CAPITAL REGION™

WATER

MARCH 2016

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT REPORT

CALENDAR YEAR 2015

AND

SEMI-ANNUAL REPORT ON CONSENT DECREE IMPLEMENTATION

JULY 1, 2015 TO DECEMBER 31, 2015

FOR

CAPITAL REGION WATER

212 LOCUST STREET, SUITE 500
HARRISBURG, PA 17101

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Executive Summary

Executive Summary

This report fulfills the requirements of two separate regulatory reporting documents for Capital Region Water, which are listed below:

- Chapter 94 Annual Wasteload Management Report for 2015
- Semi-Annual Report on Consent Decree Implementation for July 1, 2015 to December 31, 2015

The Table of Contents should serve as a useful tool for the reviewers to locate the respective sections of the document that address specific reporting requirements.

Generally, the Chapter 94 Report contents are included in Sections 1, 2, and 3, as well as the Appendices. Enclosed herein with the Executive Summary is the *PADEP Ch. 94 Report Municipal Wasteload Management Annual Report Form.*

For the Semi-Annual Report, the required information is covered in Sections 1, 2, and 3 on the operation and maintenance of the facilities, since there is some overlap between the reporting requirements. Section 4 provides a more comprehensive assessment of the status of the Wet Weather Program implementation of the partial Consent Decree requirements.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2015

☒ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☐ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**Capital Region Water**	Permit No.:	**PA0027197**
Mailing Address:	**212 Locust Street, Suite 500**	Effective Date:	**1/1/2010**
City, State, Zip:	**Harrisburg, PA 17101**	Expiration Date:	**12/31/2014**
Contact Person:	**Jeffrey K. Bowra, P.E.**	Renewal Due Date:	**Pending - Renewal application submitted to DEP on 7/14/2014**
Title:	**Lead Engineer**	Municipality:	**City of Harrisburg**
Phone:	**717-525-7677**	County:	**Dauphin**
Email:	**jeff.bowra@capitalregionwater.com**	Consultant Name:	**n/a**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:
   ☒ Line graph for flows attached (**Appendix A**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☐ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:
   ☒ Line graph for organic loads attached (**Appendix B**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☐ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

   Refer to the attached report.

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

   Check the appropriate boxes:

   ☒ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Appendix L**)

   ☒ List summarizing each extension or project attached (**Appendix L**)

   ☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

   Comments:

   Maps are attached for contributing municipalities, as applicable. Refer to Appendix L for sewer extension information from the contributing municipalities.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

   Refer to the attached report.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☐ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

Refer to the attached report.

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations

☒ The collection system does contain pump stations (Number – **4**)

☒ Discussion of condition of each pump station attached (**see attached report**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

Refer to Appendix E.

9. Existing or Projected Overload.

Check the appropriate boxes:

☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☒ Annual CSO Report attached (**Attachment** K-3)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☒ Flow calibration report attached (**Attachment** D)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the 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 knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Jess Rosentel
Superintendent, Advanced WW Treatment Faciity
Capital Region Water

Signature

717-903-0767
Telephone No.

3-23-16
Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. 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 knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Jeffrey K. Bowra, P.E.	
Lead Engineer Capital Region Water	Signature
717-525-7677	3/28/2016
Telephone No.	Date

Section 1

Section 1

Wastewater Treatment Plant

1.A Introduction

The Annual Wasteload Management Report has been prepared and submitted to the Pennsylvania Department of Environmental Protection (DEP) by Capital Region Water (CRW) (formerly known as The Harrisburg Authority). This report has been prepared in accordance with Chapter 94, Municipal Wasteload Management, Title 25 Rules & Regulations. The report presents data from the previous five years and projects loading data for the next five years.

CRW's Harrisburg Advanced Wastewater Treatment Facility (AWTF) is permitted to discharge to the Susquehanna River under NPDES Permit No. PA0027197 issued on January 1, 2010 and which expired on December 31, 2014. CRW submitted an NPDES permit renewal application to DEP in July 2014, which is currently under review. CRW owns, operates, and maintains the wastewater collection, conveyance, and treatment facilities within the City of Harrisburg.

Data presented here was obtained from the following sources:

- 2015 Operating records and discharge monitoring reports
- 2015 AWTF Monthly Reports
- 2015 Chapter 94 Reports from Contributing Municipalities (Appendix M)

1.B Hydraulic Loading

A summary of the monthly hydraulic loading of the AWTF during 2015 is presented in Appendix A. The hydraulic loading data includes the average monthly flows and an annual flow. The 2015 annual average flow was 20.7 million gallons per day (mgd) and the maximum 3-month average was 23.5 mgd yielding a ratio of 1.13. The AWTF 2015 hydraulic loading data, included as Appendix A, contains the following information:

- Permitted Design Hydraulic Capacity (mgd)
- Monthly Average Daily Flow (mgd)
- Annual Average Daily Flow (mgd)
- Maximum 3-Month Average Daily Flow (mgd)
- Projected Annual Average Daily Flow (mgd)
- Projected Maximum 3-Month Average Daily Flow (mgd)

The permitted design hydraulic capacity flow for the AWTF is 45.0 mgd. As shown from the data included in the hydraulic loading table and graph, the AWTF did not experience monthly average flows greater than 45.0 mgd during 2015. As a result, no hydraulic overloads were recorded in

2015 as the monthly average flow at the AWTF did not exceed the hydraulic design capacity of 45.0 mgd for any month. Additionally, there is no projected hydraulic overload condition for the next five years, as the year 2020 projected annual average flow is 24.4 mgd and the projected maximum 3-month average daily flow is 28.4 mgd.

The projected annual average daily flow is based on the arithmetic mean of the previous 5-year annual average daily flow representing the base flow for the year 2016. The projected yearly hydraulic loadings are expected to increase between 70,000 to 120,000 gallons per day (each year) and account for the projected flow increases for the City of Harrisburg and contributing municipalities based on their 2015 Chapter 94 reports.

1.C Organic Loading

A summary of the monthly organic loading, as BOD_5, of the AWTF during 2015 is presented in Appendix B. The table includes average monthly and annual organic loading. The 2015 annual average was 25,581 pounds per day (lb/day) with a maximum 1-month maximum of 27,885 lb/day yielding a peak to annual average ratio of 1.09. The AWTF organic loading 2015 data, included as Appendix B, contains the following organic loading information:

- Permitted Average Daily Organic Loading (lb/day)
- Monthly Average Organic Loading (lb/day)
- Annual Average Daily Organic Loading (lb/day)
- Maximum 1-Month Average Organic Loading (lb/day)
- Projected Annual Average Daily Organic Loading (lb/day)
- Projected Maximum 1-Month Average Daily Organic Loading (lb/day)

The permitted average daily organic loading for the AWTF is 68,257 lb/day. The data in the organic loading table and graph shows the AWTF experienced no organic overloads during the previous five year period. Also, there is no projected organic overload condition projected for the next five years, as the year 2020 projected annual average organic loading is 24,231 lb/day and the projected maximum 1-month average daily organic loading is 28,334 lb/day.

The projected annual average daily organic loading is based on the arithmetic mean of the previous 5-year calculated BOD/mgd organic loading value multiplied by the projected yearly hydraulic flow increase to the AWTF, added to the previous year starting point load (lbs of BOD). The projected maximum 1-month average daily load is the projected annual average organic load (lbs of BOD) multiplied by the arithmetic mean of the previous 5-year ratio of maximum 1-month daily average loading to annual average loading value, which is 1.17 for year 2011-2015.

1.D Hydraulic & Organic Loading Projections

As indicated in Appendix C, the 2015 annual average flow to the AWTF was 20.7 mgd. Approximately 8.2 mgd was contributed by the City of Harrisburg and 12.5 mgd of the flow was from the six contributing municipalities. The flow consists of residential, non-residential, commercial, industrial, institutional, and governmental users. Given the inflow and infiltration

(I&I) removal and combined sewer separation projects in the contributing municipalities, the annual average flow to the AWTF for an average rainfall year is expected to increase only slightly in the future.

The organic waste strength of the sewerage received at the AWTF has averaged less than 130 mg/l (BOD_5) for the past five years which is typically considered low strength. There is no indication that the City of Harrisburg or the contributing municipalities will experience a noticeable increase in organic waste strength within the next five years.

1.E Overload Reduction

There are no projected hydraulic or organic overload conditions anticipated over the next five years.

1.F Maintenance & Construction

The maintenance division of the AWTF operates based on a proactive preventative maintenance program and a systematic replacement policy for inventory parts that has helped minimize downtime. The following were major projects completed at the AWTF in 2015:

- Completed upgrade to all plant PLC and SCADA software control systems.
- Installed one new pump, four new motors, and four new Variable Frequency Drives at the Settled Sewage Pump Station.
- Installed new effluent flow meter, motor control center, and two wet well level monitoring systems at the Settled Sewage Pump Station.
- Installed new overflow weirs in Thickener Number 2.
- Replaced the entire cross collection assembly on Primary Settling Tank Number 2.
- Completed demolition and retrofit of all internal mechanisms in all six Final Clarifiers.
- Replaced all six return activated sludge valves for associated Final Clarifiers.
- Completed retrofit of the Cryogenic Oxygen Distillation Facility.
- Completed cleanout of all three High Purity Oxygen Reactors, and replaced associated aerators, mixers and instrumentation.
- Replacement of 15kV electrical switchgear, duct banks and high-voltage cables.
- Installed new polymer system for enhanced chemical treatment in the Primary Settling Tanks.
- Installed a new scum pump in the Final Clarifier Pipe Gallery.
- Installed mechanical seals on all pumps for Waste Activated, Thickened, and Raw Sludge pumping systems.

- Installed new variable frequency drives for the Raw Sludge, Waste Activated Sludge, and Diluent Water pumping systems.

Construction of the AWTF Nutrient Removal Upgrade project commenced in March 2014 and is anticipated to be complete in 2016. Substantial completion is anticipated to be April 29, 2016.

The following are anticipated projects at the AWTF for 2016:

- Complete construction of the AWTF Nutrient Removal Upgrade project:
  - Commissioning of approximately 4.5 million gallons of new biological reactor tankage and numerous associated appurtenances to upgrade treatment capabilities for nitrogen removal.
- Replace the roofs on Primary Digesters No. 1 & 2
- Commence construction of a new headworks screening facility at the AWTF.
- Replace hydrogritter unit for grit removal in Primary Waste Sludge.
- Replace Scum Pump Number 2 for the Gravity Thickeners.
- Begin design of improvements to the Primary Settling Tanks.

The AWTF flow meter calibration reports are included in Appendix D.

The precipitation data for the AWTF rain gauge is included in Appendix K-4.

1.G Permit Exceedances

Capital Region Water experienced monthly average concentration exceedances for Ammonia-N each month from May through October 2015. In each instance the exceedance was attributed to the limitation of the current facility design. The exceedances were reported PADEP. The ongoing AWTF construction project for improved nutrient removal, which will be completed in Spring 2016, is expected to prevent exceedances such as these once the construction is complete.

1.H Secondary Bypass Events

Table 1.1 summarizes the AWTF secondary bypass events during this reporting period. All of the requested data outlined in the partial CD is included with two exceptions. CRW does not currently have a means of measuring the flow splits between the secondary treatment train and the secondary bypass, so this flow data is not available. Generally, the AWTF operators target a flow of 45 mgd through the secondary treatment train, with the balance going through the secondary bypass in accordance with the NPDES Permit. However, there is not adequate flow control or measurement to provide actual flow data. As part of the ongoing AWTF upgrade project, CRW will gain the ability to better control, monitor, and report flows into the facility and through the secondary treatment train vs. secondary bypass. The gray highlighting indicates events in the previous 6-month reporting period and the green highlighting indicates events in the current reporting period.

Blending at the AWTF is utilized as necessary for flows in excess of 45 mgd in accordance with the NPDES Permit.

Table 1.1: Summary of AWTF Secondary Bypasses

Bypass Start Date	Bypass Start Time	Bypass End Date	Bypass End Time	Bypass Duration (Hrs)	AWTF Influent Flow ADF (mgd)	AWTF Influent Flow PDF (mgd)	Rain (in)	Rain Start	Rain End	Rain Duration (hrs)
03/14/15	01:50	03/14/15	19:25	17.58	46.80	56.80	0.73	03/13/15 20:55	03/14/15 14:40	17.75
03/14/15	22:31	03/15/15	01:00	2.48	46.80	56.80	0.73	03/13/15 20:55	03/14/15 14:40	17.75
04/20/15	04:20	04/20/15	22:46	18.43	40.20	57.60	1.88	04/20/15 01:15	04/21/15 05:30	28.25
04/20/15	23:00	04/21/15	13:30	14.50	41.20	53.60	1.88	04/20/15 01:15	04/21/15 05:30	28.25
04/22/15	09:01	04/22/15	11:13	2.20	41.20	53.60	0.07	04/22/15 06:15	04/22/15 20:20	14.08
05/18/15	22:35	05/19/15	00:40	2.08	26.4	52.6	1.57	05/18/15 16:50	05/19/15 04:00	11.17
05/19/15	04:00	05/19/15	04:58	0.97	28.3	47.5	1.57	05/18/15 16:50	05/19/15 04:00	11.17
06/02/15	09:21	06/02/15	16:40	7.32	34.90	59.40	0.86	06/02/15 07:55	06/02/15 19:15	11.33
06/08/15	17:55	06/09/15	01:08	7.22	34.5	72.70	1.35	06/08/15 17:05	06/08/15 19:10	2.08
06/14/15	18:18	06/14/15	21:15	2.95	26.6	59.2	1.02	06/14/15 17:20	06/15/15 06:50	13.50
06/19/15	01:00	06/19/15	02:37	1.62	22.90	30.0	0.86	06/18/15 21:00	06/19/15 02:35	5.58
06/20/15	22:01	06/21/15	10:59	13.97	48.4	59.70	2.12	06/20/15 17:15	06/21/15 05:05	11.83
06/23/15	16:21	06/23/15	21:10	4.82	40.6	72.3	1.19	06/23/15 15:10	06/23/15 17:15	2.08
06/27/15	13:54	06/27/15	22:46	8.87	47.2	70.9	1.51	06/27/15 04:35	06/28/15 03:35	23.00
06/28/15	02:45	06/28/15	06:40	3.92	39.0	54.8	1.51	06/27/15 04:35	06/28/15 03:35	23.00
7/4/15	11:59	7/4/15	13:06	1.12	28.4	50.0	0.34	7/3/15 23:30	7/4/15 11:17	11.88
7/14/15	3:50	7/14/15	4:31	1.68	29.4	54.1	1.07	7/14/15 1:15	7/14/15 6:35	5.50
7/14/15	6:30	7/14/15	10:25	3.92	29.4	54.1	1.07	7/14/15 1:15	7/14/15 6:35	5.50
7/27/15	00:20	7/27/15	2:21	2.02	19.6	35.8	0.91	7/26/15 20:20	7/27/15 0:25	4.42
8/20/15	14:06	8/20/15	17:51	3.75	33.6	63.7	1.50	8/20/15 6:00	8/20/15 19:20	13.42

Bypass Start Date	Bypass Start Time	Bypass End Date	Bypass End Time	Bypass Duration (Hrs)	AWTF Influent Flow ADF (mgd)	AWTF Influent Flow PDF (mgd)	Rain (in)	Rain Start	Rain End	Rain Duration (hrs)
8/20/15	19:27	8/20/15	22:23	2.93	33.6	63.7	1.50	8/20/15 6:00	8/20/15 19:20	13.42
9/10/15	12:06	9/10/15	16:44	4.63	26.8	62.4	1.04	9/10/15 8:50	9/10/15 14:30	5.75
9/12/15	14:47	9/12/15	18:16	3.48	24.7	53.7	0.63	9/12/15 10:30	9/12/15 16:20	5.83
9/29/15	20:08	9/29/15	21:23	1.25	32.9	64	1.99	9/29/15 11:50	9/30/15 1:15	13.50
9/29/15	22:10	9/30/15	16:49	18.65	32.9	64	1.99	9/29/15 11:50	9/30/15 1:15	13.50
10/3/15	5:57	10/3/15	8:40	2.72	30.5	50.9	1.07	10/2/15 10:35	10/3/15 11:00	24.50
10/28/15	10:44	10/29/15	00:56	2.2	44.9	64.9	1.98	10/27/15 23:50	10/29/15 0:25	24.67
12/1/15	12:30	12/1/15	16:00	3.5	28.6	52.1	0.74	11/30/15 21:45	12/1/15 15:00	17.33
12/23/15	15:00	12/23/15	21:18	6.3	33.2	67.4	0.71	12/23/15 11:30	12/23/15 18:25	7.00
12/29/15	1:22	12/29/15	14:00	13.63	40.7	56.5	0.81	12/28/15 23:20	12/29/15 7:40	8.42

1.I Industrial Pretreatment Program

The Industrial Waste Pretreatment Program report as prepared by CRW's Industrial Waste Pretreatment Program Coordinator is attached as Appendix E. Refer to Appendix M for additional industrial waste information from the contributing municipalities.

1.J Contract Waste Hauling Program

The Contract Waste Hauling Program report as prepared by CRW staff is attached in Appendix F.

1.K Biosolids

In 2015 there were 46.9 million gallons of solids wasted from the thickeners to the anaerobic digesters. The liquid process control sludge was dewatered to an average of 20.4% solids through the use of two (2) belt filter presses. This resulted in 2,355 dry tons of biosolids hauled for disposal or beneficial reuse to the sites identified in Appendix G. Appendix H contains the biosolids analytical data.

Section 2

Section 2

Conveyance System & Pumping Stations

2.A Condition of Pumping Stations

There are four (4) sewage pumping stations in the City of Harrisburg maintained by CRW. The Front Street and Spring Creek Pump Stations convey flow to the AWTF. The other two pump stations are both located on City Island and convey flow to the Front Street Interceptor and eventually to the Front Street Pump Station. The service conditions for these pumps are provided in the following table.

Table 2.1: Pump Station Service Conditions

Pump Station	Design		2015		2017 (Projected)	
	Average (MGD)	Peak (MGD)	Average (MGD)	Peak [1] (MGD)	Average (MGD)	Peak [2] (MGD)
Front Street	21.6	43.2	13.7	33.1	13.9	33.7
Spring Creek	10.0	28.9	5.3	12.9	5.3	13.0
City Island - North	-	0.432	0.006	0.014 Total	0.006	0.014 Total
City Island - South	-	0.432				

Notes:

1. Peak day flow.
2. Projected peak based on 2-year growth and 2015 peaking factor.
3. 2015 City Island flows based on 2007 reported flows. Actual peak flows are not available.
4. There is no projected increase on City Island for 2016-2017.

There are three (3) influent flow streams to the AWTF: Spring Creek Pump Station, Front Street Pump Station, and the Borough of Steelton via the Trewick Street Pump Station. Due to the fact there is no effluent meter at the Front Street Pump Station, flow is calculated as follows:

Front Street P.S. Flow =

Metered AWTF Influent Flow – Metered Steelton Flow – Metered Spring Creek P.S. Flow

The calibration reports for the pump station flow meters are included in Appendix I.

The Front Street and Spring Creek Pump Stations are maintained by CRW operations staff. There were no major conveyance system projects completed in 2015.

The following are anticipated conveyance system projects for 2016:

- Commence construction of a complete upgrade to the Front Street Pump Station.

- Commence design of a complete upgrade to the Spring Creek Pump Station.
- Commence construction of improvements to sections of the Paxton Creek Interceptor and Asylum Run Interceptor.

All pump stations are monitored by CRW operations staff on a routine basis. In addition, all pump stations are provided with remote monitoring capabilities.

The Front Street and Spring Creek Pump Stations are nearing the end of their useful lives. CRW is currently in design for upgrades to the Front Street Pump Station and the construction contracts are expected to be advertised for bid in 2016. CRW plans to begin design for upgrades to the Spring Creek Pump Station in 2016.

2.B Condition of Interceptors

CRW operates and maintains a total of six (6) interceptor sewers. Conveyance of combined wastewater consists of three (3) of these interceptor sewers, including the Front Street Interceptor, Paxton Creek Interceptor, and Hemlock Street Interceptor. Each of these interceptor sewers receive combined wastewater from trunk lines, and each trunk line has an associated CSO regulator structure and outfall. Additionally, the Spring Creek Interceptor, Paxton Creek Relief Interceptor, and Asylum Run Interceptor convey sanitary wastewater. The Paxton Creek Relief Interceptor and Asylum Run Interceptor connect to the Paxton Creek Interceptor. The Front Street Interceptor and Paxton Creek Interceptor discharge to the Front Street Pump Station, while the Hemlock Street Interceptor and Spring Creek Interceptor discharge to the Spring Creek Pump Station. Appendix I summarizes the interceptors and force mains in the CRW system.

In 2014, CRW contracted Redzone Robotics to inspect all interceptor sewers using the Cleanflow sewer inspection system. The Cleanflow inspections by Redzone Robotics included closed circuit television (CCTV) video, NASSCO PACP data, sonar, and laser profiling. In early 2015, CDM Smith analyzed the inspection data, and provided recommendations for improvements along with preliminary schedules and costs. The following is a summary of findings and recommendations:

- Several sewers were found to have high risk structural issues including: holes, ovality, significant corrosion/ loss of concrete.
- Pipes with visible corrosion from CCTV video and more than 2 inches of concrete loss were recommended for rehabilitation.
- Several other Level 5 PACP defects such as Hole Void Visible (HVV) and Deformed (D) with longitudinal fractures (FL) in a circular reinforced concrete pipe (RCP) were identified. These pipe segments were recommended for rehabilitation in the next 10 years.
- For pipes that have moderate structural defects, but do not meet these levels of potential failure risk, CDM Smith recommended that they be re-inspected every 5 years.
- Similarly, CDM Smith reviewed the sonar data and developed a threshold of accumulated sediment that was significant enough to warrant cleaning. For these sewers it was found to be at least 15% maximum sediment depth in relation to full flow pipe depth anywhere in a

pipe segment or a sediment volume greater than 10 cubic feet of debris. In addition, if one or two pipe segments are between a long stretch of pipe that meets the threshold, these pipes should be included in the cleaning or repair program.

- CDM Smith recommended 33,534 linear feet of interceptor sewer for heavy cleaning, and 25,100 linear feet of interceptor sewer to be rehabilitated using CIPP (round pipes) or a polymer mortar spray (square pipes).

CRW publicly bid the interceptor cleaning project in September and October 2015. The contract was awarded to the contractor in January 2016, and cleaning activities will commence in May 2016.

2.C Condition of CSO Outfalls & Regulators

CRW operates and maintains 59 CSO regulator structures located along the Front Street, Paxton Creek, and Hemlock Street interceptor sewers, which ultimately direct combined wastewater (sanitary wastewater and stormwater) to the Advanced Wastewater Treatment Facility (AWTF). Wastewater Treatment Facility (AWTF). During dry weather conditions, the CSO regulator structures divert all of the combined wastewater from the trunk sewer lines to the interceptor sewers. During wet weather, the rate and volume of the sanitary and stormwater flow from the system of collector sewers increases significantly and can exceed the capacity of the downstream interceptor sewers and the treatment facility. When this occurs, the CSO regulator structures (sometimes called diversion structures) divert a controlled volume of flow to the interceptor, while untreated excess combined wastewater is discharged to receiving waters. The receiving waters are the Susquehanna River for regulator structures along the Front Street interceptor, and Paxton Creek (a tributary of the Susquehanna) for regulators along the Paxton Creek and Hemlock Street interceptors. In addition to the 59 CSO regulator structures and outfalls, there are two additional CSO outfalls at the Front Street pumping station and the Spring Creek pumping station. These are permitted emergency outfalls (CSO-002 and CSO-003) that only activate during a mechanical failure of the pump stations or if the station capacities are exceeded during large storms. Each regulator has a dedicated outfall, with one exception in which two regulators serve a common outfall. Therefore, there are a total of 60 outfalls (including those from the pumping stations).

The Weir Rehabilitation Report is included in Appendix K-1.

2.C.1 Operational Status of Major Overflow Points

There was no change in the operational status of the combined sewer overflows during 2015. The regulators and diversion chambers were inspected in 2013. They are also inspected on a daily basis by CRW field crews to ensure proper operation.

During the manhole inspections in Fall 2015, zoom cameras were utilized to inspect each flood chamber, gates, and outfall pipe. This information was analyzed for structural integrity as well as for operation and maintenance issues. The condition assessment findings are summarized in the February 10, 2016 *CSO Outfall Repair Early Action Project Schedule* submittal.

2.C.2 Number of Regulator Inspections

Each of the 59 regulator structures were inspected once per day during the year 2015. The total number of regulator inspections was 21,535 (59 regulators x 1 inspection/day x 365 days).

2.D CSO Discharges & Dry Weather Overflows

The Combined Sewer Overflow Report by Outfall is included in Appendix K-3. The data has been reported for 2015 for all of the outfalls. Additional data is included for the thirteen outfalls that had flow monitoring devices installed from August 2014 to August 2015.

Gauge adjusted radar rainfall (GARR) has been utilized for each sewershed to establish the start and end times of the rain events. The average daily flow (ADF) and peak daily flow (PDF) of influent flow to the AWTF on the dates of the CSO discharges is also presented. All of the requested data outlined in the partial CD is included with three exceptions. At this time, CRW does not have a means of determining the start and stop times for each discharge event. The total duration of each discharge is estimated by CRW field staff when they witness the discharge during their daily inspections. In cases when the discharge is not actually observed, but is determined to have occurred from the movement of the wooden block, CRW crews are unable to estimate the discharge or volume of the event. Once the H&H model is calibrated and validated (due April 1, 2016), then the H&H model will be applied with rainfall data to determine the start and stop times of each CSO discharge. The report in Appendix K-3, does not include the initials of the inspector(s); however, this data is retained on the original CSO regulator inspection reports and available upon request.

There were three dry weather overflows during this six month reporting period. The overflows occurred on August 27, 2015 at CSO-029, August 28, 2015 at CSO-052, and November 9, 2015 at CSO-039. The details for each DWO are provided in Appendix K-5. CRW has a proactive daily regulator inspection program to ensure that DWOs are prevented and detected as soon as possible. CRW removes accumulated material from the banks of the receiving waters. The DWOs were promptly resolved upon detection. The event on August 28, 2015 was detected by the flow monitoring equipment; it is suspected to have been caused from hydrant flushing in the area. The total estimated discharge volume from the three events was 68,263 gallons, which is a minimal quantity that would not have significantly impacted the Susquehanna River (receiving water).

2.D.1 Water Quality Impacts

Water quality impacts of the CSO facilities were evaluated in detail as part of The Harrisburg Authority's CSO Long Term Control Plan (LTCP) that was approved by DEP on February 1, 2006. Detailed sampling and modeling was conducted for the Susquehanna River. CRW is currently updating the LTCP. As part of the ongoing LTCP development, CRW prepared two technical memorandums that reviewed the available data on the water quality of the receiving waters. Complete details are available in the December 22, 2014 and July 27, 2015 submissions to the regulatory agencies, but a brief summary of key findings are provided below.

- The Susquehanna River pollutant of concern is bacteria, or fecal coliform. The Susquehanna is currently in attainment for recreational uses, however elevated levels of bacteria are associates with CSOs and present a potential threat in areas of the Susquehanna used for recreation.

- In the Susquehanna River, the fecal coliform plume generated by CRW CSOs remains in the nearshore portion of the river adjacent to the City of Harrisburg and persists in the near-shore area for only a few hours following a CSO event.
- The Paxton Creek pollutants of concern are sediment, bacteria, and dissolved oxygen/BOD.
- The 2008 TMDL Report for Paxton Creek reported significant DO sags due to discharges from the combined sewer system.
- The 2008 Paxton Creek TMDL Report indicates that sediment is the primary pollutant of concern in Paxton Creek, with about 95 percent attributed to stream erosion and the rest to wet weather discharges.
- Paxton Creek is not in attainment for recreational uses due to elevated bacteria levels.

2.D.2 Chronic or Continuous Discharges

Capital Region Water's CSO system experienced no chronic or continuous discharges for the year 2015.

Section 3

Section 3
Collection System

3.A Sewer System Extensions

There were no sewer extensions in 2015 to CRW's collection system. Refer to Appendix M for descriptions of sewer system extensions in the contributing municipalities.

3.B Condition of Collection System

Maintenance activities included flushing and cleaning of manholes, collection and conveyance lines as necessary. CRW responds to emergency sewer issues and repairs sewer mains as necessary. CRW also vacuumed and repaired, and rebuilt Stormwater inlets. Refer to the Collection System Activity Report included in Appendix J for a comprehensive list of maintenance activities completed on the collection system in 2015.

From July 1, 2015 to December 31, 2015 CRW's significant maintenance efforts within the collection system resulted in the following accomplishments:

- Cleaned 165 inlets
- Repaired 100 inlets
- Repaired 8 sinkholes
- Responded to 97 customer calls

Additionally, after the purchase of a CCTV truck and equipment in early 2015, CRW maintenance crews cleaned and televised approximately 3,328 linear feet of sewer from July through December 2015.

There are approximately 130 miles of collection sewers in the City of Harrisburg, of which approximately 80% is combined (wastewater and stormwater). The collection system conveys wastewater and stormwater runoff during wet weather periods. During wet weather events when the combined flow exceeds the dry weather peak flow capacity, there are regulators and diversion chambers which divert excess flow to either Paxton Creek or the Susquehanna River. Approximately 80% of the collection system was installed prior to 1940.

CRW continued the implementation of its GIS for the collection system in 2015. CRW completed an extensive inspection of the collection system manholes from July through December 2015 with zoom cameras. CRW will utilize this data to perform initial condition assessment and mapping of the collection system to allow for better management of the system and allowing for prioritization of maintenance and repairs. The data has been a valuable tool in better understanding the connectivity and sewershed boundaries.

CRW completed a CCTV inspection and evaluation of approximately 5,000 LF of 10-in to 24-in sanitary sewer in the vicinity of Arsenal Blvd. in December 2015. Based on the findings of the evaluation, CRW is proceeding with the rehabilitation design for portions of this sanitary sewer in 2016.

3.C Sanitary Sewer Overflows & Unauthorized Discharges

Table 3.1 summarizes the sanitary sewer overflows and unauthorized discharges that occurred during this reporting period. There were two manhole surcharge events, one within the separate sanitary sewer system and one within the combined sewer system, that were reported to PADEP in writing. The other events occurred on private property, however they were attributed to issues within the CRW collection system. Under the definitions and requirements within the partial CD, which was only approved and effective after this reporting period, those events should also be reported to PADEP. CRW recorded the data provided in Table 3.1 for these events, and for all future occurrences will report the discharge to PADEP in accordance with the partial CD requirements. The rows highlighted in gray are from the previous reporting period. The rows highlighted in green are from the current reporting period.

Table 3.1: Summary of Sanitary Sewer Overflows and Unauthorized Discharges (UD)

Date	Location	SSO or UD	Issue	Duration (Hrs)	Volume (Gallons)
1/14/15	2977 Heather Place	SSO	Basement Backup	Unknown	Unknown
1/15/15	372 Wyatt Street	SSO	Basement Backup	Unknown	Unknown
2/1/15	2817 Watson Street	SSO	Basement Backup	Unknown	Unknown
2/6/15	3014 N. 3rd Street	SSO	Basement Backup	Unknown	Unknown
3/14/15 *	2262 Kensington Street	SSO	Manhole Surcharge	3.5	250
4/9/15 *	25 North 20th Street	UD	Manhole Surcharge	0.5	5 - 10
4/10/15	1463 S. 13th Street	SSO	Basement Backup	Unknown	Unknown
4/26/15	234 N. 2nd Street	UD	Basement Backup	Unknown	Unknown
5/4/15	638 & 640 Harris Street	UD	Basement Backup	Unknown	Unknown
6/3/15	1148 Derry Street	UD	Basement Backup	Unknown	Unknown
6/26/15	2541 N. 4th Street	SSO	Basement Backup	Unknown	Unknown
7/14/15*	2235 Adrian Street	SSO	Manhole Surcharge	0.5	10
10/9/15*, 10/13/15*	Unnamed tributary to Asylum Run (from Calder St. & Reily St.)	SSO	Blockage, Manhole Surcharge	Unknown	Unknown

Date	Location	SSO or UD	Issue	Duration (Hrs)	Volume (Gallons)
10/27/15*, 10/28/15*	2653 Waldo Street	UD	Basement Backup	Unknown	Unknown
11/16/15*	2201 Kennsington Street	SSO	Blokage	Unknown	Unknown
12/20/15*	Unnamed tributary to Asylum Run (from Reily St.)	SSO	Blockage, Manhole Surcharge	Unknown	Unknown
12/28/15*	1527 S. 12th Street	SSO	Basement Backup	Unknown	Unknown

** Denotes an event that was reported to PADEP.*

Section 4

Section 4

Wet Weather Control Program Progress Report

4.A Partial Consent Decree Requirements & Deadlines

Capital Region Water entered into a partial Consent Decree (CD) with the Department of Justice (DOJ), United States Environmental Protection Agency (EPA), and the Pennsylvania Department of Environmental Protection (DEP) for the management of their combined, sanitary, and stormwater sewer systems, as well as their pumping stations and Advanced Wastewater Treatment Facility. The Date of Lodging for the partial CD was February 10, 2015. This date serves as the starting point for multiple deadlines within the partial CD, whereas other dates were independently established and in some cases precede the Date of Lodging. The partial CD became effective when it was entered by the Court on August 24, 2015.

This Semi-Annual Report fulfills the requirements of the partial CD outlined in the following sections:

- Section VII.A.43
- Appendix A

CRW has fulfilled the requirements during this reporting period from July 1, 2015 to December 31, 2015, as summarized in Table 4.1. The related tasks are highlighted in green within the table. Additionally, CRW completed the activities with completion deadlines prior to July 1, 2015, which are also summarized in Table 4.1. The related tasks are highlighted in gray within the table. Although the partial CD does not specifically define the quarterly report deadlines for the AWTF Construction project and the IFMMPP, those reports were submitted on the dates outlined in Table 4.1.

