0.00	0.19	221,905.26	1.62	0.11	1	Atlas	SB.Ret
<b>CSO180 Total Volume (Gal)</b>			3,634,121.28								
<b>CSO180 Events</b>			16.00								
CSO181	4/2/15 10:45 AM	4/2/15 3:30 PM	364,123.68	0.20	5.34	68,187.95	0.99	15.08	6	Cloudburst	
CSO181	4/3/15 12:30 AM	4/3/15 11:30 AM	1,079,872.32	0.46	5.34	202,223.28	4.91	15.08	6	Cloudburst	
CSO181	4/7/15 9:30 AM	4/7/15 5:15 PM	268,809.07	0.32	0.97	277,122.76	6.3	0.43	1	Atlas	
CSO181	5/17/15 2:30 PM	5/17/15 2:30 PM	4,666.48	0.00	0.05	93,329.53	0.56	0.02	12	Atlas	
CSO181	5/26/15 2:15 PM	5/26/15 2:15 PM	205.58	0.00	0.28	734.23	0.53	0.21	1	Atlas	
CSO181	6/18/15 5:45 PM	6/18/15 5:45 PM	37,532.88	0.00	1.42	26,431.60	1.1	0.46	48	Atlas	

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB.Ret
CSO181	6/26/15 12:15 AM	6/26/15 12:15 AM	1,132.13	0.00	0.43	2,632.87	1.34	0.23	6	Atlas	
CSO181	6/26/15 5:15 PM	6/26/15 5:45 PM	307,301.46	0.02	0.9	341,446.07	2.06	0.49	1	Atlas	
<b>CSO181 Total Volume (Gal)</b>			2,063,643.60								
<b>CSO181 Events</b>			8.00								
CSO182	4/2/15 10:15 AM	4/3/15 12:15 AM	38,032.53	0.58	5.66	6,719.53	1.66	27.08	6	Cloudburst	
<b>CSO182 Total Volume (Gal)</b>			38,032.53								
<b>CSO182 Events</b>			1.00								
CSO183	4/2/15 3:00 PM	4/2/15 3:00 PM	2,444.39	0.00	5.98	408.76	0.75	45.83	6	Cloudburst	
CSO183	4/3/15 12:15 AM	4/3/15 2:30 AM	23,809.35	0.09	5.98	3,981.50	3.76	45.83	6	Cloudburst	
<b>CSO183 Total Volume (Gal)</b>			26,253.74								
<b>CSO183 Events</b>			2.00								
CSO184	4/2/15 10:45 AM	4/2/15 3:30 PM	137,074.69	0.20	5.98	22,922.19	0.82	45.83	6	Cloudburst	
CSO184	4/3/15 12:30 AM	4/3/15 10:30 AM	1,336,722.24	0.42	5.98	223,532.15	5.32	45.83	6	Cloudburst	
CSO184	4/7/15 9:30 AM	4/7/15 5:15 PM	41,836.62	0.32	0.69	60,632.79	6.68	0.32	1	Atlas	SB.Ret
CSO184	4/8/15 6:15 PM	4/8/15 6:30 PM	63,536.11	0.01	0.25	254,144.46	6.93	0.17	1	Atlas	SB.Ret
CSO184	4/9/15 11:45 AM	4/9/15 12:00 PM	44,629.36	0.01	0.31	143,965.69	6.87	0.27	1	Atlas	SB.Ret
CSO184	4/19/15 2:15 PM	4/19/15 2:30 PM	18,416.28	0.01	0.77	23,917.25	1.19	0.32	12	Atlas	SB.Ret
CSO184	5/26/15 2:15 PM	5/26/15 2:15 PM	1,296.76	0.00	0.49	2,646.45	0.73	0.35	1	Atlas	SB.Ret
CSO184	5/27/15 1:45 PM	5/27/15 1:45 PM	7,359.21	0.00	0.09	81,768.98	0.91	0.08	1	Atlas	SB.Ret
CSO184	6/17/15 5:00 AM	6/17/15 5:00 AM	5,244.14	0.00	0.7	7,491.62	0.76	0.35	3	Atlas	SB.Ret
CSO184	6/18/15 4:15 PM	6/18/15 4:15 PM	18,454.44	0.00	1.95	9,463.81	1.35	0.63	48	Atlas	SB.Ret
<b>CSO184 Total Volume (Gal)</b>			1,674,569.86								
<b>CSO184 Events</b>			10.00								
CSO185	4/2/15 10:45 AM	4/2/15 3:30 PM	214,057.23	0.20	5.98	35,795.52	0.82	45.83	6	Cloudburst	
CSO185	4/3/15 12:30 AM	4/3/15 3:45 PM	2,316,280.69	0.64	5.98	387,337.91	5.84	45.83	6	Cloudburst	
CSO185	4/7/15 9:30 AM	4/7/15 5:30 PM	78,002.08	0.33	0.69	113,046.49	6.69	0.32	1	Atlas	SB.Ret
CSO185	4/8/15 6:15 PM	4/8/15 6:30 PM	110,489.49	0.01	0.25	441,957.96	6.93	0.17	1	Atlas	SB.Ret

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB.Ret
CSO185	4/9/15 11:45 AM	4/9/15 12:00 PM	70,312.39	0.01	0.31	226,814.18	6.87	0.27	1	Atlas	SB.Ret
CSO185	4/19/15 2:15 PM	4/19/15 2:30 PM	48,449.81	0.01	0.77	62,921.83	1.19	0.32	12	Atlas	SB.Ret
CSO185	4/20/15 3:30 AM	4/20/15 3:30 AM	1,651.18	0.00	0.14	11,794.12	1.49	0.12	1	Atlas	SB.Ret
CSO185	5/11/15 5:45 PM	5/11/15 5:45 PM	5,502.80	0.00	0.12	45,856.69	0.24	0.10	1	Atlas	SB.Ret
CSO185	5/17/15 2:30 PM	5/17/15 2:30 PM	7,010.97	0.00	0.16	43,818.56	0.57	0.11	1	Atlas	SB.Ret
CSO185	5/26/15 2:00 PM	5/26/15 2:15 PM	7,775.85	0.01	0.49	15,869.09	0.73	0.35	1	Atlas	SB.Ret
CSO185	5/27/15 1:45 PM	5/27/15 1:45 PM	17,375.70	0.00	0.09	193,063.30	0.91	0.08	1	Atlas	SB.Ret
CSO185	6/13/15 2:30 PM	6/13/15 2:30 PM	1,924.76	0.00	0.3	6,415.87	0.64	0.26	1	Atlas	SB.Ret
CSO185	6/17/15 5:00 AM	6/17/15 5:45 AM	18,007.87	0.03	0.7	25,725.53	0.89	0.35	3	Atlas	SB.Ret
CSO185	6/18/15 4:15 PM	6/18/15 4:15 PM	49,107.84	0.00	1.95	25,183.51	1.35	0.63	48	Atlas	SB.Ret
<b>CSO185 Total Volume (Gal)</b>			2,945,948.66								
<b>CSO185 Events</b>			14.00								
CSO188	4/2/15 3:00 PM	4/2/15 3:00 PM	7,855.04	0.00	5.36	1,465.49	0.86	20.93	6	Cloudburst	
CSO188	4/3/15 2:30 AM	4/3/15 2:30 AM	1,663.05	0.00	5.36	310.27	3.47	20.93	6	Cloudburst	
CSO188	6/18/15 5:00 PM	6/18/15 5:00 PM	49,468.99	0.00	1.82	27,180.76	1.35	0.59	48	Atlas	SB.Ret
<b>CSO188 Total Volume (Gal)</b>			58,987.08								
<b>CSO188 Events</b>			3.00								
CSO189	4/2/15 10:45 AM	4/3/15 5:30 PM	76,706,117.46	1.28	4.8	15,980,441.14	4.93	10.76	6	Cloudburst	
CSO189	4/7/15 9:15 AM	4/7/15 6:45 PM	12,959,035.84	0.40	1.03	12,581,588.19	5.83	0.45	1	Atlas	
CSO189	4/9/15 11:45 AM	4/9/15 12:45 PM	981,649.38	0.04	0.25	3,926,597.51	5.91	0.21	1	Atlas	
CSO189	4/10/15 2:15 AM	4/10/15 4:15 AM	3,141,087.00	0.08	0.28	11,218,167.86	3.61	0.19	1	Atlas	
CSO189	4/13/15 8:30 PM	4/14/15 7:15 AM	1,192,533.30	0.45	0.87	1,370,727.94	2.19	0.33	24	Atlas	
CSO189	4/19/15 1:15 PM	4/19/15 7:15 PM	391,895.32	0.25	0.83	472,163.04	1.76	0.34	12	Atlas	
CSO189	5/16/15 11:45 AM	5/16/15 2:30 PM	4,578,536.64	0.11	0.94	4,870,783.66	1.01	0.50	3	Atlas	
CSO189	6/17/15 5:15 AM	6/17/15 7:15 AM	1,831,963.45	0.08	0.66	2,775,702.20	0.67	0.37	3	Atlas	
CSO189	6/18/15 5:15 PM	6/18/15 6:45 PM	4,259,979.74	0.06	0.83	5,132,505.71	1.38	0.54	1	Atlas	
CSO189	6/20/15 1:45 AM	6/20/15 9:15 AM	4,327,233.61	0.31	1.14	3,795,818.96	2.72	0.46	12	Atlas	
CSO189	6/26/15 12:15 AM	6/26/15 1:30 AM	340,952.43	0.05	0.85	401,120.51	2.17	0.46	6	Atlas	
CSO189	6/26/15 5:00 PM	6/27/15 12:45 AM	9,709,110.23	0.32	0.89	10,909,112.62	3.13	0.50	1	Atlas	
CSO189	6/29/15 2:00 PM	6/29/15 2:30 PM	369,225.74	0.02	0.29	1,273,192.20	2.03	0.14	1	Atlas	
<b>CSO189 Total Volume (Gal)</b>			120,789,320.14								
<b>CSO189 Events</b>			13.00								
CSO190	5/17/15 2:15 PM	5/17/15 2:30 PM	2,484.76	0.01	0.09	27,608.45	0.91	0.04	12	Atlas	
CSO190	5/25/15 8:15 AM	5/25/15 9:15 AM	11,674.09	0.04	0.3	38,913.63	0.32	0.14	12	Atlas	
CSO190	5/26/15 1:30 PM	5/26/15 2:30 PM	145,603.23	0.04	0.17	856,489.57	0.43	0.10	1	Atlas	
CSO190	6/17/15 4:45 AM	6/17/15 6:30 AM	445,553.30	0.07	0.67	665,004.93	0.67	0.37	3	Atlas	
CSO190	6/18/15 5:15 PM	6/18/15 6:15 PM	550,864.50	0.04	0.76	724,821.71	1.27	0.43	1	Atlas	
CSO190	6/20/15 1:30 AM	6/20/15 8:30 AM	784,205.85	0.29	1.04	754,044.08	2.53	0.41	12	Atlas	
CSO190	6/22/15 6:00 AM	6/22/15 6:30 AM	529.34	0.02	0.23	2,301.49	2.74	0.11	3	Atlas	
CSO190	6/25/15 11:45 PM	6/26/15 1:30 AM	93,812.27	0.07	0.61	153,790.60	1.79	0.33	6	Atlas	
CSO190	6/26/15 5:00 PM	6/27/15 12:15 AM	1,439,549.60	0.30	1.04	1,384,182.31	2.91	0.55	1	Atlas	
CSO190	6/29/15 1:45 PM	6/29/15 2:00 PM	92,440.10	0.01	0.22	420,182.29	1.87	0.12	1	Atlas	
<b>CSO190 Total Volume (Gal)</b>			3,566,717.04								
<b>CSO190 Events</b>			10.00								

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CSO191	4/2/15 3:15 PM	4/2/15 3:15 PM	205,898.80	0.00	6.2	33,209.48	0.99	36.46	6	Cloudburst	
CSO191	4/3/15 12:15 AM	4/3/15 5:15 PM	4,550,090.68	0.71	6.2	733,885.59	6.25	36.46	6	Cloudburst	
CSO191	4/7/15 5:00 PM	4/7/15 5:15 PM	93,664.09	0.01	0.88	106,436.47	7.08	0.39	1	Atlas	
CSO191	6/18/15 5:45 PM	6/18/15 5:45 PM	16,813.14	0.00	0.6	28,021.91	1.26	0.28	3	Atlas	
CSO191	6/20/15 5:00 AM	6/20/15 7:45 AM	55,365.85	0.11	1.09	50,794.36	2.49	0.43	12	Atlas	
CSO191	6/26/15 5:15 PM	6/26/15 5:45 PM	453,557.69	0.02	1.12	404,962.23	2.96	0.60	1	Atlas	
<b>CSO191 Total Volume (Gal)</b>			5,375,390.25								
<b>CSO191 Events</b>			6.00								
CSO193	4/2/15 10:30 AM	4/2/15 3:00 PM	6,700.05	0.19	5.47	1,224.87	1.09	15.85	6	Cloudburst	
CSO193	4/3/15 12:15 AM	4/3/15 4:30 AM	38,166.47	0.18	5.47	6,977.42	4.16	15.85	6	Cloudburst	
CSO193	4/7/15 9:15 AM	4/7/15 5:00 PM	16,505.39	0.32	0.87	18,971.71	6.31	0.38	1	Atlas	
CSO193	4/9/15 11:30 AM	4/9/15 11:30 AM	105.80	0.00	0.1	1,058.02	6.06	0.09	1	Atlas	
CSO193	5/26/15 2:00 PM	5/26/15 2:00 PM	1,599.83	0.00	0.21	7,618.25	0.41	0.14	1	Atlas	
CSO193	6/17/15 4:45 AM	6/17/15 4:45 AM	1,717.61	0.00	0.7	2,453.74	0.52	0.39	3	Atlas	
CSO193	6/18/15 5:15 PM	6/18/15 5:15 PM	21,367.41	0.00	1.55	13,785.42	1.29	0.50	48	Atlas	
CSO193	6/26/15 5:00 PM	6/26/15 5:15 PM	9,975.45	0.01	0.86	11,599.36	2.17	0.48	1	Atlas	
<b>CSO193 Total Volume (Gal)</b>			96,138.01								
<b>CSO193 Events</b>			8.00								
CSO196	4/2/15 10:45 AM	4/2/15 3:15 PM	29,534.52	0.19	5.52	5,350.46	1.02	20.17	6	Cloudburst	
CSO196	4/3/15 12:15 AM	4/3/15 5:00 PM	353,046.73	0.70	5.52	63,957.74	5.52	20.17	6	Cloudburst	
CSO196	4/7/15 9:30 AM	4/7/15 5:15 PM	18,902.77	0.32	0.83	22,774.42	6.34	0.37	1	Atlas	
CSO196	4/8/15 6:15 PM	4/8/15 6:30 PM	5,874.10	0.01	0.1	58,741.04	6.45	0.05	6	Atlas	
CSO196	4/9/15 11:30 AM	4/9/15 12:00 PM	7,745.44	0.02	0.33	23,471.02	6.09	0.13	24	Atlas	
CSO196	4/10/15 2:30 AM	4/10/15 2:30 AM	3,940.21	0.00	0.33	11,940.03	3.44	0.13	24	Atlas	
CSO196	4/19/15 2:30 PM	4/19/15 2:30 PM	741.55	0.00	0.6	1,235.92	1	0.25	12	Atlas	
CSO196	5/16/15 11:45 AM	5/16/15 11:45 AM	4,419.25	0.00	0.5	8,838.50	0.38	0.24	3	Atlas	
CSO196	5/17/15 2:15 PM	5/17/15 2:15 PM	14,378.06	0.00	0.08	179,725.78	0.63	0.04	1	Atlas	
CSO196	5/26/15 2:00 PM	5/26/15 2:00 PM	3,388.55	0.00	0.28	12,101.97	0.51	0.20	1	Atlas	
CSO196	6/17/15 4:45 AM	6/17/15 5:00 AM	4,188.02	0.01	0.63	6,647.65	0.48	0.34	3	Atlas	
CSO196	6/18/15 5:15 PM	6/18/15 5:45 PM	20,129.18	0.02	1.75	11,502.39	1.68	0.57	48	Atlas	
CSO196	6/20/15 1:30 AM	6/20/15 8:00 AM	11,140.90	0.27	1.75	6,366.23	2.65	0.57	48	Atlas	
CSO196	6/26/15 12:00 AM	6/26/15 12:00 AM	7,000.68	0.00	0.53	13,208.82	1.4	0.29	6	Atlas	