Table 4.1 also identifies future compliance deadlines stipulated by the partial CD. In some cases, as of the date of this report additional deliverables have been submitted and the related dates are included for a comprehensive assessment of CRW's progress. These dates are highlighted in blue in Table 4.1. Upcoming deadlines that will be included in the next Semi-Annual Report that have not been completed as of the date of this report are highlighted in yellow within Table 4.1.

Table 4.1: CRW Partial CD Deliverable Schedule and Tracking

Deadline	Deliverable	Section No.	Submission / Completion Date
	Initial Flow Metering and Monitoring Program Plan (IFMMPP)	V(E)(15)	7/1/2013
	IFMMPP Quarterly Reports	V(E) (15)(f)	1/29/15, 4/24/15, 7/29/15, 9/30/15
2/15/14	AWTF Upgrade Notice to Proceed	V(H)(32)(b)(i)	3/14/14
	AWTF Upgrade Quarterly Reports	V(H)(32)(b)(ii)	Monthly Reports
10/1/14	MS4 Individual Permit Application	V(D)(13)	10/1/14
10/31/14	Interceptor Structural Assessment	V(G)(31)(a)	10/31/14
11/28/14	Nutrient Credit Purchase	V(H)(32)(c)	11/3/14
12/30/14	Define Approach for LTCP Alternative Evaluation	V(E)(16)	12/23/14
12/31/14	Interim Resolution with City on Legal Authority Agreements	V(B)(10)	10/1/14
2/10/15	Date of Lodging of Consent Decree	IV(8)(p)	2/10/15
3/1/15	Interceptor Construction Schedule	V(G)(31)(a)	2/25/15
5/10/15*	CSO Activation Monitoring Pilot (CAMP) Study Plan	V(G)(31)(d)	5/8/15
8/1/15	Water Quality Modeling Plan (Demonstration Approach Only)	V(E)(16)	7/29/15
8/1/15	Long-Term Rainfall / Typical Year TM	V(E)(20)	7/29/15
8/10/15*	Nine Minimum Controls (NMC) Plan / O&M Manual	V(C)(11)	8/10/15
9/30/15	Semi-Annual Report / Meeting	VII(A)(43)	9/30/15
12/31/15	Upgrade Satellite Community Flow Meters	V(E)(15)(c)	8/21/14
2/10/16	CSO Outfall Structure Repair and Schedule	V(G)(31)(c)	2/10/16
2/10/16*	Capacity Assessment Plan	V(F)(30)(a)	2/10/16
3/16/16	AWTF Upgrade Construction Complete	V(H)(32)(b)(iii)	4/29/16
3/31/16	Semi-Annual Report / Meeting (with Chapter 94 Report)	VII(A)(43)	3/31/16
4/1/16	Sewer System H/H Model Report	V(E)(15)(h)	4/1/16
4/1/16	Sensitive Areas / Priority Areas TM	V(E)(19)	4/1/16
4/1/16	Financial Capability Analysis	V(E)(18)	4/1/16
8/10/16*	Annual Update of NMC Plan / O&M Manual	V(C)(11)(a) & V(C)(12)	
9/30/16	Semi-Annual Report / Meeting	VII(A)(43)	
12/1/16	CAMP Study Report	V(G)(31)(d)	
3/31/17	Semi-Annual Report / Meeting (with Chapter 94 Report)	VII(A)(43)	
4/1/17	Existing System Characterization	V(E)(21)	
4/1/17	Capacity Assessment Report with repair schedule	V(F)(30)(c)	
8/10/17*	Annual Update of NMC Plan / O&M Manual	V(C)(11)(a) & V(C)(12)	
9/30/17	Semi-Annual Report / Meeting	VII(A)(43)	
12/31/17	Paxton Creek Interceptor Priority Remedial Work	V(G)(31)(a)	
2/10/18*	Sinkhole Remediation	V(G)(31)(b)	

Deadline	Deliverable	Section No.	Submission / Completion Date
3/31/18	Semi-Annual Report / Meeting (with Chapter 94 Report)	VII(A)(43)	
4/1/18	Long Term Control Plan	V(E)(14)	
8/10/18*	Annual Update of NMC Plan / O&M Manual	V(C)(11)(a) & V(C)(12)	
9/30/18	Semi-Annual Report / Meeting	VII(A)(43)	
12/31/18	Asylum Run & Front Street Ph. I Interceptor Priority Remedial Work	V(G)(31)(a)	
3/31/19	Semi-Annual Report (with Chapter 94 Report)	VII(A)(43)	
8/10/19*	Annual Update of NMC Plan / O&M Manual	V(C)(11)(a) & V(C)(12)	
9/30/19	Semi-Annual Report / Meeting	VII(A)(43)	
3/31/20	Semi-Annual Report / Meeting (with Chapter 94 Report)	VII(A)(43)	
8/10/20*	Annual Update of NMC Plan / O&M Manual	V(C)(11)(a) & V(C)(12)	
12/31/20	Front Street Interceptor Priority Remedial Work	V(G)(31)(a)	

** Based on Date of Lodging of Consent Decree of February 10, 2015.*

4.B Compliance Table

In order to document the relationship between the work that CRW has completed and each line item within the partial CD, Table 4.2 outlines the following items:

- Partial CD Reference
- Description of Partial CD Requirement
- Deadline
- Progress to Date (7/1/15 to 12/31/15)
- Proposed Work (through 6/30/16)
- Compliance Status

The following color shading, similar to Table 4.1, has been applied to Table 4.2:

- Gray: completed in a previous reporting period
- Green: completed in the current reporting period
- Blue: already completed for the next reporting period
- Yellow: will completed during the next reporting period

CRW has completed all of the requirements of the partial CD that have deadlines prior to December 31, 2015. Additionally, CRW has made significant progress in developing programs and projects in order to fulfill the future requirements of the partial CD.

Table 4.2: General Description of Work Completed in Reporting Period and Planned for Next Reporting Period

Consent Decree Paragraph	Consent Decree Requirement	Deadline in Consent Decree / Submittal		Progress to Date (7/1/15 to 12/31/15)	Proposed Work (through 1/1/16 to 6/30/16)	Compliance Status
V.B	**LEGAL AUTHORITY**					
V.B.10	**Secure legal authority for enforcement, operation, and maintenance of sewer system and MS4, including:**	NMC Plan	8/10/2016	CRW entered into an "Intergovernmental Cooperation Agreement" with the City of Harrisburg to facilitate and assist in environmental compliance on 10/20/14. CRW conducted monthly meetings with the City to coordinate standard operation procedures (SOP), division of responsibility, coordinated enforcement, necessary revisions to City Code, and potential CRW Rules and Regulations.	CRW will continue to work with the City to prepare SOP, participate in coordinated inspection/enforcement, and revise legal mechanisms.	No Delay Anticipated
V.B.10.a	*inspect and regulate grease traps*					
V.B.10.b	*inspect and regulate non-domestic users*					
V.B.10.c	*implement MS4 permit and MCMs, including illicit discharge elimination and post construction storm water management*					
V.B.10.d	*maintain and repair connections to the sewer system and MS4*					
V.B.10	**Negotiate an interim resolution with the City with a schedule for the implementation of rules, regulations, ordinances, and other legal mechanisms. NMC Plan and MS4 Permit Application shall include similar schedules.**	CD	2/10/2015	CRW entered into an "Intergovernmental Cooperation Agreement" with the City of Harrisburg to facilitate and assist in environmental compliance on 10/20/14. CRW conducted monthly meetings with the City to coordinate standard operation procedures (SOP), division of responsibility, coordinated enforcement, necessary revisions to City Code, and potential CRW Rules and Regulations.	CRW will continue to work with the City to prepare SOP, participate in coordinated inspection/enforcement, and revise legal mechanisms.	Complete
V.C	**NINE MINIMUM CONTROLS**					
V.C.11	**Prepare an NMC Plan that evaluates and documents current NMC implementation and provides a schedule of actions to achieve compliance with the CSO Policy.**	CD	8/10/2015, with annual updates	CRW continued to review the NMC Plan and make note of recommended modifications.	CRW will continue to review the NMC Plan and make note of recommended modifications for the annual update. CRW will incorporate revisions to address EPA comments.	Complete, Updates Ongoing
V.C.11.a	**Conduct proper operation and regular maintenance of the conveyance and collection systems. Develop an operation and maintenance program. Prepare, update, and maintain an Operation & Maintenance Manual, which shall include:**	CD	8/10/2015, with annual updates	CRW continued to review the OMM and make note of recommended modifications.	CRW will continue to review the OMM and make note of recommended modifications for the annual update. CRW will incorporate revisions to address EPA comments.	Complete, Updates Ongoing
V.C.11.a.i	*A list of critical facilities and equipment.*	*NMC Plan*	4/1/2016	CRW's OMM Section 3 provides information on the critical facilities and equipment within the conveyance system and at the AWTF. CRW completed the collection system manhole inspections that will be utilized to identify the critical facilities in the collection system.	CRW will continue to review and update the list of critical equipment and facilities, specifically within the collection system.	Complete, Updates Ongoing
V.C.11.a.ii	*A program to divide the conveyance and collection systems into different sewersheds and catchments.*	*NMC Plan*	4/1/2016	CRW continued to develop the GIS mapping of their combined sewer, sanitary sewer, and separate storm sewer systems through completion of the collection system manhole investigation. As the GIS mapping was developed it was utilized to update the sewershed delineations.	The collection system manhole investigation will be analyzed to refine the sewershed and catchment delineations and support GIS mapping.	Ongoing, No Delays Anticipated
V.C.11.a.iii	*A program to locate, characterize, and map the diameter, length, elevation, construction material, and installation date of the collection and conveyance systems.*	*NMC Plan*	4/1/2016	CRW continued to develop the GIS mapping of their combined sewer, sanitary sewer, and separate storm sewer systems through completion of the collection system manhole investigation.	The collection system manhole investigation will be utilized to update the GIS database.	Ongoing, No Delays Anticipated
V.C.11.a.iv	*A program to evaluate the structural integrity and maintenance needs of the conveyance and collection systems through internal inspections and visual inspections at sinkholes and the ground surface with highest priority on critical areas.*	*NMC Plan*	4/1/2016	CRW publicly bid the interceptor cleaning contract to remove sediment deposits identified in an internal inspection conducted in 2014. Further inspection of the interceptors will be performed to verify cleaning effectiveness.	The collection system manhole investigation will be analyzed to identify area in need of further inspection or rehabilitation. CRW will proceed with the interceptor cleaning in May 2016 through the end of the year. CRW, under a contract with U.S. Army Corps of Engineers, will conduct inspections of the MS4 system, which is now approximately 30% complete.	Ongoing, No Delays Anticipated
V.C.11.a.v	*A program to inventory and inspect all force mains: documenting material, age, installation date, diameter, length, corrosion protection, and flow rates and develop a schedule for periodic evaluation*	*NMC Plan*	6/30/2016	CRW finalized the force main inspection procurement with PURE Technologies.	CRW plans to conduct the force main assessment during Spring 2016, followed by an engineering evaluation of inspection results.	Ongoing, No Delays Anticipated

Table 4.2: General Description of Work Completed in Reporting Period and Planned for Next Reporting Period

Consent Decree Paragraph	Consent Decree Requirement	Deadline in Consent Decree / Submittal		Progress to Date (7/1/15 to 12/31/15)	Proposed Work (through 1/1/16 to 6/30/16)	Compliance Status
V.C.11.a.vi	*A program to document citizen complaints and service requests and the associated corrective actions*	*NMC Plan*	10/31/2015, ongoing implementation	CRW started utilizing Cityworks on October 20, 2015 to document citizen complaints, service requests, and corrective actions.	CRW will continue to implement and optimize Cityworks for the management of complaints and service requests.	Complete, Ongoing Implementation, No Delays Anticipated
V.C.11.a.vii	*A program to identify, prioritize , and schedule remedial works determined from the findings of the investigations, evaluations, etc. required within the partial CD to prevent pipe failure, remove debris creating hydraulic bottlenecks, reduce I/I, and limit river intrusion.*	*NMC Plan*	Ongoing	CRW completed the collection system manhole and the outfall investigations.	CRW will review the findings of the collection system manhole inspection and outfall inspections to develop and prioritize additional remedial work.	Ongoing, No Delays Anticipated
V.C.11.a.viii	*A list that identifies and prioritizes equipment purchases*	*NMC Plan*	Ongoing	CRW identified key equipment purchases during the preparation of the 2016 budget.	CRW will identify key equipment purchases during the course of the year prior to budget preparation.	Ongoing, No Delays Anticipated
V.C.11.a.ix	*An O&M training program*	*NMC Plan*	Ongoing	CRW continued to provide training for staff and further develop their O&M training.	CRW will continue to provide training for staff and further develop their O&M training.	Ongoing, No Delays Anticipated
V.C.11.a.x	*Regularly scheduled regulator and outfall inspections to detect and document CSO discharge events*	*NMC Plan*	Ongoing	CRW continued to perform daily regulator inspections at each regulator. CRW also commenced the CAMP Pilot Study at four regulators with four different monitoring technologies.	CRW will continue doing daily inspections, while also continuing the CAMP Pilot Study.	Ongoing
V.C.11.a.xi	*A program with SOPs for the remedial, routine, preventative, emergency, and as-needed maintenance of the conveyance and collection systems, including*	*NMC Plan*	Ongoing	CRW continued to implement the practices outlined in the OMM, while also making notes of necessary improvements.	CRW will continue to implement the practices outlined in the OMM, while also making notes of necessary improvements.	Ongoing
V.C.11.a.xi.1	*Inspection and cleaning of catch basins to remove sources of gate blockages*	*NMC Plan*	Ongoing	CRW has an ongoing inlet cleaning and inspection program as detailed in OMM Section 4.7. From July 2015 through December 2015 CRW cleaned a total of 165 inlets.	CRW will continue to develop its inlet cleaning and maintenance program based on the findings of the ongoing system mapping and inspection work.	Ongoing
V.C.11.a.xi.2	*Inspection, cleaning, and maintenance of sewers and manholes*	*NMC Plan*	Ongoing	CRW inspects and cleans out key manholes on the interceptors and within the collection system on a regular basis as described in OMM Sections 4.4 and 4.6, respectively. CRW publicly bid the cleaning of 33,000 linear feet of interceptor during Fall 2015. CRW also inspected the collection system manholes from July 2015 through December 2015.	CRW will continue to develop its manhole cleaning and maintenance program based on the findings of the ongoing system mapping and inspection work. CRW will conduct further investigations of the collection system based upon the manhole inspection data. CRW will begin cleaning the interceptors in May 2016.	Ongoing
V.C.11.a.xi.3	*Inspection and maintenance of each pump station*	*NMC Plan*	Ongoing	CRW continues to inspect and maintain their pumping stations as outlined in CRW OMM Section 4.3.	CRW will maintain their existing practices.	Ongoing
V.C.11.a.xi.4	*Procedures to document maintenance problems in the collection and conveyance system*	*NMC Plan*	10/31/2015, refinement ongoing	CRW began the implementation of Cityworks for data management of maintenance problems on October 20, 2015.	CRW will continue to optimize Cityworks implementation, and use collected data to refine SOPs.	Complete, Ongoing, No Delays Anticipated
V.C.11.a.xi.5	*Identification of the cause of CSOs*	*NMC Plan*	Ongoing	CRW personnel continued their daily inspections of regulators to check for CSOs, document their findings, identify causes,and remedy overflows when possible. CRW also commenced the CAMP Pilot Study in November 2015.	CRW will continue daily regulator inspections and the CAMP Study to identify overflow causes and remedies.	Ongoing, No Delays Anticipated
V.C.11.a.xi.6	*Investigation of sinkholes where sewer system defects are suspected, and identification and repairs of sinkholes caused by the collection or conveyance system deterioration*	*NMC Plan*	Ongoing	CRW investigated and repaired sinkholes in accordance with OMM Section 4.9. Eight sinkholes were repaired.	CRW will continue to investigate and repair sinkholes in accordance with OMM Section 4.9, focusing on sinkholes identified prior to the CD Date of Lodging, as required under V.G.31.b, and any other sinkholes that emerge in critical locations.	Ongoing
V.C.11.a.xi.7	*Inspections of grease traps from facilities with food services*	*NMC Plan*	To be determined	CRW is working with the City Health Inspector to develop SOPs / legal mechanisms for coordinated food service inspections.	Development of legal mechanisms accompanied by surveillance and enforcement protocol to continue throughout reporting period.	No Delay Anticipated
V.C.11.a.xi.8	*Inspections of non-domestic customer facilities*	*NMC Plan*	To be determined	CRW is working with City Code Enforcement to develop SOPs/legal mechanisms for coordinated inspections / enforcement.	Development of legal mechanisms accompanied by surveillance and enforcement protocol to continue throughout reporting period.	No Delay Anticipated

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V.C.11.a.xi.9	*Annual planning and budgeting procedures to define the organization, staffing, and resources needed to properly operate and maintain the collection and conveyance systems.*	*NMC Plan*	Ongoing	CRW completed their 2016 budget in November 2015. CRW continues to hire additional staff.	CRW will continue to monitor their budget, plan for additional projects, and hire key additional staff.	No Delay Anticipated
V.C.11.a.xi.10	*Investigation and minimization of sources of floatables, solids, or other materials that cause blockages and/or reduce the hydraulic capacity of the conveyance and collection Systems.*	*NMC Plan*	Ongoing	CRW conducts daily regulator inspections and cleans out inlets to minimize solids and floatables. CRW is working with City Code Enforcement to develop SOPs/legal mechanisms to identify / control sources of solids/floatables.	CRW will continue their current practices and coordination with the City.	Ongoing
V.C.11.b	**Maximize use of storage in the collection system, by performing the following:**					
V.C.11.b.i	*Investigate the condition and effectiveness of existing measures to prevent river intrusion in the combined sewer system and perform necessary maintenance or replacements to prevent river intrusion*	*CD*	2/10/2016	CRW inspected the outfalls and related gates during Fall 2015.	CRW provided the Outfall Structure Repair and Schedule on 2/10/16.	Complete
V.C.11.b.ii	*Conduct an engineering study to identify priority remedial work to maximize in-pipe storage*	*NMC Plan*	4/1/2018	CRW continued to develop and calibrate an H&H model of its system.	Development and calibration of H&H model will proceed toward 4/1/2016 CD deadline. Engineering study will be initiated upon completion of H&H model calibration.	No Delay Anticipated
V.C.11.b.iii	*Identify portions of the combined sewer system that accumulate material and identify frequency for routine cleaning*	*NMC Plan*	Ongoing	CRW publicly bid the interceptor cleaning contract, which includes further inspection of the interceptors. CRW also completed the collection system manhole inspections to identify areas for further investigation and cleaning.	CRW will begin the interceptor cleaning project in May 2016. In addition, the collection system manhole inspection data will be reviewed to identify and prioritize portions of the collection system for further investigations and/or cleaning.	Ongoing, No Delays Anticipated
V.C.11.b.iv	*Identify locations where river intrusion occurs through cracked and damaged outfall pipes and develop a priority list and schedule for monitoring and repair/replacement*	*CD*	2/10/2016	CRW inspected the outfalls and related gates during Fall 2015.	CRW provided the Outfall Structure Repair and Schedule on 2/10/16.	Complete
V.C.11.c	**Maximize flow to the AWTF through the following measures:**					
V.C.11.c.i	*Utilize hydraulic modeling/engineering studies to evaluate, recommend, and support implementation of simple modifications to the conveyance system to maximize flow to the AWTF, including the following procedures:*	*NMC Plan*	4/1/2018	CRW continued to develop and calibrate an H&H model of its system. CRW continiued the design of upgrades to the Front Street Pumping Station.	CRW will continue to develop the H&H model, proceed with the Front St. Pumping Station design, and initiate design of Spring Creek Pump Station Improvements. Engineering study will be initiated upon completion of H&H model calibration.	Ongoing, No Delays Anticipated
V.C.11.c.i.1	*Assuring proper performance of all sewers, structures, and equipment in the Combined Sewer System and AWTF;*	*NMC Plan*	4/1/2018	CRW's ongoing O&M program detailed in the OMM was employed to ensure proper operation, and completed collection system field investigations to identify operational issues.	Continue to operate the system according to the OMM. Review issues idnetified by the collection system inpsection and set priorities for further investigation or renewal.	Ongoing
V.C.11.c.i.2	*Adjusting CSO diversion weirs or other devices to the degree possible without causing in-system surcharge or Building/Private Property Backups to reduce CSO activity;*	*NMC Plan*	4/1/2018	Continued to develop/calibrate the H&H Model.	CRW will continue to develop the H&H model which will be utilized in the future to evaluate possible control adjustments.	No Delays Anticipated
V.C.11.c.i.3	*Evaluating the benefits of any inflow and infiltration (I&I) reduction projects.*	*NMC Plan*	4/1/2018	CRW completed the collection system manhole inspections, which will be utilized to identify sources of high I&I. CRW began flow monitoring work within the sanitary sewer system to quantify I&I.	CRW will continue flow monitoring work within the sanitary sewer system to quantify I&I and continue to review collection system inspection data to identify potential sources.	No Delays Anticipated

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V.C.11.c.ii	*Annually review and revise flow maximization (to AWTF) procedures*	*NMC Plan*	March 31, Annually	During preparation of the Annual Chapter 94 Report CRW evaluated the AWTF flows. CRW continued with the construction for the AWTF upgrades.	CRW will evaluate AWTF flows during preparation of the Annual Chapter 94 Report. AWTF construction will be completed and the facility will be able to better maximize flows through the facility.	Ongoing
V.C.11.d	**Eliminate dry weather overflows. Report DWOs by phone to PADEP within 4 hours and writing within 5 days of becoming aware it. Report the following in the semi-annual report.**	*NMC Plan*	Ongoing	CRW reports all dry weather overflows in accordance with the guidelines. DWOs observed during this reporting period are summarized elsewhere in this semi-annual report.	CRW will continue their current practices.	Ongoing
V.C.11.d.i	*The number of reported Dry Weather Overflow events that have occurred;*	*NMC Plan*	Ongoing	There were three DWOs during the reporting period.	CRW will continue their current practices.	Ongoing
V.C.11.d.ii	*A detailed description of the causes of Dry Weather Overflows, and the actions that CRW has taken and will take in the future to prevent recurrence;*	*NMC Plan*	Ongoing	There were blockages that were removed in two instances, and the third event is believed to be the result of hydrant flushing.	CRW will continue their current practices.	Ongoing
V.C.11.d.iii	*The existing methods used for detecting Dry Weather Overflows and their efficacy;*	*NMC Plan*	Ongoing	CRW conducts daily inspections as detailed in OMM Sections 4.1 and 4.2.	CRW will continue their current practices.	Ongoing
V.C.11.d.iv	*The remedial measures taken for pollution deposited in Receiving Waters or onto the stream banks after a Dry Weather Overflow;*	*NMC Plan*	Ongoing	CRW removes waste material that has accumulated on the stream banks, if applicable.	CRW will continue their current practices.	Ongoing
V.C.11.d.v	*The environmental impacts of Dry Weather Overflow events.*	*NMC Plan*	Ongoing	The impact to the Susquehanna River was negligible due to the low volume and short duration these discharges.	CRW will continue their current practices.	Ongoing
V.C.11.e	**Operate and maintain the combined sewer system to control solid and floatable materials discharged from CSO outfalls and remove these materials from the stream banks. Conduct annual evaluations of past performance and implement corrective actions.**	*NMC Plan*	4/1/2018	CRW crews remove materials from the stream banks.	CRW will conduct an evaluation of their past performance, and assess a range of corrective actions during preparation of its LTCP.	No Delays Anticipated
V.C.11.f	**Implement public notification procedures set forth in the NMC Plan.**	NMC Plan	8/10/2016	CRW began developing a Signage / Public Notification Plan.	CRW will develop a temporary Signage Plan and install temporary signs at all outfalls without a sign by Memorial Day, per EPA direction. CRW will review performance of tempoarary signs, evaluate other notification methods, and seek public comment on notification protocol to incorporate into permanent Signage / Notification Plan, with submittal now expected by 12/31/16 to accommodate piloting.	Delay plan submittal to 12/31/16
V.C.11.f.i	*Install and maintain signs at each CSO outfall that notify and alert the public.*	NMC Plan	8/10/2016			
V.C.11.f.ii	*Install warning signs at public stream access points that notify and alert the public*	NMC Plan	8/10/2016			
V.C.11.f.iii	*Develop written procedures to provide the public with information concerning CSO discharge, impacts on water quality, and CSO locations*	*NMC*	8/10/2016			
V.C.11.f.iv	*Distribute CSO pamphlets for public education*	*NMC*	Ongoing	CRW continued development of their public outreach and notification program, as described in NMC Plan Section 7.3.	CRW will seek public comment on notification protocol to incorporate into permanent Signage / Notification Plan, with submittal now expected by 12/31/16 to accommodate piloting..	Delay plan submittal to 12/31/16
V.C.11.f.v	*Evaluate and document CSO public education programs and community response and develop follow-up plans*	*NMC*	Ongoing	CRW continued development of their public outreach and notification program, as described in NMC Plan Section 7.3.		
V.C.11.f.vi	*Investigate and document public involvement*	*NMC*	Ongoing	CRW continued to increase their public involvement activities, including: monthly trash cleanups, presentations at community events, and other items detailed in the narrative.		
V.C.11.f.vii	*Consider implementing email and/or text message public notification systems*	*NMC*	8/10/2016	CRW continued development of their public outreach and notification program, as described in NMC Plan Section 7.3.		

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V.C.11.g	**Utilize the following phased approach to characterize CSO impacts and control efficacy:**					
V.C.11.g.i	*During Phase I, employ visual inspections (once per day at each regulator and outfall) and other simple methods, supplemented by characterization and monitoring efforts, to determine the occurrence and apparent impacts of CSOs.*	*CD*	12/31/2016	CRW inspects the regulator and outfalls daily. Each inspection is documented on an Interceptor Service Report as outlined OMM Sections 4.1 and 4.2.	CRW will continue to conduct daily inspection of the regulators and outfalls.	Ongoing
V.C.11.g.ii	*During Phase II, utilize a combination of visual inspections and technology (determined by CAMP Study) to accurately measure the volume, duration, and start/stop time of all CSO discharges.*	*CD*	To be determined	CRW began implementing the CAMP Study in November 2015.	CRW will continue with the CAMP Study.	No Delay Anticipated
V.C.11.g.iii	*During Phase III, implement the approved post-construction monitoring program.*	*CD*	To be determined	No activity this period.	No activity anticipated this period.	No Delay Anticipated
V.C.11.g.iv	*During all Phases, record total daily rainfall in at least five minute increment.*	*CD*	Ongoing	CRW continued to monitor rainfall at the eight rain gauges.	CRW will continue to monitor rainfall at the eight rain gauges.	Ongoing
V.C.11.g.v	*CRW shall document the procedures used to collect data for CSO overflow events and maintain a record of CSO activity and rainfall.*	*NMC Plan*	Ongoing	CRW documents all their procedures related to regulator and outfall inspections and the occurrence of CSOs on the interceptor service reports. Rainfall is also recorded as noted above. The data is compiled in the Combined Sewer Overflow Report, which is included with the Semi-Annual Report.	CRW will continue to monitor and document each CSO event. The information will be compiled for the next Semi-Annual Report.	Ongoing
V.C.11.g.vi	*Once the H&H model is developed and calibrated it shall be utilized to characterize and report CSO discharges. Rainfall data shall continue to be collected from at least six rainfall gauges, as well as GARR.*	*CD*	4/1/2016	CRW has been monitoring rainfall for the 18 months at eight rain gauge sites. CRW has been employing GARR in accordance with these requirements. CRW is also developing and calibrating the initial H&H Model.	CRW will continue to monitor rainfall from the eight rain gauges and GARR. CRW will also complete calibration of the H&H model by 4/1/16 and begin to apply it to estimate CSO discharges.	No Delay Anticipated
V.C.12	**On an annual basis, evaluate the efficacy of NMC Plan and revise it in redline format.**	CD	Annual	CRW documented recommendations for revisions in the first annual update of the NMC Plan scheduled for August 2016.	CRW will continue to document recommendations for revisions in the first annual update of the NMC Plan scheduled for August 2016.	No Delay Anticipated
V.D	**MINIMUM CONTROL MEASURES - STORMWATER DISCHARGES**					
V.D.13	**Submit an MS4 Individual Permit application with a Stormwater Management Plan with procedures and a schedule for complete implementation of the MCMs, including:**	CD	10/1/2014	CRW collaborated with two neighboring municipalities to employ a watershed based approach for the Paxton Creek TMDL Strategy, which was be completed by December 31, 2015.	CRW will begin implementing the TMDL Strategy, including implementation of early action projects and preparation of TMDL Design Details Plan by September 2017. Anticipate further guidance from PADEP on MS4 permit requirements during reporting period.	Complete, Ongoing TMDL Strategy Updates
V.D.13.a	*Develop a map of the MS4 with all the outfalls identified; develop a list of priority areas for illicit discharge detection and conduct inspections/screenings; and report on illicit discharge detection and elimination efforts.*	SWM Plan	First Year of MS4 Permit Coverage	CRW continued with field investigations to identify outfalls and map the MS4 system. The findings will be utilized to update the MS4 outfall map.	CRW is continuing with field investigations to identify outfalls and map the MS4 system. The findings will be utilized to update the MS4 outfall map.	Ongoing, No Delays Anticipated
V.D.13.b	*Develop and implement a program for reviewing post-construction storm water runoff BMPs, inspecting BMP construction and maintenance, and maintaining an inventory of postconstruction BMPs.*	SWM Plan	First Year of MS4 Permit Coverage	CRW has been conducting stormwater management plan reviews through coordination with the City of Harrisburg. CRW has also developed draft rules and regulations for stormwater management. CRW is also pursuing an MOU with the Dauphin County Conservation District.	CRW will work with the City on plan reviews and necessary changes to legal mechanisms.	Ongoing, No Delays Anticipated

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V.E	**LONG TERM CONTROL PLAN DEVELOPMENT**					
V.E.14	**Complete a revised and updated LTCP, including schedules, deadlines, and timetables for remedial measures to meet the following goals:**	CD	4/1/2018	Provided under Progress to Date for V.E.15 through V.E.26	Provided under anticipated activities for V.E.15 through V.E.26	Ongoing, No Delays Anticipated
V.E.14.a	*Bring all CSO discharge points into full compliance with the technology based and water quality-based requirements of the CWA; and*					
V.E.14.b	*minimize the impacts of CSOs on water quality, aquatic biota, and human health.*					
V.E.15	**Implement the final IFMMPP and complete the following activities:**					
V.E.15.a	*Map and inspect the condition of the combined and separate sanitary sewer systems;*	NMC Plan	4/1/2016	GIS mapping of the conveyance system is complete. The collection system manhole investigation was completed. The data is utilized to revise the connectivity of the pipe networks in GIS and refine sewershed boundaries.	The collection system manhole investigation data will be reviewed and continue to be utilized to revise the connectivity of the pipe networks in GIS and refine sewershed boundaries.	Ongoing
V.E.15.b	*Divide the combined and separate sanitary sewer systems into sewersheds and catchments;*					
V.E.15.c	*Upgrade the flow meters measuring from the satellite communities and continue to utilize the upgraded meters throughout the CD;*	CD	12/31/2015	CRW updated the flow meters at the commencement of the IFMMPP and continued to utilize the upgraded flow meters, per memorandum submitted to EPA/PADEP on 12/31/15.	CRW will continue to utilize the upgraded flow meters.	Complete
V.E.15.d	*Install, utilize, and maintain at least six continuously recording rainfall gauges and procure GARR;*	CD	Ongoing	CRW has been monitoring rainfall since August 2014 at eight rain gauge sites. CRW has been employing GARR in accordance with these requirements.	CRW will continue to monitor rainfall from the eight rain gauges and employ GARR.	Complete, Ongoing
V.E.15.e	*Install flow monitoring devices on major trunk sewers tributary to thirteen critical CSO outfalls and on nine interceptor sites, which are both identified in the IFMMPP, and monitor and collect data for a minimum of 12 months;*	CD	Ongoing, complete by 11/1/2015	CRW completed 12 months of flow monitoring at 13 trunk sewer sites and 9 interceptor sites, and continues to monitor 8 interceptor sites and four trunk sewer sites.	CRW will continue to monitor 8 of the interceptor sites, as well as the four trunk sewer sites where the CAMP equipment is installed.	Complete, Ongoing
V.E.15.f	*Prepare quarterly technical memoranda documenting the results and quality of the flow monitoring data;*	CD	10/1/2014 through 10/1/2015	CRW submitted the last two quarterly reports. CRW received confirmation from the Plaintiffs that the quality of the data is adequate to complete monitoring and support calibration.	No reporting activity anticipated.	Complete
V.E.15.g	*Utilize rainfall and flow monitoring data to revise, calibrate, and validate the H&H model using the EPA SWMM 5 modeling platform. H&H model shall include the entire conveyance system, combined collection system trunk sewer greater than 42-in in diameter, and an additional 10% of the system, which shall include 15-20 percent of the combined sewer system and portions of the separate sanitary sewer system;*	CD	4/1/2016	CRW continued to develop, calibrate, and validate the H&H model.	CRW will continue to develop, calibrate, and validate the H&H model for the 4/1/16 submission.	Ongoing, No Delay Anticipated
V.E.15.h	*Prepare a Sewer System H&H Model Report with the requirements outlined in the CD; refer to the CD.*	CD	4/1/2016	CRW outlined the approach for the model calibration which was presented to EPA and DEP on 1/12/16.	CRW will continue to develop the H&H model and prepare the H&H Model Report by the 4/1/16 submission.	No Delay Anticipated
V.E.16	**Identify pollutants of concern for each receiving water and evaluate the LTCP approach options (presumptive or demonstration) for each receiving water**	CD	12/31/2014	No action required during this reporting period.	No activity anticipated this period.	Complete
V.E.17	**Prepare a Water Quality Modeling Plan if the demonstration approach will be utilized in one or more receiving waters, which shall include the following:**					
V.E.17.a	*Water quality modeling software to be employed;*					

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V.E.17.b	*Model configuration, including reaches to be modeled and segmentation and boundary conditions;*	CD	8/1/2015	CRW submitted a Water Quality Monitoring Plan on July 29, 2015 describing its approach to future water quality evaluations to support development of the LTCP.	No activity anticipated this period.	Complete
V.E.17.c	*Calibration and validation, including events and data to be employed, quantitative and qualitative calibration criteria, and utilization of H&H Model outputs;*					
V.E.17.d	*Use of the Water Quality Model to evaluate Typical Year in-stream conditions for each identified pollutant of concern;*					
V.E.17.e	*Schedule for model development and implementation, including integration into LTCP development consistent with other dates required pursuant to this Consent Decree.*					
V.E.18	**Prepare a Financial Capability Analysis, including sewer rate setting, service population definition, and median household income.**	CD	4/1/2016	CRW reviewed and compiled information for the Financial Capability Analysis. CRW updated the financial model.	CRW will complete the Financial Capability Analysis by 4/1/16.	Ongoing, No Delay Anticipated
V.E.19	**Prepare a report that addresses sensitive and priority areas in the receiving waters with documentation of inquiries to state and federal agencies.**	CD	4/1/2016	CRW reviewed and compiled information for the Sensitive/Priority Areas submission.	CRW will complete the Financial Capability Analysis by 4/1/16.	Ongoing, No Delay Anticipated
V.E.20	**Prepare a report on the statistical evaluation of long-term rainfall patterns and the identification of a typical year for the LTCP.**	CD	8/1/2015	The typical year memorandum was submitted on 7/29/15.	No activity anticipated this period.	Complete
V.E.21	**Prepare an Existing System Characterization that includes the following:**					
V.E.21.a	*Utilize the H&H model to characterize CSO discharge events based on an inter-event period of six hours;*					
V.E.21.b	*Incorporate the results of the investigation of priority and sensitive areas;*	CD	4/1/2017	No action required during this reporting period.	No activity anticipated this period.	No Delay Anticipated
V.E.21.c	*Characterize the current water quality in receiving waters in which the demonstration approach is utilized and identify efforts to identify pollutants of concern;*					
V.E.22	**Conduct an alternatives evaluation that consists of (1) identification of feasible CSO control technologies, (2) evaluation of a wide range of CSO control alternatives and sizes of each, (3) selection of a suite of proposed CSO controls to comply with the CWA. Focus on controls for outfalls with sensitive areas, priority areas, high frequency, or greatest volume.**	CD	4/1/2018	No activity this period.	No activity anticipated this period.	No Delay Anticipated
V.E.22.a	*Assess the technical feasibility of the following control technologies: source controls, collection system controls, storage technologies, and treatment technologies. Separation and deep tunnel storage shall be included.*	CD	4/1/2018	No action required during this reporting period.	No activity anticipated this period.	No Delay Anticipated
V.E.22.b	*Identify a broad range of CSO controls for detailed evaluation; refer to CD for details.*	CD	4/1/2018	No action required during this reporting period.	No activity anticipated this period.	No Delay Anticipated
V.E.22.c	*Consider GI alternatives as part of the control alternatives; refer to CD for details.*	CD	4/1/2018	CRW continued to develop the Green Infrastructure Plan.	Continue to develop CRW's Green Infrastructure Plan	No Delay Anticipated
V.E.23	**Analyze the LTCP impact on environmental justice populations.**	CD	4/1/2018	No action required during this reporting period.	No activity anticipated this period.	No Delay Anticipated
V.E.24	**The LTCP shall include these specific elements; refer to CD for details.**	CD	4/1/2018	No action required during this reporting period.	No activity anticipated this period.	No Delay Anticipated

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V.E.25	**Any proposal to modify the LTCP development schedule or the content of the deliverables shall follow the procedures in Section XIX.**	CD	To be determined	No action required during this reporting period.	No activity anticipated this period.	No Delay Anticipated
V.E.26	**After approval the LTCP shall be incorporated into and be an enforceable part of a modification to this CD or a second CD.**	CD	To be determined	No action required during this reporting period.	No activity anticipated this period.	No Delay Anticipated
V.F	**SEPARATE SANITARY SEWER SYSTEM COMPLIANCE**					
V.F.27	**Sanitary sewer overflows are prohibited.**	CD	Noted			
V.F.28	**Report SSOs by phone to PADEP within 4 hours and writing within 5 days of becoming aware it.**	CD	Ongoing	CRW reported all SSOs within the collection system, as reported elsewhere in the semi-annual report.	CRW will begin reporting SSOs on private property that are caused by the CRW system.	Ongoing
V.F.29	**Satisfy the following compliance requirements in the operation and maintenance of the separate sanitary sewer system:**					
V.F.29.a	*The OMM shall address the O&M of the separate sanitary sewer system;*	CD	8/10/2015	CRW submitted the OMM on 8/1/15. CRW's operation and maintenance procedures within the separate sanitary portion of the collection system are consistent with those in the combined portion of the collection system, as outlined in OMM Section 4.6.	CRW will continue to review the OMM and make note of recommended modifications for the annual update.	Complete, Updates Ongoing
V.F.29.b	*The H&H model shall include the portions of CRW's conveyance system that receive flow from the separate sanitary sewer system and portions of the separate sanitary sewer system that have experienced chronic capacity-related SSOs;*	CD	4/1/2017	CRW continued to develop, calibrate, and validate the H&H model of the conveyance system and gather field data to extend model into separate sanitary sewer system.	CRW will finalize calibration of the H&H model of the conveyance system by 4/1/16, and incorporate major elements of the separate sanitary sewer system as data becomes available.	Ongoing, No Delay Anticipated
V.F.29.c	*The H&H model shall accurate characterize the dry and wet weather flows from the separate sanitary sewer system;*	CD	4/1/2017	CRW began flow at monitoring four separate sanitary sewer locations.	CRW will continue flow monitoring in the separate sanitary sewer system. Findings will be incorporated into the Separate Sanitary Sewer System Capacity Assessment	Ongoing, No Delay Anticipated
V.F.29.d	*The LTCP shall address the portions of the conveyance system receiving flow from the separate sanitary sewer system.*	CD	4/1/2018	No action required during this reporting period.	No activity anticipated this period.	No Delay Anticipated
V.F.30	**Separate Sanitary Sewer System Capacity Assessment**					
V.F.30.a	*Prepare a Separate Sanitary Sewer System Assessment Plan that describes an engineering assessment with schedule to satisfy V.F.30.b.*	CD	2/10/2016	CRW began flow at monitoring four separate sanitary sewer locations and began preparing the Capacity Assessment Plan.	CRW completed the Capacity Assessment Plan.	Complete
V.F.30.b	*Implementation of separate sanitary sewer capacity assessment plan; refer to CD for details.*	CD	4/1/2017	CRW began flow at monitoring four separate sanitary sewer locations and began preparing the Capacity Assessment Plan.	No activity anticipated this period.	No Delay Anticipated
V.F.30.c	*Implement the recommendations of the Capacity Assessment*	CD	TBD	No action required during this reporting period.	No activity anticipated this period.	No Delay Anticipated
V.G	**ONGOING CONSTRUCTION EARLY ACTION PROJECTS**					
V.G.31	**Complete the following projects within the timeframes below:**					
V.G.31.a	*Perform a comprehensive assessment of the structural integrity of the Front Street Interceptor, Paxton Creek Interceptor, Asylum Run Interceptor, and Spring Creek Interceptor. Identify all priority remedial work and develop a construction schedule. All priority remedial work shall be completed by the following dates:*	CD	10/31/14; 3/1/5	CRW completed the inspection of 71,000 linear feet of interceptor in 2014. CRW identified the priority cleaning and remedial work within the interceptors, which was detailed in a 2/25/15 technical memordandum. CRW publicly bid the interceptor cleaning, and reviewed the bid results.	CRW awarded the cleaning contract. Cleaning will commence in May 2016.	Ongoing, No Delay Anticipated
V.G.31.a.i	*on the Paxton Creek Interceptor, by December 31, 2017;*	CD	12/31/2017	No action required during this reporting period.	CRW will initiate design of the Paxton Creek Interceptor rehabilitation.	Ongoing, No Delay Anticipated
V.G.31.a.ii	*on the Asylum Run Interceptor, by December 31, 2018; and*	CD	12/31/2018	No action required during this reporting period.	No action required during this reporting period.	Ongoing, No Delay
V.G.31.a.iii	*on the Front Street Interceptor, by December 31, 2020.*	CD	12/31/2020	No action required during this reporting period.	No action required during this reporting period.	Ongoing, No Delay
V.G.31.a	*Priority remedial work shall include all interceptor segments that receive a pipe segment score of "5" or "4".*	CD	3/1/2015	CRW completed the inspection of 71,000 linear feet of interceptor in 2014. CRW identified the priority cleaning and remedial work within the interceptors, which was detailed in a 2/25/15 technical memordandum.	CRW will initiate design of the Paxton Creek Interceptor rehabilitation.	Complete

Table 4.2: General Description of Work Completed in Reporting Period and Planned for Next Reporting Period

Consent Decree Paragraph	Consent Decree Requirement	Deadline in Consent Decree / Submittal		Progress to Date (7/1/15 to 12/31/15)	Proposed Work (through 1/1/16 to 6/30/16)	Compliance Status
V.G.31.b	*Prepare a list of all sinkholes, investigate all sinkholes reported as of the date of lodging, provide a schedule for repairs, and remediate all sinkholes caused by the structural deterioration of the collection and conveyance systems.*	CD	2/10/2018	CRW will continued to investigate and remediate sink holes.	CRW will continue to investigate and remediate sink holes.	Ongoing, No Delay Anticipated
V.G.31.c	*Investigate each CSO outfall for structure defects, define priority remedial work, and develop a schedule for the work.*	CD	2/10/2016	CRW completed the outfall inspections.	CRW evaluated the outfall inspection data and prepared the schedule of remedial work for the 2/10/16 submission.	Complete, No Delay Anticipated
V.G.31.d	*Develop a CSO Activation Monitoring Pilot Study Plan for CSO activation monitoring technologies in four CSOs for at least 12 months.*	CD	5/10/2015 (Plan)	No action required during this reporting period.	No action required during this reporting period.	Complete
V.G.30.d.i	*Evaluate the efficacy of the technologies in providing remote real-time regulator status and detecting DWOs.*					
V.G.31.d.ii	*The CAMP Study Plan shall identify the pilot study technologies.*					
V.G.31.d.iii	*Implement the approved CAMP Study Plan*		12/1/2016 (Study Report)	CRW began implementing the CAMP Study in November 2015.	CRW will continue implementing the CAMP Study.	Ongoing, No Delay Anticipated
V.H	**GENERAL COMPLIANCE**					
V.H.32	**Effluent Limits for AWTF.**					
V.H.32.a	**Comply with the final effluent limits in the NPDES Permit.**			CRW reported the four instances where a permit limit was exceeded to PADEP.	CRW will continue to fulfill these reporting requirements.	
V.H.32.b	**The compliance schedule for the AWTF BNR project construction is as follow:**					
V.H.32.b.i	*Issue AWTF NTP by 2/15/14;*	CD	2/15/2014	Complete; No activity this period.	Complete; No activity this period.	Complete
V.H.32.b.ii	*Provide quarterly construction progress reports;*	CD	Ongoing	CRW submits weekly inspection reports and monthly progress reports to PADEP. CRW provided a quarterly progress report on 11/15/15.	CRW will prepare and submit quarterly reports.	Ongoing, No Delay Anticipated
V.H.32.b.iii	*Complete construction by 2/15/16.*	CD	2/15/2016	CRW continued the AWTF construction.	Due to issues in the field, the substantial completion date was shifted to 3/16/16. It will likely be further extended to 4/29/16.	Ongoing, Delayed
V.H.32.c	**Purchase nutrient credits for the compliance period ending on 12/30/14**		11/28/2014, annual renewal	CRW purchased the necessary quantity of credits prior to the 11/28/15 deadline for this water year.	CRW will purchase the necessary quantity of credits prior to the 11/28/16 deadline for this water year.	Complete
V.H.33	**Dry Weather Overflows**					
V.H.33.a	*DWOs are prohibited*	CD	Noted			
V.H.33.b	*Report DWOs by phone to PADEP within 4 hours and writing within 5 days of becoming aware it.*	CD	Ongoing	There were three DWOs during the reporting period, as reported elsewhere in this semi-annual report.	CRW will continue to fulfill these reporting requirements.	Ongoing
V.H.33.c	*When a DWO occurs begin corrective action immediately upon notification or discovery*	CD	Ongoing	There were blockages that were removed in two instances, and the third event is believed to be the result of hydrant flushing.	CRW will continue to fulfill these reporting requirements.	Ongoing
V.H.33.d	*Report all DWOs in the semi-annual report.*	CD	Ongoing	The DWOs are included in the semi-annual report.	CRW will continue to fulfill these reporting requirements.	Ongoing
V.H.34	**Unauthorized releases from the combined sewer system are prohibited.**	CD	Noted			
V.H.35	**Report unauthorized releases by phone to PADEP within 4 hours and writing within 5 days of becoming aware it.**	CD	Ongoing	CRW will began to track and report unauthorized discharges starting with the date the CD became effective.	CRW will continue to track and report unauthorized discharges.	Ongoing
V.H.36	**Reporting Planned Changes and Non-Compliance.**					
V.H.36.a	*Comply with the provisions of the NPDES permit requiring the reporting of anticipated and unanticipated non-compliance with the NPDES permit.*	CD	Ongoing	CRW reported to PADEP the four instances where a permit limit was exceeded, as itemized elsewhere in this semi-annual report.	CRW will continue to fulfill these reporting requirements.	Ongoing

Table 4.2: General Description of Work Completed in Reporting Period and Planned for Next Reporting Period

Consent Decree Paragraph	Consent Decree Requirement	Deadline in Consent Decree / Submittal		Progress to Date (7/1/15 to 12/31/15)	Proposed Work (through 1/1/16 to 6/30/16)	Compliance Status
V.H.36.b	*Written notice of non-compliance shall also be submitted to EPA*	CD	Ongoing	This semi-annual compliance report includes non-compliance reporting.	CRW will continue to fulfill these reporting requirements.	Ongoing

4.C Progress & Projected Work

4.C.1 Legal Authority and Rules & Regulations

Following the acquisition of portions of the sewer system that were previously owned and operated by the City of Harrisburg, it was necessary for CRW to acquire additional legal authority for the enforcement of activities within the City. In collaboration with the City, entered into an intergovernmental cooperation agreement to facilitate and assist with environmental compliance. The Agreement provides CRW with the necessary enforce authority to fulfill their permit and consent decree requirements, as well as outlines means for cooperation between the two entities.

Additionally, CRW passed interim wastewater rules and regulations on June 25, 2014. CRW continues to develop new rules, regulations, and standard operating procedures (SOPs) to properly address the requirements of state and local regulatory agencies for stormwater management. CRW is currently coordinating with the City of Harrisburg on developing SOPs and the revised draft stormwater rules and regulations. CRW has been conducting monthly meetings with City of Harrisburg staff. As outlined in the NMC Plan, the stormwater rules and regulations will be completed by August 10, 2016.

4.C.2 NMC Plan & OMM

CRW concluded the review of their existing operations and maintenance programs, as well as the previous Nine Minimum Controls (NMC) documentation in July and August 2015. CRW also assessed the additional resources and programs that must be developed in order improve the performance of the collection, conveyance, and treatment systems for stormwater and wastewater within the City of Harrisburg.

CRW developed a detailed approach to achieve future compliance with each of the NMCs. In many cases the compliance measures are already implemented, such as daily CSO regulator inspections. In other areas, additional information is required to implement some of the NMCs and CRW has undertaken the efforts necessary to collect the data. For example, CRW completed collection system manhole inspections in Fall 2015, which are critical to understanding condition and connectivity of the system. For other tasks, CRW continues to plan for the implementation of the NMCs, as is the case with the development of formal public outreach and education program. The complete NMC Plan was submitted on August 10, 2015. Refer to Table 4.2 for additional details on the specific implementation of NMC requirements under the partial CD. Appendix L presents the NMC Plan Summary Table that was included with the NMC Plan and provides details on the current level of implementation for each NMC, as well as the proposed future actions to achieve full compliance.

CRW reviewed ongoing maintenance and operation efforts and developed improved practices for compilation in the new Operations and Maintenance Manual (OMM). The OMM defines the critical equipment and facilities for the AWTF and collection/conveyance systems. The OMM also includes detailed procedures, complete with checklists, for the following system components: CSO regulators, outfalls and backflow prevention gates, pump stations, interceptors, force mains, collection system and manholes, and inlets and catch basins. The OMM also outlines emergency procedures, citizen complaint tracking, sinkhole remediation, and education programs. The document was submitted on August 10, 2015.

CRW has been continually reviewing and documenting proposed revisions to the NMC Plan and OMM. In addition, CRW provided responses to EPA comments on Feburary 10, 2016.

4.C.3 GIS & Cityworks

CRW has developed a Cityworks data management system for their sewer system. Cityworks was implemented in October 20, 2015. This software is the record keeping tool for maintenance activities and will assist in reporting requirements of the partial CD. From October 20, 2015 to December 31, 2015 the following items have been documented in Cityworks for sewer system maintenance and inspection activities:

- 43 service requests, including 8 for sinkholes
- 63 work orders completed
- 155 daily CSO inspection work orders with a total of 4,580 inspections

Beginning on February 9, 2016 Cityworks began documenting the hot spot manhole inspections. During 2016 CRW will continue to review and assess the data captured with relation to workflow processes and reporting requirements. Additional training for CRW staff is also scheduled for 2016.

CRW continues to update their GIS database. During Fall 2015 significant modifications were incorporated based on the collection system manhole inspections, which provide information of pipe connectivity.

4.C.4 Public Notification & Outreach

CRW conducted an inventory of the existing signage in Summer 2015. As detailed in the NMC Plan, CRW is developing a signage plan and notification procedures. This will now include a pilot program for signage, which will be detailed in the August 10, 2016 NMC Plan Update. CRW is currently developing temporary signs to the install at the 18 outfalls that currently do not have signage prior to Memorial Day 2016; this is in response to EPA comments on the NMC Plan.

CRW has continued to conduct numerous public outreach activities from July through December 2015, including the following:

- 2-Minute Tuesday monthly trash cleanups involving over 180 volunteers
- City Beautiful presentation at Bethesda Mission Youth Center
- Community Ambassador monthly meetings
- Conservation Carnival on Labor Day
- Can the Grease demonstration at Bethesda Youth Mission Family Day

4.C.5 MS4 & TMDL Strategy

CRW prepared and submitted an MS4 Individual Permit application on October 1, 2014, which included a Stormwater Management Program and Paxton Creek TMDL Strategy. An MS4 Outfall

map was also provided based upon the information available at the time, which continues to be updated as additional data is collected.

CRW prepared a revised Paxton Creek TMDL Strategy in conjunction with two of the neighboring municipalities, Lower Paxton Township and Susquehanna Township, to provide a watershed-based approach. The Strategy outlined early action projects and a watershed-wide approach to defining additional projects to meet the TMDL. The Strategy was submitted on December 31, 2015.

CRW will begin implementing the Strategy in the next reporting period.

4.C.6 IFMMPP & CAMP Study

CRW completed the Initial Flow Metering and Monitoring Program Plan (IFMMPP) in August 2015. The monitoring program involved flow monitoring with redundant level measurement at 13 CSO regulator monitoring sites and 13 interceptor monitoring sites. There are eight precipitation gauging sites, as well as gauge adjusted radar rainfall. The monitoring period commenced in September 2014 and has provided data that will be suitable for sewershed characterization and model validation. The third and fourth quarterly report were submitted in during the reporting period.

CRW is maintaining the four flow meters monitoring flow from the satellite communities, as well as eight of the combined sewer interceptor flow meters at the current sites in order to support flow maximization and storage maximization evaluations.

By December 2015 CRW was monitoring flow at six sites within the separate sanitary sewer. This data will be utilized in the Separate Sanitary Sewer Capacity Assessment.

CRW began the CAMP Study in November 2015. Three of the four technologies have been successfully installed and remain operational. The fourth technology encountered technical difficulties, which required removal of the unit. Due to issues with the required modifications, the unit may not be able to be reinstalled. The data collected to date has been analyzed and compared against redundant flow monitoring equipment. CRW is continuing the CAMP Study through the next two reporting periods.

4.C.7 LTCP Development

In support of the LTCP development CRW completed several key tasks during this reporting period:

- Prepared the Typical Year Precipitation memorandum summarizing the methodology used to develop the typical year precipitation for evaluating existing combined sewer system performance and evaluating LTCP alternatives.
- Continued to refine the H&H model to reflect record review and field collection of sewer system connectivity and attributes; evaluate monitored flow from satellite communities, and performance data from CRW regulators and pump stations. Model testing, calibration, and validation will proceed during the next reporting period in order to meet the April 1, 2016 CD compliance date.

- Formed stakeholder advisory committees to prepare a Green Infrastructure Plan as a fundamental element of CRW's LTCP.
- Preparation of the Sensitive Areas / Priority Areas technical memorandum, and the Financial Capability Analysis will begin in the next reporting period in order to meet the April 1, 2016 CD compliance dates.

4.D Wet Weather Program Management Schedule

Table 4.1 provides an overall summary of the key partial CD deadlines around which CRW is formulating their overall program for wet weather management. The NMC Plan Summary Table, included in Appendix L, shows the detailed framework and schedule that CRW has developed to work towards NMC compliance. In addition, various memoranda and evaluations will be proceeding during and beyond the next reporting period that will provide additional anticipated completion dates for CRW activities:

- The CSO Outfall Structure Repair and Schedule (submitted February 10, 2016)
- Engineering evaluation of the rapid collection system inspection at known manholes (to be provided in scheduled semi-annual reports and/or annual NMC Plan / OMM updates)
- The CAMP Study (due December 1, 2016) will include recommendations and an implementation schedule for future CSO activation monitoring.
- The Separate Sanitary Sewer Capacity Assessment Plan (submitted February 10, 2016).
- The Green Infrastructure Plan (due 4th quarter 2016) will include recommendations for implementing green infrastructure policies, regulations, incentives, and demonstration / pilot projects.

Appendix A

HYDRAULIC LOADING DATA
MONTHLY AVERAGE FLOWS FOR PAST FIVE YEARS (MGD)
HARRISBURG ADVANCED WASTEWATER TREATMENT FACILITY
CHAPTER 94 REPORT - 2015

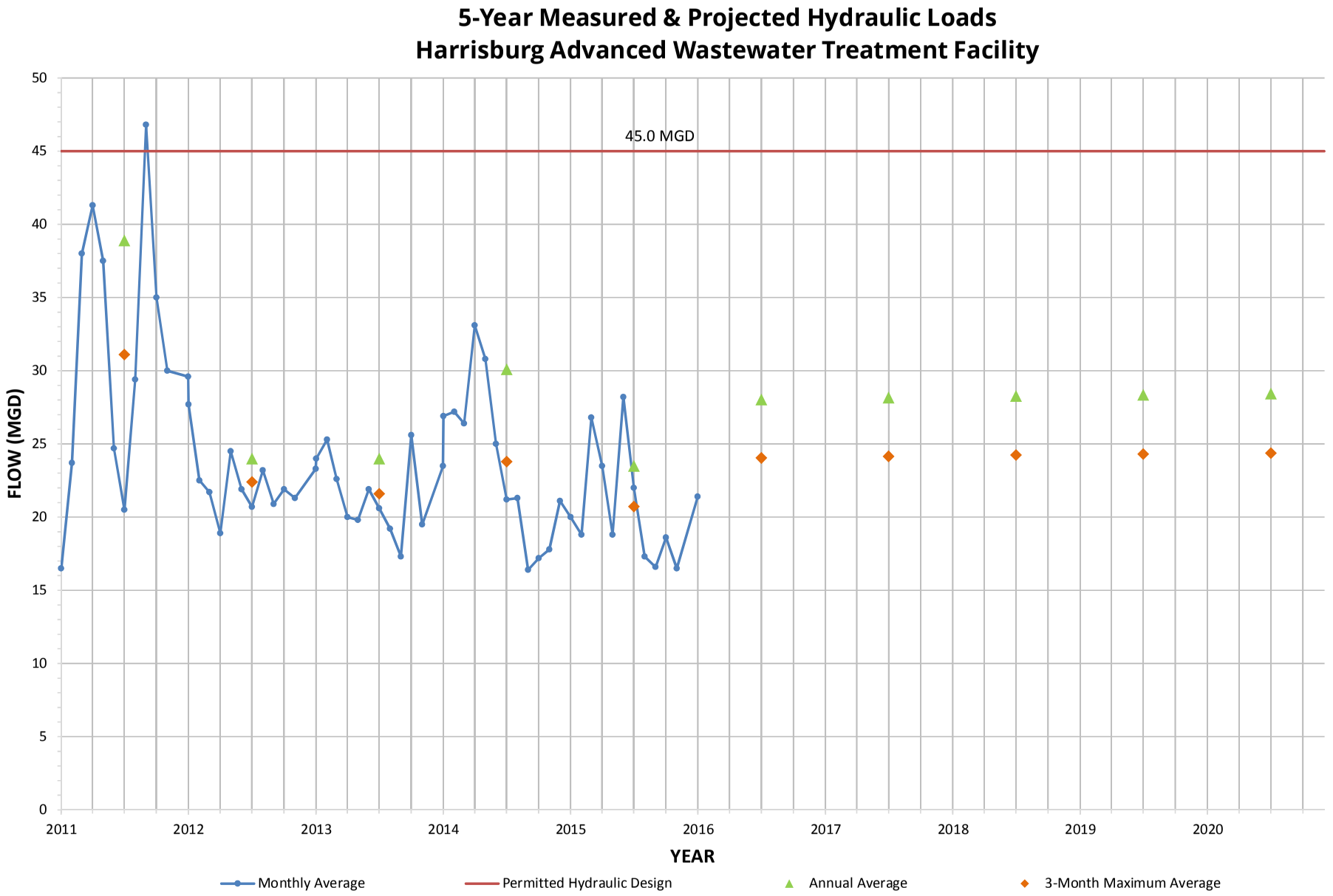
MONTH	2011	2012	2013	2014	2015
January	16.5	**27.7**	**24.0**	26.9	20.0
February	23.7	**22.5**	**25.3**	27.2	18.8
March	**38.0**	**21.7**	**22.6**	**26.4**	26.8
April	**41.3**	18.9	20.0	**33.1**	**23.5**
May	**37.5**	24.5	19.8	**30.8**	**18.8**
June	24.7	21.9	21.9	25.0	**28.2**
July	20.5	20.7	20.6	21.2	22.0
August	29.4	23.2	19.2	21.3	17.3
September	46.8	20.9	17.3	16.4	16.6
October	35.0	21.9	25.6	17.2	18.6
November	30.0	21.3	19.5	17.8	16.5
December	29.6	23.3	23.5	22.2	21.4
ANNUAL AVERAGE DAILY FLOW (ADF)	31.1	22.4	21.6	23.8	20.7
MAX 3-MONTH ADF	38.9	24.0	24.0	30.1	23.5
RATIO OF MAX 3-MONTH TO ADF	1.25	1.07	1.11	1.27	1.13
5-YEAR ADF					23.9

PROJECTED HYDRAULIC LOADING DATA (MGD)
HARRISBURG ADVANCED WASTEWATER TREATMENT FACILITY
CHAPTER 94 REPORT - 2015

	2016	2017	2018	2019	2020
PREVIOUS YEAR ADF [1]	23.91	24.0	24.2	24.2	24.3
PROJECTED INCREASE DUE TO KNOWN DEVELOPMENT	0.12	0.12	0.08	0.07	0.07
PROJECTED ADF	24.0	24.2	24.2	24.3	24.4
RATIO OF MAX 3-MONTH TO ADF [2]	1.17	1.17	1.17	1.17	1.17
PROJECTED MAX 3-MONTH ADF	28.0	28.2	28.3	28.4	28.4
PROJECTED 5-YEAR ADF					24.2

NOTES:

1. Year 2016 uses the 2011-2015 five-year average flow. The remaining years are calculated from the prior year's flow.
2. Five-year average ratio, 2011-2015.


5-Year Measured & Projected Hydraulic Loads
Harrisburg Advanced Wastewater Treatment Facility
45.0 MGD
FLOW (MGD)
YEAR
0
5
10
15
20
25
30
35
40
45
50
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Monthly Average
Permitted Hydraulic Design
Annual Average
3-Month Maximum Average

Appendix A

Appendix B

ORGANIC LOADING DATA
AVERAGE BOD_5 LOADING IN POUNDS PER DAY (lbs/day)
HARRISBURG ADVANCED WASTEWATER TREATMENT FACILITY
CHAPTER 94 REPORT - 2015

MONTH	2011	2012	2013	2014	2015
January	26,421	23,614	23,918	23,599	25,902
February	26,881	25,268	22,771	24,020	27,872
March	28,206	25,840	23,130	16,052	26,844
April	24,445	25,195	20,629	25,205	27,646
May	25,646	**27,728**	19,093	19,128	26,543
June	24,308	24,839	16,893	**26,160**	25,848
July	23,594	22,288	16,108	26,156	23,834
August	24,765	22,285	17,232	24,235	22,264
September	23,809	25,718	19,096	24,771	20,866
October	**31,817**	21,337	15,143	22,819	24,788
November	30,524	21,128	**25,117**	20,760	26,682
December	25,180	21,078	22,509	22,591	**27,885**
ANNUAL AVERAGE (AA) ORGANIC LOADING	26,300	23,860	20,137	22,958	25,581
MAX 1-MONTH AVERAGE DAILY LOADING	31,817	27,728	25,117	26,160	27,885
RATIO OF MAX 1-MONTH TO AA LOADING	1.21	1.16	1.25	1.14	1.09
5-YEAR AVERAGE DAILY LOADING					23,767

PROJECTED ORGANIC LOADING DATA
HARRISBURG ADVANCED WASTEWATER TREATMENT FACILITY
CHAPTER 94 REPORT - 2015

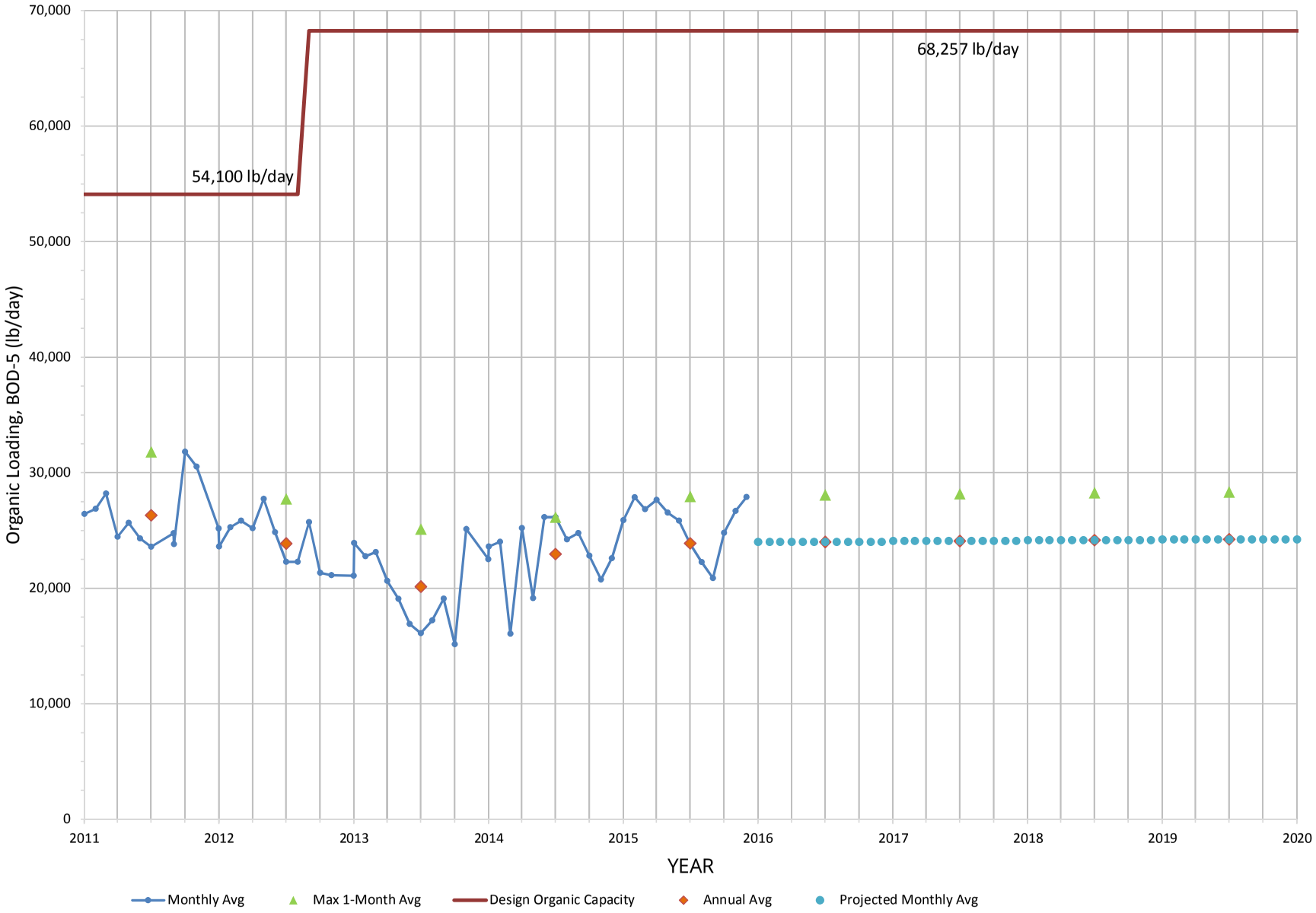
	2011	2012	2013	2014	2015
ANNUAL AVERAGE ORGANIC LOADING (LBS/DAY)	26,300	23,860	20,137	22,958	25,581
ANNUAL AVERAGE FLOW (MGD)	31.1	22.4	21.6	23.8	20.7
LBS BOD/MGD	846	1,066	932	965	1,235
5- YEAR AVERAGE LBS BOD/MGD					1,009

	2016	2017	2018	2019	2020
STARTING ORGANIC LOAD (LBS/DAY) [(1)]	23,767	23,888	24,009	24,090	24,161
INCREASE DUE TO KNOWN DEVELOPMENT (LBS/BOD/DAY)	121	121	81	71	71
PROJECTED LOAD (LBS/DAY)	23,888	24,009	24,090	24,161	24,231
5-YEAR AVERAGE RATIO OF MAX 1-MONTH DAILY AVERAGE TO AA LOADING	1.17	1.17	1.17	1.17	1.17
PROJECTED MAX 1-MONTH AVERAGE DAILY LOAD (LBS/DAY)	27,943	28,085	28,179	28,262	28,344

NOTE:

1. Year 2015 uses the five-year average BOD load from 2011-2015. The remaining years are calculated from the previous year's flow.