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CSO196	6/26/15 5:15 PM	6/26/15 5:30 PM	34,192.19	0.01	0.93	36,765.79	2.19	0.52	1	Atlas	
CSO196	6/29/15 1:30 PM	6/29/15 1:30 PM	542.47	0.00	0.28	1,937.39	1.73	0.21	1	Atlas	
<b>CSO196 Total Volume (Gal)</b>			519,164.61								
<b>CSO196 Events</b>			16.00								
CSO199	4/2/15 10:45 AM	4/3/15 3:45 PM	150,833.19	1.21	5.52	27,324.85	5.51	20.17	6	Cloudburst	
CSO199	4/7/15 9:30 AM	4/7/15 5:15 PM	8,249.40	0.32	0.83	9,939.03	6.34	0.37	1	Atlas	
CSO199	4/8/15 6:15 PM	4/8/15 6:15 PM	3,633.17	0.00	0.1	36,331.67	6.45	0.05	6	Atlas	
CSO199	4/10/15 2:30 AM	4/10/15 2:30 AM	870.70	0.00	0.33	2,638.48	3.44	0.13	24	Atlas	
CSO199	4/19/15 2:30 PM	4/19/15 2:30 PM	1,755.51	0.00	0.6	2,925.85	1	0.25	12	Atlas	
CSO199	5/17/15 2:15 PM	5/17/15 2:15 PM	7,922.71	0.00	0.08	99,033.86	0.63	0.04	1	Atlas	
CSO199	5/26/15 2:00 PM	5/26/15 2:15 PM	3,350.91	0.01	0.28	11,967.52	0.51	0.20	1	Atlas	
CSO199	6/17/15 4:45 AM	6/17/15 5:45 AM	6,596.27	0.04	0.63	10,470.27	0.6	0.34	3	Atlas	
CSO199	6/18/15 5:15 PM	6/19/15 4:45 PM	1,828,542.98	0.98	1.75	1,044,881.70	1.86	0.57	48	Atlas	
CSO199	6/20/15 8:30 PM	6/21/15 8:30 AM	11,230.83	0.50	1.19	9,437.68	2.6	0.51	12	Atlas	
CSO199	6/26/15 12:00 AM	6/26/15 12:00 AM	2,282.53	0.00	0.53	4,306.66	1.4	0.29	6	Atlas	
CSO199	6/26/15 5:15 PM	6/26/15 5:15 PM	2,194.11	0.00	0.93	2,359.26	2.16	0.52	1	Atlas	
CSO199	6/29/15 1:30 PM	6/29/15 1:30 PM	566.11	0.00	0.28	2,021.84	1.73	0.21	1	Atlas	
<b>CSO199 Total Volume (Gal)</b>			2,028,028.42								
<b>CSO199 Events</b>			13.00								
CSO200	4/2/15 10:30 AM	4/2/15 3:15 PM	80,459.54	0.20	5.52	14,576.00	1.03	20.17	6	Cloudburst	
CSO200	4/3/15 12:15 AM	4/3/15 3:30 PM	524,543.05	0.64	5.52	95,025.91	5.39	20.17	6	Cloudburst	
CSO200	4/7/15 9:15 AM	4/7/15 5:00 PM	27,745.82	0.32	0.83	33,428.70	6.31	0.37	1	Atlas	
CSO200	4/8/15 6:00 PM	4/8/15 6:15 PM	3,868.38	0.01	0.1	38,683.75	6.45	0.05	6	Atlas	
CSO200	4/9/15 11:30 AM	4/9/15 11:45 AM	191.34	0.01	0.33	579.83	6.09	0.13	24	Atlas	
CSO200	4/10/15 2:15 AM	4/10/15 2:15 AM	357.25	0.00	0.33	1,082.58	3.58	0.13	24	Atlas	
CSO200	4/10/15 10:45 AM	4/10/15 10:45 AM	432.29	0.00	0.33	1,309.97	1.78	0.13	24	Atlas	
CSO200	4/19/15 2:15 PM	4/19/15 2:30 PM	358.99	0.01	0.6	598.32	1	0.25	12	Atlas	
CSO200	5/17/15 2:15 PM	5/17/15 2:15 PM	330.10	0.00	0.08	4,126.30	0.63	0.04	1	Atlas	
CSO200	5/26/15 2:00 PM	5/26/15 2:00 PM	640.92	0.00	0.28	2,288.99	0.51	0.20	1	Atlas	
CSO200	6/8/15 8:15 AM	6/8/15 8:15 AM	175.35	0.00	0.22	797.06	0.24	0.13	3	Atlas	
CSO200	6/17/15 4:45 AM	6/17/15 5:00 AM	2,696.36	0.01	0.63	4,279.94	0.48	0.34	3	Atlas	
CSO200	6/18/15 5:00 PM	6/18/15 6:00 PM	130,070.23	0.04	1.75	74,325.85	1.69	0.57	48	Atlas	
CSO200	6/20/15 3:15 AM	6/20/15 7:45 AM	224.19	0.19	1.75	128.11	2.63	0.57	48	Atlas	
CSO200	6/25/15 11:45 PM	6/26/15 12:00 AM	22,236.21	0.01	0.53	41,955.11	1.4	0.29	6	Atlas	
CSO200	6/26/15 5:00 PM	6/26/15 5:30 PM	27,620.07	0.02	0.93	29,699.01	2.19	0.52	1	Atlas	
CSO200	6/29/15 1:15 PM	6/29/15 1:15 PM	1,137.09	0.00	0.28	4,061.05	1.65	0.21	1	Atlas	
<b>CSO200 Total Volume (Gal)</b>			823,087.19								
<b>CSO200 Events</b>			17.00								
CSO202	4/2/15 10:30 AM	4/2/15 3:15 PM	32,172.78	0.20	5.52	5,828.40	1.03	20.17	6	Cloudburst	
CSO202	4/3/15 12:15 AM	4/3/15 4:30 AM	74,285.18	0.18	5.52	13,457.46	4.14	20.17	6	Cloudburst	
CSO202	4/3/15 3:30 PM	4/3/15 3:30 PM	1,375.58	0.00	5.52	249.20	5.39	20.17	6	Cloudburst	
CSO202	4/7/15 9:15 AM	4/7/15 5:00 PM	17,394.10	0.32	0.83	20,956.75	6.31	0.37	1	Atlas	
CSO202	4/9/15 11:30 AM	4/9/15 11:30 AM	524.51	0.00	0.33	1,589.43	6.06	0.13	24	Atlas	
CSO202	5/16/15 11:30 AM	5/16/15 11:30 AM	1,511.30	0.00	0.5	3,022.60	0.35	0.24	3	Atlas	
CSO202	5/17/15 2:15 PM	5/17/15 2:15 PM	1,949.35	0.00	0.08	24,366.93	0.63	0.04	1	Atlas	
CSO202	5/26/15 2:00 PM	5/26/15 2:00 PM	3,917.24	0.00	0.28	13,990.14	0.51	0.20	1	Atlas	
CSO202	6/8/15 8:15 AM	6/8/15 8:15 AM	672.91	0.00	0.22	3,058.66	0.24	0.13	3	Atlas	
CSO202	6/17/15 4:45 AM	6/17/15 4:45 AM	2,612.50	0.00	0.63	4,146.83	0.43	0.34	3	Atlas	

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB.Ret
CSO202	6/18/15 4:00 PM	6/18/15 5:15 PM	26,133.97	0.05	1.75	14,933.70	1.5	0.57	48	Atlas	
CSO202	6/25/15 11:45 PM	6/25/15 11:45 PM	8,385.59	0.00	0.53	15,821.88	1.39	0.29	6	Atlas	
CSO202	6/26/15 5:00 PM	6/26/15 5:00 PM	13,867.74	0.00	0.93	14,911.55	2.08	0.52	1	Atlas	
CSO202	6/29/15 1:15 PM	6/29/15 1:15 PM	1,636.30	0.00	0.28	5,843.94	1.65	0.21	1	Atlas	
<b>CSO202 Total Volume (Gal)</b>			186,439.07								
<b>CSO202 Events</b>			14.00								
CSO203	4/2/15 3:00 PM	4/2/15 3:15 PM	57,393.25	0.01	5.52	10,397.33	0.94	20.17	6	Cloudburst	
CSO203	4/3/15 12:15 AM	4/3/15 3:15 AM	171,813.93	0.13	5.52	31,125.71	3.79	20.17	6	Cloudburst	
CSO203	4/7/15 9:30 AM	4/7/15 9:30 AM	4,635.00	0.00	0.83	5,584.34	6.08	0.37	1	Atlas	
CSO203	4/8/15 6:15 PM	4/8/15 6:15 PM	1,481.56	0.00	0.1	14,815.63	6.45	0.05	6	Atlas	
CSO203	4/9/15 11:30 AM	4/9/15 11:30 AM	2,166.10	0.00	0.33	6,563.95	6.06	0.13	24	Atlas	
CSO203	5/17/15 2:15 PM	5/17/15 2:15 PM	16,787.00	0.00	0.08	209,837.50	0.63	0.04	1	Atlas	
CSO203	5/26/15 2:00 PM	5/26/15 2:00 PM	1,835.73	0.00	0.28	6,556.18	0.51	0.20	1	Atlas	
CSO203	6/17/15 4:45 AM	6/17/15 4:45 AM	580.64	0.00	0.63	921.64	0.43	0.34	3	Atlas	
CSO203	6/18/15 5:15 PM	6/18/15 5:45 PM	9,185.82	0.02	1.75	5,249.04	1.68	0.57	48	Atlas	
CSO203	6/20/15 11:15 AM	6/20/15 7:30 PM	8,630.22	0.34	1.75	4,931.55	2.68	0.57	48	Atlas	
CSO203	6/26/15 12:00 AM	6/26/15 12:00 AM	3,059.08	0.00	0.53	5,771.86	1.4	0.29	6	Atlas	
CSO203	6/26/15 5:15 PM	6/27/15 4:45 PM	269,640.23	0.98	0.93	289,935.73	2.53	0.52	1	Atlas	
CSO203	6/29/15 3:15 PM	6/30/15 2:45 AM	11,211.18	0.48	0.28	40,039.92	1.74	0.21	1	Atlas	
<b>CSO203 Total Volume (Gal)</b>			558,419.74								
<b>CSO203 Events</b>			13.00								
CSO205	4/2/15 3:15 PM	4/2/15 3:15 PM	178.95	0.00	5.66	31.62	0.9	27.08	6	Cloudburst	
CSO205	4/3/15 12:15 AM	4/3/15 3:30 PM	14,082.66	0.64	5.66	2,488.10	5.56	27.08	6	Cloudburst	
CSO205	5/17/15 2:15 PM	5/17/15 2:15 PM	474.10	0.00	0.15	3,160.69	0.6	0.10	1	Atlas	SB.Ret
CSO205	5/26/15 1:45 PM	5/26/15 2:00 PM	736.45	0.01	0.46	1,600.97	0.67	0.35	1	Atlas	SB.Ret
CSO205	6/17/15 4:45 AM	6/17/15 4:45 AM	286.10	0.00	0.74	386.63	0.7	0.39	3	Atlas	SB.Ret
CSO205	6/18/15 5:00 PM	6/18/15 5:15 PM	5,681.90	0.01	1.97	2,884.21	1.78	0.64	48	Atlas	SB.Ret
CSO205	6/20/15 4:45 AM	6/20/15 8:00 AM	750.66	0.14	1.97	381.04	3.16	0.64	48	Atlas	SB.Ret
CSO205	6/26/15 5:15 PM	6/26/15 5:15 PM	206.09	0.00	0.78	264.22	2.25	0.41	1	Atlas	SB.Ret
<b>CSO205 Total Volume (Gal)</b>			22,396.91								
<b>CSO205 Events</b>			8.00								
CSO206	4/2/15 10:00 AM	4/2/15 3:45 PM	191,020.06	0.24	5.22	36,593.88	1.08	14.07	6	Cloudburst	
CSO206	4/3/15 12:15 AM	4/4/15 2:45 PM	14,689,766.09	1.60	5.22	2,814,131.44	5.25	14.07	6	Cloudburst	
CSO206	4/7/15 7:30 AM	4/7/15 9:45 AM	222,092.23	0.09	0.64	347,019.11	5.65	0.27	12	Atlas	
CSO206	4/8/15 6:00 PM	4/8/15 6:00 PM	235,732.03	0.00	0.14	1,683,800.22	5.99	0.08	3	Atlas	
CSO206	4/9/15 11:45 AM	4/9/15 11:45 AM	76,718.71	0.00	0.4	191,796.78	6.01	0.35	1	Atlas	
CSO206	4/14/15 7:30 AM	4/14/15 12:15 PM	259,435.81	0.20	0.54	480,436.68	1.75	0.21	24	Atlas	
CSO206	4/16/15 10:15 AM	4/16/15 10:45 AM	38,845.47	0.02	0.07	554,935.25	1.18	0.05	1	Atlas	
CSO206	4/25/15 9:15 AM	4/25/15 9:15 AM	6,478.62	0.00	0.1	64,786.15	1	0.05	6	Atlas	
CSO206	4/25/15 7:15 PM	4/25/15 7:15 PM	3,650.88	0.00	0.05	73,017.50	1.02	0.03	3	Atlas	
CSO206	5/9/15 3:45 AM	5/9/15 3:45 AM	3,556.89	0.00	0.16	22,230.53	0.08	0.10	3	Atlas	
CSO206	5/16/15 12:45 PM	5/16/15 1:00 PM	7,935.60	0.01	0.34	23,340.01	0.39	0.14	3	Atlas	
CSO206	5/25/15 6:45 AM	5/25/15 8:15 AM	13,304.47	0.06	0.31	42,917.64	0.23	0.14	12	Atlas	
CSO206	6/1/15 8:45 AM	6/1/15 8:45 AM	2,760.33	0.00	0.16	17,252.08	0.73	0.09	6	Atlas	
CSO206	6/17/15 5:45 AM	6/17/15 6:45 AM	18,701.92	0.04	0.64	29,221.74	0.9	0.36	3	Atlas	
CSO206	6/18/15 5:00 PM	6/18/15 6:30 PM	1,920,909.10	0.06	2.34	820,901.32	1.85	0.76	48	Atlas	
CSO206	6/19/15 9:00 PM	6/20/15 11:00 AM	158,436.68	0.58	2.34	67,707.98	3.35	0.76	48	Atlas	
CSO206	6/25/15 11:45 PM	6/26/15 2:30 AM	205,184.01	0.11	0.59	347,769.50	2.13	0.31	6	Atlas	

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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB Ret
<b>CSO206 Total Volume (Gal)</b>			18,054,528.88								
<b>CSO206 Events</b>			17.00								
CSO207	4/2/15 9:45 AM	4/3/15 4:00 PM	224,358.48	1.26	5.15	43,564.75	5.23	10.13	24	Cloudburst	
CSO207	4/7/15 4:30 AM	4/7/15 11:30 PM	41,507.04	0.79	0.9	46,118.94	6.05	0.45	1	Atlas	
CSO207	4/8/15 4:30 PM	4/9/15 2:30 AM	1,511.89	0.42	0.17	8,893.44	6.22	0.13	1	Atlas	
CSO207	4/9/15 1:00 PM	4/9/15 10:30 PM	728.14	0.40	0.1	7,281.35	5.81	0.08	1	Atlas	
CSO207	5/17/15 2:30 PM	5/18/15 1:00 PM	844.71	0.94	0.04	21,117.71	0.75	0.03	1	Atlas	
CSO207	5/26/15 2:15 PM	5/27/15 6:45 PM	1,754.51	1.19	0.16	10,965.69	0.55	0.10	1	Atlas	
CSO207	5/30/15 4:15 PM	5/31/15 11:15 AM	1,728.42	0.79	0.07	24,691.67	0.61	0.03	1	Atlas	
CSO207	6/1/15 5:45 AM	6/1/15 2:00 PM	1,744.32	0.34	0.11	15,857.48	0.68	0.05	6	Atlas	
CSO207	6/8/15 5:30 AM	6/8/15 3:15 PM	6,927.59	0.41	0.24	28,864.97	0.34	0.13	6	Atlas	
CSO207	6/13/15 2:30 PM	6/13/15 2:30 PM	19.07	0.00	0.02	953.65	0.26	0.02	1	Atlas	
CSO207	6/17/15 3:45 AM	6/17/15 11:15 AM	520.29	0.31	0.67	776.55	0.69	0.39	3	Atlas	
CSO207	6/18/15 4:15 PM	6/19/15 3:15 AM	11,027.36	0.46	1.53	7,207.43	1.31	0.50	48	Atlas	
CSO207	6/26/15 7:00 PM	6/27/15 12:30 AM	4,408.42	0.23	0.89	4,953.28	2.44	0.46	1	Atlas	
<b>CSO207 Total Volume (Gal)</b>			297,080.25								
<b>CSO207 Events</b>			13.00								
CSO208	4/2/15 9:30 AM	4/3/15 4:45 PM	252,987.76	1.30	5.04	50,195.98	5.2	10.00	24	Cloudburst	
CSO208	4/7/15 9:00 AM	4/7/15 5:15 PM	50,146.14	0.34	0.86	58,309.46	5.89	0.36	12	Atlas	
CSO208	4/9/15 11:15 AM	4/9/15 11:30 AM	415.55	0.01	0.12	3,462.93	5.69	0.10	1	Atlas	
CSO208	4/10/15 2:00 AM	4/10/15 2:45 AM	30,603.23	0.03	0.23	133,057.52	3.66	0.15	3	Atlas	
CSO208	4/13/15 7:45 PM	4/13/15 9:00 PM	1,252.84	0.05	0.58	2,160.08	1.49	0.22	24	Atlas	
CSO208	4/14/15 6:45 AM	4/14/15 11:30 AM	1,080.90	0.20	0.58	1,863.61	1.81	0.22	24	Atlas	
CSO208	4/19/15 6:30 AM	4/19/15 6:15 PM	2,043.53	0.49	0.57	3,585.14	1.22	0.24	12	Atlas	
CSO208	4/20/15 3:15 AM	4/20/15 3:30 AM	435.82	0.01	0.08	5,447.79	1.29	0.06	1	Atlas	
CSO208	4/25/15 8:45 AM	4/25/15 9:15 AM	397.89	0.02	0.14	2,842.04	0.82	0.07	6	Atlas	
CSO208	4/25/15 6:45 PM	4/25/15 6:45 PM	24.40	0.00	0.2	121.98	0.97	0.13	3	Atlas	
CSO208	5/9/15 3:15 AM	5/9/15 3:15 AM	62.56	0.00	0.08	782.03	0.06	0.04	1	Atlas	
CSO208	5/16/15 11:30 AM	5/16/15 2:00 PM	28,093.68	0.10	0.79	35,561.62	0.78	0.41	3	Atlas	
CSO208	5/17/15 2:00 PM	5/17/15 2:15 PM	538.82	0.01	0.12	4,490.19	0.89	0.06	12	Atlas	
CSO208	5/25/15 6:15 AM	5/25/15 8:15 AM	479.58	0.08	0.32	1,498.70	0.25	0.15	12	Atlas	
CSO208	5/26/15 1:30 PM	5/26/15 1:30 PM	125.56	0.00	0.23	545.92	0.39	0.16	1	Atlas	
CSO208	5/31/15 6:30 AM	5/31/15 6:30 AM	61.58	0.00	0.13	473.72	0.79	0.06	3	Atlas	
CSO208	6/1/15 8:00 AM	6/1/15 8:00 AM	109.26	0.00	0.12	910.50	0.68	0.07	3	Atlas	
CSO208	6/8/15 6:45 AM	6/8/15 8:15 AM	1,110.50	0.06	0.22	5,047.73	0.29	0.13	3	Atlas	
CSO208	6/17/15 4:30 AM	6/17/15 6:30 AM	6,994.14	0.08	0.63	11,101.80	0.63	0.34	3	Atlas	
CSO208	6/17/15 5:00 PM	6/17/15 5:00 PM	798.15	0.00	0.07	11,402.08	0.71	0.06	1	Atlas	
CSO208	6/18/15 5:00 PM	6/18/15 5:45 PM	11,129.07	0.03	0.56	19,873.34	1.07	0.29	3	Atlas	
CSO208	6/20/15 1:15 AM	6/20/15 8:00 AM	22,438.62	0.28	0.83	27,034.48	2.07	0.37	12	Atlas	
CSO208	6/22/15 5:45 AM	6/22/15 5:45 AM	612.22	0.00	0.24	2,550.91	2.23	0.11	12	Atlas	
CSO208	6/25/15 11:30 PM	6/26/15 12:45 AM	1,719.88	0.05	0.64	2,687.30	1.56	0.33	6	Atlas	
CSO208	6/26/15 5:00 PM	6/27/15 12:00 AM	50,974.05	0.29	1.09	46,765.18	2.77	0.57	1	Atlas	
CSO208	6/29/15 1:15 PM	6/29/15 1:30 PM	1,506.44	0.01	0.26	5,793.99	1.98	0.17	1	Atlas	
<b>CSO208 Total Volume (Gal)</b>			466,142.16								
<b>CSO208 Events</b>			26.00								



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CSO	Start Date-Time	End Date-Time	Total Volume (Gal)	Duration (Days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period (hrs)	Standard	SneadsSB.Ret
CSO210	4/2/15 11:15 AM	4/3/15 7:45 PM	9,951,396.92	1.35	5.44	1,829,300.90	5.57	18.39	6	Cloudburst	
CSO210	4/7/15 9:00 AM	4/7/15 8:00 PM	436,314.31	0.46	0.89	490,240.80	6.34	0.37	12	Atlas	
CSO210	4/9/15 10:45 AM	4/9/15 1:15 PM	34,954.81	0.10	0.08	436,935.14	6.19	0.06	1	Atlas	
CSO210	4/10/15 2:15 PM	4/10/15 8:15 AM	486,213.89	0.43	0.08	6,077,673.60	5.79	0.06	1	Atlas	
CSO210	4/13/15 8:45 PM	4/14/15 12:15 AM	61,823.61	0.15	0.55	112,406.56	1.62	0.21	24	Atlas	
CSO210	4/14/15 8:45 AM	4/14/15 4:15 PM	145,467.95	0.31	0.55	264,487.18	1.78	0.21	24	Atlas	
CSO210	4/19/15 8:45 AM	4/19/15 11:30 PM	225,784.65	0.61	0.81	278,746.48	1.43	0.33	12	Atlas	
CSO210	5/16/15 12:15 PM	5/16/15 4:15 PM	84,280.29	0.17	0.95	88,716.09	1.08	0.58	3	Atlas	
CSO210	6/17/15 6:15 AM	6/17/15 3:30 PM	63,144.59	0.39	0.63	100,229.50	0.65	0.34	3	Atlas	
CSO210	6/18/15 2:15 PM	6/18/15 9:00 PM	355,739.65	0.28	0.62	573,773.63	1.3	0.36	1	Atlas	
CSO210	6/20/15 3:15 AM	6/20/15 11:15 AM	323,598.38	0.33	1.19	271,931.42	2.59	0.49	12	Atlas	
CSO210	6/26/15 12:45 AM	6/26/15 3:30 AM	298,998.37	0.11	0.77	388,309.57	2.33	0.42	6	Atlas	
CSO210	6/26/15 5:00 PM	6/27/15 2:30 AM	775,474.36	0.50	0.99	783,307.43	3.28	0.55	1	Atlas	
CSO210	6/29/15 1:30 PM	6/29/15 3:45 PM	19,114.86	0.09	0.35	54,613.87	2.11	0.26	1	Atlas	
<b>CSO210 Total Volume (Gal)</b>			13,262,306.63								
<b>CSO210 Events</b>			14.00								
CSO211	4/3/15 12:45 AM	4/3/15 6:45 AM	52,962,425.90	0.25	5.44	9,735,740.06	4.73	18.39	6	Cloudburst	
<b>CSO211 Total Volume (Gal)</b>			52,962,425.90								
<b>CSO211 Events</b>			1.00								
<b>Grand Total Volume (Gal)</b>			1,822,774,612.83								
<b>Grand Events</b>			1,199.00								

<sup>SB.Ret</sup> Indicates a volume that was retained by the Snead Branch Relief Drain. These volumes did not escape to the Waters of the US.

**2015 2nd Quarter (4/1/15 to 7/1/15)**

DRAFT - There are known problems with some flow monitor locations that may be inflating actual overflow volumes (for example storm water flows).

<b>CSO</b>	<b>Status</b>	<b>Monitored</b>	<b>Volume (Gal)</b>	<b>Events</b>
CSO015	I	Y	147,308,560.67	11.00
CSO016	I	Y	110,168,149.39	12.00
CSO018	I	Y	4,761,431.33	9.00
CSO019	I	Y	120,461,081.61	18.00
CSO020	I	Y	434,137,653.64	14.00
CSO022	I	Y		14.00
CSO023	I	Y		1.00
CSO027	I	Y	15,311.01	2.00
CSO028	I	Y	69,319.07	4.00
CSO029	I	Y	11,171,712.16	13.00
CSO031	I	Y	627,456.92	9.00
CSO034	I	Y	331,055.25	6.00
CSO035	I	Y		15.00
CSO036	I	Y	6,087,495.59	15.00
CSO038	I	Y	3,903,394.65	7.00
CSO050	I	Y	7,571,297.98	26.00
CSO051	I	Y	525,717.45	18.00
CSO052	I	Y		19.00
CSO053	I	Y	3,307,080.40	22.00
CSO054	I	Y	801,410.68	29.00
CSO055	I	Y	83,258.42	8.00
CSO056	I	N		
CSO057	I	Y	29,942.03	9.00
CSO058	I	Y	48,904.41	18.00
CSO062	I	N		
CSO082	I	Y		12.00
CSO083	I	Y	640,501.57	10.00
CSO084	I	Y	175,164.29	15.00
CSO088	I	Y	2,593,605.40	8.00
CSO091	I	Y	1,234,453.99	19.00
CSO092	I	Y	938,162.38	25.00
CSO093	I	Y	38,243.28	14.00
CSO097	I	Y	5,947,152.58	15.00
CSO104	I	Y	2,317,745.56	11.00
CSO105	I	Y	103,711,121.19	19.00
CSO106	I	Y	986,334.78	19.00
CSO108	I	Y	70,107,649.79	13.00
CSO109	I	Y		9.00
CSO110	I	Y	18,354,390.18	17.00
CSO111	I	Y	76,110.26	7.00

**2015 2nd Quarter (4/1/15 to 7/1/15)**

DRAFT - There are known problems with some flow monitor locations that may be inflating actual overflow volumes (for example storm water flows).

<b>CSO</b>	<b>Status</b>	<b>Monitored</b>	<b>Volume (Gal)</b>	<b>Events</b>
CSO113	I	Y	6,382,086.90	28.00
CSO117	I	Y	40,206,241.77	22.00
CSO118	I	Y	31,135,440.43	25.00
CSO119	I	Y		18.00
CSO120	I	Y	3,533,418.66	19.00
CSO121	I	Y	3,283,526.12	17.00
CSO125	I	Y	65,387,811.16	17.00
CSO126	I	Y	84,169,989.94	11.00
CSO127	I	Y	23,297,370.11	25.00
CSO130	I	Y	248,864.84	4.00
CSO131	I	Y		10.00
CSO132	I	Y	47,969,263.54	18.00
CSO137	I	Y	2,617,017.38	33.00
CSO140	I	Y	5,724,629.20	16.00
CSO141	I	Y	3,651,326.73	19.00
CSO142	I	Y		6.00
CSO144	I	Y	43,811.64	11.00
CSO146	I	Y	35,389,297.88	26.00
CSO148	I	Y	2,009,242.37	26.00
CSO149	I	Y	16,027,289.11	14.00
CSO150	I	Y	1,616,225.97	11.00
CSO151	I	Y	24,647,372.28	24.00
CSO152	I	Y	21,214,830.88	26.00
CSO153	I	Y	6,326,433.55	23.00
CSO154	I	Y	543,881.15	5.00
CSO155	I	Y	419,634.86	18.00
CSO160	I	Y	24,949.97	17.00
CSO161	I	Y	59,041.73	10.00
CSO166	I	Y	85,328,840.62	18.00
CSO167	I	Y	7,630,883.59	17.00
CSO174	I	Y	11,711,396.61	2.00
CSO178	I	Y		11.00
CSO179	I	Y	2,748,752.53	4.00
CSO180	I	Y	2,327,914.40	2.00
CSO181	I	Y	2,063,643.60	8.00
CSO182	I	Y	38,032.53	1.00
CSO183	I	Y	26,253.74	2.00
CSO184	I	Y	1,473,796.93	2.00
CSO185	I	Y	2,530,337.92	2.00
CSO186	I	Y		-

**2015 2nd Quarter (4/1/15 to 7/1/15)**

DRAFT - There are known problems with some flow monitor locations that may be inflating actual overflow volumes (for example storm water flows).

<b>CSO</b>	<b>Status</b>	<b>Monitored</b>	<b>Volume (Gal)</b>	<b>Events</b>
CSO187	I	Y		5.00
CSO188	I	Y	9,518.09	2.00
CSO189	I	Y	120,789,320.14	13.00
CSO190	I	Y	3,566,717.04	10.00
CSO191	I	Y	5,375,390.25	6.00
CSO193	I	Y	96,138.01	8.00
CSO195	I	Y		13.00
CSO196	I	Y	519,164.61	16.00
CSO197	I	Y		17.00
CSO198	I	Y		1.00
CSO199	I	Y	2,028,028.42	13.00
CSO200	I	Y	823,087.19	17.00
CSO201	I	Y		21.00
CSO202	I	Y	186,439.07	14.00
CSO203	I	Y	558,419.74	13.00
CSO205	I	Y	14,261.60	2.00
CSO207	I	Y	297,080.25	13.00
CSO208	I	Y	466,142.16	26.00
CSO210	I	Y	13,262,306.63	14.00
CSO211	I	Y	52,962,425.90	1.00

Appendix C – Acronyms



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**Appendix C – Acronyms for Project WIN Quarterly Report**

AAM	Advanced Asset Management
AAOV	Annual Average Overflow Volume
ADAPS	Automated Data Processing System
BGC	Beargrass Creek
BMP	Best Management Practices
CCP	Composite Correction Plan
CD	Consent Decree
CMF	Central Maintenance Facility
CMMS	Computerized Maintenance Management System
CMOM	Capacity Management Operations and Maintenance
CPE	Comprehensive Performance Evaluations
CSO	Combined Sewer Overflow
CSS	Combined Sewer System
CSSA	Continuing Sewer System Assessment
DAP	Discharge Abatement Plan (DAP)
DMR	Discharge Monitoring Report
eB	Enterprise Bridge (Spescom scanning software for document management)
EMC	Event Mean Concentration
EPA	Environmental Protection Agency
ERP	Enforcement Response Plan
FM	Force Main
FOG	Fats, Oil & Grease
FPS	Flood Pump Station
FSE	Food Service Establishment
FY	Fiscal Year
GCE	Grease Control Equipment
GIS	Geographical Information System
GLPM	Gravity Line Preventive Maintenance
HMI	Human Machine Interface
I&FP	Infrastructure & Flood Protection (MSD Division)
ICA	Interceptor Condition Assessment
ID	Identification
I&I	Inflow and Infiltration
IMS	Information Management System
IOAP	Integrated Overflow Abatement Plan
ISSDP	Interim Sanitary Sewer Discharge Plan
IT	Information Technology
IWD	Industrial Waste Department
JCPS	Jefferson County Public Schools