5-Year Measured & Projected Organic Loads
Harrisburg Advanced Wastewater Treatment Facility



Appendix B

Appendix C

HYDRAULIC LOADING
CONNECTIONS & PROJECTIONS
HARRISBURG ADVANCED WASTEWATER TREATMENT FACILITY
CHAPTER 94 REPORT - 2015

Municipality	**Actual Connections** per Tributary Muncipality Chapter 94 Reports					**Projected Connections** per Tributary Muncipality Chapter 94 Reports					
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	
City of Harrisburg	Requested from the City of Harrisburg					Requested from the City of Harrisburg					
Lower Paxton Township [1]	-51	166	-90	167	-194	146	105	85	82	69	EDU
						36,500	26,250	21,250	20,500	17,250	Flow (gpd)
Penbrook Borough [2]											EDU
	-4,900	-1,600	-2,500	2,500	1,900	2,100	2,100	2,100	2,200	2,200	Flow (gpd)
Paxtang Borough [2]											EDU
	-300	300	-1,700	300	400	1,000	1,100	1,200	1,100	1,100	Flow (gpd)
Steelton Borough [1,2]						8	2	2	2	2	EDU
	435,000	-622,000	149,000	-47,000	-299,000	2,000	500	500	500	500	Flow (gpd)
Susquehanna Township [1]	0	173	149	7	151	264	292	158	151	149	EDU
						66,000	73,000	39,500	37,750	37,250	Flow (gpd)
Swatara Township [3]	-405	-2,132	37	-40	75	40	40	40	40	40	EDU
						7,120	7,120	7,120	7,120	7,120	Flow (gpd)
					TOTAL FLOW (GPD)	114,720	110,070	71,670	69,170	65,420	
					(rounded totals reported in Appendix A up to next 10,000)	120,000	120,000	80,000	70,000	70,000	

NOTES:

1. Municipality calculated projected flows using 250 gpd/EDU.
2. Actual connection information provided by municipality in units of flow with no EDU equivalent.
3. Municipality calculated projected flows using 178 gpd/EDU.

Appendix D

Cal-Tech Service, Inc.

2131 Shaaron Dr.
Lancaster, PA 17601
Phone/ Fax 717-299-7116

Service Report / Invoice

Invoice # R50128

WWW.Cal-Tech.org

Billing Address:

CAPITAL REGION WATER

Job Address:

MONTHLY CALIBRATION

Page #	Rep:	SR # - Job	Date:	Customer P.O.#
1	M		1-28-15	

MONTHLY CALIBRATION Influent Flow meter
Rosemount DIP Transmitter - 0-88.64" H2O -
Blew out High and low sides of venturi - Plunged and
purged High and low side openings for transmitter - Bled
All Air from input Lines -
CALIBRATED output for 4 17-20mmac - verified at Control Room
Computer and Honeywell mini trend - Both indicating properly

- Influent flow serviced and CALIBRATED and operating
properly

Material

MI	HR	MATL.	SHIPPING:	TX EX	TOTAL:
				☐	

Service Representative:	Customer Signature:	DATE:
Randy Rowland		

TERMS: *NET30 DAYS*

Instrumentation

1% MONTHLY CHARGE ON LATE PAYMENTS

Cal-Tech Service, Inc.

2131 Shaaron Dr.
Lancaster, PA 17601
Phone/ Fax 717-299-7116

Service Report / Invoice

Invoice # R50220

WWW.Cal-Tech.org

Billing Address:	Job Address:
CAPITAL REGION	MONTHLY CALIB. MAIN FLOW WWTP

Page #	Rep:	SR # - Job	Date:	Customer P.O.#
1	RR		2-20-15	

MONTHLY CALIBRATION of MAIN FLOW
Rosemount Differential Pressure - 0-88.6" H_2O
Blew down supply lines from High/Low sides of venturi to transmitter - purged any air - Plunged orifice openings
Live zero of transmitter by isolating from venturi. Spanned for 88.6" H_2O - O.K.
CALIBRATED OUTPUT for 4-12-20mADC - verified 4-20 at Computer and Honeywell minitrend.

Completes monthly calibration on main flow loop - calibrated and indicating properly

Material					
MI	**HR**	**MATL.**	**SHIPPING:**	**TX EX**	**TOTAL:**
				☒	

Service Representative:	Customer Signature:	DATE:
Randy Rumbaugh		2-20-15

TERMS: NET30 DAYS

Instrumentation

1% MONTHLY CHARGE ON LATE PAYMENTS

Cal-Tech Service, Inc.
2131 Shaaron Dr.
Lancaster, PA 17601
Phone/ Fax 717-299-7116

Service Report / Invoice

Invoice # R50324

WWW.Cal-Tech.org

Billing Address:
Capital Region

Job Address:
Monthly Flow
Quarterly LEL

Page #	Rep:	SR # - Job	Date:	Customer P.O.#
1	MY RR		3-24-15	

Monthly Calibration main Flow loop:
Rosemount 3051 DP transmitter - Blew down input lines from venturi - Ensured all air out of lines - plunged orifice openings - Live 200 of sensors - O.K. - calibrated output for 4-12-20 mADC - verified at computer.
- Return - Middle - totalizer not operational - Re-set meter now operating properly
- Quarterly LEL calibration and verification - All O.K. - Data provided on calibration log.

Completes Monthly calibration

Material

MI	HR	MATL.	SHIPPING:	TX EX	TOTAL:
				☒	

Service Representative:	Customer Signature:	DATE:
[signature] M.P.M	[signature]	3-24-15

TERMS: NET30 DAYS

Instrumentation

1% MONTHLY CHARGE ON LATE PAYMENTS

Cal-Tech Service, Inc.
2131 Shaaron Dr.
Lancaster, PA 17601
Phone/ Fax 717-299-7116

Service Report / Invoice

Invoice # R50422

WWW.Cal-Tech.org

Billing Address:
CAPITAL WATER

Job Address:

Page #	Rep:	SR # - Job	Date:	Customer P.O.#
1	RR		4-22-15	

MONTHLY CALIBRATION:
MAIN FLOW - Rosemount D/P TRANSMITTER - 0-88.64" H2O
Blew sludge build-up from lines & sensors - Bled all
air from lines - live zero test on sensors O.K. - CALIBRATED
for 0-88" H2O - CALIBRATED OUTPUT for 4-12-20 MADC - OPERATING properly
- Steelton Flow - BIF Recorder/Totalizer - Brooks 3560 ser# 9310-34490-1-2
0-5MGD - BIF Recorder - Chart out of mechanical alignment - Adjusted
AND O.K. - CALIBRATED for 4-12-20 MADC - O.K. - Timed totalizer at 0 & 2.5MGD
found counting app 2% of F.S. high (FAST) - Adjusted zero trim - Now
counting properly - Brooks mag meter - verified set-up - Checked AND
verified 4-20 ma OUTPUT - proper -
ATTEMPTED TO verify flow with doppler - Unable to get signal -

Above units CALIBRATED AS NOTED

Material

MI	HR	MATL.	SHIPPING:	TX EX	TOTAL:
				☒	

Service Representative:	Customer Signature:	DATE:
Randy Rowland		

TERMS: *NET30 DAYS*

Instrumentation

1% MONTHLY CHARGE ON LATE PAYMENTS

Cal-Tech Service, Inc.

2131 Shaaron Dr.
Lancaster, PA 17601
Phone/ Fax 717-299-7116

Service Report / Invoice

Invoice # R50522

WWW.Cal-Tech.org

Billing Address:

CAPITOL REGION WATER

Job Address:

MONTHLY CALIBRATION

Page #	Rep:	SR # - Job	Date:	Customer P.O.#
1	RM		5-22-15	

MONTHLY CALIBRATION OF METERING.
MAIN FLOW - Rosemount D/P Transmitter - Live zero check - O.K.
Blew down High and Low inputs to venturi - Bled all air from
input lines - checked output for 4-12-20 mADC - INDICATING properly
Stockham - B/F Recorder / Totalizer - Calibrated pen for 4-12-20 mADC -
Aligned - Timed totalizer at actual flow 2.4 mgd - counting properly
Bristol magmeter - verified set up parameters - Checked output at actual
and calibrated for 4-20 mADC -
LEL Panel - Found 1 module needed Re-set - After Reset checked
sensors to verify - All O.K. (Problem does occur with this version
MSA intermittently)

Completed monthly calibration - All working as noted above

Material

MI	HR	MATL.	SHIPPING:	TX EX	TOTAL:
				☒	

Service Representative:	Customer Signature:	DATE:
[signature]	[signature]	5-22-15

TERMS: *NET30 DAYS* **Instrumentation** 1% MONTHLY CHARGE ON LATE PAYMENTS

Cal-Tech Service, Inc.
2131 Shaaron Dr.
Lancaster, PA 17601
Phone/ Fax 717-299-7116

Service Report / Invoice

Invoice # R50624

WWW.Cal-Tech.org

Billing Address:
CAPITAL REGION WATER

Job Address:
MONTHLY Flow meter
Quarterly LEL

Page #	Rep:	SR # - Job	Date:	Customer P.O.#
1	RR		6-24-15	

MONTHLY CALIBRATION of Main Flow meter:
Rosemount 3051- 0-88.64" H_2O — Blew down both High and low inputs from Venturi - Blew air from each. Bled each sensor - live zero on loop by isolating venturi - O.K.
Spanned unit for 88.64" H_2O - CALIBRATED OUTPUT for 4-12-20 mmc.

LEL- zeroed and spanned Main Plant, Front St., and Spring Creek
Results provided on calibration log-
Digested Sludge - Unit no longer zeroing - Span is fine -
Sensor will need replaced - No safety issue - unit still responds to calibrated LEL level.

- Completes Routine service

Material

MI	HR	MATL.	SHIPPING:	TX EX	TOTAL:
				☐	

Service Representative:	Customer Signature:	DATE:
Randy Rowland	[signature]	6-25-15

TERMS: *NET30 DAYS*

Instrumentation

1% MONTHLY CHARGE ON LATE PAYMENTS

Cal-Tech Service, Inc.
2131 Shaaron Dr.
Lancaster, PA 17601
Phone/ Fax 717-299-7116

Service Report / Invoice

Invoice # R50720-2

WWW.Cal-Tech.org

Billing Address:
CAPITOL REGION WATER
HARRISBURG, PA

Job Address:
MONTHLY
CALIB.
MAIN FLOW

Page #	Rep:	SR # - Job	Date:	Customer P.O.#
1	M		7-20-15	

Monthly CALIBRATION MAIN FLOW -
Rosemount 3051 - 0-88.64" H2O -
Blew Down High & Low sides of venturi. Flushed orifice openings. flushed all air - live zero of transmitter sensors spanned for 88.64" - O.K. CALIBRATED OUTPUT for 4-12-20 mADC verified at Honeywell minitrend.

- MSA 5300 Panel Channel #1. Loop had sensor that was drifting AND NEEDED REPLACEMENT - Installed new sensor and zeroed & spanned for 0-50% LEL - Unit Responded properly

Material Ken: MSA 813624 LEL Sensor

MI	HR	MATL.	SHIPPING:	TX EX	TOTAL:
				☐	

Service Representative:	Customer Signature:	DATE:
[signature]	[signature]	7-20-15

TERMS: NET30 DAYS

Instrumentation

1% MONTHLY CHARGE ON LATE PAYMENTS

Cal-Tech Service, Inc.

2131 Shaaron Dr.
Lancaster, PA 17601
Phone/ Fax 717-299-7116

Service Report / Invoice

Invoice # A50825

WWW.Cal-Tech.org

Billing Address:

CAPITAL REGION WATER

Job Address:

MONTHLY
MAIN FLOW

Page #	Rep:	SR # - Job	Date:	Customer P.O.#
1	RR		8-25-15	

MONTHLY CALIBRATION MAIN FLOW
- REMOVED 2 INCH D/P TRANSMITTER - 0-85.64" H2O
- BLEW DOWN HIGH AND LOW INPUT LINES FROM VENTURI
- PURGED AIR FROM INPUT LINES -
LIVE ZERO CHECK BY ISOLATING HIGH / LOW SENSORS FROM VENTURI - O.K. - SPANNED FOR 85.6 " H2O - O.K.
CALIBRATED OUTPUT FOR 4-12-20 mADC - O.K. CHECKED SIGNAL BACK TO HONEYWELL MONITORING

MAIN FLOW LOOP IS CALIBRATED AND OPERATING PROPERLY

Material

MI	HR	MATL.	SHIPPING:	TX EX	TOTAL:
				☒	

Service Representative: Karl Rowland

Customer Signature:

DATE:

TERMS: *NET30 DAYS*

Instrumentation

1% MONTHLY CHARGE ON LATE PAYMENTS

Cal-Tech Service, Inc.
2131 Shaaron Dr.
Lancaster, PA 17601
Phone/ Fax 717-299-7116

Service Report / Invoice

Invoice # R50929

WWW.Cal-Tech.org

Billing Address:	Job Address:
Capital Region Water	WWTP
Harrisburg, PA	Monthly Flow
	Quarterly LEL

Page #	Rep:	SR # - Job	Date:	Customer P.O.#
1	RR		9-29-15	

Routine Calibration & Service

- Main Flow - Rosemount 3051 differential pressure transmitter - 0-88.6" H2O - Blew down High and Low inputs from venturi. Calibrated for 0-88.6" H2O - Live zero check - O.K. Bled all air from input lines - checked output at 4-12-20 mADC All O.K. - Loop operating properly

- LEL check - Main Plant, Front St, Spring Creek - zeroed and spanned All - All calibrated - All results on calibration form

- Completes monthly calibration

Material					
MI	HR	MATL.	SHIPPING:	TX EX	TOTAL:
				☒	

Service Representative:	Customer Signature:	DATE:
Randy Rowland		

TERMS: NET30 DAYS

Instrumentation

1% MONTHLY CHARGE ON LATE PAYMENTS

Cal-Tech Service, Inc.

2131 Shaaron Dr.
Lancaster, PA 17601
Phone/ Fax 717-299-7116

Service Report / Invoice

Invoice # 251124

WWW.Cal-Tech.org

Billing Address:	Job Address:
Capital Region Water	WWTP
	Monthly
	Calib.

Page #	Rep:	SR # - Job	Date:	Customer P.O.#
1	RL		11-4-15	

Monthly Calibration Main Flow.
Rosemount 3051 Differential Pressure Transmitter 0-836" H2O
Blewdown input lines from Venturi - purged Venturi
Purged all air from lines - Isolated venturi inputs to check
for live zero - O.K. - Spanned transmitter for 836" H2O O.K.
Calibrated output for 4-12-20 madc - verified at Honeywell and
Computer - Flow loop operating properly
- Digester Sludge Flow - checked all set-up parameters - Timed local
totalizer at actual - O.K.
Sludge Flow (Basement) - Rosemount mag - verified all parameters - Timed
local totalizer at actual - O.K.
Local totalizers verified and useable in back-up situations
Returns - 2 of 3 in service - RPM's to get identical flows way off (57%-75%)
At Return bldg. I monitored the flows in the building, at identical places
on each train with my portable doppler - Each flow (while lower than indicated
on meters) was almost identical - Possible RPM pick-up problem - Pump efficiency?

Material

MI	HR	MATL.	SHIPPING:	TX EX	TOTAL:
				☒	

Service Representative:	Customer Signature:	DATE:
Randy Rowland	[signature]	

TERMS: NET30 DAYS **Instrumentation** 1% MONTHLY CHARGE ON LATE PAYMENTS

Cal-Tech Service, Inc.

2131 Shaaron Dr.
Lancaster, PA 17601
Phone/ Fax 717-299-7116

Service Report / Invoice

Invoice # R51124

WWW.Cal-Tech.org

Billing Address:	Job Address:
CAPITAL Region WATER	MONTHLY CALIBRATION MAIN FLOW

Page #	Rep:	SR # - Job	Date:	Customer P.O.#
1	RR		11-24-15	

MONTHLY CALIBRATION MAIN FLOW LOOP -
Blew down high and low side impuls from venturi
Bled all air from lines. Live zero checked properly
Spanned Rosemount on D/P for 186" H2O - working properly
CALIBRATED OUTPUT for 4-12-20 mA - verified at
Honeywell monitor

Completed monthly service and calibration of main flow -

Material

MI	HR	MATL.	SHIPPING:	TX EX	TOTAL:
				☒	

Service Representative:	Customer Signature:	DATE:
Randy Rudnow		

TERMS: NET 30 DAYS **Instrumentation** 1% MONTHLY CHARGE ON LATE PAYMENTS

Cal-Tech Service, Inc.

2131 Shaaron Dr.
Lancaster, PA 17601
Phone/ Fax 717-299-7116

Service Report / Invoice

Invoice # R51223

WWW.Cal-Tech.org

Billing Address:
CAPITOL REGION WATER
HARRISBURG, PA

Job Address:
MONTHLY FLOW
Quarterly LEL

Page #	Rep:	SR # - Job	Date:	Customer P.O.#
1	RR/MK		12-23-15	

MONTHLY CALIBRATION of MAIN FLOW LOOP -
Rosemount D/P TRANS. 3051 - 0.88.6" H2O -
Blew down high and low sides of venturi - Bled
All air from lines - Purged orifice openings high/low
- Live zero check INDICATING properly
- CALIBRATED OUTPUT for 4-12-20 MADC - verified
Quarterly zero + span of LEL's, MAIN PLANT, FRONT ST,
Spring CREEK. All O.K.

Completes monthly / quarterly CALIBRATION

Material

MI	HR	MATL.	SHIPPING:	TX EX	TOTAL:
				☒	

Service Representative: Randy Rowland

Customer Signature: [signature]

DATE:

TERMS: NET30 DAYS

Instrumentation

1% MONTHLY CHARGE ON LATE PAYMENTS

Appendix E

APPENDIX E-1

INDUSTRIAL WASTE PRETREATMENT PROGRAM

INDUSTRIAL WASTE PRETREATMENT PROGRAM

This report has been prepared in accordance with the United States Environmental Protection Agency's Instructions for Completion of the Annual Report. The report is divided into two sections. The first deals with the "Pretreatment Performance Summary" and includes specific information on the implementation of the program throughout the service area. The second section, entitled "Pretreatment Program Developments", addresses toxic monitoring, local limits, and program changes.

PRETREATMENT PERFORMANCE SUMMARY

The function of the EPA Industrial Waste Pretreatment Program is to ensure that industrial users (IUs) comply with applicable federal, state, and local pretreatment program effluent discharge limitations and regulations. Industrial user compliance eliminates interference or possible damage to the conveyance and treatment system, untreated waste from passing through the AWTF to the receiving stream, the contamination of sludge which limits disposal and reuse options, and the exposure of personnel to chemical, explosion or fire hazards.

During the year, no additional significant industrial users[(1)] were permitted. The total number of permitted industrial users in 2015 was nine. Ending 2015 with the loss of one permitted industrial user, the total number of permitted industrial facilities was eight. Of the eight permitted industrial users, one is classified as categorical and seven as noncategorical industrial users.

No compliance schedules were issued during 2015 and the number of permitted industrial users on a formal compliance schedule is zero.

Inspection and sampling activities performed during the year included facility inspections, self monitoring inspections, and compliance sampling. In 2015, ten facility inspections and eight self monitoring inspections were performed. Compliance sampling schedules remained at twice annually for three consecutive days with each day providing a separate sample. Additional monitoring is performed when necessary. The total number of significant industrial users sampled for compliance monitoring was nine and encompassed forty-eight sampling visits. Of the three permitted significant industrial users not sampled through three consecutive days, two are landfills with a uniform and seasonal discharge, and one has two landfill sites with a uniform and seasonal discharge.

Self monitoring sampling and reporting activities for significant industrial users remained at quarterly for a conventional pollutant discharger and monthly for a metal and organic priority

---

(1) Significant industrial user as defined by Section 9-501.1 of Capital Region Water's Rules and Regulations means all categorical industrial users or any noncategorical industrial users that:

A) Have a discharge flow of 25,000 gallons per day or more per average workday of process wastewater; or
B) Have an average process flow which makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or
C) Have a reasonable potential in the opinion of the Control or Approval Authority to adversely affect the treatment plant through inhibition, pass through of pollutants, sludge contamination, or endangerment of AWTF workers, or to violate any pretreatment standard or requirement.

pollutant discharger. The total number of significant industrial users required to submit a self monitoring report is nine and the total number of self monitoring sampling events was seventy-eight.

During the 2015 calendar year, three violation notices were issued. Two letters of violation were issued for noncompliance with effluent discharge limits. Where noncompliance persisted or an industry did not return to compliance within a satisfactory time frame, significant noncompliance enforcement action is taken. One notice of violation was issued for a significant noncompliance reporting violation along with $750.00 in fines. In this instance, public notification is required.

For additional details on industrial users' performance, please refer to the exhibits listed below:

Exhibit XIV	-	Pretreatment Performance Summary
Exhibit XV	-	Regulated Industrial Users 2015
Exhibit XVI	-	Enforcement Actions 2015
Exhibit XVII	-	Compliance Sampling/Inspection Schedule 2016
Exhibit XVIII	-	Annual Newspaper Publication of 2015 Significant Noncompliance Violators

APPENDIX E-2

PRETREATMENT PROGRAM DEVELOPMENTS

PRETREATMENT PROGRAM DEVELOPMENTS

During the 2015 calendar year, the AWTF did not experience an upset or permit violation attributed to the indirect discharge of industrial waste. NPDES permit violation(s) caused by something other than an industrial discharge were monthly average ammonia nitrogen exceedances during the period May through October and an unpermitted discharge of sanitary sewerage from the Asylum Run Interceptor. In order to monitor toxic and incompatible pollutants, various analyses were performed on the plant's influent, effluent, and sludge. The results of this activity are detailed in Exhibit XIX. Influent, effluent, and sludge average metals concentrations for current and past years are graphically illustrated in Figures I, II, and III.

Interpretation of influent metals concentration trends contained on Figure I show a slight decrease in cyanide concentrations in 2015. The copper, lead, nickel and zinc concentration trend lines show a slight increase in 2015. The arsenic and chromium concentration trend lines show no upward or downward trend in recent years. Cadmium and mercury concentrations show no appreciable amounts detected in 2015. Other local limit influent metals and PCBs not illustrated on Figure I, show no appreciable amounts detected in 2015.

Interpretation of effluent metals concentration trends contained on Figure II show an increase in arsenic, chromium, cyanide, lead and nickel concentrations in 2015 due to lower analytical detection levels. The zinc concentration trend line shows a decrease after increasing in 2014. The copper concentration trend lines have remained the same in recent years. Cadmium and mercury concentrations show no appreciable amounts detected in 2015. Other local limit effluent metals and PCBs not illustrated on Figure II, show no appreciable amounts detected in 2015.

Interpretation of belt press filter cake or biosolids metals concentration trends contained on Figure III continue to show a slight increase in zinc concentrations in 2015. The high level of zinc is attributed to the contribution of 45.4 lbs./day of a zinc based corrosion inhibitor in the contributing public water supplies. The assessment is based on the analysis of the contributing public water supplies. The lead concentration trend line shows a slight decrease in 2015. Chromium, copper and nickel concentration trend lines show no upward or downward trend in recent years. Arsenic, cadmium, cyanide and mercury concentrations show no appreciable amounts detected in 2015. Other local limit biosolid metals and PCBs not illustrated on Figure III show no appreciable amounts detected in 2015.

Local limits were approved on September 30, 1988, by the US EPA and adopted by the City of Harrisburg on October 28, 1988. The local discharge limitations were developed with the assistance of the US EPA computer program PRELIM and are based on the allowable headworks loading method and a safety factor of twenty-five percent. Allocation of the daily maximum allowable industrial pollutant loadings was achieved by the uniform concentration technique based on total industrial flow.

A toxics reduction evaluation (TRE) was completed on October 9, 1991, as a part of Harrisburg's NPDES permit renewal process to verify the presence or absence of toxic pollutants in the discharge and biosolids. As a result of the TRE, a new zinc local limit was adopted by the City of Harrisburg on June 24, 1992, and approved by the US EPA on May 19, 1993. The zinc

local discharge limitation was developed with the assistance of the US EPA computer program PRELIM and is based on the allowable headworks loading method and a safety factor of twenty-five percent. Allocation of the daily maximum allowable industrial pollutant loadings was achieved by the uniform concentration technique based on total industrial flow.

A local limits evaluation was completed August 11, 2009 as part of Harrisburg's NPDES renewal process to verify the presence or absence of toxic pollutants in the discharge and biosolids. As a result of a PAG-08 permit for beneficial use of biosolids, molybdenum, silver, selenium and polychlorinated biphenyl local limits were adopted by the City of Harrisburg on October 29, 2010 and approved by the US EPA on May 15, 2012. The molybdenum, silver, selenium and polychlorinated biphenyl discharge limits were developed with the assistance of the US EPA MS Excel computer program and are based on the allowable headworks loading method with a safety factor of ten percent. Allocation of the daily maximum allowable pollutant loadings was achieved by the uniform concentration technique base on total industrial flow.

In addition to the development of the daily maximum loadings, instantaneous maximum concentrations in grab samples have also been calculated. The instantaneous maximum values were determined by multiplying the daily maximum concentration, where applicable, by a factor of two. A multiplier of two was chosen to correspond to the same multiplier used by the PA DEP in developing the instantaneous maximum values in Harrisburg's NPDES permit.

Industrial Waste Pretreatment Program changes and miscellaneous developments that occurred in 2015 are as follows: receipt of an updated baseline monitoring report and industrial wastewater discharge application, and issued a five-year industrial user permit to Public Realty Capital; applied molybdenum, silver, selenium and polychlorinated biphenyl local discharge limits to applicable industrial user permits issued in 2016; receipt of an updated 90-day compliance report from Public Realty Capital; performed a facility closure inspection and vacated Electronic Service & Design Corporation's industrial user permit due to the shuttering and removal of the printed circuit board manufacturing processes; issued a violation notice to Pinnacle Health – Harrisburg Campus for discharging materials that interfered with the operation of the sewer system.

On April 9, 2014, an audit of Capital Region Water's pretreatment program was performed by US EPA representative Robert G. Staves. No deficiencies were cited. The last pretreatment program audit was conducted on July 16, 2015 by US EPA contractor TetraTech. As a result of the "Pretreatment Streamlining Regulations" promulgated on October 17, 2005, several program changes were implemented in 2008. Program changes, where applicable, have been submitted to the US EPA and approved.

APPENDIX E-3

PRETREATMENT PERFORMANCE SUMMARY

EXHIBIT XIV

CAPITAL REGION WATER
ADVANCED WASTEWATER TREATMENT FACILITY

Pretreatment Performance Summary

I. General Information

Control Authority Name: Capital Region Water
Address: 1662 South Cameron Street
City: Harrisburg State: Pennsylvania Zip: 17104
Contact Person: Jess Rosentel
Contact Title: Superintendent
Contact Telephone Number: (717) 939-7275
Contact E-mail Address: jess.rosentel@capitalregionwater.com
NPDES No.: PA0027197
Permit Issuance Date: 01/01/10 Expiration Date:12/31/14
Reporting Period: January 1 - December 31, 2015
Total Categorical IUs (CIUs): 1
Total "Middle Tier" CIUs (MTCIUs): 0
Total Nonsignificant CIUs (NSCIUs): 0
Total Significant Noncategorical IUs (SNIUs): 7

II. Significant Industrial User Compliance

1. No. of SIUs With Current Control Documents	8 (1)
2. No. of SIU Facilities Inspected	9
3. No. of SIU Facilities Sampled	9
4. No. of SIUs Submitting Self-Monitoring Reports	9

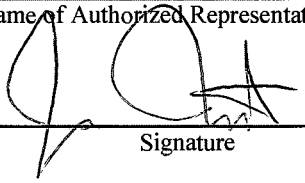
III. Significant Industrial User Compliance

1. No. of SIUs Violating a Compliance Schedule/No. on a Schedule	0
2. No. of SIUs in SNC for the July to December Period	0
3. No. of SIUs in SNC At Any Time During Calendar Year	1
4. No. of SIUs in SNC That Were Also in SNC During the Previous Calendar Year	0
5. No. of NSCIUs that violated any standards or requirements	0

IV. Enforcement Actions

1. Notices/Letters of Violation Issued to SIUs	3
2. Enforceable Compliance Schedules Issued to SIUs	0
3. Civil/Criminal Suits Filed	0
4. No. of SIUs From Which Penalties Have Been Collected	1
5. Other Actions (sewer bans, etc.)	0

I certify that the information contained in this report and attachments is complete and accurate to the best of my knowledge. (See Part B.V of the instructions)

Jess Rosentel	Superintendent
Name of Authorized Representative (Print)	Title (Print)
	March 14, 2016
Signature	Date

(1) Electronic Service & Design, Inc. permit vacated 10/29/15.

APPENDIX E-4

REGULATED INDUSTRIAL USERS - 2015

CAPITAL REGION WATER
ADVANCED WASTEWATER TREATMENT FACILITY

INDUSTRIAL WASTE PRETREATMENT PROGRAM

Regulated Industrial Users - 2015

Industrial User	Class	SIC	Category	BMR (1) Submittal	*********Permit********** Number	Issued	Expir.	90-Day (2) Compliance Report Rec'd	****Inspection**** Facility	Self Mon.	*******Sampling******* Compliance	Self Mon.
Electronic Service & Design Corporation (3) 5885 Grayson Road, Hbg., Pa 17111	C	3679	Metal Finishing	05/20/11	062616-10	06/27/11	06/26/16	09/14/11 (b)	2	0	4	6
Harrisburg Dairies, Inc. 20th and Herr Streets, Hbg., Pa 17103	NC	2020	High Load Conv.	08/20/14	082119-13	08/22/14	08/21/19	09/30/14 (b)	1	1	9	6
Hershey Creamery Company 301 South Cameron Street, Hbg., Pa 17101	NC	2024	High Load Conv.	05/29/14	072319-8	07/24/14	07/23/19	08/29/14 (b)	1	1	9	17
LCSWMA (002/003) (4) 1670 South 19th Street, Hbg., Pa 17104	NC	4953	High Load Metals	12/17/13	122017-9	12/21/13	12/20/17	03/20/13 (b)	1	1	4	11
Norfolk Southern Railway Company 3322 Industrial Road, Hbg., Pa 17110	NC	4011	High Load Conv.	05/22/13	081918-11	08/20/13	08/19/18	11/15/13 (b)	1	1	6	4
Public Realty Capital 909 Elmerton Avenue, Hbg., Pa 17110	NC	4953	High Load Metals	04/01/15	040620-21	04/07/15	04/06/20	05/21/15 (b)	1	1	2	4
Robert E. Young Water Services Center 100 Pine Drive, Harrisburg, PA 17104	NC	4941	High Load Conv.	04/29/13	042918-22	04/30/13	04/29/18	09/23/13 (b)	1	1	6	12
Swatara Township Landfill 599 Eisenhower Boulevard, Hbg., Pa 17111	NC	4953	High Load Metals	01/16/13	031618-17	03/17/13	03/16/18	07/09/13 (b)	1	1	2	3 (5)
The AMES Companies, Inc. 1500 South Cameron Street, Hbg., Pa 17104	C	3799	Metal Finishing	05/19/14	062519-6	06/26/14	06/25/19	09/24/14 (b)	1	1	6	15

Notes:
(1) All industrial users are required to update their BMR's prior to permit issuance or reissuance. The date indicated represents the most recent submittal.
(2) All industrial users are required to submit a 90-day compliance report upon industrial user permit: (a) issuance, (b) reissuance or (c) amendment. The date indicated represents the most recent submittal.
(3) Industrial user's printed circuit board manufacturing process ceased 06/18/15. Following a final closure inspection to verify equipment removal and discharge line capping, the industrial user permit was vacated 10/29/15.
(4) Lancaster County Solid Waste Management Authority/Susquehanna Resource Management Complex
(5) Industrial user failed to self monitor during the second quarter 2015.

C - Categorical MTC - Middle Tier Categorical NSC - Nonsignificant Categorical NC - Noncategorical

APPENDIX E-5

FORMAL COMPLIANCE SCHEDULES - 2015

FORMAL COMPLIANCE SCHEDULES

There were no formal compliance schedules for 2015.

APPENDIX E-6

ENFORCEMENT ACTIONS - 2015

EXHIBIT XVI

THE HARRISBURG AUTHORITY
ADVANCED WASTEWATER TREATMENT FACILITY

INDUSTRIAL WASTE PRETREATMENT PROGRAM

Enforcement Actions - 2015

Industrial User	Class	Violation	Type	City Action	I.U. Response
Harrisburg Dairies, Inc.	N	Oil/Grease daily maximum effluent discharge limit exceedance; compliance monitoring 06/23/15.	NC	Letter of violation issued ending the second quarter 2015 enforcement evaluation period that requested an explanation of the violation and a plan of corrective action be submitted within 30 days.	Corrected. I.U. responded within 30 days and explained that packing on the "Homogenizer" blew out and the leak caused the violation. As corrective action, the packing was replaced and the operator was advised to inform maintenance about any leaks in the future.
Harrisburg Dairies, Inc.	N	Oil/Grease daily maximum effluent discharge limit exceedance; compliance monitoring 07/16/15, 08/06/15 and 11/17/15.	NC	Letter of violation ending the fourth quarter 2015 enforcement evaluation period that requested an explanation of the violations and a plan of corrective action be submitted within 30 days.	Satisfactory Response. I.U. responded within 30 days and explained the company was forced to buy additional cream to keep up with production needs. When cleaning the transport tankers, the existing pump was unable to get all the cream and foam out of the transport tanker. When CIP-ing the transport tanker, the residual cream and foam overloaded the wastewater equalization tank and caused the violations. As corrective action, a "ringless" style pump was installed to evacuate most of the cream and foam from the transport tanker thereby reducing the fats, oils and grease (FOG) in the discharge.

Key: C - Categorical N - Noncategorical NC - Noncompliance SNC - Significant Noncompliance

Industrial User	Class	Violation	Type	City Action	I.U. Response
Swatara Township Landfill	N	Reporting violation; failure to submit the results of self monitoring for the second quarter 2015.	SNC	Notice of violation issued ending the second quarter enforcement evaluation period that requested a plan of corrective action be submitted within 30 days. Also, due to the investigative time incurred, levied $750.00 in fines.	Corrected. I.U. responded within 30 days. As a plan of corrective action, the individual responsible for monitoring the landfill was relieved of those duties and the Director of Code Enforcement was assigned all future industrial user permit monitoring and reporting duties. Also, remitted $750.00 in fines.

Key: C-Categorical N-Noncategorical NC-Noncompliance SNC-Significant Noncompliance

APPENDIX E-7

COMPLIANCE SAMPLING / INSPECTION SCHEDULE

EXHIBIT XVII

CAPITAL REGION WATER
ADVANCED WASTEWATER TREATMENT FACILITY

INDUSTRIAL WASTE PRETREATMENT PROGRAM

Compliance Sampling/Inspection Schedule - 2016

Industrial User	Compliance Sampling	Facility Inspection	Self Monitoring Inspection
The AMES Companies Incorporated	March 7/October 17	March 14	July 11
Harrisburg Dairies, Inc.	April 11/September 5	March 28	July 11
Hershey Creamery Company	April 18/September 17	April 11	July 11
LCSWMA (002/003)	May 9/September 12	April 18	August 1
Norfolk Southern Corporation	May 2/August 8	April 25	September 12
Public Realty Capital	March 28/August 15	May 9	September 12
Robert E. Young Water Services Center	February 29/October 3	May 16	October 3
Swatara Township	April 4/September 26	March 7	November 1

Scheduled monitoring and inspection visitation will be through the week of the date above.

APPENDIX E-8

ANNUAL NEWSPAPER NOTIFICATION OF 2015 SIGNIFICANT NON-COMPLIANCE VIOLATORS

CAPITAL REGION WATER
ADVANCED WASTEWATER TREATMENT FACILITY

INDUSTRIAL WASTE PRETREATMENT PROGRAM

Annual Newspaper Publication

of

2015 Significant Noncompliance Violators

PUBLIC NOTICE

OF

SIGNIFICANT INDUSTRIAL

POLLUTION VIOLATIONS

Listed below is a significant industrial wastewater violation applicable to 40 CFR, Part 403 (General Pretreatment Regulations) which occurred during the calendar year 2015 to an industry tributary to Capital Region Water's Advanced Wastewater Treatment Facility.

Industry Name: Swatara Township Landfill

Address: 599 Eisenhower Boulevard, Harrisburg, PA 17111

Violation: Reporting violation; failure to complete second quarter 2015 self monitoring.

Action Taken: A violation notice was issued. Levied $750.00 in fines.

I.U. Response: I.U. responded within 30 days. As a plan of corrective action, all industrial user permit monitoring and reporting duties were re-assigned to the Director of Code Enforcement. Also, paid $750.00 in fines.
Appeared in: ***Patriot-News*** on Tuesday, 02/16/2016

APPENDIX E-9

METAL CONCENTRATIONS - 2015

CAPTIAL REGION WATER
ADVANCED WASTEWATER TREATMENT FACILITY

INDUSTRIAL WASTE PRETREATMENT PROGRAM

Influent Metals Concentration, mg/l - 2015

Date	Ag	As	Cd	Cr	Cu	CN	Mo	Pb	Hg	Ni	Se	Zn	PCBs
03/03/2015	<0.0010	<0.0015	<0.0005	0.0019	0.038	<0.0050	0.0044	0.0036	<0.0002	0.0033	<0.0020	0.200	<0.0005
05/07/2015	<0.0010	<0.0015	<0.0005	<0.0010	0.005	<0.0050	0.0072	<0.0010	<0.0002	0.0037	<0.0020	0.038	<0.0005
07/13/2015	<0.0020	<0.0050	<0.0010	<0.0025	0.043	<0.0050	<0.0100	0.0094	<0.0002	<0.0100	<0.0100	0.190	<0.0005
11/24/2015	<0.0010	<0.0015	<0.0005	0.0017	0.034	<0.0050	0.0035	0.0038	0.0002	0.0034	<0.0020	0.200	<0.0005
AVERAGE	**<0.0010**	**<0.0015**	**<0.0005**	**0.0018**	**0.030**	**<0.0050**	**0.0050**	**0.0056**	**0.0002**	**0.0035**	**<0.0020**	**0.157**	**<0.0005**

Effluent Metals Concentration, mg/l - 2015

Date	Ag	As	Cd	Cr	Cu	CN	Mo	Pb	Hg	Ni	Se	Zn	PCBs
03/03/2015	<0.0010	<0.0015	<0.0005	<0.0010	0.004	<0.0050	0.0035	<0.0010	<0.0002	0.0025	<0.0020	0.073	<0.0005
05/07/2015	<0.0010	0.0025	<0.0005	0.0140	0.015	<0.0050	<0.0010	0.0032	<0.0002	<0.0025	<0.0020	0.017	<0.0005
07/13/2015	<0.0020	<0.0050	<0.0010	<0.0025	0.006	0.0070	<0.0100	<0.0030	<0.0002	<0.0100	<0.0100	0.038	<0.0005
11/24/2015	0.0300	<0.0015	<0.0005	<0.0010	0.005	<0.0050	0.0036	<0.0010	<0.0002	<0.0025	<0.0020	0.030	<0.0005
AVERAGE	**0.0300**	**0.0025**	**<0.0005**	**0.0140**	**0.007**	**0.0070**	**0.0036**	**0.0032**	**<0.0002**	**0.0025**	**<0.0020**	**0.040**	**<0.0005**

Biosolids Metals Concentration, mg/kg - 2015

Date	Ag	As	Cd	Cr	Cu	CN	Mo	Pb	Hg	Ni	Se	Zn	PCBs
01/15/2015	4	<9.6	<2.4	29	504	<1.4	11.3	72	1.40	24	<24.0	1860	<0.31
03/03/2015	3	<9.9	<2.5	29	481	2.6	10.2	50	1.60	23	<24.7	1750	<0.43
05/07/2015	3	<9.1	<2.3	26	439	1.2	9.6	56	1.20	21	<22.6	1370	<0.41
07/13/2015	4	<8.6	4.6	34	484	1.2	11.1	82	1.80	24	<21.4	1540	0.34
09/15/2015	3	<8.1	<2.0	29	423	<1.2	17.9	51	0.96	28	<20.2	1670	<0.16
11/24/2015	3	<10.4	<2.6	30	504	<1.5	16.6	58	1.10	28	<26.0	2040	<0.19
AVERAGE	**3**	**<10.1**	**4.6**	**29**	**473**	**1.7**	**13**	**62**	**1.34**	**25**	**<26.0**	**1705**	**0.34**

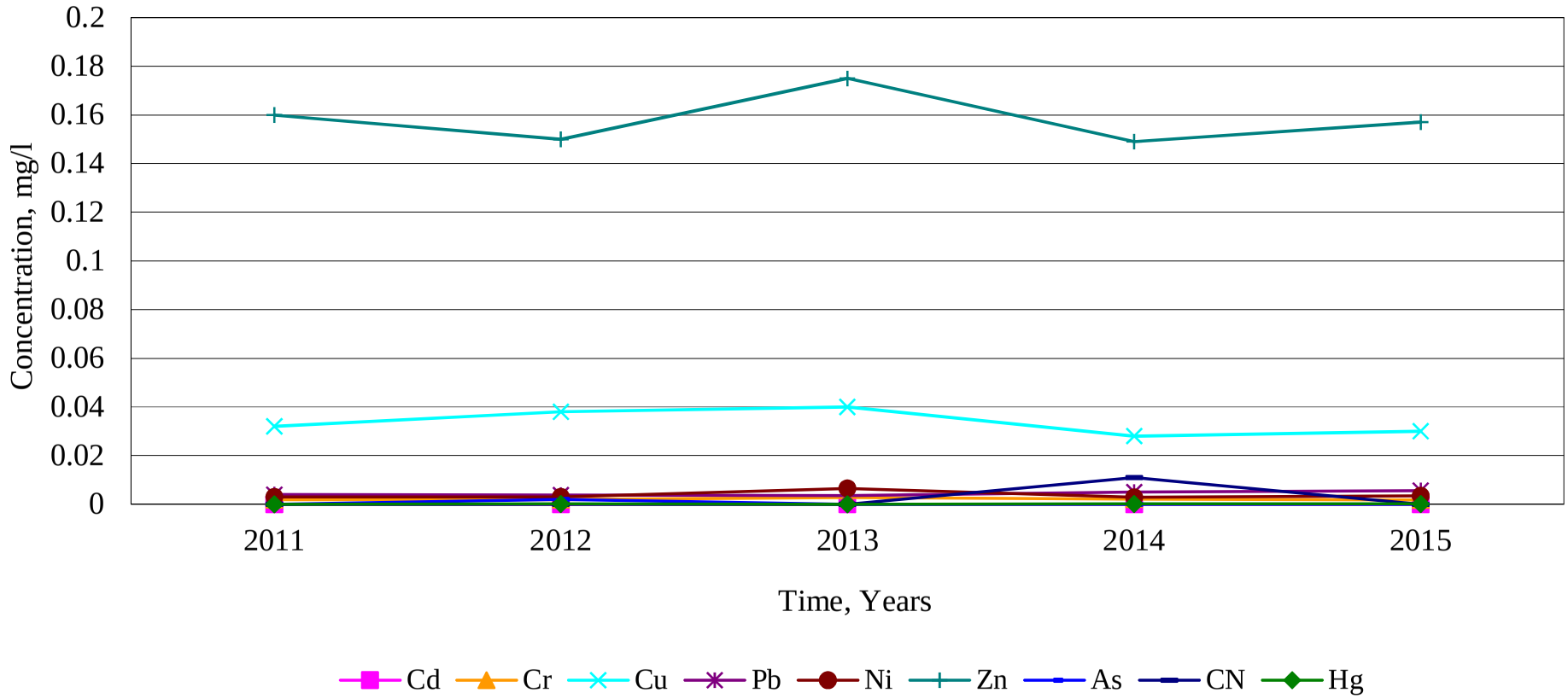
APPENDIX E-10

GRAPH: INFLUENT METAL CONCENTRATIONS - 2015

Figure I

Influent Metals Concentration

Yearly Averages: 2011 - 2015



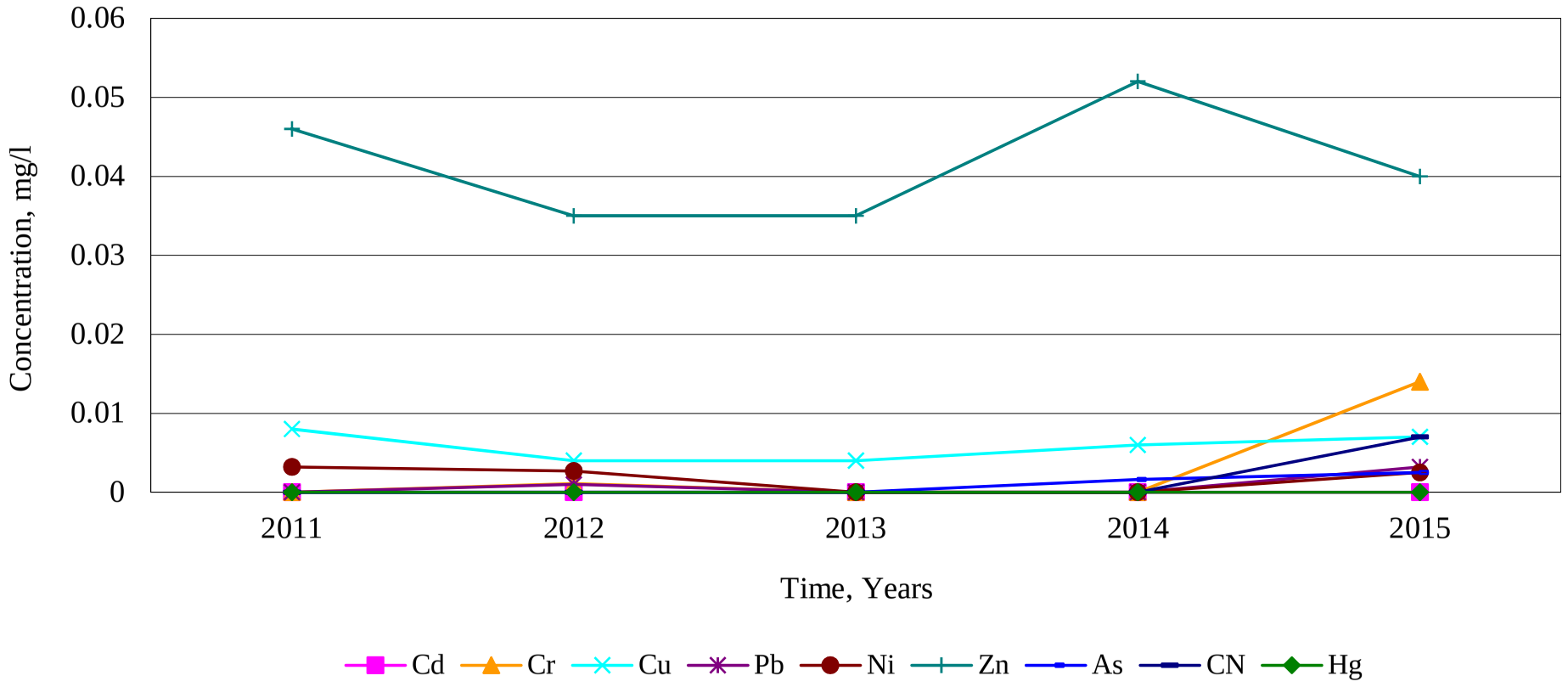
APPENDIX E-11

GRAPH: EFFLUENT METAL CONCENTRATIONS - 2015

Figure II

Effluent Metals Concentration

Yearly Averages: 2011 - 2015



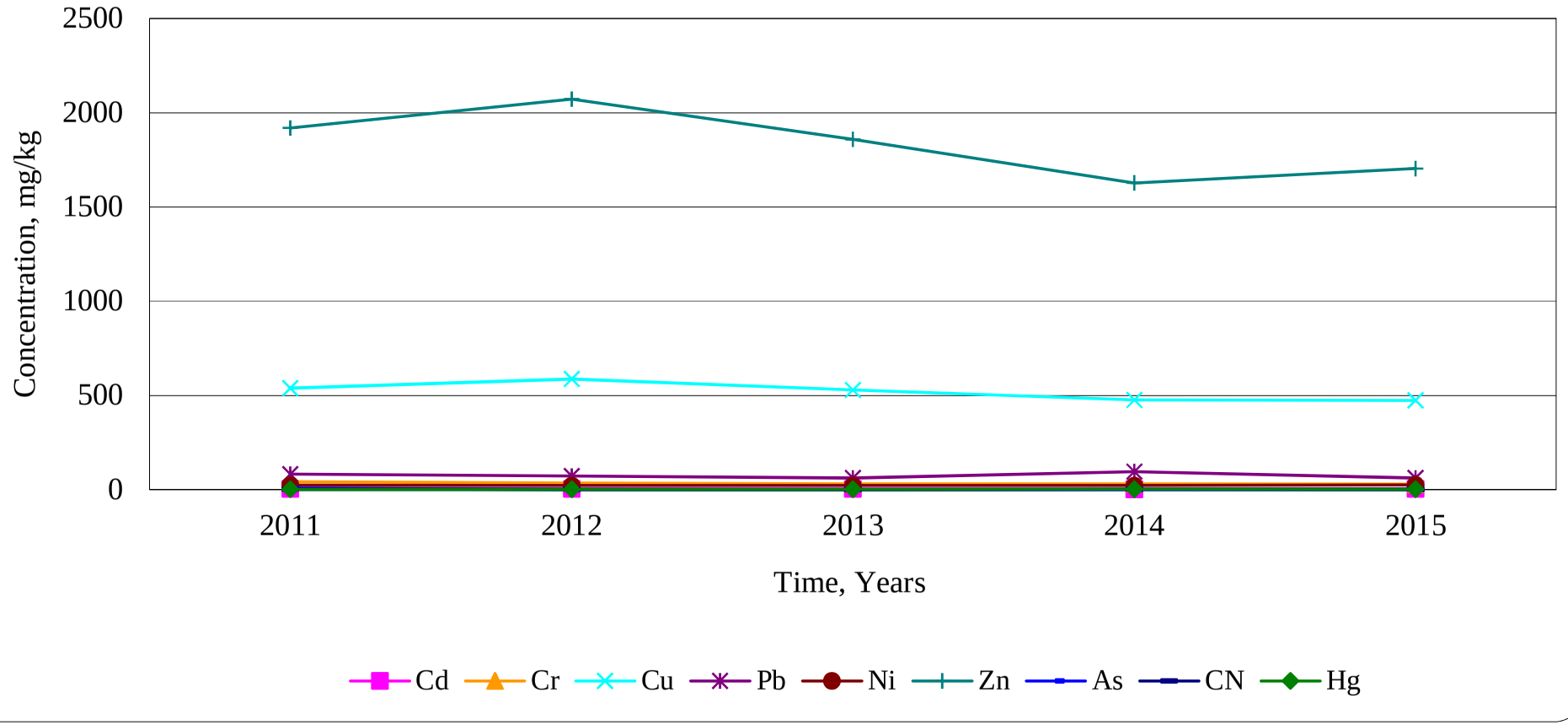
APPENDIX E-12

GRAPH: BIOSOLIDS METAL CONCENTRATIONS - 2015

Figure III

Biosolids Metals Concentration

Yearly Averages: 2011 - 2015



Appendix F

APPENDIX F-1

CONTRACT WASTE HAULING PROGRAM NARRATIVE

CONTRACT WASTE HAULING PROGRAM

The AWTF continues to be well known in Central Pennsylvania as a sludge disposal center for process and septic waste. The objectives of the Contract Waste Hauling Program (CWHP) are to 1) provide an alternate sludge disposal method to regional POTWs, food processing companies, and septic waste haulers; 2) collect permit, disposal, and laboratory fees in excess of expenses; and 3) increase digester gas production by decomposition of the waste by-products. Correspondingly, with increased gas production, there is an increase in cogeneration electrical sales.

A computer program is utilized by AWTF personnel to facilitate the administration of the CWHP. The program maintains customer information, controls daily transactions, produces invoices, and keeps complete accounting records for each customer. Computerization has reduced manual tasks, minimized errors, and structured CWHP activities.

All waste accepted at Harrisburg must meet certain criteria outlined in the Contract Waste Hauling Program Manual to insure the protection of AWTF personnel, structures, equipment, processes, and sludge disposal options. To insure that all waste complies with AWTF requirements, routine monitoring is performed by the facility's Laboratory.

Monitoring is accomplished through a complete scan upon permit application submittal, surveillance scans, or routine sampling of waste throughout the course of the year**.** In 2015, thirty permit scans, thirty-two surveillance scans, and six hundred thirty-nine routine hauler analyses were performed.

Disposal permits are issued for a one-year period, and each hauler is categorized as handling either process or septic waste. In 2015, twenty-six process and two septic disposal permits were issued; accordingly, collected $1,400.00 in permit application fees. Disposal activities accounted for $241,779.60 in revenue, while an additional $11,274.21 was attributed to the sale of electricity based on an increase in methane gas production from the digestion of Contract Waste Hauling sludge. Additional details may be found on Exhibit XX and XXI.

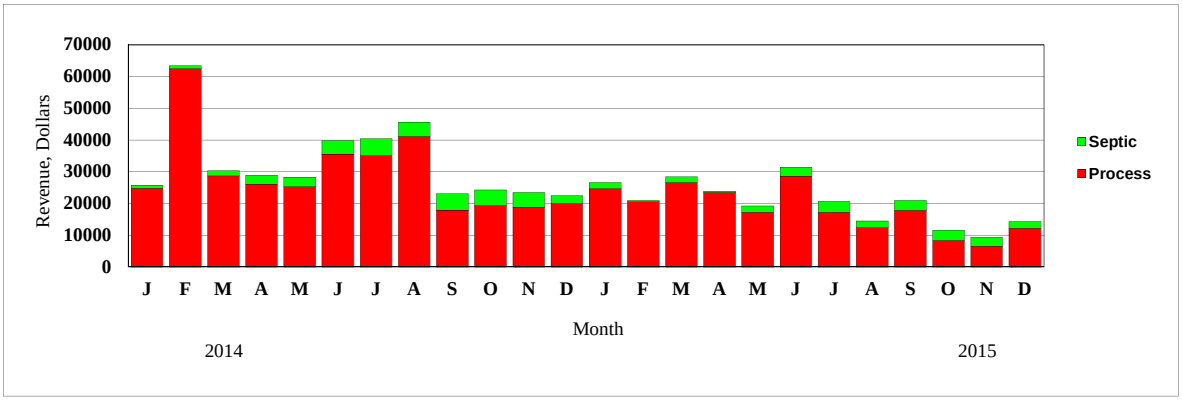
APPENDIX F-2

CONTRACT WASTE HAULING PROGRAM - 2014-2015

CAPITAL REGION WATER
ADVANCED WASTEWATER TREATMENT FACILITY

Contract Waste Hauling Program 2014 - 2015

Month	Process Gallons	Process Revenue	Septic Gallons	Septic Revenue	Total Gallons	Total Revenue
January	697,300	$24,777.00	35,250	$963.00	732,550	$25,740.00
February	1,648,800	$61,614.00	26,400	$878.40	1,648,800	$62,492.40
March	926,500	$27,144.90	47,750	$1,611.00	974,250	$28,755.90
April	743,400	$23,248.80	78,550	$2,827.80	821,950	$26,076.60
May	711,400	$22,292.30	85,000	$3,024.00	796,400	$25,314.30
June	949,300	$31,365.00	119,500	$4,230.00	1,068,800	$35,595.00
July	1,060,100	$29,740.50	150,250	$5,328.00	1,210,350	$35,068.50
August	784,100	$36,450.30	129,050	$4,609.80	913,150	$41,060.10
September	361,100	$12,810.60	145,300	$5,104.80	506,400	$17,915.40
October	456,900	$14,496.30	138,750	$4,887.00	595,650	$19,383.30
November	372,100	$14,169.60	131,500	$4,662.00	503,600	$18,831.60
December	558,600	$19,988.10	72,500	$2,466.00	631,100	$22,454.10
Total - 2014	9,269,600	$318,097.40	1,159,800	$40,591.80	10,403,000	$358,687.20
Monthly Average - 2014	772,467	$26,508.12	96,650	$3,382.65	866,917	$29,890.60
January	628,800	$24,672.60	55,500	$1,908.00	684,300	$26,580.60
February	538,700	$20,538.00	13,000	$378.00	551,700	$20,916.00
March	667,200	$26,604.00	53,500	$1,836.00	720,700	$28,440.00
April	605,800	$23,462.10	10,000	$360.00	615,800	$23,822.10
May	467,400	$17,208.00	55,000	$1,980.00	522,400	$19,188.00
June	643,100	$28,596.60	78,000	$2,808.00	721,100	$31,404.60
July	524,100	$17,233.20	95,000	$3,420.00	619,100	$20,653.20
August	345,100	$12,385.80	60,000	$2,160.00	405,100	$14,545.80
September	402,500	$17,865.00	85,000	$3,060.00	487,500	$20,925.00
October	245,500	$8,356.50	90,000	$3,240.00	335,500	$11,596.50
November	184,800	$6,512.40	80,000	$2,880.00	264,800	$9,392.40
December	367,700	$12,209.40	58,500	$2,106.00	426,200	$14,315.40
Total - 2015	5,620,700	$215,643.60	733,500	$26,136.00	6,354,200	$241,779.60
Monthly Average - 2015	468,392	$17,970.30	61,125	$2,178.00	529,517	$20,148.30



APPENDIX F-3

CONTRACT WASTE HAULER CONTRIBUTIONS - 2015

CAPITAL REGION WATER
ADVANCED WASTEWATER TREATMENT FACILITY

Contract Waste Hauler Contributions - 2015

Contract Waste Hauler	January	February	March	April	May	June	July	August	September	October	November	December	Total Gallons
Bloomfield Borough WWTP	18,000	18,000	0	24,000	24,000	18,000	24,000	24,000	18,000	18,000	16,000	18,000	220,000
Borough of Carroll Valley	20,000	30,000	20,000	50,000	20,000	15,000	20,000	25,000	15,000	15,000	0	20,000	250,000
Borough of Highspire	0	0	51,000	0	0	0	0	0	0	0	6,000	0	57,000
Borough of Lemoyne WWTP	52,200	30,000	48,800	7,500	0	133,500	15,800	0	0	0	0	0	287,800
Borough of New Cumberland	0	0	0	0	0	0	0	0	0	0	0	0	0
Conewago Twp. Sewer Authority	72,000	96,000	36,000	90,000	48,000	120,000	0	48,000	24,000	54,000	0	66,000	654,000
Creekview Sewage Plant	6,000	0	6,000	2,000	0	0	2,500	2,000	0	0	0	0	18,500
Dauphin Borough	0	0	24,000	0	0	0	36,000	0	0	0	0	0	60,000
Defense Distribution Depot Susq. PA	0	24,000	0	0	0	0	0	0	24,000	0	0	0	48,000
Derry Township Municipal Authority	0	0	0	0	0	0	0	0	0	0	0	0	0
Dillsburg Septic	0	0	0	0	0	2,000	0	0	0	0	0	3,500	5,500
Duncannon Borough WWTP	0	0	0	0	27,500	0	0	0	0	0	0	33,000	60,500
Elizabethville Area Authority	64,000	25,600	38,400	12,800	51,200	0	38,400	0	0	38,500	0	0	268,900
Fairfield Municipal Authority	0	0	0	0	40,000	0	0	30,000	0	0	0	0	70,000
Halifax Municipal Authority	12,000	6,000	0	18,000	0	0	12,000	30,000	0	0	0	16,200	94,200
Hodges MHP	0	0	0	5,000		5,000		0	0	0	0	0	10,000
Keystone Protein Company	0	0	0	0	0	0	0	0	0	0	0	0	0
Liverpool Municipal Authority	16,000	16,000	16,000	16,500	0	11,000	5,500	11,000	0	0	5,500	11,000	108,500
Lower Allen Twp. Authority	0	0	0	0	0	0	0	0	156,000	0	0	0	156,000
Loysville Village Muni. Authority	0	0	10,000	0	0	7,600	12,000	8,000	8,000	8,000	8,000	4,000	65,600
Masser & Smeltz, Inc. (Holding)	0	0	0	0	0	0	0	0	0	0	0	0	0
Masser & Smeltz, Inc. (Septic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Middletown Borough WWTP	0	0	0	0	0	0	0	0	0	0	0	0	0
Millerstown Sewer Plant	24,000	20,000	28,000	0	0	0	6,000	0	6,000	0	6,000	12,000	102,000
Morton Buildings, Inc.	0	0	0	0	0	0	0	0	0	0	0	0	0
Mountain View Reclamation	0	0	0	0	0	0	0	0	0	0	0	0	0
Natural Soil Products	0	0	0	33,000	9,700	0	108,300	0	0	0	0	0	151,000
Newberry Twp. Muni. Authority	0	0	0	0	0	0	0	0	0	0	0	0	0
Newport WWTP	53,000	22,000	106,000	88,500	78,000	59,000	72,000	53,000	41,000	5,000	0	0	577,500
Newville Water & Sewer Auth.	0	48,000	30,000	0	0	0	0	0	0	0	18,000	36,000	132,000
Northern Lebanon County Authority	88,000	82,500	104,500	88,000	71,500	93,000	119,000	59,000	93,500	66,000	77,000	82,500	1,024,500
Oak Tree Env. Services (Holding)	5,000	5,000	5,000	0	0	0	0	0	0	0	0	0	15,000
Oak Tree Env. Services (Septic)	12,500	4,000	30,500	0	0	0	0	0	0	0	0	0	47,000
Pilot/Flying J (Clarks Ferry)	7,500	5,000	7,500	5,000	5,000	5,000	7,500	7,500	5,000	5,000	5,000	5,000	70,000
Ranch House Restaurant	2,000	0	2,000	0	2,000	0	0	0	2,000	0	0	2,000	10,000
Regency Woods North	8,600	8,600	15,000	5,000	5,000	8,000	6,100	8,600	10,000	10,000	10,800	10,000	105,700
Shealer's Septic Service	38,000	4,000	18,000	10,000	55,000	76,000	95,000	60,000	85,000	90,000	80,000	55,000	666,000
South Middleton Township	114,000	42,000	72,000	102,000	66,000	90,000	0	0		0	0	0	486,000
Swatara Township Authority	0	0	0	0	0	0	0	0	0	0	0	0	0
Twin Boroughs Sani. Authority	71,500	65,000	52,000	58,500	19,500	78,000	39,000	39,000	0	26,000	32,500	52,000	533,000
Total Gallons	684,300	551,700	720,700	615,800	522,400	721,100	619,100	405,100	487,500	335,500	264,800	426,200	6,354,200

Appendix G

2015

Biosolids Disposal

KBS, Inc.
P.O. Box 7
Thomasville, PA 17364
717-792-1800

Landfill

Mostoller Municipal Waste Landfill
7095 Glades Pike
Somerset, PA 15501
1-814-701-3600

Agricultural (Spreading on permitted farm sites)

Jason L. Jones
931 W. Old York Road
Carlisle, PA 17015
717-245-2175

Robert Kirk
290 Pilottown Road
Peach Bottom, PA 17563

Don McKeehan
2118 Newville Road
Carlisle, PA 17015
717-574-8863

Mahlon W. Lapp
148 Hensel Road
Peach Bottom, PA 17563
1-717-548-2248
1-717-940-7510 (cell)

Keith Oellig
440 Fire House Road
Grantville, PA 17028
717-469-0180

Appendix H

ALS Environmental

34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

January 26, 2015

Mr. Randy Schaffer
Capital Region Water-AWTF (fka/Harrisburg)
Advanced WW Treatment Facility
1662 S. Cameron St.
Harrisburg, PA 17104

Certificate of Analysis

Project Name:	**2014WW.76**	Workorder:	**2049545**
Purchase Order:	**2014WW.76**	Workorder ID:	**59153-59160**

Dear Mr. Schaffer:

Enclosed are the analytical results for samples received by the laboratory on Thursday, January 15, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Amy K Borden (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Jess Rosentel

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Amy K Borden

Ms. Amy K Borden
Project Coordinator

ALS Environmental

34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2049545 59153-59160

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2049545001	59153 AWTF Biosolids	Solid	1/15/2015 08:30	1/15/2015 10:52	Collected by Client
2049545002	59154 AWTF Biosolids	Solid	1/15/2015 08:47	1/15/2015 10:52	Collected by Client
2049545003	59155 AWTF Biosolids	Solid	1/15/2015 09:02	1/15/2015 10:52	Collected by Client
2049545004	59156 AWTF Biosolids	Solid	1/15/2015 09:17	1/15/2015 10:52	Collected by Client
2049545005	59157 AWTF Biosolids	Solid	1/15/2015 09:32	1/15/2015 10:52	Collected by Client
2049545006	59158 AWTF Biosolids	Solid	1/15/2015 09:47	1/15/2015 10:52	Collected by Client
2049545007	59159 AWTF Biosolids	Solid	1/15/2015 10:05	1/15/2015 10:52	Collected by Client
2049545008	59160 AWTF Biosolids	Solid	1/15/2015 10:05	1/15/2015 10:52	Collected by Client

ALS Environmental

34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2049545 59153-59160

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2049545 59153-59160

Lab ID: **2049545001** Date Collected: 1/15/2015 08:30 Matrix: Solid

Sample ID: **59153 AWTF Biosolids** Date Received: 1/15/2015 10:52

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	81.3		%	0.1	S2540G-11		1/16/15 10:02	NK	A
Total Solids	18.7		%	0.1	S2540G-11		1/16/15 10:02	NK	A
MICROBIOLOGY									
Fecal Coliforms	11800	1	col/gm Dry Wt	5.36	S9222D-97		1/15/15 14:17	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2049545 59153-59160