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KDEP	Kentucky Department of Environmental Protection
KPDES	Kentucky Pollutant Discharge Elimination System
KY	Kentucky
LE	Lateral Extension
LID	Low Impact Development
LIMS	Laboratory Information Management System
LTC	Long Term Control
LTCP	Long Term Control Plan
LOJIC	Louisville and Jefferson County Information Consortium
MDS	Main Diversion Structure
MEB	Main Equipment Building
MFWTP	Morris Forman Wastewater Treatment Plant
MG	Million Gallons
MGD	Million Gallons Per Day
MLK	Martin Luther King
MO	Metro Operations
MOA	Memorandum of Agreement
MOR	Monthly Operating Report
MOU	Memorandum of Understanding
MSD	Metropolitan Sewer District (Louisville and Jefferson County)
NDD	Non-Domestic Dischargers
NMC	Nine Minimum Controls
NPR	National Public Radio
ORSANCO	Ohio River Valley Water Sanitation Commission
PACP	Pipeline Assessment and Certification Program
PCM	Post Construction Monitoring
PI	Plant Information System
PM	Preventive Maintenance
POC	Pollutants of Concern
PP	Pumping Package
PS	Pump Station
PSC	Property Service Connection
RDII	Rainfall-Derived Infiltration and Inflow
RS	Regulatory Services
RTC	Real Time Control
SCADA	Supervisory Control And Data Acquisition
SCAP	System Capacity Assurance Plan
SIU	Significant Industrial User
SOP	Standard Operating Procedure
SORP	Sewer Overflow Response Protocol
SSDP	Sanitary Sewer Discharge Plan
SSES	Sanitary Sewer Evaluation Study



SSO	Sanitary Sewer Overflow
SSOP	Sanitary Sewer Overflow Plan
SWOR2	Southwestern Outfall Relief - Phase 2
SWPS	Southwestern Pump Station
TM	Technical Memorandum
TMDL	Total Maximum Daily Load
TV	Television
UIM	Utility Information Management
UK	University of Kentucky
USACE	US Army Corps of Engineers
USF&W	United States Fish and Wildlife
USGS	United States Geological Survey
WDR	Wastewater Discharge Regulators
WIN	Waterway Improvements Now
WQT	Water Quality Tool
WQTC	Water Quality Treatment Center
WW	Wet Weather
WWT	Wet Weather Team
WWTP	Wet Weather Treatment Facility

Appendix D – SCAP Balance





## Capacity Credit Balance Sheet per Credit Basin

<u>APNO</u>	<u>APNAME</u>	<u>APTTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
<b>CCREEK</b>						
235533	CEDAR CK IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	6,521	6,521
236380	FAIRMOUNT ROAD MH REHAB	SCAPCREDIT		6/5/09	10,734	17,255
362688	CCRK IFP ACTIVITY NOV08-MAY12	SCAPCREDIT		5/1/12	2,161	19,416
362689	CCRK IFP ACTIVITY JUN12-AUG12	SCAPCREDIT		8/31/12	2,047	21,463
320989	LITTLE CEDAR CREEK I/I REHABIL	SCAPCREDIT		9/27/12	652,907	674,370
263934	ST JAMES CROSSINGS	LAT EXT	9,000	11/30/12	-19,575	654,795
196927	SONIC SPRINGS	LAT EXT	3,600	12/5/12	-7,830	646,965
14SC1000	FY13 IFP ACTIVITY FIRST HALF - CEDAR CREEK	SCAPCREDIT		12/31/13	2,048	649,013
13LE1155	RAISING CANE'S CEDARLOOK DRIVE	LAT EXT	1,175	5/23/14	-2,556	646,457
239030	POPLAR LAKES PH 1	LAT EXT	18,000	1/26/15	-39,150	607,307
13LE1003	Bardstown Woods Sec 6	LAT EXT	5,200	5/26/15	-11,310	595,997
<b>FFORK</b>						
235557	FLOYDSFRK IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	14,540	14,540
362638	FY09 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/08	1	14,541
362647	FY09 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/09	4	14,545
362651	FY10 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/09	524	15,069
230379	SHAKES RUN SECTION 4	LAT EXT	3,770	1/5/10	-8,200	6,869
362655	FY10 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/10	81	6,950
362661	FY11 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/10	14,155	21,105
362669	FY11 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/11	22,707	43,812
242480	CLAIBOURNE CROSSINGS PHASE 2	LAT EXT	0	10/17/11	0	43,812
359320	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	4,000	47,812
362674	FY12 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/11	2	47,814

## Capacity Credit Balance Sheet per Credit Basin

<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>
362678	FY12 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/12	331	48,145
332823	SINGLE FAMILY HOME	LAT EXT	400	7/13/12	-870	47,275
315945	BROOKFIELD SEC 3	LAT EXT	12,800	10/26/12	-27,840	19,435
361689	LAKE FOREST REHAB PH1	SCAPCREDIT		12/18/12	174,769	194,204
362683	FY13 IFP ACTIVITY FIRST HALF - FFORK	SCAPCREDIT		12/31/12	3	194,207
331397	BROOKFIELD SEC 2A	LAT EXT	14,400	5/8/13	-31,320	162,887
13LE1062	SPEEDWAY #9451	LAT EXT	540	2/18/15	-1,175	161,713
<b>HCREEK</b>						
235561	HITE CK IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	6,404	6,404
362641	FY09 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/08	2	6,406
362648	FY09 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/09	8	6,414
362652	FY10 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/09	8	6,422
362657	FY10 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/10	329	6,751
295322	FLOYDSBURG RD I/I INVEST/REHAB	SCAPCREDIT		12/17/10	28,437	35,188
320906	FLOYDSBURG ROAD I/I REHABILITA	SCAPCREDIT		12/17/10	28,437	63,625
362662	FY11 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/10	3	63,628
362670	FY11 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/11	5	63,633
246638	CHAPMAN COURT S/S	LAT EXT	800	9/28/11	-1,740	61,893
362675	FY12 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/11	332	62,225
362679	FY12 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/12	5,002	67,227
290181	CAMDEN WOOD APARTMENTS	LAT EXT	12,400	8/31/12	-26,970	40,257
304536	MAGNOLIA SPRINGS EAST PRIV P/S	LAT EXT	9,500	12/1/12	-20,663	19,595
335610	ROCK SPRINGS FARM SEC 4B	LAT EXT	6,400	12/7/12	-13,920	5,675
362684	FY13 IFP ACTIVITY FIRST HALF - HCREEK	SCAPCREDIT		12/31/12	3	5,678



## Capacity Credit Balance Sheet per Credit Basin

<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>JTOWN</b>						
235563	J-TOWN IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	6,203	6,203
359323	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		12/31/08	4,000	10,203
254871	LAKESIDE BAPT CHURCH PRIV PS	LAT EXT	2,500	8/10/10	-5,438	4,766
340213	JEFFERSONTOWN ENG REHAB	SCAPCREDIT		8/11/11	997,448	1,002,214
359324	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	4,000	1,006,214
337261	SINGLE FAMILY 2909 PELHAM CT	LAT EXT	400	5/28/13	-870	1,005,344
13LE1010	SWOPE HR & TRAINING BLDG	LAT EXT	400	6/28/13	-870	1,004,474
13LE1092	BALE EQUIPMENT	LAT EXT	450	10/25/13	-979	1,003,495
14SC1002	FY13 IFP ACTIVITY FIRST HALF - JEFFERSONTC	SCAPCREDIT		12/31/13	3,458	1,006,953
13LE1098	UNIPAK	LAT EXT	720	2/27/14	-1,566	1,005,387
LE924043	Bluegrass Indoor Cartina	LAT EXT	400	5/1/14	-870	1,004,517
13LE1067	PARK COMMUNITY	LAT EXT	2,220	12/31/14	-4,829	999,688
<b>MCREEK</b>						
359380	CALENDAR 2005 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/05	12,000	12,000
359381	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/07	24,000	36,000
235568	MILL CK IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	51,530	87,530
359382	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/08	16,000	103,530
362642	FY09 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/08	93	103,623
362649	FY09 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/09	1,507	105,130
236614	DEVEROES	LAT EXT	960	9/9/09	-2,088	103,042
362653	FY10 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/09	25,272	128,314
359383	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	32,000	160,314
253586	KINGSFORD RETAIL CENTER	LAT EXT	480	1/6/10	-1,044	159,270
238421	6840 DIXIE HWY OUTLOT	LAT EXT	2,100	4/28/10	-4,568	154,703

## Capacity Credit Balance Sheet per Credit Basin

<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>
362658	FY10 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/10	6,213	160,916
259408	FAMILY DOLLAR 5105 DIXIE	LAT EXT	1,200	7/2/10	-2,610	158,306
264294	SAINT PETER THE APOSTLE CATHOL	LAT EXT	2,000	7/23/10	-4,350	153,956
276215	FAMILY DOLLAR - KRISTIN WAY	LAT EXT	400	10/12/10	-870	153,086
362664	FY11 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/10	22,740	175,826
359384	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/10	4,000	179,826
359325	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	8,000	187,826
320916	SONNE AVE PS REHABILITATION -	SCAPCREDIT		6/30/11	120,800	308,626
362671	FY11 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/11	11,615	320,241
299399	FAMILY DOLLAR - GREENWOOD RD	LAT EXT	800	10/4/11	-1,740	318,501
309018	PRP PERFORMING ARTS ADDITION	LAT EXT	1,134	11/9/11	-2,466	316,034
359385	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	12,000	328,034
362676	FY12 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/11	3,245	331,279
359326	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	12,000	343,279
318096	CRACKER BARREL OLD COUNTRY	LAT EXT	6,000	1/19/12	-13,050	330,229
262545	DIXIE MANOR SHOPPING CENTER	LAT EXT	965	5/21/12	-2,099	328,130
300374	FORT KNOX FEDERAL CREDIT UNION	LAT EXT	400	6/26/12	-870	327,260
362680	FY12 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/12	2,807	330,067
361693	FY12 MILL CREEK REHAB	SCAPCREDIT		6/30/12	81,675	411,742
231800	PIONEER MOBILE HOME PARK	LAT EXT	11,200	7/24/12	-24,360	387,382
237457	WAVERLY HILLS	LAT EXT	400	9/18/12	-870	386,512
341883	NHK SPRING PRECISION	LAT EXT	17,800	10/19/12	-38,715	347,797
334997	BEECHLAND BAPTIST CHURCH	LAT EXT	2,715	12/5/12	-5,905	341,892
359327	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	148,000	489,892
362685	FY13 IFP ACTIVITY FIRST HALF - MCREEK	SCAPCREDIT		12/31/12	3,458	493,350
359386	CALENDAR 2012 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/12	4,000	497,350

## Capacity Credit Balance Sheet per Credit Basin

<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>
343763	SOUTHEAST CHRISTIAN CHURCH SW	LAT EXT	6,000	1/18/13	-13,050	484,300
224875	ASHBY GREEN APARTMENT HOMES	LAT EXT	36,400	3/20/13	-79,170	405,130
265944	RIVERPORT PHASE 4A - MICHELIN	LAT EXT	400	6/6/13	-870	404,260
314887	DAYTON FREIGHT	LAT EXT	1,200	9/10/13	-2,610	401,650
13LE1014	LOUISVILLE FREE PUBLIC LIBRARY SOUTHWEST	LAT EXT	8,200	9/26/13	-17,835	383,815
357140	FAMILY DOLLAR CANE RUN ROAD	LAT EXT	832	10/3/13	-1,810	382,005
13LE1171	SINGLE FAMILY HOME 3700 ROMANIA DR	LAT EXT	400	1/29/14	-870	381,135
<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	MID FORK IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	43,779	147,779
359329	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		12/31/08	8,000	155,779
236517	ANCHOR ESTATES MH REHAB	SCAPCREDIT		1/16/09	15,552	171,331
217235	SINKING FORK ICA PHASE I REHAB	SCAPCREDIT		3/30/09	437,967	609,298
235376	MIDDLE FORK INT REHAB PH1	SCAPCREDIT		5/15/09	487,744	1,097,042
179246	SHADY GLEN OF LYNDON PERSONAL	LAT EXT	-500	5/26/09	1,088	1,098,130
250572	1316 WITAWANGA AVE	LAT EXT	400	11/4/09	-870	1,097,260
359331	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	24,000	1,121,260
359401	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	4,000	1,125,260
197432	ALMOST HOME KENNELS - ALL PET	LAT EXT	3,700	3/16/10	-8,048	1,117,212
260064	OXMOOR GOLF FRONT 9	LAT EXT	400	4/15/10	-870	1,116,342
260065	OXMOOR GOLF BACK 9	LAT EXT	400	4/15/10	-870	1,115,472
229834	THE BROOK HOS- DUPONT ADDITION	LAT EXT	1,763	4/27/10	-3,835	1,111,637
265723	Z-XPRESS CAR WASH	LAT EXT	5,449	7/2/10	-11,852	1,099,786
255793	HERR LANE APARTMENTS - 4 PLEX	LAT EXT	1,200	7/14/10	-2,610	1,097,176



## Capacity Credit Balance Sheet per Credit Basin

<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>
255792	HERR LANE APARTMENTS - 8 PLEX	LAT EXT	2,400	7/14/10	-5,220	1,091,956
274303	FARM CREDIT SERVICES	LAT EXT	525	9/9/10	-1,142	1,090,814
278015	METROPOLITAN UROLOGY	LAT EXT	400	12/15/10	-870	1,089,944
359402	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/10	8,000	1,097,944
359333	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	12,000	1,109,944
285637	SHELBYHURST OFFICE BUILDING 1	LAT EXT	6,600	1/20/11	-14,355	1,095,589
313465	DORSEY POINTE/CODOMINIUMS 8-13	LAT EXT	2,400	1/27/11	-5,220	1,090,369
291263	BROWNS LANE BUILDING	LAT EXT	400	4/14/11	-870	1,089,499
293400	FOUR PLEX APARTMENTS	LAT EXT	1,200	6/14/11	-2,610	1,086,889
330019	FY11 ANCHOR ESTATES REHAB	SCAPCREDIT		8/11/11	1,359	1,088,248
310046	EL NAPEL - MCMAHAN CENTER	LAT EXT	3,100	10/31/11	-6,743	1,081,506
314591	CHOCOLATE MARTINI BAR/REST	LAT EXT	3,275	11/29/11	-7,123	1,074,382
320983	HURSTBOURNE I/I INVESTIGATION	SCAPCREDIT		12/27/11	1,408,279	2,482,661
359335	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	16,000	2,498,661
321228	SINGLE FAMILY UNIT	LAT EXT	400	2/15/12	-870	2,497,791
321647	SINGLE FAMILY	LAT EXT	400	3/27/12	-870	2,496,921
328074	SINGLE FAMILY-703 FOUNTAIN AVE	LAT EXT	400	6/22/12	-870	2,496,051
193195	CEDAR LAKE LODGE WASHBURN	LAT EXT	1,900	8/20/12	-4,133	2,491,919
320923	ST MATTHEWS I/I REHABILITATION	SCAPCREDIT		8/23/12	20,841	2,512,760
337796	CHAMPPS	LAT EXT	635	9/5/12	-1,381	2,511,379
347126	ADVANCE PRODUCTION SYSTEMS	LAT EXT	400	12/28/12	-870	2,510,509
359336	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	92,000	2,602,509
339367	BAPTIST RADIATION ONCOLOGY	LAT EXT	1,500	1/4/13	-3,263	2,599,246
340778	PANDA RESTAURANT	LAT EXT	1,725	1/16/13	-3,752	2,595,494
349044	BLAIRWOOD POOL ADDITION	LAT EXT	400	1/29/13	-870	2,594,624
328659	SINGLE FAMILY HOME - 6911 AMBR	LAT EXT	400	2/4/13	-870	2,593,754