Lab ID: **2049545002** Date Collected: 1/15/2015 08:47 Matrix: Solid

Sample ID: **59154 AWTF Biosolids** Date Received: 1/15/2015 10:52

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	81.6		%	0.1	S2540G-11		1/16/15 10:02	NK	A
Total Solids	18.4		%	0.1	S2540G-11		1/16/15 10:02	NK	A
MICROBIOLOGY									
Fecal Coliforms	14100	1	col/gm Dry Wt	5.44	S9222D-97		1/15/15 14:19	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2049545 59153-59160

Lab ID: **2049545003** Date Collected: 1/15/2015 09:02 Matrix: Solid

Sample ID: **59155 AWTF Biosolids** Date Received: 1/15/2015 10:52

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	81.8		%	0.1	S2540G-11		1/16/15 10:02	NK	A
Total Solids	18.2		%	0.1	S2540G-11		1/16/15 10:02	NK	A
MICROBIOLOGY									
Fecal Coliforms	17600	1	col/gm Dry Wt	5.50	S9222D-97		1/15/15 14:21	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2049545 59153-59160

Lab ID: **2049545004** Date Collected: 1/15/2015 09:17 Matrix: Solid

Sample ID: **59156 AWTF Biosolids** Date Received: 1/15/2015 10:52

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	81.7		%	0.1	S2540G-11		1/16/15 10:02	NK	A
Total Solids	18.3		%	0.1	S2540G-11		1/16/15 10:02	NK	A
MICROBIOLOGY									
Fecal Coliforms	15900	1	col/gm Dry Wt	5.48	S9222D-97		1/15/15 14:23	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2049545 59153-59160

Lab ID: **2049545005** Date Collected: 1/15/2015 09:32 Matrix: Solid

Sample ID: **59157 AWTF Biosolids** Date Received: 1/15/2015 10:52

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	81.8		%	0.1	S2540G-11		1/16/15 10:02	NK	A
Total Solids	18.2		%	0.1	S2540G-11		1/16/15 10:02	NK	A
MICROBIOLOGY									
Fecal Coliforms	12600	1	col/gm Dry Wt	5.50	S9222D-97		1/15/15 14:24	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2049545 59153-59160

Lab ID: **2049545006** Date Collected: 1/15/2015 09:47 Matrix: Solid

Sample ID: **59158 AWTF Biosolids** Date Received: 1/15/2015 10:52

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	81.5		%	0.1	S2540G-11		1/16/15 10:02	NK	A
Total Solids	18.5		%	0.1	S2540G-11		1/16/15 10:02	NK	A
MICROBIOLOGY									
Fecal Coliforms	23200	1	col/gm Dry Wt	5.40	S9222D-97		1/15/15 14:26	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2049545 59153-59160

Lab ID: **2049545007** Date Collected: 1/15/2015 10:05 Matrix: Solid

Sample ID: **59159 AWTF Biosolids** Date Received: 1/15/2015 10:52

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	82.4		%	0.1	S2540G-11		1/16/15 10:02	NK	A
Total Solids	17.6		%	0.1	S2540G-11		1/16/15 10:02	NK	A
MICROBIOLOGY									
Fecal Coliforms	13600	1	col/gm Dry Wt	5.68	S9222D-97		1/15/15 14:28	LLJ	A

Ms. Amy K Borden
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2049545 59153-59160

Lab ID: **2049545008** Date Collected: 1/15/2015 10:05 Matrix: Solid

Sample ID: **59160 AWTF Biosolids** Date Received: 1/15/2015 10:52

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
PCBs										
Total Polychlorinated Biphenyl	ND		mg/kg	0.31	SW846 8082A	1/16/15	KAC	1/16/15 13:31	EGO	A
Aroclor-1016	ND		mg/kg	0.31	SW846 8082A	1/16/15	KAC	1/16/15 13:31	EGO	A
Aroclor-1221	ND		mg/kg	0.31	SW846 8082A	1/16/15	KAC	1/16/15 13:31	EGO	A
Aroclor-1232	ND		mg/kg	0.31	SW846 8082A	1/16/15	KAC	1/16/15 13:31	EGO	A
Aroclor-1242	ND		mg/kg	0.31	SW846 8082A	1/16/15	KAC	1/16/15 13:31	EGO	A
Aroclor-1248	ND		mg/kg	0.31	SW846 8082A	1/16/15	KAC	1/16/15 13:31	EGO	A
Aroclor-1254	ND		mg/kg	0.31	SW846 8082A	1/16/15	KAC	1/16/15 13:31	EGO	A
Aroclor-1260	ND		mg/kg	0.31	SW846 8082A	1/16/15	KAC	1/16/15 13:31	EGO	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	68.8		%	46 - 120	SW846 8082A	1/16/15	KAC	1/16/15 13:31	EGO	A
Tetrachloro-m-xylene (S)	62.9		%	52 - 115	SW846 8082A	1/16/15	KAC	1/16/15 13:31	EGO	A
WET CHEMISTRY										
Ammonia, Total (Moist Basis)	1750		mg/kg	7.4	S4500NH3D	1/20/15	J1H	1/20/15 13:15	J1H	A
Ammonia-nitrogen, Total	9760		mg/kg	41.2	S4500NH3D	1/20/15	J1H	1/20/15 13:15	J1H	A
Cyanide, Total	ND		mg/kg	1.4	SW846 9012B	1/17/15	SYB	1/19/15 10:19	LJF	A
Hexane Extractable Material	62900		mg/kg	1160	SW846 9071B			1/19/15 08:00	MPP	A
Moisture	82.1		%	0.1	S2540G-11			1/16/15 10:02	NK	A
pH	8.61	1	pH_Units		SW846 9045D			1/16/15 07:15	GMM	A
Phosphorus, Total	36800		mg/kg	1380	EPA 365.1	1/20/15	THB	1/22/15 11:52	LJF	A
Silica Gel Treated HEM	17500		mg/kg	1160	SW846 9071B			1/19/15 08:00	MPP	A
Tot. Kjeldahl Nitrogen,(Moist)	11000		mg/kg	517	S4500NH3C-97	1/25/15	C_W	1/26/15 13:08	JWB	A
Total Kjeldahl Nitrogen	61100		mg/kg	2880	S4500NH3C-97	1/25/15	C_W	1/26/15 01:08	NK	A
Total Solids	17.9		%	0.1	S2540G-11			1/16/15 10:02	NK	A
METALS										
Arsenic, Total	ND		mg/kg	9.6	SW846 6010C	1/18/15	AAM	1/20/15 03:53	TSS	A1
Cadmium, Total	ND		mg/kg	2.4	SW846 6010C	1/18/15	AAM	1/20/15 03:53	TSS	A1
Chromium, Total	28.5		mg/kg	4.8	SW846 6010C	1/18/15	AAM	1/20/15 03:53	TSS	A1
Copper, Total	504		mg/kg	9.6	SW846 6010C	1/18/15	AAM	1/20/15 03:53	TSS	A1
Iron, Total	26500		mg/kg	48.0	SW846 6010C	1/18/15	AAM	1/20/15 03:53	TSS	A1
Lead, Total	72.1		mg/kg	9.6	SW846 6010C	1/18/15	AAM	1/20/15 03:53	TSS	A1
Mercury, Total	1.4		mg/kg	0.23	SW846 7471B	1/21/15	MNP	1/21/15 14:30	MNP	A2
Molybdenum, Total	11.3		mg/kg	9.6	SW846 6010C	1/18/15	AAM	1/20/15 03:53	TSS	A1
Nickel, Total	23.9		mg/kg	9.6	SW846 6010C	1/18/15	AAM	1/20/15 03:53	TSS	A1
Potassium, Total	1280		mg/kg	240	SW846 6010C	1/18/15	AAM	1/20/15 03:53	TSS	A1
Selenium, Total	ND		mg/kg	24.0	SW846 6010C	1/18/15	AAM	1/20/15 03:53	TSS	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2049545 59153-59160

Lab ID: **2049545008** Date Collected: 1/15/2015 10:05 Matrix: Solid

Sample ID: **59160 AWTF Biosolids** Date Received: 1/15/2015 10:52

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Silver, Total	3.9		mg/kg	2.4	SW846 6010C	1/18/15	AAM	1/20/15 03:53	TSS	A1
Zinc, Total	1860		mg/kg	9.6	SW846 6010C	1/18/15	AAM	1/20/15 03:53	TSS	A1

Ms. Amy K Borden
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2049545001	1	59153 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 45 minutes after sampling.				
2049545002	1	59154 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 30 minutes after sampling.				
2049545003	1	59155 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 20 minutes after sampling.				
2049545004	1	59156 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 5 minutes after sampling.				
2049545005	1	59157 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 50 minutes after sampling.				
2049545006	1	59158 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 40 minutes after sampling.				
2049545007	1	59159 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 30 minutes after sampling.				
2049545008	1	59160 AWTF Biosolids	SW846 9045D	pH
The solid pH measured in water was 8.608 at 18.6 degrees C.				

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of 2

Courier:

Tracking #:

2049545

Co. Name: Capital Region Water - AWTF

Contact (Report to): R. Schaffer Phone:

Address: 1662 S. Cameron Street
Harrisburg, PA 17104

Bill to (if different than Report to): Same PO#: 2015 WW78

Project Name/#: ALS Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.

Date Required:

Approved By:

Email? [X] -Y

Fax? [ ] -Y No.:

***Container Type	PL	GG
***Container Size	125	1000
*** Preservative	<6°C	<6°C

ANALYSES/METHOD REQUESTED

Enter Number of Containers Per Analysis

	Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Fecal Coliform	Potassium	Phosphorus	Iron	TKN	Ammonia-N	PCB's	Cyanide, T	pH	Oil/Grease
1	59153 AWTF Biosolids		1/15/15	0830	G	SL	1									
2	59154 AWTF Biosolids		1/15/15	0847	G	SL	1									
3	59155 AWTF Biosolids		1/15/15	0902	G	SL	1									
4	59156 AWTF Biosolids		1/15/15	0917	G	SL	1									
5	59157 AWTF Biosolids		1/15/15	0932	G	SL	1									
6	59158 AWTF Biosoilds		1/15/15	0947	G	SL	1									
7	59159 AWTF Biosolids		1/15/15	1005	G	SL	1									
8	59160 AWTF Biosolids		1/15/15	1005	C	SL		1								

(completed by Sample Receiving)

Performed In: [illegible]

Cooler Temp: 4°C

Therm. ID: [illegible]

No. of Coolers:

Notes:

Sample	Custody seals Present?	(If present) Seals intact?	Received on ice?	COC/Labels complete/accurate?	Container in good condition?
1	Y	Y	Y	Y	Y
2	N	N	N	N	N
3	Y	Y	Y	Y	Y
4	N	N	N	N	N
5	N	N	N	N	N
6	N	N	N	N	N
7	N	N	N	N	N
8	N	N	N	N	N

SAMPLED BY (Please Print): LEN KELLY

Project Comments: 1/15/15 1237

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	Len Kelly, CRW	1/15/15	10 25	2	Jorge Mollo	1/15/15	1025
3	Jorge Falla	1/15/15	1052	4	[signature] ALS	1/15/15	1052
5				6			
7				8			
9				10			

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] (other)

EDDs Required? [ ] If yes, format type:

DOD Criteria Required?

SDWA Forms? yes [ ] yes [ ] yes [ ] yes [ ]

State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ]

Other

ALS FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite **Matrix: Al=Air; DW=Drinking Water; GW=Groundwater; Ol=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY ***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

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Middletown, PA 17057
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F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Courier:
Tracking #:

2095405

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Co. Name: Capital Region Water - AWTF
Contact (Report to): R. Schaffer Phone: 717-939-7270
Address: 1662 S. Cameron Street
Harrisburg, PA 17104

Bill to (if different than Report to): Same PO#: 2015 WW 78

Project Name/#: ALS Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days. Date Required:
[ ] Rush-Subject to ALS approval and surcharges. Approved By:

Email? [X] -Y
Fax? [ ] -Y No.:

	Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Enter Number of Containers Per Analysis
1	(From Page 1 - Continued)						
2	AWTF Biosolids		11/15/15	1005	G	SL	
3							
4							
5							
6							
7							
8							

***Container Type: CG
***Container Size: 1000
***Preservative: 4°C

ANALYSES/METHOD REQUESTED

Total: As, Cd, Cr, Pb, Hg
Total: Cu, Ni, Se
Total: Mo, Ni, Se
Total: Ag, Zn
Report: mg/kg - Dry wt.

Receipt Information (completed by Sample Receiver)
Performed by: [illegible]
Cooler Temp: 10°C
Therm. ID: IR-291
No. of Coolers:
Notes:

	Correct containers?	Correct sample volume?	Correct preservation?	Headspace/Volatiles?	Circle appropriate Y or N.
Custody seals Present?	Y N	Y N	Y N	Y N	Y N
(if present) Seals intact?	Y N	Y N	Y N	Y N	Y N
Received on ice?	Y N	Y N	Y N	Y N	Y N
COC/Labels complete/accurate?	Y N	Y N	Y N	Y N	Y N
Container in good condition?	Y N	Y N	Y N	Y N	Y N

AT 11/15/15 1237

SAMPLED BY (Please Print): LEN KELLY

Project Comments:

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	Len Kelly CRW	11/15/15	1025	2	Jaye Dale	11/15/15	1025
3	Jaye Dale	11/15/15	10 52	4	ALS	11/15	1052
5				6			
7				8			
9				10			

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] other
EDDs Required? [ ] If yes, format type:
SDWA Forms? ⇨ yes [ ] yes [ ] yes [ ]
State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ]
Other
DOD Criteria Required?

ALS FIELD SERVICES
[ ] Pickup
[ ] Labor
[ ] Composite Sampling
[ ] Rental Equipment
[ ] Other:

* G=Grab; C=Composite
**Matrix: Al=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater
***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY

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March 16, 2015

Mr. Randy Schaffer
Capital Region Water-AWTF (fka/Harrisburg)
Advanced WW Treatment Facility
1662 S. Cameron St.
Harrisburg, PA 17104

Certificate of Analysis

Project Name:	**2015WW.78**	Workorder:	**2057176**
Purchase Order:	**2015WW.78**	Workorder ID:	**59312 through 59319**

Dear Mr. Schaffer:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, March 3, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Amy K Borden (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Jess Rosentel

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Amy K Borden

Ms. Amy K Borden
Project Coordinator

ALS Environmental

34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2057176 59312 through 59319

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2057176001	59312	Solid	3/3/2015 08:45	3/3/2015 11:03	Collected by Client
2057176002	59313	Solid	3/3/2015 09:00	3/3/2015 11:03	Collected by Client
2057176003	59314	Solid	3/3/2015 09:15	3/3/2015 11:03	Collected by Client
2057176004	59315	Solid	3/3/2015 09:30	3/3/2015 11:03	Collected by Client
2057176005	59316	Solid	3/3/2015 09:45	3/3/2015 11:03	Collected by Client
2057176006	59317	Solid	3/3/2015 10:00	3/3/2015 11:03	Collected by Client
2057176007	59318	Solid	3/3/2015 10:15	3/3/2015 11:03	Collected by Client
2057176008	59319	Solid	3/3/2015 10:15	3/3/2015 11:03	Collected by Client

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SAMPLE SUMMARY

Workorder: 2057176 59312 through 59319

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)

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ANALYTICAL RESULTS

Workorder: 2057176 59312 through 59319

Lab ID: **2057176001** Date Collected: 3/3/2015 08:45 Matrix: Solid

Sample ID: **59312** Date Received: 3/3/2015 11:03

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.5		%	0.1	S2540G-11		3/4/15 09:00	AAP	A
Total Solids	19.5		%	0.1	S2540G-11		3/4/15 09:00	AAP	A
MICROBIOLOGY									
Fecal Coliforms	3700	1	col/gm Dry Wt	5.13	S9222D-97		3/3/15 15:06	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2057176 59312 through 59319

Lab ID: **2057176002** Date Collected: 3/3/2015 09:00 Matrix: Solid

Sample ID: **59313** Date Received: 3/3/2015 11:03

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.2		%	0.1	S2540G-11		3/4/15 09:00	AAP	A
Total Solids	19.8		%	0.1	S2540G-11		3/4/15 09:00	AAP	A
MICROBIOLOGY									
Fecal Coliforms	2280	1	col/gm Dry Wt	5.06	S9222D-97		3/3/15 15:08	LLJ	A

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2057176 59312 through 59319

Lab ID: **2057176003** Date Collected: 3/3/2015 09:15 Matrix: Solid

Sample ID: **59314** Date Received: 3/3/2015 11:03

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.6		%	0.1	S2540G-11		3/4/15 09:00	AAP	A
Total Solids	19.4		%	0.1	S2540G-11		3/4/15 09:00	AAP	A
MICROBIOLOGY									
Fecal Coliforms	2780	1	col/gm Dry Wt	5.15	S9222D-97		3/3/15 15:10	LLJ	A

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ANALYTICAL RESULTS

Workorder: 2057176 59312 through 59319

Lab ID: **2057176004** Date Collected: 3/3/2015 09:30 Matrix: Solid
Sample ID: **59315** Date Received: 3/3/2015 11:03

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	79.3		%	0.1	S2540G-11		3/4/15 09:00	AAP	A
Total Solids	20.7		%	0.1	S2540G-11		3/4/15 09:00	AAP	A
MICROBIOLOGY									
Fecal Coliforms	8720	1	col/gm Dry Wt	4.84	S9222D-97		3/3/15 15:12	LLJ	A

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ANALYTICAL RESULTS

Workorder: 2057176 59312 through 59319

Lab ID: **2057176005** Date Collected: 3/3/2015 09:45 Matrix: Solid

Sample ID: **59316** Date Received: 3/3/2015 11:03

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	79.6		%	0.1	S2540G-11		3/4/15 09:00	AAP	A
Total Solids	20.4		%	0.1	S2540G-11		3/4/15 09:00	AAP	A
MICROBIOLOGY									
Fecal Coliforms	4410	1	col/gm Dry Wt	4.89	S9222D-97		3/3/15 15:14	LLJ	A

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ANALYTICAL RESULTS

Workorder: 2057176 59312 through 59319

Lab ID: **2057176006** Date Collected: 3/3/2015 10:00 Matrix: Solid

Sample ID: **59317** Date Received: 3/3/2015 11:03

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.4		%	0.1	S2540G-11		3/4/15 09:00	AAP	A
Total Solids	19.6		%	0.1	S2540G-11		3/4/15 09:00	AAP	A
MICROBIOLOGY									
Fecal Coliforms	1830	1	col/gm Dry Wt	5.09	S9222D-97		3/3/15 15:16	LLJ	A

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ANALYTICAL RESULTS

Workorder: 2057176 59312 through 59319

Lab ID: **2057176007** Date Collected: 3/3/2015 10:15 Matrix: Solid

Sample ID: **59318** Date Received: 3/3/2015 11:03

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.4		%	0.1	S2540G-11		3/4/15 09:00	AAP	A
Total Solids	19.6		%	0.1	S2540G-11		3/4/15 09:00	AAP	A
MICROBIOLOGY									
Fecal Coliforms	2290	1	col/gm Dry Wt	5.10	S9222D-97		3/3/15 15:18	LLJ	A

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ANALYTICAL RESULTS

Workorder: 2057176 59312 through 59319

Lab ID: **2057176008** Date Collected: 3/3/2015 10:15 Matrix: Solid

Sample ID: **59319** Date Received: 3/3/2015 11:03

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
PCBs										
Total Polychlorinated Biphenyl	ND		mg/kg	0.43	SW846 8082A	3/6/15	KAC	3/6/15 16:43	EGO	A
Aroclor-1016	ND		mg/kg	0.43	SW846 8082A	3/6/15	KAC	3/6/15 16:43	EGO	A
Aroclor-1221	ND		mg/kg	0.43	SW846 8082A	3/6/15	KAC	3/6/15 16:43	EGO	A
Aroclor-1232	ND		mg/kg	0.43	SW846 8082A	3/6/15	KAC	3/6/15 16:43	EGO	A
Aroclor-1242	ND		mg/kg	0.43	SW846 8082A	3/6/15	KAC	3/6/15 16:43	EGO	A
Aroclor-1248	ND		mg/kg	0.43	SW846 8082A	3/6/15	KAC	3/6/15 16:43	EGO	A
Aroclor-1254	ND		mg/kg	0.43	SW846 8082A	3/6/15	KAC	3/6/15 16:43	EGO	A
Aroclor-1260	ND		mg/kg	0.43	SW846 8082A	3/6/15	KAC	3/6/15 16:43	EGO	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	83.3		%	46 - 120	SW846 8082A	3/6/15	KAC	3/6/15 16:43	EGO	A
Tetrachloro-m-xylene (S)	80.2		%	52 - 115	SW846 8082A	3/6/15	KAC	3/6/15 16:43	EGO	A
WET CHEMISTRY										
Ammonia, Total (Moist Basis)	2310		mg/kg	7.5	S4500NH3D	3/5/15	J1H	3/6/15 14:30	NJA	A
Ammonia-nitrogen, Total	11400		mg/kg	36.9	S4500NH3D	3/5/15	J1H	3/6/15 14:30	NJA	A
Cyanide, Total	2.6	2	mg/kg	1.2	SW846 9012B	3/10/15	SYB	3/10/15 13:04	KLR	A
Hexane Extractable Material	66400		mg/kg	969	SW846 9071B			3/11/15 06:30	AT	A
Moisture	79.8		%	0.1	S2540G-11			3/4/15 09:00	AAP	A
pH	8.98	1	pH_Units		SW846 9045D			3/4/15 05:27	GMM	A
Phosphorus, Total	49800		mg/kg	2410	EPA 365.1	3/11/15	THB	3/13/15 15:38	LJF	A
Silica Gel Treated HEM	15700		mg/kg	969	SW846 9071B			3/11/15 06:30	AT	A
Tot. Kjeldahl Nitrogen,(Moist)	11200		mg/kg	150	S4500NH3C-97	3/5/15	J1H	3/6/15 13:00	NJA	A
Total Kjeldahl Nitrogen	55400		mg/kg	741	S4500NH3C-97	3/5/15	J1H	3/6/15 15:00	NJA	A
Total Solids	20.2		%	0.1	S2540G-11			3/4/15 09:00	AAP	A
METALS										
Arsenic, Total	ND		mg/kg	9.9	SW846 6010C	3/6/15	AAM	3/10/15 04:32	TSS	A2
Cadmium, Total	ND		mg/kg	2.5	SW846 6010C	3/6/15	AAM	3/10/15 04:32	TSS	A2
Chromium, Total	29.0		mg/kg	4.9	SW846 6010C	3/6/15	AAM	3/10/15 04:32	TSS	A2
Copper, Total	481		mg/kg	9.9	SW846 6010C	3/6/15	AAM	3/10/15 04:32	TSS	A2
Iron, Total	25800		mg/kg	49.4	SW846 6010C	3/6/15	AAM	3/10/15 04:32	TSS	A2
Lead, Total	50.4		mg/kg	9.9	SW846 6010C	3/6/15	AAM	3/10/15 04:32	TSS	A2
Mercury, Total	1.6		mg/kg	0.21	SW846 7471B	2/4/15	MNP	3/4/15 08:16	MNP	A1
Molybdenum, Total	10.2		mg/kg	9.9	SW846 6010C	3/6/15	AAM	3/10/15 04:32	TSS	A2
Nickel, Total	22.7		mg/kg	9.9	SW846 6010C	3/6/15	AAM	3/10/15 04:32	TSS	A2
Potassium, Total	1220		mg/kg	247	SW846 6010C	3/6/15	AAM	3/10/15 04:32	TSS	A2
Selenium, Total	ND		mg/kg	24.7	SW846 6010C	3/6/15	AAM	3/10/15 04:32	TSS	A2

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ANALYTICAL RESULTS

Workorder: 2057176 59312 through 59319

Lab ID: **2057176008** Date Collected: 3/3/2015 10:15 Matrix: Solid

Sample ID: **59319** Date Received: 3/3/2015 11:03

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Silver, Total	3.4		mg/kg	2.5	SW846 6010C	3/6/15	AAM	3/10/15 04:32	TSS	A2
Zinc, Total	1750		mg/kg	9.9	SW846 6010C	3/6/15	AAM	3/10/15 04:32	TSS	A2

Ms. Amy K Borden
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2057176001	1	59312	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 6 hours & 20 minutes after sampling.				
2057176002	1	59313	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 6 hours & 10 minutes after sampling.				
2057176003	1	59314	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 55 minutes after sampling.				
2057176004	1	59315	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 45 minutes after sampling.				
2057176005	1	59316	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 30 minutes after sampling.				
2057176006	1	59317	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 15 minutes after sampling.				
2057176007	1	59318	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours after sampling.				
2057176008	1	59319	SW846 9045D	pH
The solid pH measured in water was 8.981 at 18.6 degrees C.				
2057176008	2	59319	SW846 9012B	Cyanide, Total
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits.				

AWB

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Environmental • Industrial Hygiene • Field Services
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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Page ___ of ___
Courier:
Tracking #:

2057176

Co. Name: Harrisburg AWTF
Contact (Report to): R. Schaffer
Phone: 717-939-7270
Address: 1662 S. Cameron Street, Harrisburg, PA 17104

Bill to (if different than Report to): Same
PO#: 2015 work

Project Name/#:
ALSI Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALSI approval and surcharges.
Date Required:
Approved By:

Email? [X] -Y
Fax? [ ] -Y No.

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Enter Number of Containers Per Analysis									
						***Container Type	P	G							
						***Container Size	125	1000							
						*** Preservative	None	4 deg C							
									Fecal Coliform	Potassium, T	Phosphorus, T	Iron, T	TKN	Ammonia-N	PCB's
1 59312	AWTF Biosolids	3-3-15	0845	G	SL	1									
2 59313	AWTF Biosolids	3-3-15	0900	G	SL	1									
3 59314	AWTF Biosolids	3-3-15	0915	G	SL	1									
4 59315	AWTF Biosolids	3-3-15	0930	G	SL	1									
5 59316	AWTF Biosolids	3-3-15	0945	G	SL	1									
6 59317	AWTF Biosolids	3-3-15	1000	G	SL	1									
7 59318	AWTF Biosolids	3-3-15	1015	G	SL	1									
8 59319	AWTF Biosolids	3-3-15	1015	C	SL		1	X	X	X	X	X	X	X	X

ANALYSES/METHOD REQUESTED

Cyanide, T	pH	O&G / Grease	Correct containers?	Correct sample volume?	Correct preservation?	Headspace/Volatiles?	Circle appropriate Y or N.
			N	N	N	N	
			Y	Y	Y	Y	
			N	N	N	N	
			Y	Y	Y	Y	
			N	N	N	N	
			Y	Y	Y	Y	
			N	N	N	N	
			Y	Y	Y	Y	
			N	N	N	N	
			Y	Y	Y	Y	
X	X	X	Custody seals Present?	(if present) Seals intact?	Received on Ice?	COC/Labels complete/accurate?	Container in good condition?

(completed by Sample Receiver)
Performed by:
Cooler Temp: 4
Therm. ID: 791
No. of Coolers:
Notes:

SAMPLED BY (Please Print): Brian L. Mountain

LOGGED BY(signature): [signature] DATE: 3/03/15 TIME: 1415
REVIEWED BY(signature): DATE: TIME:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [signature]	3-3-15	10:30	2 [signature]	3-3-15	10:30
3 [signature]	3-3-15	11:03	4 [signature]	03/03	1103
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] other
EDDs Required? [ ] If yes, format type:
DOD Criteria Required?
SDWA Forms? yes [ ] MD [ ] NJ [ ] NY [ ] PA [ ] Other
State Samples Collected in?
Enter PWSID No.

ALSI FIELD SERVICES
[ ] Pickup
[ ] Labor
[ ] Composite Sampling
[ ] Rental Equipment
[ ] Other:

* G=Grab; C=Composite
**Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater
***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

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ALB

Page ___ of ___
Courier:
Tracking #:

90C# 96

Co. Name: Harrisburg AWTF
Contact (Report to): R. Schaffer
Phone: 717-939-7270
Address: 1442 S. Cameron Street
Harrisburg, PA 17104

Bill to (if different than Report to): Same
PO#: 2015WW78
Project Name/#:
ALSI Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALSI approval and surcharges.
Date Required:
Approved By:

Email? [X] -Y
Fax? [ ] -Y No.:

***Container Type	G
***Container Size	1000
*** Preservative	≤6°C

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Total: As, Cd, Cr	Total: Cu, Pb, Hg	Total: Mo, Ni, Se	Total: Ag, Zn
1	(Continued from page 1)									
2	AWTF Biosolids		3-3-15	1015	C	SL	X	X	X	X
3										
4										
5	(Report mg/kg dry wt.)									
6										
7										
8										

Enter Number of Containers Per Analysis

Receipt Information (completed by Sample Receiving)
Performed by: [illegible]
Cooler Temp: 4
Therm. ID: 191
No. of Coolers:
Notes:

Sample Description/Location	Sample Date	Military Time	*G or C	**Matrix	Total: As, Cd, Cr	Total: Cu, Pb, Hg	Total: Mo, Ni, Se	Total: Ag, Zn
1 (Continued from page 1)								
2 AWTF Biosolids	3-3-15	1015	C	SL	X	X	X	X
3								
4								
5 (Report mg/kg dry wt.)								
6								
7								
8								

Sample Description/Location	Correct containers?	Correct sample volume?	Correct preservation?	Headspace/Volatiles?	Circle appropriate Y or N.
1	Y	Y	Y	Y	
2	N	N	N	N	N
3	Y	Y	Y	Y	Y
4					
5					
6					
7					
8					

Custody seals Present? (if present) Seals intact? Received on ice? COC/Labels complete/accurate? Container in good condition?

SAMPLED BY (Please Print): Brian L. Mountain
LOGGED BY (signature): [signature] DATE: 03/03/15 TIME: 4415
REVIEWED BY (signature): DATE: TIME:

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	[signature]	3-3-15	1030	2	[signature]	3-3-15	10:30
3	[signature]	3-3-15	11:03	4	[signature]	03/03	1103
5				6			
7				8			
9				10			

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] (other)
EDDs Required? [ ] If yes, format type:
DOD Criteria Required?

SDWA Forms? yes [ ] yes [ ] yes [ ] yes [ ]
State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ] Other
Enter PWSID No.

ALSI FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite **Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater
***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY
Rev 8/07

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

May 15, 2015

Mr. Randy Schaffer
Capital Region Water-AWTF (fka/Harrisburg)
Advanced WW Treatment Facility
1662 S. Cameron St.
Harrisburg, PA 17104

Certificate of Analysis

Project Name:	**2015WW.76**	Workorder:	**2069340**
Purchase Order:	**2015WW.78**	Workorder ID:	**59597-59604**

Dear Mr. Schaffer:

Enclosed are the analytical results for samples received by the laboratory on Thursday, May 7, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Amy K Borden (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Jess Rosentel

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2069340 59597-59604

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2069340001	59597 AWTF Biosolids	Solid	5/7/2015 07:50	5/7/2015 11:07	Collected by Client
2069340002	59598 AWTF Biosolids	Solid	5/7/2015 08:08	5/7/2015 11:07	Collected by Client
2069340003	59599 AWTF Biosolids	Solid	5/7/2015 08:25	5/7/2015 11:07	Collected by Client
2069340004	59600 AWTF Biosolids	Solid	5/7/2015 08:40	5/7/2015 11:07	Collected by Client
2069340005	59601 AWTF Biosolids	Solid	5/7/2015 08:55	5/7/2015 11:07	Collected by Client
2069340006	59602 AWTF Biosolids	Solid	5/7/2015 09:10	5/7/2015 11:07	Collected by Client
2069340007	59603 AWTF Biosolids	Solid	5/7/2015 09:25	5/7/2015 11:07	Collected by Client
2069340008	59604 AWTF Biosolids	Solid	5/7/2015 09:25	5/7/2015 11:07	Collected by Client

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SAMPLE SUMMARY

Workorder: 2069340 59597-59604

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340001** Date Collected: 5/7/2015 07:50 Matrix: Solid

Sample ID: **59597 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	79.6		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
Total Solids	20.4		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
MICROBIOLOGY									
Fecal Coliforms	3090	1	col/gm Dry Wt	4.90	S9222D-97		5/8/15 13:11	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340002** Date Collected: 5/7/2015 08:08 Matrix: Solid

Sample ID: **59598 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	77.7		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
Total Solids	22.3		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
MICROBIOLOGY									
Fecal Coliforms	2430	1	col/gm Dry Wt	4.49	S9222D-97		5/8/15 13:13	LLJ	A

Amy K Borden

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340003** Date Collected: 5/7/2015 08:25 Matrix: Solid

Sample ID: **59599 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	78.0		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
Total Solids	22.0		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
MICROBIOLOGY									
Fecal Coliforms	10000	1	col/gm Dry Wt	4.54	S9222D-97		5/8/15 13:15	LLJ	A

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340004** Date Collected: 5/7/2015 08:40 Matrix: Solid

Sample ID: **59600 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	78.1		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
Total Solids	21.9		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
MICROBIOLOGY									
Fecal Coliforms	3300	1	col/gm Dry Wt	4.58	S9222D-97		5/8/15 13:18	LLJ	A

Amy K Borden

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340005** Date Collected: 5/7/2015 08:55 Matrix: Solid

Sample ID: **59601 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	79.0		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
Total Solids	21.0		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
MICROBIOLOGY									
Fecal Coliforms	2570	1	col/gm Dry Wt	4.75	S9222D-97		5/8/15 13:20	LLJ	A

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340006** Date Collected: 5/7/2015 09:10 Matrix: Solid

Sample ID: **59602 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	78.5		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
Total Solids	21.5		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
MICROBIOLOGY									
Fecal Coliforms	2090	1	col/gm Dry Wt	4.65	S9222D-97		5/8/15 13:22	LLJ	A

Amy K Borden

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340007** Date Collected: 5/7/2015 09:25 Matrix: Solid

Sample ID: **59603 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	79.3		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
Total Solids	20.7		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
MICROBIOLOGY									
Fecal Coliforms	3050	1	col/gm Dry Wt	4.84	S9222D-97		5/8/15 13:24	LLJ	A

Amy K Borden

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340008** Date Collected: 5/7/2015 09:25 Matrix: Solid

Sample ID: **59604 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
PCBs										
Total Polychlorinated Biphenyl	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Aroclor-1016	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Aroclor-1221	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Aroclor-1232	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Aroclor-1242	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Aroclor-1248	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Aroclor-1254	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Aroclor-1260	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyls (S)	67.9		%	46 - 120	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Tetrachloro-m-xylene (S)	68.2		%	52 - 115	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
WET CHEMISTRY										
Ammonia, Total (Moist Basis)	1950		mg/kg	7.6	S4500NH3D	5/10/15	J1H	5/11/15 08:38	J1H	A
Ammonia-nitrogen, Total	9210		mg/kg	35.7	S4500NH3D	5/10/15	J1H	5/11/15 08:38	J1H	A
Cyanide, Total	1.2	2	mg/kg	1.2	SW846 9012B	5/13/15	SYB	5/14/15 10:12	LJF	A
Hexane Extractable Material	55900		mg/kg	942	SW846 9071B			5/12/15 15:00	AT	A
Moisture	78.8		%	0.1	S2540G-11			5/8/15 11:10	JKP	A
pH	8.70	1	pH_Units		SW846 9045D			5/8/15 06:42	GMM	A
Phosphorus, Total	31800		mg/kg	1190	EPA 365.1	5/12/15	LJF	5/12/15 04:26	LJF	A
Silica Gel Treated HEM	16400		mg/kg	942	SW846 9071B			5/12/15 15:00	AT	A
Tot. Kjeldahl Nitrogen,(Moist)	27600		mg/kg	74.6	S4500NH3C-97	5/13/15	J1H	5/14/15 12:43	JWB	A
Total Kjeldahl Nitrogen	130000		mg/kg	1760	S4500NH3C-97	5/13/15	J1H	5/14/15 12:43	J1H	A
Total Solids	21.2		%	0.1	S2540G-11			5/8/15 11:10	JKP	A
METALS										
Arsenic, Total	ND		mg/kg	9.1	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Cadmium, Total	ND		mg/kg	2.3	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Chromium, Total	26.3		mg/kg	4.5	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Copper, Total	439		mg/kg	9.1	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Iron, Total	28700		mg/kg	45.3	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Lead, Total	56.0		mg/kg	9.1	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Mercury, Total	1.2		mg/kg	0.20	SW846 7471B	5/13/15	MNP	5/13/15 11:56	MNP	A2
Molybdenum, Total	9.6		mg/kg	9.1	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Nickel, Total	21.2		mg/kg	9.1	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Potassium, Total	1030		mg/kg	226	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Selenium, Total	ND		mg/kg	22.6	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340008** Date Collected: 5/7/2015 09:25 Matrix: Solid

Sample ID: **59604 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Silver, Total	3.4		mg/kg	2.3	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Zinc, Total	1370		mg/kg	9.1	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1

Ms. Amy K Borden
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2069340001	1	59597 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 20 minutes after sampling.				
2069340002	1	59598 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 5 minutes after sampling.				
2069340003	1	59599 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 50 minutes after sampling.				
2069340004	1	59600 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 40 minutes after sampling.				
2069340005	1	59601 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 25 minutes after sampling.				
2069340006	1	59602 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 10 minutes after sampling.				
2069340007	1	59603 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours after sampling.				
2069340008	1	59604 AWTF Biosolids	SW846 9045D	pH
The solid pH measured in water was 8.698 at 20.5 degrees Celsius.				
2069340008	2	59604 AWTF Biosolids	SW846 9012B	Cyanide, Total
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits.				

Friday, May 15, 2015 4:07:25 PM
Page 14 of 15

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

AB

Page 1 of 2

Courier:

Tracking #:

2069340

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/ SAMPLER. INSTRUCTIONS ON THE BACK.

Co. Name: HARRISBURG AWTF

Contact (Report to): R. SCHAFFER Phone: 939-7270

Address: 1662 S. CAMERON ST HARRISBURG, PA 17104

Bill to (if different than Report to): SAME PO#: 2015 WW-78

Project Name/#: ALS Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges. Date Required: Approved By:

Email? [X] -Y Fax? [ ] -Y No.:

***Container Type	P	G								
***Container Size	125	1000								
*** Preservative	$NA_2S_2O_3$	4°C								

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Fecal Coliform	Potassium, T	Phosphorus, T	Iron, T	TKN	Ammonia-N	PCB's	Cyanide, T	pH	Oil/Grease
1 59597 AWTF BIOSOLIDS		5/7/15	07:50	G	SL	1									
2 59598 AWTF BIOSOLIDS		5/7/15	08:08	G	SL	1									
3 59599 AWTF BIOSOLIDS		5/7/15	08:25	G	SL	1									
4 59600 AWTF BIOSOLIDS		5/7/15	08:40	G	SL	1									
5 59601 AWTF BIOSOLIDS		5/7/15	08:55	G	SL	1									
6 59602 AWTF BIOSOLIDS		5/7/15	09:10	G	SL	1									
7 59603 AWTF BIOSOLIDS		5/7/15	09:25	G	SL	1									
8 59604 AWTF BIOSOLIDS		5/7/15	09:25	C	SL		1	X	X	X	X	X	X	X	X

Enter Number of Containers Per Analysis

(completed by Sample Receiving)

Performed by: MITCH HERR

Cooler Temp: 4

Therm. ID: 291

No. of Coolers:

Notes:

	Custody seals Present?	(if present) Seals intact?	Received on ice?	COC/Labels complete/accurate?	Container in good condition?
Correct containers?	N	N	N	N	Circle appropriate Y or N.
Correct sample volume?	N	N	N	N	
Correct preservation?	N	N	N	N	
Headspace/Volatiles?	N	N	N	N	

SAMPLED BY (Please Print): ISAAC E. GREEN

Project Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Isaac E. Green	5-7-15	09:25	2 [signature]	5/7/15	9:35 AM
3 [signature]	5-7-15	11:07	4 [signature]	5/7/15	1107
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] other

EDDs Required? [ ] If yes, format type:

DOD Criteria Required?

SDWA Forms?: yes [ ] yes [ ] yes [ ] yes [ ]

State Samples Collected in?: MD [ ] NJ [ ] NY [ ] PA [ ]

Other

ALS FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite

**Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY

Rev 01-2013

ALS Environmental

34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/ SAMPLER. INSTRUCTIONS ON THE BACK.

Page 2 of 2

Courier:

Tracking #:

2069340

Co. Name: HARRISBURG AWTF

Contact (Report to): R. SCHAFFER

Phone: 939-7270

Address: 1662 S. CAMERON ST
HARRISBURG, PA 17104

Bill to (if different than Report to): SAME

PO#: 2015 WAJ-78

Project Name/#:

ALS Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.

Date Required:

Approved By:

Email? [X] -Y

Fax? [ ] -Y No.:

	***Container Type	***Container Size	***Preservative
Total: As, Cd, Cr	AG	1000	4°C
Total: Cu, Pb, Hg	→	→	→
Total: Mo, Ni, Se	→	→	→
Total: Ag, Zn	→	→	→

ANALYSES/METHOD REQUESTED: Total: As, Cd, Cr; Total: Cu, Pb, Hg; Total: Mo, Ni, Se; Total: Ag, Zn; Report as mg/kg dry wt

Enter Number of Containers Per Analysis

#	Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Total: As, Cd, Cr	Total: Cu, Pb, Hg	Total: Mo, Ni, Se	Total: Ag, Zn	Report as mg/kg dry wt
1	59604 AWTF BIOSOLIDS		5/7/15	0925	C	S	X	X	X	X	
2	• CONTINUED FROM PG 1										
3											* metals as mg/kg dry weight
4											
5											
6											
7											
8											

AG 5/7/15 1348

Receipt Information (completed by Sample Receiving)

Performed by: INITIAL HERE

Cooler Temp: 4

Therm. ID: 291

No. of Coolers:

Notes:

Circle appropriate Y or N.

Correct containers?	Y
Correct sample volume?	Y
Correct preservation?	Y
Headspace/Volatiles?	
Custody seals Present?	N
(If present) Seals intact?	—
Received on ice?	Y
COC/Labels complete/accurate?	Y
Container in good condition?	Y

SAMPLED BY (Please Print): ISAAC E. Green

Project Comments:

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	[signature]	5/7/15	09:25	2	[signature]	5/7/15	9:35 AM
3	[signature]	5/7/15	11:07	4	[signature]	5/7/15	935
5				6			11:07
7				8			
9				10			

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ]

EDDs Required? [ ] If yes, format type:

SDWA Forms? yes [ ] yes [ ] yes [ ] yes [ ] Other

State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ]

DOD Criteria Required?

ALS FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite

**Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

June 9, 2015

Mr. Randy Schaffer
Capital Region Water-AWTF (fka/Harrisburg)
Advanced WW Treatment Facility
1662 S. Cameron St.
Harrisburg, PA 17104

Certificate of Analysis

Revised Report - 6/9/2015 4:02:37 PM - See workorder comment section for explanation

Project Name:	**2015WW.76**	Workorder:	**2069340**
Purchase Order:	**2015WW.78**	Workorder ID:	**59597-59604**

Dear Mr. Schaffer:

Enclosed are the analytical results for samples received by the laboratory on Thursday, May 7, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Amy K Borden (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Jess Rosentel

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2069340 59597-59604

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2069340001	59597 AWTF Biosolids	Solid	5/7/2015 07:50	5/7/2015 11:07	Collected by Client
2069340002	59598 AWTF Biosolids	Solid	5/7/2015 08:08	5/7/2015 11:07	Collected by Client
2069340003	59599 AWTF Biosolids	Solid	5/7/2015 08:25	5/7/2015 11:07	Collected by Client
2069340004	59600 AWTF Biosolids	Solid	5/7/2015 08:40	5/7/2015 11:07	Collected by Client
2069340005	59601 AWTF Biosolids	Solid	5/7/2015 08:55	5/7/2015 11:07	Collected by Client
2069340006	59602 AWTF Biosolids	Solid	5/7/2015 09:10	5/7/2015 11:07	Collected by Client
2069340007	59603 AWTF Biosolids	Solid	5/7/2015 09:25	5/7/2015 11:07	Collected by Client
2069340008	59604 AWTF Biosolids	Solid	5/7/2015 09:25	5/7/2015 11:07	Collected by Client

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SAMPLE SUMMARY

Workorder: 2069340 59597-59604

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)

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PROJECT SUMMARY

Workorder: 2069340 59597-59604

Workorder Comments

This report was modified on 5/29/15 to reanalyze for TKN per client request. VLF

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340001** Date Collected: 5/7/2015 07:50 Matrix: Solid

Sample ID: **59597 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	79.6		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
Total Solids	20.4		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
MICROBIOLOGY									
Fecal Coliforms	3090	1	col/gm Dry Wt	4.90	S9222D-97		5/8/15 13:11	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340002** Date Collected: 5/7/2015 08:08 Matrix: Solid

Sample ID: **59598 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	77.7		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
Total Solids	22.3		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
MICROBIOLOGY									
Fecal Coliforms	2430	1	col/gm Dry Wt	4.49	S9222D-97		5/8/15 13:13	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340003** Date Collected: 5/7/2015 08:25 Matrix: Solid

Sample ID: **59599 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	78.0		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
Total Solids	22.0		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
MICROBIOLOGY									
Fecal Coliforms	10000	1	col/gm Dry Wt	4.54	S9222D-97		5/8/15 13:15	LLJ	A

Amy K Borden

Ms. Amy K Borden
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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340004** Date Collected: 5/7/2015 08:40 Matrix: Solid

Sample ID: **59600 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	78.1		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
Total Solids	21.9		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
MICROBIOLOGY									
Fecal Coliforms	3300	1	col/gm Dry Wt	4.58	S9222D-97		5/8/15 13:18	LLJ	A

Amy K Borden

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340005** Date Collected: 5/7/2015 08:55 Matrix: Solid

Sample ID: **59601 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	79.0		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
Total Solids	21.0		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
MICROBIOLOGY									
Fecal Coliforms	2570	1	col/gm Dry Wt	4.75	S9222D-97		5/8/15 13:20	LLJ	A

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340006** Date Collected: 5/7/2015 09:10 Matrix: Solid

Sample ID: **59602 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	78.5		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
Total Solids	21.5		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
MICROBIOLOGY									
Fecal Coliforms	2090	1	col/gm Dry Wt	4.65	S9222D-97		5/8/15 13:22	LLJ	A

Amy K Borden

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340007** Date Collected: 5/7/2015 09:25 Matrix: Solid

Sample ID: **59603 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	79.3		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
Total Solids	20.7		%	0.1	S2540G-11		5/8/15 11:10	JKP	A
MICROBIOLOGY									
Fecal Coliforms	3050	1	col/gm Dry Wt	4.84	S9222D-97		5/8/15 13:24	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340008** Date Collected: 5/7/2015 09:25 Matrix: Solid

Sample ID: **59604 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
PCBs										
Total Polychlorinated Biphenyl	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Aroclor-1016	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Aroclor-1221	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Aroclor-1232	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Aroclor-1242	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Aroclor-1248	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Aroclor-1254	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Aroclor-1260	ND		mg/kg	0.41	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyls (S)	67.9		%	46 - 120	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
Tetrachloro-m-xylene (S)	68.2		%	52 - 115	SW846 8082A	5/13/15	KAC	5/13/15 12:58	EGO	A
WET CHEMISTRY										
Ammonia, Total (Moist Basis)	1950		mg/kg	7.6	S4500NH3D	5/10/15	J1H	5/11/15 08:38	J1H	A
Ammonia-nitrogen, Total	9210		mg/kg	35.7	S4500NH3D	5/10/15	J1H	5/11/15 08:38	J1H	A
Cyanide, Total	1.2	2	mg/kg	1.2	SW846 9012B	5/13/15	SYB	5/14/15 10:12	LJF	A
Hexane Extractable Material	55900		mg/kg	942	SW846 9071B			5/12/15 15:00	AT	A
Moisture	78.8		%	0.1	S2540G-11			5/8/15 11:10	JKP	A
pH	8.70	1	pH_Units		SW846 9045D			5/8/15 06:42	GMM	A
Phosphorus, Total	31800		mg/kg	1190	EPA 365.1	5/12/15	LJF	5/12/15 04:26	LJF	A
Silica Gel Treated HEM	16400		mg/kg	942	SW846 9071B			5/12/15 15:00	AT	A
Tot. Kjeldahl Nitrogen,(Moist)	11000		mg/kg	75.4	S4500NH3C-97	6/5/15	J1H	6/8/15 10:15	J1H	A
Total Kjeldahl Nitrogen	51900		mg/kg	710	S4500NH3C-97	6/5/15	J1H	6/8/15 10:15	J1H	A
Total Solids	21.2		%	0.1	S2540G-11			5/8/15 11:10	JKP	A
METALS										
Arsenic, Total	ND		mg/kg	9.1	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Cadmium, Total	ND		mg/kg	2.3	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Chromium, Total	26.3		mg/kg	4.5	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Copper, Total	439		mg/kg	9.1	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Iron, Total	28700		mg/kg	45.3	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Lead, Total	56.0		mg/kg	9.1	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Mercury, Total	1.2		mg/kg	0.20	SW846 7471B	5/13/15	MNP	5/13/15 11:56	MNP	A2
Molybdenum, Total	9.6		mg/kg	9.1	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Nickel, Total	21.2		mg/kg	9.1	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Potassium, Total	1030		mg/kg	226	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Selenium, Total	ND		mg/kg	22.6	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1

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ANALYTICAL RESULTS

Workorder: 2069340 59597-59604

Lab ID: **2069340008** Date Collected: 5/7/2015 09:25 Matrix: Solid

Sample ID: **59604 AWTF Biosolids** Date Received: 5/7/2015 11:07

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Silver, Total	3.4		mg/kg	2.3	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1
Zinc, Total	1370		mg/kg	9.1	SW846 6010C	5/10/15	AAM	5/13/15 04:07	TSS	A1

Ms. Amy K Borden
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2069340001	1	59597 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 20 minutes after sampling.				
2069340002	1	59598 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 5 minutes after sampling.				
2069340003	1	59599 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 50 minutes after sampling.				
2069340004	1	59600 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 40 minutes after sampling.				
2069340005	1	59601 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 25 minutes after sampling.				
2069340006	1	59602 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 10 minutes after sampling.				
2069340007	1	59603 AWTF Biosolids	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours after sampling.				
2069340008	1	59604 AWTF Biosolids	SW846 9045D	pH
The solid pH measured in water was 8.698 at 20.5 degrees Celsius.				
2069340008	2	59604 AWTF Biosolids	SW846 9012B	Cyanide, Total
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits.				

ALS Environmental

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F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/ SAMPLER. INSTRUCTIONS ON THE BACK.

AB

Courier:
Tracking #:

* 2 0 6 9 3 4 0 *

Co. Name: HARRISBURG AWTF
Contact (Report to): R. SCHAFFER
Phone: 939-7270
Address: 1662 S. CAMERON ST, HARRISBURG, PA 17104

Bill to (if different than Report to): SAME
PO#: 2015 WW-78

Project Name/#:
ALS Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.
Date Required:
Approved By:

Email? [X] -Y
Fax? [ ] -Y No.:

	***Container Type	P	G
	***Container Size	125	1000
	*** Preservative	$NA_2S_2O_3$	4°C

ANALYSES/METHOD REQUESTED

Enter Number of Containers Per Analysis

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Fecal Coliform	Potassium, T	Phosphorus, T	Iron, T	TKN	Ammonia-N	PCB's	Cyanide, T	pH	Oil/Grease
1 59597 AWTF BIOSOLIDS		5/7/15	07:50	G	SL	1									
2 59598 AWTF BIOSOLIDS		5/7/15	08:08	G	SL	1									
3 59599 AWTF BIOSOLIDS		5/7/15	08:25	G	SL	1									
4 59600 AWTF BIOSOLIDS		5/7/15	08:40	G	SL	1									
5 59601 AWTF BIOSOLIDS		5/7/15	08:55	G	SL	1									
6 59602 AWTF BIOSOLIDS		5/7/15	09:10	G	SL	1									
7 59603 AWTF BIOSOLIDS		5/7/15	09:25	G	SL	1									
8 59604 AWTF BIOSOLIDS		5/7/15	09:25	C	SL		1	X	X	X	X	X	X	X	X

AG 5/7/15 (348)

(completed by Sample Receiving)
Performed by: MTH HCN
Cooler Temp: 4
Therm. ID: 291
No. of Coolers:
Notes:

	Y/N
Correct containers?	Y
Correct sample volume?	Y
Correct preservation?	Y
Headspace/Volatiles?	—
Circle appropriate Y or N.	
Custody seals Present?	N
(If present) Seals intact?	—
Received on ice?	Y
COC/Labels complete/accurate?	Y
Container in good condition?	Y

SAMPLED BY (Please Print): ISAAC E. GREEN

Project Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [signature]	5-7-15	09:25	2 [signature]	5/7/15	9:35 AM
3 [signature]	5-7-15	11:07	4 [signature]	5/7/15	1107
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ]
EDDs Required? [ ] If yes, format type:
DOD Criteria Required?

SDWA Forms? yes [ ] yes [ ] yes [ ] yes [ ] Other
State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ]

ALS FIELD SERVICES
[ ] Pickup
[ ] Labor
[ ] Composite Sampling
[ ] Rental Equipment
[ ] Other:

* G=Grab; C=Composite
**Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater
***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY
Rev 01-2013

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/ SAMPLER. INSTRUCTIONS ON THE BACK.

AB

Page 2 of 2

Courier:
Tracking #:

2069340

Co. Name: HARRISBURG AWTF
Contact (Report to): R. SCHAFFER
Phone: 939-7270
Address: 1662 S. CAMERON ST
HARRISBURG, PA 17104

Bill to (if different than Report to): SAME
PO#: 2015WWJ-78

Project Name/#:
ALS Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.
Date Required:
Approved By:

Email? [X] -Y
Fax? [ ] -Y No.:

***Container Type	AG
***Container Size	1000
***Preservative	4°C

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Total: As, Cd, Cr	total: Cu, Pb, Hg	Total: Mo, Ni, Se	total: Ag, Zn	Report as mg/kg dry wt
1	59604 AWTF BIOSOLIDS		5/7/15	0925	C	SL	X	X	X	X	
2	• CONTINUED FROM PG 1										
3											
4											
5											
6											
7											
8											

Enter Number of Containers Per Analysis

4 metals as mg/kg dry weight

AS 5/7/15 1326

Receipt Information (completed by Sample Receiving)
Performed by: INITIAL HERE
Cooler Temp: 4
Therm. ID: 291
No. of Coolers:
Notes:

Correct containers? (Y) N
Correct sample volume? (Y) N
Correct preservation? (Y) N
Headspace/Volatiles? Y N
Circle appropriate Y or N.

Custody seals Present? Y (N)
(if present) Seals intact? Y N
Received on ice? (Y) N
COC/Labels complete/accurate? (Y) N
Container in good condition? (Y) N

SAMPLED BY (Please Print): ISAAC E. GREEN

Project Comments:

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	[signature]	5/7/15	09:25	2	[signature]	5/7/15	9:35
3	[signature]	5/7/15	11:07	4	[signature]	5/7/15	935
5				6			11:07
7				8			
9				10			

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ]
EDDs Required? [ ] If yes, format type:
DOD Criteria Required?

SDWA Forms? yes [ ] yes [ ] yes [ ] yes [ ] Other
State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ]

ALS FIELD SERVICES
[ ] Pickup
[ ] Labor
[ ] Composite Sampling
[ ] Rental Equipment
[ ] Other:

* G=Grab; C=Composite
**Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater
***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

July 31, 2015

Mr. Randy Schaffer
Capital Region Water-AWTF (fka/Harrisburg)
Advanced WW Treatment Facility
1662 S. Cameron St.
Harrisburg, PA 17104

Certificate of Analysis

Project Name:	**Biosolids MM/DD/YY**	Workorder:	**2082491**
Purchase Order:	**2015.WW.78**	Workorder ID:	**Biosolids 07-13-15**

Dear Mr. Schaffer:

Enclosed are the analytical results for samples received by the laboratory on Monday, July 13, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Amy K Borden (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Jess Rosentel

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2082491 Biosolids 07-13-15

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2082491001	59809 AWTF Biosolids	Solid	7/13/2015 09:30	7/13/2015 11:40	Collected by Client
2082491002	59810 AWTF Biosolids	Solid	7/13/2015 09:45	7/13/2015 11:40	Collected by Client
2082491003	59811 AWTF Biosolids	Solid	7/13/2015 10:00	7/13/2015 11:40	Collected by Client
2082491004	59812 AWTF Biosolids	Solid	7/13/2015 10:15	7/13/2015 11:40	Collected by Client
2082491005	59813 AWTF Biosolids	Solid	7/13/2015 10:30	7/13/2015 11:40	Collected by Client
2082491006	59814 AWTF Biosolids	Solid	7/13/2015 10:45	7/13/2015 11:40	Collected by Client
2082491007	59815 AWTF Biosolids	Solid	7/13/2015 11:00	7/13/2015 11:40	Collected by Client
2082491008	59816 AWTF Biosolids	Solid	7/13/2015 11:00	7/13/2015 11:40	Collected by Client

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SAMPLE SUMMARY

Workorder: 2082491 Biosolids 07-13-15

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)

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PROJECT SUMMARY

Workorder: 2082491 Biosolids 07-13-15

Sample Comments

Lab ID: 2082491008 **Sample ID:** 59816 AWTF Biosolids **Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.
One or more of the matrix spike compounds for the EPA 8270 analysis were recovered outside of the quality control limits due to sample matrix interferences. The LCS sample associated to this sample was within control limits.
This sample was collected in a soil jar for the volatile analysis. The sample was prepared by Method 5035 after the 48-hour holding time.

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2082491 Biosolids 07-13-15

Lab ID: **2082491001** Date Collected: 7/13/2015 09:30 Matrix: Solid
Sample ID: **59809 AWTF Biosolids** Date Received: 7/13/2015 11:40

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	78.1		%	0.1	S2540G-11		7/15/15 13:30	REA	A
Total Solids	21.9		%	0.1	S2540G-11		7/15/15 13:30	REA	A
MICROBIOLOGY									
Fecal Coliforms	123	1	col/gm Dry Wt	0.456	S9222D-97		7/13/15 14:50	ABL	A

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2082491 Biosolids 07-13-15

Lab ID: **2082491002** Date Collected: 7/13/2015 09:45 Matrix: Solid

Sample ID: **59810 AWTF Biosolids** Date Received: 7/13/2015 11:40

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	77.7		%	0.1	S2540G-11		7/15/15 13:30	REA	A
Total Solids	22.3		%	0.1	S2540G-11		7/15/15 13:30	REA	A
MICROBIOLOGY									
Fecal Coliforms	40.4	1	col/gm Dry Wt	0.449	S9222D-97		7/13/15 14:52	ABL	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2082491 Biosolids 07-13-15

Lab ID: **2082491003** Date Collected: 7/13/2015 10:00 Matrix: Solid

Sample ID: **59811 AWTF Biosolids** Date Received: 7/13/2015 11:40

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	78.4		%	0.1	S2540G-11		7/15/15 13:30	REA	A
Total Solids	21.6		%	0.1	S2540G-11		7/15/15 13:30	REA	A
MICROBIOLOGY									
Fecal Coliforms	125	1	col/gm Dry Wt	0.463	S9222D-97		7/13/15 14:55	ABL	A

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2082491 Biosolids 07-13-15

Lab ID: **2082491004** Date Collected: 7/13/2015 10:15 Matrix: Solid

Sample ID: **59812 AWTF Biosolids** Date Received: 7/13/2015 11:40

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	78.0		%	0.1	S2540G-11		7/15/15 13:30	REA	A
Total Solids	22.0		%	0.1	S2540G-11		7/15/15 13:30	REA	A
MICROBIOLOGY									
Fecal Coliforms	123	1	col/gm Dry Wt	0.455	S9222D-97		7/13/15 14:58	ABL	A

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2082491 Biosolids 07-13-15

Lab ID: **2082491005** Date Collected: 7/13/2015 10:30 Matrix: Solid

Sample ID: **59813 AWTF Biosolids** Date Received: 7/13/2015 11:40

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	78.2		%	0.1	S2540G-11		7/15/15 13:30	REA	A
Total Solids	21.8		%	0.1	S2540G-11		7/15/15 13:30	REA	A
MICROBIOLOGY									
Fecal Coliforms	82.4	1	col/gm Dry Wt	0.458	S9222D-97		7/13/15 15:00	ABL	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

ALS Environmental

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ANALYTICAL RESULTS

Workorder: 2082491 Biosolids 07-13-15

Lab ID: **2082491006** Date Collected: 7/13/2015 10:45 Matrix: Solid

Sample ID: **59814 AWTF Biosolids** Date Received: 7/13/2015 11:40

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	78.1		%	0.1	S2540G-11		7/15/15 13:30	REA	A
Total Solids	21.9		%	0.1	S2540G-11		7/15/15 13:30	REA	A
MICROBIOLOGY									
Fecal Coliforms	82.2	1	col/gm Dry Wt	0.456	S9222D-97		7/13/15 15:03	ABL	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2082491 Biosolids 07-13-15

Lab ID: **2082491007** Date Collected: 7/13/2015 11:00 Matrix: Solid
Sample ID: **59815 AWTF Biosolids** Date Received: 7/13/2015 11:40

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	78.1		%	0.1	S2540G-11		7/15/15 13:30	REA	A
Total Solids	21.9		%	0.1	S2540G-11		7/15/15 13:30	REA	A
MICROBIOLOGY									
Fecal Coliforms	82.4	1	col/gm Dry Wt	0.458	S9222D-97		7/13/15 15:07	ABL	A

Ms. Amy K Borden
Project Coordinator

ALS Environmental

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2082491 Biosolids 07-13-15

Lab ID: **2082491008** Date Collected: 7/13/2015 11:00 Matrix: Solid

Sample ID: **59816 AWTF Biosolids** Date Received: 7/13/2015 11:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acrolein	ND		ug/kg	9340	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Acrylonitrile	ND		ug/kg	1870	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Benzene	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Bromodichloromethane	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Bromoform	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Bromomethane	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
2-Butanone	ND		ug/kg	3740	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Carbon Tetrachloride	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Chlorobenzene	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Chlorodibromomethane	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Chloroethane	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
2-Chloroethylvinyl ether	ND		ug/kg	747	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Chloroform	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Chloromethane	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
1,1-Dichloroethane	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
1,2-Dichloroethane	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
1,1-Dichloroethene	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
trans-1,2-Dichloroethene	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
1,2-Dichloropropane	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
1,3-Dichloropropene, Total	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Ethylbenzene	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Methylene Chloride	856	3	ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
1,1,2,2-Tetrachloroethane	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Tetrachloroethene	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Toluene	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
1,1,1-Trichloroethane	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
1,1,2-Trichloroethane	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Trichloroethene	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Vinyl Chloride	ND		ug/kg	374	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	75.2		%	71 - 146	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
4-Bromofluorobenzene (S)	66.4		%	46 - 138	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Dibromofluoromethane (S)	58.7		%	42 - 143	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
Toluene-d8 (S)	82.8		%	54 - 141	SW846 8260B	7/16/15	CJG	7/21/15 01:29	CJG	A
SEMIVOLATILES										
Acenaphthene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2082491 Biosolids 07-13-15

Lab ID: **2082491008** Date Collected: 7/13/2015 11:00 Matrix: Solid

Sample ID: **59816 AWTF Biosolids** Date Received: 7/13/2015 11:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Acenaphthylene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Anthracene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Benzidine	ND		ug/kg	3590	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Benzo(a)anthracene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Benzo(a)pyrene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Benzo(b)fluoranthene	630		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Benzo(g,h,i)perylene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Benzo(k)fluoranthene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
4-Bromophenyl-phenylether	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Butylbenzylphthalate	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
4-Chloro-3-methylphenol	ND		ug/kg	1210	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
bis(2-Chloroethoxy)methane	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
bis(2-Chloroethyl)ether	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
bis(2-Chloroisopropyl)ether	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
2-Chloronaphthalene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
2-Chlorophenol	ND		ug/kg	1210	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
4-Chlorophenyl-phenylether	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Chrysene	485		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Di-n-Butylphthalate	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Di-n-Octylphthalate	ND		ug/kg	1210	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Dibenzo(a,h)anthracene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
1,2-Dichlorobenzene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
1,3-Dichlorobenzene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
1,4-Dichlorobenzene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
3,3-Dichlorobenzidine	ND		ug/kg	672	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
2,4-Dichlorophenol	ND		ug/kg	897	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Diethylphthalate	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
2,4-Dimethylphenol	ND		ug/kg	1210	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Dimethylphthalate	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
2,4-Dinitrophenol	ND		ug/kg	897	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
2,4-Dinitrotoluene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
2,6-Dinitrotoluene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
1,2-Diphenylhydrazine	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
bis(2-Ethylhexyl)phthalate	11500		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Fluoranthene	777		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Fluorene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Hexachlorobenzene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Hexachlorobutadiene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A

ANALYTICAL RESULTS

Workorder: 2082491 Biosolids 07-13-15

Lab ID: **2082491008** Date Collected: 7/13/2015 11:00 Matrix: Solid

Sample ID: **59816 AWTF Biosolids** Date Received: 7/13/2015 11:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Hexachlorocyclopentadiene	ND		ug/kg	1210	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Hexachloroethane	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Indeno(1,2,3-cd)pyrene	597		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Isophorone	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
2-Methyl-4,6-dinitrophenol	ND		ug/kg	1210	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Naphthalene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Nitrobenzene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
2-Nitrophenol	ND		ug/kg	1210	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
4-Nitrophenol	ND		ug/kg	1210	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
N-Nitrosodimethylamine	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
N-Nitroso-di-n-propylamine	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
N-Nitrosodiphenylamine	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Pentachlorophenol	ND		ug/kg	897	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Phenanthrene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Phenol	ND		ug/kg	1210	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Pyrene	736		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
1,2,4-Trichlorobenzene	ND		ug/kg	448	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
2,4,6-Trichlorophenol	ND		ug/kg	897	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	57.8		%	37 - 123	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
2-Fluorobiphenyl (S)	63.5		%	45 - 105	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
2-Fluorophenol (S)	51.1		%	35 - 104	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Nitrobenzene-d5 (S)	56.2		%	41 - 110	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Phenol-d5 (S)	52.3		%	40 - 100	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
Terphenyl-d14 (S)	67.6		%	38 - 113	SW846 8270D	7/16/15	PDK	7/17/15 22:56	DHF	A
PCBs										
Total Polychlorinated Biphenyl	0.34		mg/kg	0.15	SW846 8082A	7/16/15	KAC	7/16/15 13:48	EGO	A
Aroclor-1016	ND		mg/kg	0.15	SW846 8082A	7/16/15	KAC	7/16/15 13:48	EGO	A
Aroclor-1221	ND		mg/kg	0.15	SW846 8082A	7/16/15	KAC	7/16/15 13:48	EGO	A
Aroclor-1232	ND		mg/kg	0.15	SW846 8082A	7/16/15	KAC	7/16/15 13:48	EGO	A
Aroclor-1242	ND		mg/kg	0.15	SW846 8082A	7/16/15	KAC	7/16/15 13:48	EGO	A
Aroclor-1248	ND		mg/kg	0.15	SW846 8082A	7/16/15	KAC	7/16/15 13:48	EGO	A
Aroclor-1254	0.34		mg/kg	0.15	SW846 8082A	7/16/15	KAC	7/16/15 13:48	EGO	A
Aroclor-1260	ND		mg/kg	0.15	SW846 8082A	7/16/15	KAC	7/16/15 13:48	EGO	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyls (S)	102		%	46 - 120	SW846 8082A	7/16/15	KAC	7/16/15 13:48	EGO	A