## Capacity Credit Balance Sheet per Credit Basin

<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>
352805	POOL HOUSE 9213 REIGATE COURT	LAT EXT	200	2/20/13	-435	2,593,319
14LE1001	MIRANDA LAGRANGE RD	LAT EXT	400	3/19/13	-870	2,592,449
350246	SINGLE FAMILY - 218 BLISS AVE	LAT EXT	400	3/20/13	-870	2,591,579
349974	SINGLE FAMILY 205 N WATTERSON	LAT EXT	400	3/26/13	-870	2,590,709
342433	SHELBYHURST 700 OFFICE BLDG	LAT EXT	7,500	4/15/13	-16,313	2,574,397
350340	JARED THE GALLERY OF JEWELRY	LAT EXT	770	4/16/13	-1,675	2,572,722
13LE1009	Single familv 11716 Wetherbv Ave	LAT EXT	400	6/7/13	-870	2,571,852
13SC1000	FY14 STARVIEW REHABILITATION	SCAPCREDIT		6/30/13	14,183	2,586,035
13LE1001	Single Familv 835 Fountain Ave	LAT EXT	400	8/28/13	-870	2,585,165
355162	PROPOSED RESTAURANT	LAT EXT	7,540	9/10/13	-16,400	2,568,766
13LE1045	SINGLE FAMILY 8325 WHIPPS MILL RD	LAT EXT	400	9/30/13	-870	2,567,896
319292	WATERMARK ON HURSTBOURNE	LAT EXT	71,600	10/22/13	-155,730	2,412,166
331542	DENTAL/MEDICAL OFFICE BLDG	LAT EXT	400	10/28/13	-870	2,411,296
13LE1128	SINGLE FAMILY HOME 1327 ETAWAH AVE	LAT EXT	400	11/5/13	-870	2,410,426
13LE1144	SINGLE FAMILY 1329 ETAWAH AVE	LAT EXT	400	11/5/13	-870	2,409,556
13LE1165	SINGLE FAMILY 8504 LORE LANE	LAT EXT	400	11/25/13	-870	2,408,686
13LE1146	CITY OF ST MATTHEWS COMMUNITY CTR PARI	LAT EXT	1,500	11/26/13	-3,263	2,405,423
13LE1099	NICKLIES - ST MATTHEWS	LAT EXT	1,920	12/11/13	-4,176	2,401,247
353963	DORSEY COMMONS TRACTS 1.2.3	LAT EXT	4,335	12/18/13	-9,429	2,391,819
14SC1003	FY13 IFP ACTIVITY FIRST HALF - MIDDLE FORK	SCAPCREDIT		12/31/13	3,230	2,395,049
352026	MCPAHAN PLAZA PHASE II BLDG B	LAT EXT	766	12/31/13	-1,666	2,393,382
13LE1117	THE VININGS	LAT EXT	850	4/10/14	-1,849	2,391,534
14LE1021	KODA KENTUCKY ORGAN DONOR AFFILIATES	LAT EXT	400	6/18/14	-870	2,390,664
14LE1128	WALDORF SCHOOL OF LOUISVILLE	LAT EXT	400	6/30/14	-870	2,389,794

NDITCH

<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>
359404	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/07	28,000	28,000
235569	N.DITCH IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	11,147	39,147
236363	NORTHERN DITCH INT REHAB PH1	SCAPCREDIT		11/25/08	108,760	147,907
359339	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	4,000	151,907
234678	THE LIGHTHOUSE PROMISE COMPLEX	LAT EXT	2,825	3/5/10	-6,144	145,763
284728	SUBWAY - NEW CUT RD	LAT EXT	1,314	12/21/10	-2,858	142,905
359340	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	4,000	146,905
320908	PARKVIEW ESTATES REHABILITATIO	SCAPCREDIT		6/28/11	36	146,941
312810	WILLOW PLACE APT COMMUNITY CEN	LAT EXT	400	11/11/11	-870	146,071
359341	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	24,000	170,071
359405	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	12,000	182,071
315723	JCPS EARLY CHILDHOOD DEVELOP	LAT EXT	6,000	1/26/12	-13,050	169,021
312057	DOLLAR GENERAL - MEDALLION CT	LAT EXT	400	3/21/12	-870	168,151
312659	KROGER L-350 FUEL STATION	LAT EXT	400	8/20/12	-870	167,281
359343	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	24,000	191,281
13LE1147	CARLON ROOFING	LAT EXT	992	12/5/13	-2,158	189,123
13LE1126	JENNINGS CROSSING TRACT 3	LAT EXT	2,100	12/12/13	-4,568	184,556
14SC1004	FY13 IFP ACTIVITY FIRST HALF - NORTHERN DI	SCAPCREDIT		12/31/13	329	184,885
<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	ORFM IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	19,826	79,826
362643	FY09 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/08	2	79,828
362650	FY09 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/09	3,836	83,664
362654	FY10 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/09	7,322	90,986

## Capacity Credit Balance Sheet per Credit Basin

<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>
263548	SINGLE FAMILY CONNECTION	LAT EXT	400	5/18/10	-870	90,116
213488	NORTHEAST CHRISTIAN CHURCH	LAT EXT	10,000	6/28/10	-21,750	68,366
362660	FY10 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/10	6,630	74,996
362665	FY11 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/10	165	75,161
362672	FY11 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/11	4,124	79,285
280837	SPRINGHURST TOWNE CTR LOT C	LAT EXT	400	9/20/11	-870	78,415
320920	SHADOW WOOD I/I REHABILITATION	SCAPCREDIT		9/30/11	14,279	92,694
311412	SPRINGHURST CHEVROLET	LAT EXT	855	10/14/11	-1,860	90,834
359345	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	16,000	106,834
359434	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	16,000	122,834
362677	FY12 IFP ACTIVITY FIRST HALF	SCAPCREDIT		12/31/11	7,258	130,092
320921	DERINGTON COURT I/I REHABILITA	SCAPCREDIT		3/1/12	56,208	186,300
187028	GLENVIEW PARK SUBD SECTION 1	LAT EXT	4,400	3/5/12	-9,570	176,730
213450	GLENVIEW PARK SUB. SEC 2	LAT EXT	5,600	3/5/12	-12,180	164,550
322455	FIRST LADY NAILS	LAT EXT	400	3/12/12	-870	163,680
362681	FY12 IFP ACTIVITY SECOND HALF	SCAPCREDIT		6/30/12	18,220	181,900
292239	SPRINGHURST RESTAURANT/ RETAIL	LAT EXT	3,440	7/5/12	-7,482	174,418
323821	TIRE DISCOUNTERS WESTPORT RD	LAT EXT	400	12/11/12	-870	173,548
363238	FY13 PROSPECT MANHOLE REHAB	SCAPCREDIT		12/18/12	72,703	246,251
341319	RAISING CANES RETAIL CENTER	LAT EXT	1,225	12/18/12	-2,664	243,587
359346	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	24,000	267,587
363235	FY13 MUDDY FORK MH REHAB	SCAPCREDIT		12/31/12	41,653	309,240
362686	FY13 IFP ACTIVITY FIRST HALF - ORFM	SCAPCREDIT		12/31/12	1,148	310,388
360262	SINGLE FAMILY 3419 HILLVALE RD	LAT EXT	400	5/13/13	-870	309,518
343729	RETAIL & RESTAURANT	LAT EXT	3,500	6/21/13	-7,613	301,906
334154	GLENVIEW PARK SUBD SEC 4	LAT EXT	3,600	11/7/13	-7,830	294,076



## Capacity Credit Balance Sheet per Credit Basin

<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>
13LE1024	Overlook at Beech Spring Farm Sec 4	LAT EXT	5,600	12/31/13	-12,180	281,896
199896	SPRINGDALE OFFICE BUILDING	LAT EXT	4,210	3/11/14	-9,157	272,739
225863	SPRING FARM LAKES SEC 1	LAT EXT	4,800	5/16/14	-10,440	262,299
177756	SUMMIT GARDENS PHASE 1	LAT EXT	32,000	9/22/14	-69,600	192,699
14LE1121	Riverside Sewer Extension	LAT EXT	1,200	11/10/14	-2,610	190,089
13LE1071	SPRING FARM LAKE SEC 2	LAT EXT	6,000	1/16/15	-13,050	177,039
352634	BAUER PROPERTY	LAT EXT	2,920	2/12/15	-6,351	170,688
<b>PCREEK</b>						
235574	POND CRK IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	71,782	71,782
359347	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		12/31/08	4,000	75,782
359438	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/08	4,000	79,782
359439	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	12,000	91,782
359348	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	4,000	95,782
192513	BANNON CROSSINGS SECTION 3A-1	LAT EXT	800	2/17/10	-1,740	94,042
261115	EMERGENCY RESTORATION	LAT EXT	400	4/27/10	-870	93,172
276977	DADISMAN BUILDERS-POPLAR TREE	LAT EXT	400	10/13/10	-870	92,302
266833	THORNTONS @ PRESTON HWY	LAT EXT	400	12/1/10	-870	91,432
280751	NOTTINGTON HILLS SEC 1	LAT EXT	4,400	12/29/10	-9,570	81,862
359350	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	12,000	93,862
187739	GLENGARRY INDUSTRIAL PARK	LAT EXT	4,300	1/13/11	-9,353	84,510
277777	TIRE DISCOUNTERS - BOERSTE WAY	LAT EXT	2,960	3/21/11	-6,438	78,072
304408	UPS SUPPLY CHAIN SOLUTIONS #7	LAT EXT	2,250	9/14/11	-4,894	73,178
320918	EDSEL I/I REHABILITATION - FY1	SCAPCREDIT		9/27/11	106,700	179,878
313444	PLANET FITNESS - JEFF BLVD	LAT EXT	1,600	11/4/11	-3,480	176,398
312391	LONGHORN STEAKHOUSE RESTAURANT	LAT EXT	4,840	11/29/11	-10,527	165,871



## Capacity Credit Balance Sheet per Credit Basin

<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>
320919	LANTANA I/I REHABILITATION - F	SCAPCREDIT		12/29/11	5,000	170,871
359351	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	20,000	190,871
310845	ZAXBY'S RESTAURANT	LAT EXT	3,750	2/28/12	-8,156	182,715
255044	ISA-RECYCLING CENTER	LAT EXT	400	3/13/12	-870	181,845
312814	MILLER TRANSPORTATION	LAT EXT	1,800	3/19/12	-3,915	177,930
324554	NORTONS TEMPORARY OFFICE	LAT EXT	900	4/16/12	-1,958	175,972
234102	ETHOS AT VALLEY FARM SR LIVING	LAT EXT	7,050	6/19/12	-15,334	160,638
322367	SHEPHERDS CARE MEMORY HOME	LAT EXT	2,000	6/21/12	-4,350	156,288
307332	LOUISVILLE INDUSTRIAL BLDG B	LAT EXT	2,520	8/6/12	-5,481	150,807
279860	BANNON CROSSINGS SEC 3B-2	LAT EXT	9,600	8/10/12	-20,880	129,927
312053	DOLLAR GENERAL - CLEARWATER FA	LAT EXT	400	8/13/12	-870	129,057
343455	SINGLE FAMILY 1812 GREYLING DR	LAT EXT	400	10/12/12	-870	128,187
243109	OVERBROOK APARTMENTS	LAT EXT	41,200	11/9/12	-89,610	38,577
359354	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	56,000	94,577
329624	COPART	LAT EXT	400	2/20/13	-870	93,707
346082	ZAXBYS	LAT EXT	2,065	5/2/13	-4,491	89,216
320924	LEA ANN WAY INTERCEPTOR I&I RE	SCAPCREDIT		6/30/13	1,017,423	1,106,639
335385	HARRISON LOW PRESSURE S/S	LAT EXT	1,600	7/2/13	-3,480	1,103,159
320940	4 RESIDENCE SFU 7821 MANSCLICK	LAT EXT	400	8/16/13	-870	1,102,289
361336	RENAISSANCE SOUTH BUSINESS	LAT EXT	540	9/6/13	-1,175	1,101,114
324886	PNC BANK	LAT EXT	400	9/6/13	-870	1,100,244
13LE1083	SINGLE FAMILY HOME 5402 (H) E MANSCLICK RC	LAT EXT	400	9/26/13	-870	1,099,374
353125	PEGASUS TRANSPORTATION	LAT EXT	250	12/9/13	-544	1,098,831
341439	PRESTON GARDENS APTS	LAT EXT	22,200	12/10/13	-48,285	1,050,546
308206	APPLEGATE FARMS	LAT EXT	57,200	12/10/13	-124,410	926,136
14SC1005	FY13 IFP ACTIVITY FIRST HALF - POND CREEK	SCAPCREDIT		12/31/13	21,344	947,480

## Capacity Credit Balance Sheet per Credit Basin

<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>
13LE1179	TIMBERBEND SUBDIVISION SEC 5B	LAT EXT	6,400	2/14/14	-13,920	933,560
13LE1035	RENAISSANCE SOUTH BUSINESS PARK TRACT	LAT EXT	5,415	4/10/14	-11,778	921,782
13LE1115	VERIZON-OUTER LOOP	LAT EXT	400	4/22/14	-870	920,912
348014	ASHTON PARK TOWN HOMES	LAT EXT	9,000	4/24/14	-19,575	901,337
280180	LOUISVILLE INDUSTRIAL CTR F	LAT EXT	2,480	5/16/14	-5,394	895,943
14LE1085	Williams Properties - Self Storage Facility	LAT EXT	400	5/28/14	-870	895,073
13LE1034	6300 GEIL LANE WAREHOUSE	LAT EXT	720	6/9/14	-1,566	893,507
284215	HURSTBOURNE POINTE APTS	LAT EXT	9,600	7/7/14	-20,880	872,627
344230	AUSTIN PARK APARTMENTS PH6	LAT EXT	27,600	8/25/14	-60,030	812,597
13LE1105	JEFFERSON COMMONS	LAT EXT	17,075	11/13/14	-37,138	775,459
13LE1017	APEX ON PRESTON APT HOMES(Formerly CITY)	LAT EXT	84,400	1/13/15	-183,570	591,889
354207	COOPER FARMS SEC 11B	LAT EXT	12,400	4/29/15	-26,970	564,919
354209	COOPER FARMS SEC 11A	LAT EXT	13,200	4/29/15	-28,710	536,209
SC939830	Lea Ann Way West Quad 1 & 2 Rehabilitation Project	SCAPCREDIT		12/31/15	445,911	982,120
<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
235575	SE DIV IFP WORK AUG05-NOV08	SCAPCREDIT		11/1/08	71,472	207,472
236214	GOLDSMITH BUECHB ICA PHI REHAB	SCAPCREDIT		12/22/08	314,808	522,280
236296	BEARGRASS INT REHAB PH1 SEDIV	SCAPCREDIT		12/22/08	122,688	644,968
359441	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/08	16,000	660,968
359356	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		12/31/08	4,000	664,968
229854	TINY HANDS DAYCARE	LAT EXT	1,225	10/20/09	-2,664	662,304
359357	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	12,000	674,304
359443	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	8,000	682,304

## Capacity Credit Balance Sheet per Credit Basin

<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>
235291	SULLIVAN COLLEGE OF TECHNOLOGY	LAT EXT	900	2/11/10	-1,958	680,346
238328	LOUISVILLE COLLEGIATE SPORTS	LAT EXT	400	3/1/10	-870	679,476
241759	FRISCHS BIG BOY RESTAURANT	LAT EXT	2,400	3/5/10	-5,220	674,256
257275	LOUISVILLE JUNIOR ACADEMY	LAT EXT	520	4/16/10	-1,131	673,125
320993	BEARGRASS CREEK PHASE II - FY1	SCAPCREDIT		12/14/10	10,368	683,493
359358	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	4,000	687,493
359444	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/10	24,000	711,493
286513	GARDINER POINT RESIDENCE HALL	LAT EXT	10,800	2/16/11	-23,490	688,003
276378	TIRE DISCOUNTERS - BARDSTOWN	LAT EXT	1,500	5/6/11	-3,263	684,741
287888	BEVERAGE WAREHOUSE	LAT EXT	1,180	5/30/11	-2,567	682,174
296295	KEN TOWERY -3800 S HURSTBOURNE	LAT EXT	400	7/1/11	-870	681,304
359445	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	8,000	689,304
359359	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	64,000	753,304
307018	HOOK PROPERTY FAMILY DOLLAR	LAT EXT	400	8/10/12	-870	752,434
359361	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	68,000	820,434
359446	CALENDAR 2012 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/12	4,000	824,434
187741	BROOKSTONE SENIOR APARTMENTS	LAT EXT	16,800	3/11/13	-36,540	787,894
232601	RAINTREE/MARIAN CT P/S ELIM	LAT EXT	105,800	6/14/13	-230,115	557,779
330437	COLLEGIATE ATHLETIC FIELD	LAT EXT	800	11/26/13	-1,740	556,039
14SC1006	FY13 IFP ACTIVITY FIRST HALF - SE DIVERSION	SCAPCREDIT		12/31/13	20,623	576,662



Appendix E – IOAP Project Crosswalk

## Appendix E IOAP Project Crosswalk

Project Name	PROGRAM	ASSET ID	PROJECT ID
Avanti PS Elimination	IOAP	21229-W	S_PO_WC_PC07_M_01_A
Sinking Fork Relief Sewer	ISSDP	21103	SFRS
Sinking Fork Relief Sewer	ISSDP	63319	SFRS
Sinking Fork Relief Sewer	ISSDP	25012	SFRS
Beargrass Interceptor Rehab Ph. 2	IOAP	51594	S_SD_MF_NB06_S_13_C
Floydsburg Rd. I/I Investigation & Rehabilitation	IOAP	108958	S_HC_HC_MSD1086_M_07_C_A
Floydsburg Rd. I/I Investigation & Rehabilitation	IOAP	108956	S_HC_HC_MSD1086_M_07_C_A
Floydsburg Rd. I/I Investigation & Rehabilitation	IOAP	MSD1086-PS	S_HC_HC_MSD1086_M_07_C_A
Floydsburg Rd. I/I Investigation & Rehabilitation	IOAP	90776	S_HC_HC_MSD1086_M_07_C_A
Floydsburg Rd. I/I Investigation & Rehabilitation	IOAP	108957	S_HC_HC_MSD1086_M_07_C_A
Floydsburg Rd. I/I Investigation & Rehabilitation	IOAP	108953	S_HC_HC_MSD1086_M_07_C_A
Running Fox PS Elimination	IOAP	MSD1080-LS	S_CC_CC_MSD1080_S_01_C
Beechwood Village Sanitary Sewer Replacement	ISSDP	21153	BVSSR
Beechwood Village Sanitary Sewer Replacement	ISSDP	21101	BVSSR
Beechwood Village Sanitary Sewer Replacement	ISSDP	21156	BVSSR
Beechwood Village Sanitary Sewer Replacement	ISSDP	21061	BVSSR
Hazelwood PS I/I Investigation & Rehabilitation	IOAP	55667	S_MC_MF_55665_S_07_C
Hazelwood PS I/I Investigation & Rehabilitation	IOAP	55665	S_MC_MF_55665_S_07_C
Parkview Estates I/I Investigation & Rehabilitation	IOAP	47250	S_SD_MF_NB03_S_07_C
Sonne PS I/I Investigation & Rehabilitation	IOAP	MSD0042-PS	S_OR_MF_42007_S_07_C
Woodland Hills PS Diversion	IOAP	33003	S_FF_FF_NB01_S_01_C_A
Anchor Estates- Anchor Ests PS 1 & 2 PS Eliminations	IOAP	0057-W	S_MI_MF_NB06_M_01_A_A - 1
Northern Ditch Diversion Interceptor	ISSDP	MSD0271	NDDI
Edsel PS I/I Investigation & Rehabilitation	IOAP	MSD1048-PS	S_PO_WC_PC11_M_07_C
Edsel PS I/I Investigation & Rehabilitation	IOAP	94009	S_PO_WC_PC11_M_07_C
Edsel PS I/I Investigation & Rehabilitation	IOAP	92098	S_PO_WC_PC11_M_07_C
Edsel PS I/I Investigation & Rehabilitation	IOAP	92099	S_PO_WC_PC11_M_07_C
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	13946	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	44396	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	66349	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	51301	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	36763	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	8717	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	44397	S_SF_MF_30917_M_09_A

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Project Name	PROGRAM	ASSET ID	PROJECT ID
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	13931	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	99259	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	104223	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	13943	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation	IOAP	104231	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	44397	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	104223	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	104231	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	13946	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	13931	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	66349	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	51301	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	99259	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	36763	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	13943	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	44396	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 1 - SSES	IOAP	8717	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	13943	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	13931	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	66349	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	8717	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	13946	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	99259	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	51301	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	36763	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	104223	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	104231	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	44397	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 2 - Sewer Replacement and Rehabilitation	IOAP	44396	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	44397	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	51301	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	99259	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	13943	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	8717	S_SF_MF_30917_M_09_A

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Project Name	PROGRAM	ASSET ID	PROJECT ID
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	13946	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	13931	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	44396	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	104223	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	36763	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	66349	S_SF_MF_30917_M_09_A
Camp Taylor System Improvements Phase 4 - Storage Basin and Sewer Upsize	IOAP	104231	S_SF_MF_30917_M_09_A
Hurstbourne I/I Investigation & Rehabilitation	IOAP	67535	S_MI_MF_NB07_S_07_C
Hurstbourne I/I Investigation & Rehabilitation	IOAP	47650	S_MI_MF_NB07_S_07_C
Hurstbourne I/I Investigation & Rehabilitation	IOAP	47656	S_MI_MF_NB07_S_07_C
Hurstbourne I/I Investigation & Rehabilitation	IOAP	1793	S_MI_MF_NB07_S_07_C
Lantana PS #1 I/I Investigation and Rehabilitation	IOAP	25484	S_PO_WC_PC05_M_07_C
Lantana PS #1 I/I Investigation and Rehabilitation	IOAP	MSD0101-PS	S_PO_WC_PC05_M_07_C
Lantana PS #1 I/I Investigation and Rehabilitation	IOAP	93719	S_PO_WC_PC05_M_07_C
Derington Ct. PS I/I Investigation & Rehabilitation	IOAP	MSD0095-PS	S_OR_MF_NB03_S_07_C
Derington Ct. PS I/I Investigation & Rehabilitation	IOAP	20155	S_OR_MF_NB03_S_07_C
Southeastern Diversion Structure and Interceptor	ISSDP	72571-X	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	30704	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	30702	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	63779	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	8426	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	8427	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	8431	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	49647	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	8430	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	18654	SDSI
Southeastern Diversion Structure and Interceptor	ISSDP	30701	SDSI
Derek R. Guthrie WQTC Wet Weather Facility	ISSDP	MSD0277	DRGWQTC
Derek R. Guthrie WQTC Wet Weather Facility	ISSDP	32688	DRGWQTC
Derek R. Guthrie WQTC Wet Weather Facility	ISSDP	59169	DRGWQTC
Derek R. Guthrie WQTC Wet Weather Facility	ISSDP	22307	DRGWQTC
Derek R. Guthrie WQTC Wet Weather Facility	ISSDP	22385	DRGWQTC
Derek R. Guthrie WQTC Wet Weather Facility	ISSDP	22370	DRGWQTC
Derek R. Guthrie WQTC Wet Weather Facility	ISSDP	32682	DRGWQTC

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Project Name	PROGRAM	ASSET ID	PROJECT ID
Hikes Lane Interceptor and Highgate Springs	ISSDP	18370	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18434	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	30681	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	MSD0012-PS	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	49673	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	49236	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18483	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	49224	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18134	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18471	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18318-W	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18505	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18595	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	73111	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	49672	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	17571	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18302	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18297	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	18299	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	30680	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	48886	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	48888	HLIHSPS
Hikes Lane Interceptor and Highgate Springs	ISSDP	48885	HLIHSPS
Lake Forest PS SSO Investigation	IOAP	MSD1169-LS	S_FF_LF_NB01_S_13_C_A
Meadow Stream Pump Station & Force Main Upgrade	IOAP	MSD1082-PS	S_HC_HC_MSD1082_S_09A_C
Meadow Stream Pump Station & Force Main Upgrade	IOAP	91087	S_HC_HC_MSD1082_S_09A_C
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	41374	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	MSD0007-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	MSD0024-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	26752	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	MSD0023-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	MSD0010-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	24472	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	MSD0006-PS	S_OR_MF_NB01_M_01_B

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Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	IOAP	24152-W	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	MSD0007-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	24472	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	41374	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	26752	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	MSD0023-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	MSD0024-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	24152-W	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	MSD0010-PS	S_OR_MF_NB01_M_01_B
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	IOAP	MSD0006-PS	S_OR_MF_NB01_M_01_B
Anchor Estates PS Elimination 1 - Vannah PS Elimination	IOAP	MSD0057-LS	S_MI_MF_NB06_M_01_A_A - 2
Anchor Estates PS Elimination 1 - Vannah PS Elimination	IOAP	00056-W	S_MI_MF_NB06_M_01_A_A - 2
Anchor Estates PS Elimination 1 - Vannah PS Elimination	IOAP	817	S_MI_MF_NB06_M_01_A_A - 2
Anchor Estates PS Elimination 1 - Vannah PS Elimination	IOAP	0057-W	S_MI_MF_NB06_M_01_A_A - 2
Anchor Estates PS Elimination 1 - Vannah PS Elimination	IOAP	746	S_MI_MF_NB06_M_01_A_A - 2
Anchor Estates PS Elimination 1 - Vannah PS Elimination	IOAP	1106	S_MI_MF_NB06_M_01_A_A - 2
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	47583	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	47604	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	47603	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	2933	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	2935	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	8537	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	72289	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	30376	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	45796	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	115183	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	84155	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	23211	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	40559	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	51160	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	51180	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	47582	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	47034	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1- Buechel Basin	IOAP	72288	S_MISF_MF_NB01_M_01_C_A1



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Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and	IOAP	8537	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and	IOAP	90700	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and	IOAP	2932	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and	IOAP	47034	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and	IOAP	72288	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and	IOAP	47593	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and	IOAP	30376	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and	IOAP	84155	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and	IOAP	115183	S_MISF_MF_NB01_M_01_C_A1
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and	IOAP	45835	S_MISF_MF_NB01_M_01_C_A1
Fairway View PS Improvements	IOAP	MSD1065-PS	S_HC_HS_NB01_S_03_C_A
Riding Ridge PS Improvements	IOAP	MSD1060-LS	S_HC_HN_NB01_S_03_C_A
Shively Interceptor	IOAP	MSD0047-PS	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	4498	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	MSD0049-PS	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	4542	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	81814-W	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	MSD0016-PS	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	MSD0044-PS	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	MSD0048-PS	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	MSD0050-PS	S_MC_WC_NB01_M_01_A
Shively Interceptor	IOAP	MSD0043-PS	S_MC_WC_NB01_M_01_A
Chenoweth Hills WQTC Elimination & PS Improvements	IOAP	92061	S_JT_JT_NB01A_M_03_C
Chenoweth Hills WQTC Elimination & PS Improvements	IOAP	86052	S_JT_JT_NB01A_M_03_C
Chenoweth Hills WQTC Elimination & PS Improvements	IOAP	MSD0263	S_JT_JT_NB01A_M_03_C
Chenoweth Hills WQTC Elimination & PS Improvements	IOAP	MSD1043-PS	S_JT_JT_NB01A_M_03_C
Chenoweth Hills WQTC Elimination & PS Improvements	IOAP	MSD0196-PS	S_JT_JT_NB01A_M_03_C
Chenoweth Hills WQTC Elimination & PS Improvements	IOAP	64096	S_JT_JT_NB01A_M_03_C
Chenoweth Hills WQTC Elimination & PS Improvements	IOAP	MSD0263A-PS	S_JT_JT_NB01A_M_03_C
Fairmount Road Pump Station Off-Line Storage	IOAP	81316	S_FF_CC_81316_M_03_C_A
Fairmount Road Pump Station Off-Line Storage	IOAP	97362	S_FF_CC_81316_M_03_C_A
Jeffersontown WQTC Elimination	IOAP	28391	S_JT_JT_NB01_M_01_C_A
Jeffersontown WQTC Elimination	IOAP	64505	S_JT_JT_NB01_M_01_C_A
Jeffersontown WQTC Elimination	IOAP	28392	S_JT_JT_NB01_M_01_C_A



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Project Name	PROGRAM	ASSET ID	PROJECT ID
Jeffersontown WQTC Elimination	IOAP	28395	S_JT_JT_NB01_M_01_C_A
Jeffersontown WQTC Elimination	IOAP	ISO28-SI	S_JT_JT_NB01_M_01_C_A
Jeffersontown WQTC Elimination	IOAP	31733	S_JT_JT_NB01_M_01_C_A
Jeffersontown WQTC Elimination	IOAP	28551	S_JT_JT_NB01_M_01_C_A
Jeffersontown WQTC Elimination	IOAP	MSD0255	S_JT_JT_NB01_M_01_C_A
Jeffersontown WQTC Elimination	IOAP	28173	S_JT_JT_NB01_M_01_C_A
Klondike Interceptor	IOAP	26651	S_SD_MF_NB04_S_01_B_A
Klondike Interceptor	IOAP	26650	S_SD_MF_NB04_S_01_B_A
Klondike Interceptor	IOAP	20644	S_SD_MF_NB04_S_01_B_A
Klondike Interceptor	IOAP	66232	S_SD_MF_NB04_S_01_B_A
Klondike Interceptor	IOAP	49513	S_SD_MF_NB04_S_01_B_A
Klondike Interceptor	IOAP	25676	S_SD_MF_NB04_S_01_B_A
Lea Ann Way System Improvements	IOAP	MSD1200-PS	S_PO_WC_PC08_M_01_C
Lea Ann Way System Improvements	IOAP	29933	S_PO_WC_PC08_M_01_C
Lea Ann Way System Improvements	IOAP	31074	S_PO_WC_PC08_M_01_C
Lea Ann Way System Improvements	IOAP	31073	S_PO_WC_PC08_M_01_C
Lea Ann Way System Improvements	IOAP	57874	S_PO_WC_PC08_M_01_C
Lea Ann Way System Improvements	IOAP	29948	S_PO_WC_PC08_M_01_C
Lea Ann Way System Improvements	IOAP	MSD1010-PS	S_PO_WC_PC08_M_01_C
Prospect #1 - WQTC Eliminations	IOAP	MSD0192-PS	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	MSD1063-PS	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	MSD0123-PS	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	MSD0193-PS	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	40870	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	MSD1044-PS	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	MSD0183-PS	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	22436	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	40872	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	40871	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	65635	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	42680	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	89791	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	89646	S_OR_MF_NB04_M_03_B_B
Prospect #1 - WQTC Eliminations	IOAP	40879	S_OR_MF_NB04_M_03_B_B

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

Appendix E  
IOAP Project Crosswalk

Project Name	PROGRAM	ASSET ID	PROJECT ID
Prospect #3 - ORFM System Improvemetns	IOAP	MSD0192-PS	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvemetns	IOAP	42675	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvemetns	IOAP	40872	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvemetns	IOAP	65633	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvemetns	IOAP	MSD1044-PS	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvemetns	IOAP	MSD0186-PS	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvemetns	IOAP	MSD0123-PS	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvemetns	IOAP	40870	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvemetns	IOAP	65623	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvemetns	IOAP	42680	S_OR_MF_NB04_M_03_B_B
Prospect #3 - ORFM System Improvemetns	IOAP	89791	S_OR_MF_NB04_M_03_B_B
Anchor Estates PS Elimination 2 - Anchor Estates #1 and #2 PS Elimination	IOAP	1106	S_MI_MF_NB06_M_01_A_A - 1
Anchor Estates PS Elimination 2 - Anchor Estates #1 and #2 PS Elimination	IOAP	MSD0057-LS	S_MI_MF_NB06_M_01_A_A - 1
Anchor Estates PS Elimination 2 - Anchor Estates #1 and #2 PS Elimination	IOAP	817	S_MI_MF_NB06_M_01_A_A - 1
Anchor Estates PS Elimination 2 - Anchor Estates #1 and #2 PS Elimination	IOAP	00056-W	S_MI_MF_NB06_M_01_A_A - 1
Anchor Estates PS Elimination 2 - Anchor Estates #1 and #2 PS Elimination	IOAP	746	S_MI_MF_NB06_M_01_A_A - 1
Caven Ave Pump Station Elimination	IOAP	70212	S_PO_WC_PC09_M_09B_C
Caven Ave Pump Station Elimination	IOAP	61667	S_PO_WC_PC09_M_09B_C
Caven Ave Pump Station Elimination	IOAP	MSD0133-PS	S_PO_WC_PC09_M_09B_C
Caven Ave Pump Station Elimination	IOAP	17724	S_PO_WC_PC09_M_09B_C
Caven Ave Pump Station Elimination	IOAP	61687	S_PO_WC_PC09_M_09B_C
Caven Ave Pump Station Elimination	IOAP	27116	S_PO_WC_PC09_M_09B_C
Ashburton PS Improvements & Diversion	IOAP	MSD0165-PS	S_FF_FF_NB03_M_01_C_A
Bardstown Rd. PS Improvements	IOAP	88545	S_CC_CC_MSD1025_S_03_B
East Rockford PS Relocation	IOAP	04699-W	S_MC_WC_NB02_S_03_C
Fox Harbor Inline Storage	IOAP	62769	S_HC_HN_NB03_S_09A_A_A
Gunpowder PS Inline Storage	IOAP	MSD1055-LS	S_HC_HN_NB02_S_09A_C_B
Lucas Lane PS Inline Storage	IOAP	MSD0199-LS	S_FF_BT_NB01_S_09A_C_A
Raintree and Marian Ct 1 - PS Elimination	IOAP	28395A	S_JT_JT_NB03_M_01_C
Raintree and Marian Ct 1 - PS Elimination	IOAP	28719	S_JT_JT_NB03_M_01_C
Raintree and Marian Ct 1 - PS Elimination	IOAP	28729-W	S_JT_JT_NB03_M_01_C
Raintree and Marian Ct 1 - PS Elimination	IOAP	MSD0149-PS	S_JT_JT_NB03_M_01_C
Raintree and Marian Ct 2 - Pipe Upgrades	IOAP	MSD0149-PS	S_JT_JT_NB03_M_01_C
Raintree and Marian Ct 2 - Pipe Upgrades	IOAP	28395A	S_JT_JT_NB03_M_01_C

Appendix E  
IOAP Project Crosswalk

Project Name	PROGRAM	ASSET ID	PROJECT ID
Raintree and Marian Ct 2 - Pipe Upgrades	IOAP	28719	S_JT_JT_NB03_M_01_C
Raintree and Marian Ct 2 - Pipe Upgrades	IOAP	28729-W	S_JT_JT_NB03_M_01_C
St. Rene Rd. PS Inline Storage	IOAP	94187	S_FF_CH_NB01_S_09A_C_A
Charleswood Interceptor Extension	IOAP	25480	S_PO_WC_PC03_M_01_C
Charleswood Interceptor Extension	IOAP	25479	S_PO_WC_PC03_M_01_C
Charleswood Interceptor Extension	IOAP	25477	S_PO_WC_PC03_M_01_C
Charleswood Interceptor Extension	IOAP	MSD0130-PS	S_PO_WC_PC03_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28415	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	98564	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28250	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	99649	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28416	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28340	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	104289	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28414	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28417	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28413	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28249	S_JT_JT_NB02_M_01_C
Dell Rd and Charlane Pkwy Interceptor Improvements	IOAP	28336	S_JT_JT_NB02_M_01_C
Leven PS Elimination	IOAP	36419	S_PO_WC_PC10_M_01_C
Monticello PS Elimination	IOAP	27969	S_JT_JT_NB04_M_01_A
Monticello PS Elimination	IOAP	MSD0151-PS	S_JT_JT_NB04_M_01_A
Cinderella PS Elimination	IOAP	MSD1013-PS	S_PO_WC_PC04_M_01_C
Cinderella PS Elimination	IOAP	60679	S_PO_WC_PC04_M_01_C
Cinderella PS Elimination	IOAP	35309	S_PO_WC_PC04_M_01_C
Idlewood Inline Storage	IOAP	63094	S_CC_CC_70158_M_09A_C
Idlewood Inline Storage	IOAP	63095	S_CC_CC_70158_M_09A_C
Idlewood Inline Storage	IOAP	70158	S_CC_CC_70158_M_09A_C
Idlewood Inline Storage	IOAP	28984	S_CC_CC_70158_M_09A_C
Idlewood Inline Storage	IOAP	28998	S_CC_CC_70158_M_09A_C
Sutherland Interceptor	IOAP	16649	S_SD_MF_NB05_M_01_A
Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale Wet Weather Storage	IOAP	43472	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale Wet Weather Storage	IOAP	MSD1024-PS	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale Wet Weather Storage	IOAP	105936	S_MI_MF_NB04_M_03_B

Appendix E  
IOAP Project Crosswalk

Project Name	PROGRAM	ASSET ID	PROJECT ID
Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale Wet Weather Storage	IOAP	62418	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale Wet Weather Storage	IOAP	62420	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale Wet Weather Storage	IOAP	21628-W	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale Wet Weather Storage	IOAP	91630	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale Wet Weather Storage	IOAP	46891	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale Wet Weather Storage	IOAP	91629	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	62420	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	91629	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	46891	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	MSD1024-PS	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	62418	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	43472	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	91630	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	105936	S_MI_MF_NB04_M_03_B
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	IOAP	21628-W	S_MI_MF_NB04_M_03_B
Government Center PS Elimination	IOAP	94541	S_PO_WC_PC06_M_01_C
Government Center PS Elimination	IOAP	MSD0180-PS	S_PO_WC_PC06_M_01_C
Government Center PS Elimination	IOAP	94542	S_PO_WC_PC06_M_01_C
Kavanaugh Rd. PS Improvements	IOAP	MSD1085-PS	S_HC_HC_MSD1085_S_03_A
Little Cedar Creek Interceptor Improvements	IOAP	67997	S_CC_CC_67997_M_01_C
Little Cedar Creek Interceptor Improvements	IOAP	89197	S_CC_CC_67997_M_01_C
Little Cedar Creek Interceptor Improvements	IOAP	89196	S_CC_CC_67997_M_01_C
Little Cedar Creek Interceptor Improvements	IOAP	86423	S_CC_CC_67997_M_01_C
Little Cedar Creek Interceptor Improvements	IOAP	89195	S_CC_CC_67997_M_01_C
Little Cedar Creek Interceptor Improvements	IOAP	86424	S_CC_CC_67997_M_01_C
Eden Care PS SSO Investigation	IOAP	MSD1105-PS	S_FF_FF_NB02_S_13_C
Leland Road SSO Investigation	IOAP	96020	S_OR_MF_NB02_S_13_C

Appendix F – CSO108 Semi-Annual Report #14



Louisville and Jefferson County Metropolitan Sewer District  
700 West Liberty Street  
Louisville Kentucky 40203-1911  
502-540-6000  
www.msdlouky.org

June 30, 2015

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

Subject: CSO 108 Semi-Annual Report #14

Dear Ms. Bender:

As required in Paragraph #10 of the document titled "Memorandum of Understanding by and between the Kentucky State Nature Preserve Commission and the Louisville and Jefferson County Metropolitan Sewer District", MSD submits to you the MOU Semi-Annual Report #14. This report summarizes activities at the CSO 108 CDS Site during the reporting period of January 1, 2015 to June 30, 2015.

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

Sincerely,

Julie L. Potempa  
Project Administrator

cc: J. Loechle                      A. Akridge                      D. Thompson                      File



Beneficial Use of Louisville's Biosolids  
[www.louisvillegreen.com](http://www.louisvillegreen.com)



## **INTRODUCTION**

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

This is the fourteenth Semi-Annual Report submitted in accordance with Paragraph 10 of the MOU. This report covers the time period of January 1, 2015 to June 30, 2015.

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

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

### **Paragraph #10 of the MOU:**

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

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

The CSO 108 CDS Unit is inspected weekly and cleaned on an as-needed basis. Between the dates of January 1, 2015, and June 30, 2015, MSD cleaned the CDS Unit bar racks three times. The information, shown in Table 1, is generated from work orders initiated whenever the CDS Unit is inspected and needs to be cleaned. Cleaning consists of either washing debris off of the bar racks or hauling the solids and floatables from the site. Both operations result in removing debris that would otherwise overflow into Beargrass Creek. When cleaning the bar racks, the debris is



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

**TABLE 1: CSO 108 CDS Unit Debris Removal**

<u>ACTCO</u>	<u>UNITID</u>	<u>QTY</u>	<u>COMMENTS</u>	<u>COMPDTM</u>
Debris	CSO 108	Unknown	None	01/21/15
Debris	CSO 108	Unknown	None	02/03/15
Debris	CSO 108	Unknown	None	03/02/15

- Maintenance Activities:

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

- Captured Flow

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

In an effort to estimate the volume of debris captured by the CDS Unit and kept within the sewer system, a study of the efficiency of the unit was performed in the



early 2002. The results of the study indicated that the concentration of solids kept within the sewer system was approximately 1ml/l. Using pump run times and knowing the efficiency of the pumps, MSD was able to determine a volume of solids captured by the CDS technology. MSD estimates that the CDS Unit captured 74.04 tons of solids during the reporting period. Attachment "B" lists the pump run times and calculations MSD used to determine the amount of debris captured by the CDS Unit and sent to the MFWQTC for treatment.

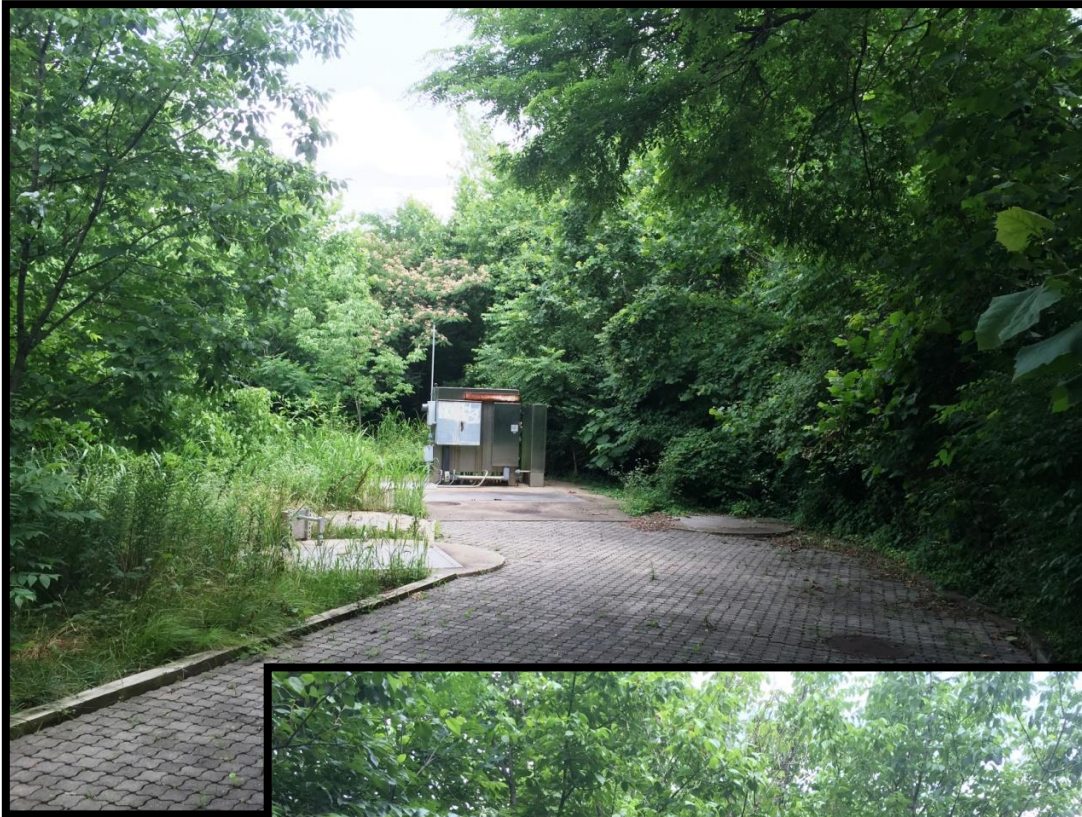


# **ATTACHMENT “A”**

## **PHOTOS OF AREA ADJACENT TO CSO 108 AND THE CDS UNIT (dated June 23, 2015)**



**Figures 1 and 2 – Entrance to CDS Unit**



**Figures 3 and 4 – Area Adjacent to CDS Unit**

June 30, 2015



**Figure 5 – Area Adjacent to Entrance**

June 30, 2015



**Figures 6 and 7 – Area Adjacent to Creek**



## **ATTACHMENT “B”**

### **CDS UNIT PUMP RUN TIMES**



## CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
30-Dec-14	0.0374	5,000.24	37,404.43	37.40
31-Dec-14	0.0390	5,215.01	39,011.01	39.01
01-Jan-15	0.0381	5,098.97	38,142.96	38.14
02-Jan-15	0.0388	5,189.74	38,821.95	38.82
03-Jan-15	0.0382	5,108.25	38,212.35	38.21
04-Jan-15	0.0375	5,013.59	37,504.23	37.50
05-Jan-15	0.0419	5,598.26	41,877.93	41.88
06-Jan-15	0.0372	4,970.81	37,184.23	37.18
07-Jan-15	0.0390	5,211.63	38,985.73	38.99
08-Jan-15	0.0384	5,133.49	38,401.21	38.40
09-Jan-15	0.0397	5,303.79	39,675.09	39.68
10-Jan-15	0.0400	5,342.25	39,962.82	39.96
11-Jan-15	0.0389	5,205.91	38,942.90	38.94
12-Jan-15	0.0394	5,273.05	39,445.15	39.45
13-Jan-15	0.0381	5,098.56	38,139.90	38.14
14-Jan-15	0.0416	5,560.69	41,596.82	41.60
15-Jan-15	0.0384	5,130.48	38,378.66	38.38
16-Jan-15	0.0382	5,102.14	38,166.62	38.17
17-Jan-15	0.0378	5,058.55	37,840.56	37.84
18-Jan-15	0.0379	5,060.71	37,856.75	37.86
19-Jan-15	0.0376	5,030.96	37,634.21	37.63
20-Jan-15	0.0371	4,959.93	37,102.84	37.10
21-Jan-15	0.0375	5,018.16	37,538.48	37.54
22-Jan-15	0.0374	5,001.21	37,411.63	37.41
23-Jan-15	0.0371	4,958.45	37,091.77	37.09
24-Jan-15	0.0376	5,029.60	37,624.00	37.62
25-Jan-15	0.0407	5,437.54	40,675.64	40.68
26-Jan-15	0.0376	5,031.54	37,638.50	37.64
27-Jan-15	0.0374	4,993.66	37,355.14	37.36
28-Jan-15	0.0382	5,105.35	38,190.70	38.19
29-Jan-15	0.0380	5,076.07	37,971.67	37.97
30-Jan-15	0.0381	5,091.21	38,084.87	38.08
31-Jan-15	0.0374	4,997.18	37,381.51	37.38
01-Feb-15	0.0376	5,031.74	37,640.05	37.64
02-Feb-15	0.0379	5,067.05	37,904.15	37.90
03-Feb-15	0.0371	4,959.53	37,099.88	37.10
04-Feb-15	0.0381	5,096.87	38,127.25	38.13
05-Feb-15	0.0421	5,623.35	42,065.60	42.07
06-Feb-15	0.0375	5,006.76	37,453.19	37.45
07-Feb-15	0.0387	5,177.38	38,729.53	38.73
08-Feb-15	0.0384	5,129.68	38,372.67	38.37
09-Feb-15	0.0375	5,019.58	37,549.06	37.55
10-Feb-15	0.0370	4,940.17	36,955.04	36.96
11-Feb-15	0.0375	5,014.45	37,510.70	37.51
12-Feb-15	0.0378	5,055.39	37,816.94	37.82
13-Feb-15	0.0411	5,493.03	41,090.70	41.09

## CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
14-Feb-15	0.0385	5,145.85	38,493.60	38.49
15-Feb-15	0.0383	5,121.71	38,313.06	38.31
16-Feb-15	0.0383	5,124.05	38,330.54	38.33
17-Feb-15	0.0383	5,124.05	38,330.54	38.33
18-Feb-15	0.0789	10,549.39	78,914.94	78.91
19-Feb-15	0.0392	5,238.69	39,188.11	39.19
20-Feb-15	0.0392	5,244.50	39,231.55	39.23
21-Feb-15	0.0402	5,378.60	40,234.76	40.23
22-Feb-15	0.0398	5,325.63	39,838.49	39.84
23-Feb-15	0.0428	5,717.41	42,769.23	42.77
24-Feb-15	0.0379	5,068.97	37,918.53	37.92
25-Feb-15	0.0388	5,181.64	38,761.33	38.76
26-Feb-15	0.0384	5,135.34	38,415.01	38.42
27-Feb-15	0.0421	5,625.83	42,084.09	42.08
28-Feb-15	0.0381	5,099.25	38,145.06	38.15
01-Mar-15	0.0386	5,166.56	38,648.57	38.65
02-Mar-15	0.0382	5,106.01	38,195.64	38.20
03-Mar-15	0.0376	5,027.14	37,605.60	37.61
04-Mar-15	0.0375	5,017.36	37,532.43	37.53
05-Mar-15	0.0744	9,942.28	74,373.40	74.37
06-Mar-15	1.3141	175,673.73	1,314,130.78	1,314.13
07-Mar-15	0.0839	11,213.31	83,881.40	83.88
08-Mar-15	0.0570	7,618.37	56,989.39	56.99
09-Mar-15	0.0570	7,618.37	56,989.39	56.99
10-Mar-15	0.1142	15,272.18	114,243.85	114.24
11-Mar-15	0.0536	7,168.37	53,623.16	53.62
12-Mar-15	0.8181	109,357.73	818,052.65	818.05
13-Mar-15	0.0897	11,986.78	89,667.35	89.67
14-Mar-15	0.0612	8,186.42	61,238.69	61.24
15-Mar-15	0.1427	19,081.04	142,736.11	142.74
16-Mar-15	0.1976	26,408.83	197,551.77	197.55
17-Mar-15	0.0782	10,451.87	78,185.45	78.19
18-Mar-15	0.0622	8,318.98	62,230.30	62.23
19-Mar-15	0.0564	7,539.33	56,398.08	56.40
20-Mar-15	0.0530	7,079.47	52,958.13	52.96
21-Mar-15	0.0481	6,434.74	48,135.23	48.14
22-Mar-15	0.0492	6,575.33	49,186.89	49.19
23-Mar-15	0.0502	6,706.83	50,170.57	50.17
24-Mar-15	0.0444	5,935.04	44,397.18	44.40
25-Mar-15	0.0450	6,010.29	44,960.11	44.96
26-Mar-15	0.0458	6,116.61	45,755.43	45.76
27-Mar-15	0.0402	5,372.85	40,191.73	40.19
28-Mar-15	0.0449	6,003.77	44,911.31	44.91
29-Mar-15	0.0447	5,979.37	44,728.83	44.73
30-Mar-15	0.0377	5,036.07	37,672.43	37.67
31-Mar-15	0.0418	5,593.43	41,841.76	41.84

## CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
01-Apr-15	0.0411	5,498.41	41,131.00	41.13
02-Apr-15	0.0370	4,941.74	36,966.79	36.97
03-Apr-15	0.0369	4,938.68	36,943.90	36.94
04-Apr-15	0.3508	46,890.64	350,766.36	350.77
05-Apr-15	1.4939	199,704.93	1,493,896.60	1,493.90
06-Apr-15	1.1313	151,238.15	1,131,339.91	1,131.34
07-Apr-15	0.0768	10,263.77	76,778.36	76.78
08-Apr-15	0.0545	7,290.89	54,539.62	54.54
09-Apr-15	0.2302	30,773.88	230,204.60	230.20
10-Apr-15	0.2160	28,877.88	216,021.52	216.02
11-Apr-15	0.1688	22,568.65	168,825.22	168.83
12-Apr-15	0.0579	7,745.64	57,941.41	57.94
13-Apr-15	0.0459	6,130.27	45,857.58	45.86
14-Apr-15	0.0457	6,110.97	45,713.25	45.71
15-Apr-15	0.0458	6,116.54	45,754.89	45.75
16-Apr-15	0.0458	6,125.05	45,818.54	45.82
17-Apr-15	0.0410	5,475.67	40,960.89	40.96
18-Apr-15	0.0403	5,386.57	40,294.36	40.29
19-Apr-15	0.0402	5,367.87	40,154.45	40.15
20-Apr-15	0.0369	4,936.62	36,928.49	36.93
21-Apr-15	0.0911	12,174.54	91,071.92	91.07
22-Apr-15	0.0458	6,125.68	45,823.29	45.82
23-Apr-15	0.0415	5,546.35	41,489.55	41.49
24-Apr-15	0.0369	4,936.62	36,928.49	36.93
25-Apr-15	0.0411	5,500.62	41,147.52	41.15
26-Apr-15	0.0370	4,949.77	37,026.87	37.03
27-Apr-15	0.0369	4,936.62	36,928.49	36.93
28-Apr-15	0.0386	5,165.67	38,641.93	38.64
29-Apr-15	0.0369	4,936.79	36,929.75	36.93
30-Apr-15	0.0369	4,936.74	36,929.38	36.93
01-May-15	0.0369	4,936.63	36,928.54	36.93
02-May-15	0.0369	4,936.62	36,928.49	36.93
03-May-15	0.0413	5,521.10	41,300.71	41.30
04-May-15	0.0369	4,936.62	36,928.49	36.93
05-May-15	0.0369	4,933.16	36,902.61	36.90
06-May-15	0.0369	4,936.62	36,928.49	36.93
07-May-15	0.0369	4,936.62	36,928.49	36.93
08-May-15	0.0369	4,936.62	36,928.49	36.93
09-May-15	0.0369	4,936.62	36,928.49	36.93
10-May-15	0.0413	5,526.19	41,338.80	41.34
11-May-15	0.0369	4,936.62	36,928.49	36.93
12-May-15	0.0369	4,936.62	36,928.49	36.93
13-May-15	0.0903	12,068.72	90,280.26	90.28
14-May-15	0.0395	5,286.40	39,544.99	39.54
15-May-15	0.0369	4,936.62	36,928.49	36.93
16-May-15	0.0369	4,936.62	36,928.49	36.93

## CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
17-May-15	0.0369	4,936.62	36,928.49	36.93
18-May-15	0.0369	4,936.62	36,928.49	36.93
19-May-15	0.0369	4,936.62	36,928.49	36.93
20-May-15	0.0369	4,936.62	36,928.49	36.93
21-May-15	0.0411	5,496.75	41,118.55	41.12
22-May-15	0.0369	4,936.62	36,928.49	36.93
23-May-15	0.0370	4,940.08	36,954.37	36.95
24-May-15	0.0369	4,936.79	36,929.73	36.93
25-May-15	0.0369	4,936.62	36,928.49	36.93
26-May-15	0.0369	4,933.16	36,902.61	36.90
27-May-15	0.0369	4,936.62	36,928.49	36.93
28-May-15	0.0477	6,380.83	47,731.95	47.73
29-May-15	0.0369	4,936.62	36,928.49	36.93
30-May-15	0.0369	4,936.62	36,928.49	36.93
31-May-15	0.0505	6,747.45	50,474.42	50.47
01-Jun-15	0.0369	4,933.16	36,902.61	36.90
02-Jun-15	0.0369	4,936.62	36,928.49	36.93
03-Jun-15	0.0369	4,936.62	36,928.49	36.93
04-Jun-15	0.0369	4,936.62	36,928.49	36.93
05-Jun-15	0.0369	4,936.62	36,928.49	36.93
06-Jun-15	0.0369	4,936.62	36,928.49	36.93
07-Jun-15	0.0369	4,933.16	36,902.61	36.90
08-Jun-15	0.0369	4,936.62	36,928.49	36.93
09-Jun-15	0.0369	4,936.62	36,928.49	36.93
10-Jun-15	0.0369	4,936.62	36,928.49	36.93
11-Jun-15	0.0414	5,540.76	41,447.74	41.45
12-Jun-15	0.0369	4,936.62	36,928.49	36.93
13-Jun-15	0.0369	4,936.62	36,928.49	36.93
14-Jun-15	0.0369	4,933.16	36,902.61	36.90
15-Jun-15	0.0369	4,936.62	36,928.49	36.93
16-Jun-15	0.0369	4,936.62	36,928.49	36.93
17-Jun-15	0.0369	4,936.62	36,928.49	36.93
18-Jun-15	0.0369	4,936.62	36,928.49	36.93
19-Jun-15	0.0369	4,933.16	36,902.61	36.90
20-Jun-15	0.2665	35,629.62	266,528.10	266.53
21-Jun-15	0.0595	7,950.34	59,472.68	59.47
22-Jun-15	0.2057	27,500.07	205,714.79	205.71
23-Jun-15	0.0369	4,936.62	36,928.49	36.93
24-Jun-15	0.0369	4,936.62	36,928.49	36.93
25-Jun-15	0.0369	4,933.16	36,902.61	36.90
26-Jun-15	0.0369	4,936.62	36,928.49	36.93
				<b>13,654.98</b>

148,087.21

Pounds

**74.04**

**Tons**

## CSO 108 CDS Facility

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
30-Dec-14	0.00	0.00	0.00
31-Dec-14	0.00	0.00	0.02
01-Jan-15	0.00	0.00	0.00
02-Jan-15	0.00	0.00	0.00
03-Jan-15	0.00	0.00	0.00
04-Jan-15	0.00	0.00	0.00
05-Jan-15	0.00	0.00	0.05
06-Jan-15	0.00	0.00	0.00
07-Jan-15	0.00	0.00	0.00
08-Jan-15	0.00	0.00	0.00
09-Jan-15	0.00	0.00	0.00
10-Jan-15	0.00	0.00	0.00
11-Jan-15	0.00	0.00	0.00
12-Jan-15	0.00	0.00	0.00
13-Jan-15	0.00	0.00	0.00
14-Jan-15	0.00	0.00	0.05
15-Jan-15	0.00	0.00	0.00
16-Jan-15	0.00	0.00	0.00
17-Jan-15	0.00	0.00	0.00
18-Jan-15	0.00	0.00	0.00
19-Jan-15	0.00	0.00	0.00
20-Jan-15	0.00	0.00	0.00
21-Jan-15	0.00	0.00	0.00
22-Jan-15	0.00	0.00	0.00
23-Jan-15	0.00	0.00	0.00
24-Jan-15	0.00	0.00	0.00
25-Jan-15	0.00	0.00	0.05
26-Jan-15	0.00	0.00	0.00
27-Jan-15	0.00	0.00	0.00
28-Jan-15	0.00	0.00	0.00
29-Jan-15	0.00	0.00	0.00
30-Jan-15	0.00	0.00	0.00
31-Jan-15	0.00	0.00	0.00
01-Feb-15	0.00	0.00	0.00
02-Feb-15	0.00	0.00	0.00
03-Feb-15	0.00	0.00	0.00
04-Feb-15	0.00	0.00	0.00
05-Feb-15	0.00	0.00	0.05
06-Feb-15	0.00	0.00	0.00
07-Feb-15	0.00	0.00	0.00
08-Feb-15	0.00	0.00	0.00
09-Feb-15	0.00	0.00	0.00
10-Feb-15	0.00	0.00	0.00

## CSO 108 CDS Facility

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
11-Feb-15	0.00	0.00	0.00
12-Feb-15	0.00	0.00	0.00
13-Feb-15	0.00	0.00	0.03
14-Feb-15	0.00	0.00	0.00
15-Feb-15	0.00	0.00	0.00
16-Feb-15	0.00	0.00	0.00
17-Feb-15	0.00	0.00	0.00
18-Feb-15	0.00	0.00	0.00
19-Feb-15	0.00	0.00	0.00
20-Feb-15	0.00	0.00	0.00
21-Feb-15	0.00	0.00	0.00
22-Feb-15	0.00	0.00	0.00
23-Feb-15	0.00	0.00	0.05
24-Feb-15	0.00	0.00	0.00
25-Feb-15	0.00	0.00	0.00
26-Feb-15	0.00	0.00	0.00
27-Feb-15	0.00	0.00	0.05
28-Feb-15	0.00	0.00	0.00
01-Mar-15	0.00	0.00	0.00
02-Mar-15	0.00	0.00	0.00
03-Mar-15	0.00	0.00	0.00
04-Mar-15	0.00	0.00	0.00
05-Mar-15	0.57	0.00	0.50
06-Mar-15	16.63	0.00	17.02
07-Mar-15	0.00	0.00	0.48
08-Mar-15	0.00	0.00	0.22
09-Mar-15	0.00	0.00	0.20
10-Mar-15	0.00	0.00	0.22
11-Mar-15	0.00	0.00	0.17
12-Mar-15	12.80	0.00	12.23
13-Mar-15	0.00	0.00	0.53
14-Mar-15	0.00	0.00	0.25
15-Mar-15	5.02	0.00	5.43
16-Mar-15	17.93	0.00	17.23
17-Mar-15	0.00	0.00	0.45
18-Mar-15	0.00	0.00	0.25
19-Mar-15	0.00	0.00	0.22
20-Mar-15	0.00	0.00	0.18
21-Mar-15	0.00	0.00	0.13
22-Mar-15	0.00	0.00	0.12
23-Mar-15	0.00	0.00	0.13
24-Mar-15	0.00	0.00	0.08
25-Mar-15	0.00	0.00	0.10

### CSO 108 CDS Facility

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
26-Mar-15	0.00	0.00	0.08
27-Mar-15	0.00	0.00	0.03
28-Mar-15	0.00	0.00	0.10
29-Mar-15	0.00	0.00	0.08
30-Mar-15	0.00	0.00	0.00
31-Mar-15	0.00	0.00	0.03
01-Apr-15	0.00	0.00	0.05
02-Apr-15	0.00	0.00	0.00
03-Apr-15	0.00	0.00	0.00
04-Apr-15	1.90	0.00	10.20
05-Apr-15	0.00	0.00	24.00
06-Apr-15	0.00	0.00	16.40
07-Apr-15	0.00	0.00	0.40
08-Apr-15	0.00	0.00	0.17
09-Apr-15	1.72	0.00	2.03
10-Apr-15	1.48	0.00	1.73
11-Apr-15	1.17	0.00	1.50
12-Apr-15	0.00	0.00	0.22
13-Apr-15	0.00	0.00	0.10
14-Apr-15	0.00	0.00	0.08
15-Apr-15	0.00	0.00	0.08
16-Apr-15	0.00	0.00	0.08
17-Apr-15	0.00	0.00	0.03
18-Apr-15	0.00	0.00	0.05
19-Apr-15	0.00	0.00	0.05
20-Apr-15	0.00	0.00	0.00
21-Apr-15	0.03	0.00	0.52
22-Apr-15	0.00	0.00	0.08
23-Apr-15	0.00	0.00	0.05
24-Apr-15	0.00	0.00	0.00
25-Apr-15	0.00	0.00	0.03
26-Apr-15	0.00	0.00	0.00
27-Apr-15	0.00	0.00	0.00
28-Apr-15	0.00	0.00	0.05
29-Apr-15	0.00	0.00	0.00
30-Apr-15	0.00	0.00	0.00
01-May-15	0.00	0.00	0.00
02-May-15	0.00	0.00	0.00
03-May-15	0.00	0.00	0.03
04-May-15	0.00	0.00	0.00
05-May-15	0.00	0.00	0.00
06-May-15	0.00	0.00	0.00
07-May-15	0.00	0.00	0.00

### CSO 108 CDS Facility

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
08-May-15	0.00	0.00	0.00
09-May-15	0.00	0.00	0.00
10-May-15	0.00	0.00	0.05
11-May-15	0.00	0.00	0.00
12-May-15	0.00	0.00	0.00
13-May-15	0.52	0.00	0.63
14-May-15	0.00	0.00	0.03
15-May-15	0.00	0.00	0.00
16-May-15	0.00	0.00	0.00
17-May-15	0.00	0.00	0.00
18-May-15	0.00	0.00	0.00
19-May-15	0.00	0.00	0.00
20-May-15	0.00	0.00	0.00
21-May-15	0.00	0.00	0.05
22-May-15	0.00	0.00	0.00
23-May-15	0.00	0.00	0.00
24-May-15	0.00	0.00	0.00
25-May-15	0.00	0.00	0.00
26-May-15	0.00	0.00	0.00
27-May-15	0.00	0.00	0.00
28-May-15	0.00	0.00	0.10
29-May-15	0.00	0.00	0.00
30-May-15	0.00	0.00	0.00
31-May-15	0.00	0.00	0.15
01-Jun-15	0.00	0.00	0.00
02-Jun-15	0.00	0.00	0.00
03-Jun-15	0.00	0.00	0.00
04-Jun-15	0.00	0.00	0.00
05-Jun-15	0.00	0.00	0.00
06-Jun-15	0.00	0.00	0.00
07-Jun-15	0.00	0.00	0.00
08-Jun-15	0.00	0.00	0.00
09-Jun-15	0.00	0.00	0.00
10-Jun-15	0.00	0.00	0.00
11-Jun-15	0.00	0.00	0.05
12-Jun-15	0.00	0.00	0.00
13-Jun-15	0.00	0.00	0.00
14-Jun-15	0.00	0.00	0.00
15-Jun-15	0.00	0.00	0.00
16-Jun-15	0.00	0.00	0.00
17-Jun-15	0.00	0.00	0.00
18-Jun-15	0.00	0.00	0.00
19-Jun-15	0.00	0.00	0.00



### CSO 108 CDS Facility

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
20-Jun-15	2.30	0.00	2.47
21-Jun-15	0.00	0.00	0.22
22-Jun-15	1.13	0.00	1.68
23-Jun-15	0.00	0.00	0.00
24-Jun-15	0.00	0.00	0.00
25-Jun-15	0.00	0.00	0.00
26-Jun-15	0.00	0.00	0.00