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2082491 Biosolids 07-13-15

Lab ID: **2082491008** Date Collected: 7/13/2015 11:00 Matrix: Solid
Sample ID: **59816 AWTF Biosolids** Date Received: 7/13/2015 11:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Tetrachloro-m-xylene (S)	87.8		%	52 - 115	SW846 8082A	7/16/15	KAC	7/16/15 13:48	EGO	A
PESTICIDES										
Aldrin	ND		ug/kg	38.6	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
alpha-BHC	ND		ug/kg	38.6	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
beta-BHC	ND		ug/kg	38.6	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
delta-BHC	ND		ug/kg	38.6	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
gamma-BHC	ND		ug/kg	38.6	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
alpha-Chlordane	ND		ug/kg	38.6	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
gamma-Chlordane	ND		ug/kg	38.6	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
4,4'-DDD	ND		ug/kg	75.0	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
4,4'-DDE	ND		ug/kg	75.0	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
4,4'-DDT	ND		ug/kg	75.0	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
Dieldrin	ND		ug/kg	75.0	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
Endosulfan I	ND		ug/kg	38.6	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
Endosulfan II	ND		ug/kg	75.0	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
Endosulfan Sulfate	ND		ug/kg	75.0	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
Endrin	ND		ug/kg	75.0	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
Endrin Aldehyde	ND		ug/kg	75.0	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
Endrin Ketone	ND		ug/kg	75.0	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
Heptachlor	ND		ug/kg	38.6	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
Heptachlor Epoxide	ND		ug/kg	38.6	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
Methoxychlor	ND		ug/kg	75.0	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
Mirex	ND		ug/kg	75.0	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
Toxaphene	ND		ug/kg	295	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyls (S)	62.8		%	30 - 135	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
Tetrachloro-m-xylene (S)	43.2		%	30 - 111	SW846 8081B	7/16/15	KAC	7/16/15 13:40	RWS	A
WET CHEMISTRY										
Ammonia-nitrogen, Total	0.93		%	0.0034	S4500NH3BD-97	7/19/15	J1H	7/20/15 13:32	J1H	A
Cyanide, Total	1.2		mg/kg	1.2	SW846 9012B	7/19/15	SYB	7/19/15 13:35	SYB	A
Hexane Extractable Material	17700		mg/kg	918	SW846 9071B			7/16/15 06:15	AT	A
Moisture	78.0		%	0.1	S2540G-11			7/30/15 11:00	REA	A
Phenolics	42.3	2	mg/kg	2.2	SW846 9066	7/19/15	NV	7/20/15 13:14	AMH	A
Phosphorus, Total	32100		mg/kg	1130	EPA 365.1	7/21/15	NV	7/22/15 08:45	SYB	A
Silica Gel Treated HEM	4910		mg/kg	918	SW846 9071B			7/16/15 06:15	AT	A
Tot. Kjeldahl Nitrogen,(Moist)	10600		mg/kg	300	S4500NH3D	7/16/15	C_W	7/16/15 15:15	NJA	A
Total Kjeldahl Nitrogen	48100		mg/kg	1360	S4500NH3D	7/16/15	C_W	7/16/15 15:15	NJA	A

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ANALYTICAL RESULTS

Workorder: 2082491 Biosolids 07-13-15

Lab ID: **2082491008** Date Collected: 7/13/2015 11:00 Matrix: Solid

Sample ID: **59816 AWTF Biosolids** Date Received: 7/13/2015 11:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Total Solids	22.0	4	%	0.1	S2540G-11			7/30/15 11:00	REA	A
METALS										
Antimony, Total	ND		mg/kg	8.6	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4
Arsenic, Total	ND		mg/kg	8.6	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4
Beryllium, Total	ND		mg/kg	4.3	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4
Cadmium, Total	4.6		mg/kg	2.1	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4
Chromium, Total	33.6		mg/kg	4.3	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4
Copper, Total	484		mg/kg	8.6	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4
Iron, Total	27600		mg/kg	42.9	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4
Lead, Total	81.9		mg/kg	8.6	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4
Mercury, Total	1.8		mg/kg	0.20	SW846 7471B	7/21/15	MNP	7/21/15 12:11	MNP	A5
Molybdenum, Total	11.1		mg/kg	8.6	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4
Nickel, Total	24.3		mg/kg	8.6	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4
Potassium, Total	1130		mg/kg	214	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4
Selenium, Total	ND		mg/kg	21.4	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4
Silver, Total	3.8		mg/kg	2.1	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4
Thallium, Total	ND		mg/kg	12.9	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4
Zinc, Total	1540		mg/kg	8.6	SW846 6010C	7/16/15	JPS	7/17/15 04:49	TSS	A4

Ms. Amy K Borden
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2082491001	1	59809 AWTF Biosolids	S9222D-97	Fecal Coliforms
This fecal was analyzed approximately 5 hours & 20 minutes after sampling.				
2082491002	1	59810 AWTF Biosolids	S9222D-97	Fecal Coliforms
This fecal was analyzed approximately 5 hours & 10 minutes after sampling.				
2082491003	1	59811 AWTF Biosolids	S9222D-97	Fecal Coliforms
This fecal was analyzed approximately 4 hours & 55 minutes after sampling.				
2082491004	1	59812 AWTF Biosolids	S9222D-97	Fecal Coliforms
This fecal was analyzed approximately 4 hours & 45 minutes after sampling.				
2082491005	1	59813 AWTF Biosolids	S9222D-97	Fecal Coliforms
This fecal was analyzed approximately 4 hours & 30 minutes after sampling.				
2082491006	1	59814 AWTF Biosolids	S9222D-97	Fecal Coliforms
This fecal was analyzed approximately 4 hours & 20 minutes after sampling.				
2082491007	1	59815 AWTF Biosolids	S9222D-97	Fecal Coliforms
This fecal was analyzed approximately 4 hours & 5 minutes after sampling.				
2082491008	2	59816 AWTF Biosolids	SW846 9066	Phenolics
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits.				
2082491008	3	59816 AWTF Biosolids	SW846 8260B	Methylene Chloride
The Method Blank for method SW846 8260B reported a value greater than the reporting level for the analyte Methylene Chloride.				
2082491008	4	59816 AWTF Biosolids	S2540G-11	Total Solids
Analyte was analyzed past the 14 day holding time.				

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of 2

Courier:

Tracking #:

2082491

Co. Name: HBC AWTF

Contact (Report to): R Schaffer

Address: 1642 S Cameron St Hbg PA 17104

Phone: 939-7270

Bill to (if different than Report to): SAME

PO#: 2015WW.78

Project Name/#:

ALS Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.

Date Required:

Approved By:

Email? [X] -Y

Fax? [ ] -Y No.:

***Container Type	PL	C													
***Container Size	125	1000													
*** Preservative	1 2.5	4°C													

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Fecal Coliform	Potassium, T	Phosphorous, T	Iron	TKN	Ammonia-N	PCB's Pesticides	VOC 624	BNA-625	Phenols
1 59809 AWTF Biosolids		7-13-15	0930	G	SL	1									
2 59810 AWTF BioSolids		7-13-15	0945	G	SL	1									
3 59811 AWTF BioSolids		7-13-15	1000	G	SL	1									
4 59812 AWTF BioSolids		7-13-15	1015	G	SL	1									
5 59813 AWTF BioSolids		7-13-15	1030	G	SL	1									
6 59814 AWTF BioSolids		7-13-15	1045	G	SL	1									
7 59815 AWTF BioSolids		7-13-15	1100	G	SL	1									
8 59816 AWTF BioSolids		7-13-15	1100	G	SL		1	X	X	X	X	X	X	X	X

Enter Number of Containers Per Analysis

Correct containers?	Y	N	Correct sample volume?	Y	N	Correct preservation?	Y	N	Headspace/Volatiles?	Y	N
Custody seals Present?	Y	N	(if present) Seals intact?	Y	N	Received on ice?	Y	N	COC/Labels complete/accurate?	Y	N
Container in good condition?	Y	N								

Circle appropriate Y or N.

(completed by Sample Receiving)

Performed by: BKG

Cooler Temp: 3°C

Therm. ID: TH-291

No. of Coolers:

Notes:

SAMPLED BY (Please Print): Kevin Martin

Project Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 K E Martin	7-13-15	11:08	2 [signature]	07/13/15	11:09
3 [signature]	07-13-15	11:40 AM	4 Benny Schaffer	7/13/15	11:40
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] other

EDDs Required? [ ] If yes, format type:

SDWA Forms? yes [ ] yes [ ] yes [ ] yes [ ]

State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ]

Other

DOD Criteria Required?

ALS FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite **Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY ***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Rev 01-2013

ALS Environmental

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER INSTRUCTIONS ON THE BACK

Page 2 of 2

Courier:

Tracking #:

49.01/#

Co. Name: HBC AWTF

Contact (Report to): R. Schaffer

Phone: 989-7270

Address: 1662 S Cameron St Hbg PA 17104

Bill to (if different than Report to): SAME

PO#: 2015-WW 78

Project Name/#:

ALS Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.

Date Required:

Approved By:

Email? [X] -Y

Fax? [ ] -Y No.:

***Container Type	1000 G														
***Container Size	1000														
*** Preservative	4°C														

ANALYSES/METHOD REQUESTED

Enter Number of Containers Per Analysis

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Cyanide, T	Priority Pollutant Metals	Molybdenum, T	Oil & Grease						
1															
2	Continued From Pg 1														
3															
4	59814 AWTF Biosolids			C	SL	X	X	X	X						
5															
6	(Report Mg/Kg Dry Weight)			Cont. From page 1											
7															
8															

Receipt Information (completed by Sample Receiving)

Performed by: BKS

Cooler Temp: 30°C

Therm. ID: TH-291

No. of Coolers:

Notes:

Sample Description/Location	Custody seals Present?	(if present) Seals intact?	Received on ice?	COC/Labels complete/accurate?	Container in good condition?
1	Y	Y	Y	Y	Y
2	Y	Y	Y	Y	Y
3	Y	Y	Y	Y	Y
4	Y	Y	Y	Y	Y
5	Y	Y	Y	Y	Y
6	Y	Y	Y	Y	Y
7	Y	Y	Y	Y	Y
8	Y	Y	Y	Y	Y

Circle appropriate Y or N.

SAMPLED BY (Please Print): KEVIN MARTIN

Project Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 K Martin	7-13-15	11:08	2 [signature]	07/13/15	11:09
3 [signature]	07-13-15	11:40 AM	4		
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] ____ Other

SDWA Forms? ⇨ yes [ ] yes [ ] yes [ ] yes [ ]

State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ]

EDDs Required? [ ] If yes, format type: Other

DOD Criteria Required?

ALS FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite **Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY ***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

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ALS Environmental

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September 23, 2015

Mr. Randy Schaffer
Capital Region Water-AWTF (fka/Harrisburg)
Advanced WW Treatment Facility
1662 S. Cameron St.
Harrisburg, PA 17104

Certificate of Analysis

Project Name:	**Biosolids MM/DD/YY**	Workorder:	**2095570**
Purchase Order:	**2015WW.78**	Workorder ID:	**Biosolids 60018 to 25 09/15/15**

Dear Mr. Schaffer:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, September 15, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Amy K Borden (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Jess Rosentel

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2095570001	60018	Solid	9/15/2015 08:00	9/15/2015 10:30	Collected by Client
2095570002	60019	Solid	9/15/2015 08:15	9/15/2015 10:30	Collected by Client
2095570003	60020	Solid	9/15/2015 08:30	9/15/2015 10:30	Collected by Client
2095570004	60021	Solid	9/15/2015 08:45	9/15/2015 10:30	Collected by Client
2095570005	60022	Solid	9/15/2015 09:00	9/15/2015 10:30	Collected by Client
2095570006	60023	Solid	9/15/2015 09:15	9/15/2015 10:30	Collected by Client
2095570007	60024	Solid	9/15/2015 09:30	9/15/2015 10:30	Collected by Client
2095570008	60025	Solid	9/15/2015 09:45	9/15/2015 10:30	Collected by Client

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SAMPLE SUMMARY

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570001** Date Collected: 9/15/2015 08:00 Matrix: Solid

Sample ID: **60018** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.5		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
Total Solids	19.5		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
MICROBIOLOGY									
Fecal Coliforms	133000	1	col/gm Dry Wt	51.2	S9222D-97		9/15/15 13:41	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570002** Date Collected: 9/15/2015 08:15 Matrix: Solid

Sample ID: **60019** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.6		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
Total Solids	19.4		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
MICROBIOLOGY									
Fecal Coliforms	170000	1	col/gm Dry Wt	51.6	S9222D-97		9/15/15 13:43	LLJ	A

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570003** Date Collected: 9/15/2015 08:30 Matrix: Solid

Sample ID: **60020** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	81.1		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
Total Solids	18.9		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
MICROBIOLOGY									
Fecal Coliforms	48100	12	col/gm Dry Wt	5.29	S9222D-97		9/15/15 13:45	LLJ	A

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Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570004** Date Collected: 9/15/2015 08:45 Matrix: Solid

Sample ID: **60021** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.3		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
Total Solids	19.7		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
MICROBIOLOGY									
Fecal Coliforms	29500	1	col/gm Dry Wt	5.08	S9222D-97		9/15/15 13:47	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570005** Date Collected: 9/15/2015 09:00 Matrix: Solid

Sample ID: **60022** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.7		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
Total Solids	19.3		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
MICROBIOLOGY									
Fecal Coliforms	51300	12	col/gm Dry Wt	5.17	S9222D-97		9/15/15 13:49	LLJ	A

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570006** Date Collected: 9/15/2015 09:15 Matrix: Solid

Sample ID: **60023** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.2		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
Total Solids	19.8		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
MICROBIOLOGY									
Fecal Coliforms	41800	12	col/gm Dry Wt	5.04	S9222D-97		9/15/15 13:51	LLJ	A

Ms. Amy K Borden
Project Coordinator

ALS Environmental

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570007** Date Collected: 9/15/2015 09:30 Matrix: Solid

Sample ID: **60024** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.6		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
Total Solids	19.4		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
MICROBIOLOGY									
Fecal Coliforms	38100	12	col/gm Dry Wt	5.15	S9222D-97		9/15/15 13:53	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570008** Date Collected: 9/15/2015 09:45 Matrix: Solid

Sample ID: **60025** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
PCBs										
Total Polychlorinated Biphenyl	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Aroclor-1016	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Aroclor-1221	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Aroclor-1232	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Aroclor-1242	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Aroclor-1248	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Aroclor-1254	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Aroclor-1260	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyls (S)	95.9		%	46 - 120	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Tetrachloro-m-xylene (S)	76.5		%	52 - 115	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
WET CHEMISTRY										
Ammonia-nitrogen, Total	0.77		%	0.0036	S4500NH3BD-97	9/16/15	J1H	9/17/15 08:50	J1H	A
Cyanide, Total	ND		mg/kg	1.2	SW846 9012B	9/17/15	AMH	9/17/15 12:00	LJF	A
Hexane Extractable Material	64100		mg/kg	962	SW846 9071B			9/18/15 07:00	AT	A
Moisture	79.4		%	0.1	S2540G-11			9/17/15 09:00	EMW	A
pH	7.85	1	pH_Units		SW846 9045D			9/20/15 19:40	REA	A
Phosphorus, Total	28800		mg/kg	1210	EPA 365.1	9/15/15	THB	9/18/15 11:51	LJF	A
Silica Gel Treated HEM	15000		mg/kg	962	SW846 9071B			9/18/15 07:00	AT	A
Tot. Kjeldahl Nitrogen,(Moist)	20300		mg/kg	1670	S4500NH3D	9/21/15	J1H	9/22/15 11:19	J1H	A
Total Kjeldahl Nitrogen	98800		mg/kg	8100	S4500NH3D	9/21/15	J1H	9/22/15 11:19	J1H	A
Total Solids	20.6		%	0.1	S2540G-11			9/17/15 09:00	EMW	A
METALS										
Arsenic, Total	ND		mg/kg	8.1	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Cadmium, Total	ND		mg/kg	2.0	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Chromium, Total	28.5		mg/kg	4.0	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Copper, Total	423		mg/kg	8.1	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Iron, Total	30600		mg/kg	40.5	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Lead, Total	50.8		mg/kg	8.1	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Mercury, Total	0.96		mg/kg	0.22	SW846 7471B	9/23/15	MNP	9/23/15 13:01	MNP	A2
Molybdenum, Total	17.9		mg/kg	8.1	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Nickel, Total	28.1		mg/kg	8.1	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Potassium, Total	990		mg/kg	202	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Selenium, Total	ND		mg/kg	20.2	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Silver, Total	2.7		mg/kg	2.0	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570008** Date Collected: 9/15/2015 09:45 Matrix: Solid

Sample ID: **60025** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Total	1670		mg/kg	8.1	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1

Ms. Amy K Borden
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2095570001	1	60018	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 40 minutes after sampling.				
2095570002	1	60019	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 30 minutes after sampling.				
2095570003	1	60020	S9222D-97	Fecal Coliforms
This is an estimated result.				
2095570003	2	60020	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 15 minutes after sampling.				
2095570004	1	60021	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours after sampling.				
2095570005	1	60022	S9222D-97	Fecal Coliforms
This is an estimated result.				
2095570005	2	60022	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 50 minutes after sampling.				
2095570006	1	60023	S9222D-97	Fecal Coliforms
This is an estimated result.				
2095570006	2	60023	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 50 minutes after sampling.				
2095570007	1	60024	S9222D-97	Fecal Coliforms
This is an estimated result.				
2095570007	2	60024	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 20 minutes after sampling.				
2095570008	1	60025	SW846 9045D	pH
The solid pH measured in water was 7.852 at 20.4 degrees C.				

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of 2

Courier:

Tracking #:

* 2 0 9 5 5 7 0 *

Co. Name: CRW - AWTF

Contact (Report to): R. Schaffer Phone: 717-939-7270

Address: 1662 S. Cameron Street
Harrisburg, PA 17104

Bill to (if different than Report to): Same PO#: 2015 WO 78

Project Name/#: ALS Quote #:

TAT: [X] Normal-Standard TAT is 10 business days. Date Required:
[ ] Rush-Subject to ALS approval and surcharges. Approved By:

Email? [X] -Y
Fax? [ ] -Y No.:

***Container Type	PL	G
***Container Size	125ml	1000ml
*** Preservative	[illegible]	<6.0°C

ANALYSES/METHOD REQUESTED

Enter Number of Containers Per Analysis

	Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Fecal Coliform	Potassium	Phosphorus, T	Iron	TKN	Ammonia - N	PCB's	Cyanide, T	pH	Oil/Grease
1	60018	AWTF Biosolids	9-15	08:00	G	SI	1									
2	60019	AWTF Biosolids	9-15	08:15	G	SI	1									
3	60020	AWTF Biosolids	9-15	08:30	G	SI	1									
4	60021	AWTF Biosolids	9-15	08:45	G	SI	1									
5	60022	AWTF Biosolids	9-15	09:00	G	SI	1									
6	60023	AWTF Biosolids	9-15	09:15	G	SI	1									
7	60024	AWTF Biosolids	9-15	09:30	G	SI	1									
8	60025	AWTF Biosolids	9-15	09:45	G	SI										

Receipt Information (completed by Sample Receipt)
Performed by: BKS
Cooler Temp: 7.00 °C
Therm. ID: TH-309
No. of Coolers:
Notes:

Sample Description/Location	Correct containers?	Correct sample volume?	Correct preservation?	Headspace/Volatiles?	Circle appropriate Y or N.
1 60018 AWTF Biosolids	Y	Y	Y	Y	
2 60019 AWTF Biosolids	Y	Y	Y	Y	
3 60020 AWTF Biosolids	Y	Y	Y	Y	
4 60021 AWTF Biosolids	Y	Y	Y	Y	
5 60022 AWTF Biosolids	Y	Y	Y	Y	
6 60023 AWTF Biosolids	Y	Y	Y	Y	
7 60024 AWTF Biosolids	Y	Y	Y	Y	
8 60025 AWTF Biosolids	Y	Y	Y	Y	

Custody seals Present? (if present) Seals intact? Received on ice? COC/Labels complete/accurate? Container in good condition?

SAMPLED BY (Please Print): Isaac E. Green

LOGGED BY (signature): [signature] DATE 9/15/15 TIME 1528

REVIEWED BY (signature): DATE TIME

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [signature]	9-15-15	0.945	2 Jorge Garcia	9/15/15	9:45
3 [signature]	9/15	1030	4 B Schaeffer	9/15/15	10:30
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] other

EDDs Required? [ ] If yes, format type:

SDWA Forms? yes [ ] yes [ ] yes [ ] yes [ ]

State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ] Other

Enter PWSID No.

DOD Criteria Required?

ALS FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite **Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY ***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Rev 6/2011

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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Page 2 of 2

Courier:

Tracking #:

5700#

Co. Name: CRW - AWTF

Contact (Report to): R. Schaffer

Phone:

Address: 1662 S. Cameron Street, Harrisburg, PA 17104

Bill to (if different than Report to): Same

PO#: 2015 WW78

Project Name/#:

ALS Quote #:

TAT: [X] Normal-Standard TAT is 10 business days. [ ] Rush-Subject to ALS approval and surcharges.

Date Required:

Approved By:

Email? [X] -Y

Fax? [ ] -Y No.:

***Container Type	G
***Container Size	1000ml
Preservative	<6.0C

ANALYSES/METHOD REQUESTED

T: As, Cd, Cr

T: Cu, Pb, Hg

T: Mo, Ni, Sc

T: Ag, Zn

Enter Number of Containers Per Analysis

	Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix
1	60025 AWTF Biosolids					
2	(Cont. from page 1)					
3						
4						
5	Report: Mg/Kg - dry weight					
6						
7						
8						

Receipt Information (completed by Sample Receiver)

Performed In: BKS

Cooler Temp: 2°C

Therm. ID: TH309

No. of Coolers:

Notes:

Sample Description/Location	Custody seals Present?	(if present) Seals intact?	Received on Ice?	COC/Labels complete/accurate?	Container in good condition?
1	Y	Y	Y	Y	Y
2	N	N	N	N	N
3	Y	Y	Y	Y	Y
4					
5					
6					
7					
8					

Correct containers? Y N

Correct sample volume? Y N

Correct preservation? Y N

Headspace/Volatiles? Y N

Circle appropriate Y or N.

SAMPLED BY (Please Print): Isaac E Green

LOGGED BY (signature): DATE: TIME:

REVIEWED BY (signature): DATE: TIME:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Isaac E Green	9-15-15	0945	2 Jorge Garcia	9/15/15	945
3 Jorge Garcia			4 B. Schaeffer	9/15/15	1030
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] (other)

SOWA Forms? yes [ ] yes [ ] yes [ ] yes [ ]

State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ]

EDDs Required? [ ] If yes, format type:

Other

Enter PWSID No.

DOD Criteria Required?

ALS FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite **Matrix: Al=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY ***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Rev 6/2011

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October 7, 2015

Mr. Randy Schaffer
Capital Region Water-AWTF (fka/Harrisburg)
Advanced WW Treatment Facility
1662 S. Cameron St.
Harrisburg, PA 17104

Certificate of Analysis

Revised Report - 10/7/2015 8:48:15 AM - See workorder comment section for explanation

Project Name:	**Biosolids MM/DD/YY**	Workorder:	**2095570**
Purchase Order:	**2015WW.78**	Workorder ID:	**Biosolids 60018 to 25 09/15/15**

Dear Mr. Schaffer:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, September 15, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Amy K Borden (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Jess Rosentel

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2095570001	60018	Solid	9/15/2015 08:00	9/15/2015 10:30	Collected by Client
2095570002	60019	Solid	9/15/2015 08:15	9/15/2015 10:30	Collected by Client
2095570003	60020	Solid	9/15/2015 08:30	9/15/2015 10:30	Collected by Client
2095570004	60021	Solid	9/15/2015 08:45	9/15/2015 10:30	Collected by Client
2095570005	60022	Solid	9/15/2015 09:00	9/15/2015 10:30	Collected by Client
2095570006	60023	Solid	9/15/2015 09:15	9/15/2015 10:30	Collected by Client
2095570007	60024	Solid	9/15/2015 09:30	9/15/2015 10:30	Collected by Client
2095570008	60025	Solid	9/15/2015 09:45	9/15/2015 10:30	Collected by Client

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SAMPLE SUMMARY

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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PROJECT SUMMARY

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Workorder Comments

Report modified to reanalyze TKN. AKB 09/25/15

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ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570001** Date Collected: 9/15/2015 08:00 Matrix: Solid

Sample ID: **60018** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.5		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
Total Solids	19.5		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
MICROBIOLOGY									
Fecal Coliforms	133000	1	col/gm Dry Wt	51.2	S9222D-97		9/15/15 13:41	LLJ	A

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570002** Date Collected: 9/15/2015 08:15 Matrix: Solid

Sample ID: **60019** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.6		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
Total Solids	19.4		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
MICROBIOLOGY									
Fecal Coliforms	170000	1	col/gm Dry Wt	51.6	S9222D-97		9/15/15 13:43	LLJ	A

Ms. Amy K Borden
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ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570003** Date Collected: 9/15/2015 08:30 Matrix: Solid

Sample ID: **60020** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	81.1		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
Total Solids	18.9		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
MICROBIOLOGY									
Fecal Coliforms	48100	12	col/gm Dry Wt	5.29	S9222D-97		9/15/15 13:45	LLJ	A

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570004** Date Collected: 9/15/2015 08:45 Matrix: Solid

Sample ID: **60021** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.3		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
Total Solids	19.7		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
MICROBIOLOGY									
Fecal Coliforms	29500	1	col/gm Dry Wt	5.08	S9222D-97		9/15/15 13:47	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570005** Date Collected: 9/15/2015 09:00 Matrix: Solid

Sample ID: **60022** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.7		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
Total Solids	19.3		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
MICROBIOLOGY									
Fecal Coliforms	51300	12	col/gm Dry Wt	5.17	S9222D-97		9/15/15 13:49	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570006** Date Collected: 9/15/2015 09:15 Matrix: Solid

Sample ID: **60023** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.2		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
Total Solids	19.8		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
MICROBIOLOGY									
Fecal Coliforms	41800	12	col/gm Dry Wt	5.04	S9222D-97		9/15/15 13:51	LLJ	A

Ms. Amy K Borden
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570007** Date Collected: 9/15/2015 09:30 Matrix: Solid

Sample ID: **60024** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	80.6		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
Total Solids	19.4		%	0.1	S2540G-11		9/17/15 09:00	EMW	A
MICROBIOLOGY									
Fecal Coliforms	38100	12	col/gm Dry Wt	5.15	S9222D-97		9/15/15 13:53	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

ALS Environmental

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ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570008** Date Collected: 9/15/2015 09:45 Matrix: Solid
Sample ID: **60025** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
PCBs										
Total Polychlorinated Biphenyl	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Aroclor-1016	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Aroclor-1221	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Aroclor-1232	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Aroclor-1242	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Aroclor-1248	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Aroclor-1254	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Aroclor-1260	ND		mg/kg	0.16	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyls (S)	95.9		%	46 - 120	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
Tetrachloro-m-xylene (S)	76.5		%	52 - 115	SW846 8082A	9/16/15	KAC	9/17/15 01:55	EGO	A
WET CHEMISTRY										
Ammonia-nitrogen, Total	0.77		%	0.0036	S4500NH3BD-97	9/16/15	J1H	9/17/15 08:50	J1H	A
Cyanide, Total	ND		mg/kg	1.2	SW846 9012B	9/17/15	AMH	9/17/15 12:00	LJF	A
Hexane Extractable Material	64100		mg/kg	962	SW846 9071B			9/18/15 07:00	AT	A
Moisture	79.4		%	0.1	S2540G-11			9/17/15 09:00	EMW	A
pH	7.85	1	pH_Units		SW846 9045D			9/20/15 19:40	REA	A
Phosphorus, Total	28800		mg/kg	1210	EPA 365.1	9/15/15	THB	9/18/15 11:51	LJF	A
Silica Gel Treated HEM	15000		mg/kg	962	SW846 9071B			9/18/15 07:00	AT	A
Tot. Kjeldahl Nitrogen,(Moist)	9540		mg/kg	600	S4500NH3D	9/30/15	J1H	10/5/15 06:48	J1H	
Total Kjeldahl Nitrogen	46300		mg/kg	2910	S4500NH3D	9/30/15	J1H	10/5/15 06:48	J1H	
Total Solids	20.6		%	0.1	S2540G-11			9/17/15 09:00	EMW	A
METALS										
Arsenic, Total	ND		mg/kg	8.1	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Cadmium, Total	ND		mg/kg	2.0	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Chromium, Total	28.5		mg/kg	4.0	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Copper, Total	423		mg/kg	8.1	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Iron, Total	30600		mg/kg	40.5	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Lead, Total	50.8		mg/kg	8.1	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Mercury, Total	0.96		mg/kg	0.22	SW846 7471B	9/23/15	MNP	9/23/15 13:01	MNP	A2
Molybdenum, Total	17.9		mg/kg	8.1	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Nickel, Total	28.1		mg/kg	8.1	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Potassium, Total	990		mg/kg	202	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Selenium, Total	ND		mg/kg	20.2	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1
Silver, Total	2.7		mg/kg	2.0	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2095570 Biosolids 60018 to 25 09/15/15

Lab ID: **2095570008** Date Collected: 9/15/2015 09:45 Matrix: Solid

Sample ID: **60025** Date Received: 9/15/2015 10:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Total	1670		mg/kg	8.1	SW846 6010C	9/21/15	JPS	9/22/15 06:27	TSS	A1

Ms. Amy K Borden
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2095570001	1	60018	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 40 minutes after sampling.				
2095570002	1	60019	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 30 minutes after sampling.				
2095570003	1	60020	S9222D-97	Fecal Coliforms
This is an estimated result.				
2095570003	2	60020	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours & 15 minutes after sampling.				
2095570004	1	60021	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 5 hours after sampling.				
2095570005	1	60022	S9222D-97	Fecal Coliforms
This is an estimated result.				
2095570005	2	60022	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 50 minutes after sampling.				
2095570006	1	60023	S9222D-97	Fecal Coliforms
This is an estimated result.				
2095570006	2	60023	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 50 minutes after sampling.				
2095570007	1	60024	S9222D-97	Fecal Coliforms
This is an estimated result.				
2095570007	2	60024	S9222D-97	Fecal Coliforms
This sample was analyzed approximately 4 hours & 20 minutes after sampling.				
2095570008	1	60025	SW846 9045D	pH
The solid pH measured in water was 7.852 at 20.4 degrees C.				

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of 2

Courier:

Tracking #:

* 2 0 9 5 5 7 0 *

Co. Name: CRW - AWTF

Contact (Report to): R. Schaffer Phone: 717-939-7270

Address: 1662 S. Cameron Street
Harrisburg, PA 17104

Bill to (if different than Report to): Same PO#: 2015 WO 78

Project Name/#: ALS Quote #:

TAT: [X] Normal-Standard TAT is 10 business days. Date Required:
[ ] Rush-Subject to ALS approval and surcharges. Approved By:

Email? [X] -Y
Fax? [ ] -Y No.:

***Container Type	PL	G
***Container Size	125ml	1000ml
*** Preservative	1 oz H_2SO_4	<6.0°C

ANALYSES/METHOD REQUESTED

Enter Number of Containers Per Analysis

	Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Fecal Coliform	Potassium	Phosphorus, T	Iron	TKN	Ammonia - N	PCB's	Cyanide, T	pH	Oil/Grease
1	60018	AWTF Biosolids	9-15	08:00	G	SI	1									
2	60019	AWTF Biosolids	9-15	08:15	G	SI	1									
3	60020	AWTF Biosolids	9-15	08:30	G	SI	1									
4	60021	AWTF Biosolids	9-15	08:45	G	SI	1									
5	60022	AWTF Biosolids	9-15	09:00	G	SI	1									
6	60023	AWTF Biosolids	9-15	09:15	G	SI	1									
7	60024	AWTF Biosolids	9-15	09:30	G	SI	1									
8	60025	AWTF Biosolids	9-15	09:45	G	SI										

Receipt Information (completed by Sample Receipt)
Performed by: BKS
Cooler Temp: 7.00 °C
Therm. ID: TH-309
No. of Coolers:
Notes:

Sample	Correct containers?	Correct sample volume?	Correct preservation?	Headspace/Volatiles?	Circle appropriate Y or N.
1	Y	Y	Y	Y	
2	Y	Y	Y	Y	
3	Y	Y	Y	Y	
4	Y	Y	Y	Y	
5	Y	Y	Y	Y	
6	Y	Y	Y	Y	
7	Y	Y	Y	Y	
8	Y	Y	Y	Y	

Custody seals Present? (if present) Seals intact? Received on ice? COC/Labels complete/accurate? Container in good condition?

SAMPLED BY (Please Print): Isaac E. Green

LOGGED BY (signature): [signature] DATE 9/15/15 TIME 1528

REVIEWED BY (signature): DATE TIME

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [signature]	9-15-15	0.945	2 Jorge Garcia	9/15/15	9:45
3 [signature]	9/15	1030	4 B Schaeffer	9/15/15	10:30
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] other

EDDs Required? [ ] If yes, format type:

SDWA Forms? yes [ ] yes [ ] yes [ ] yes [ ]

State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ] Other

Enter PWSID No.

DOD Criteria Required?

ALS FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite **Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY ***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Rev 6/2011

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Page 2 of 2

Courier:

Tracking #:

5700#

Co. Name: CRW - AWTF

Contact (Report to): R. Schaffer

Phone:

Address: 1662 S. Cameron Street, Harrisburg, PA 17104

Bill to (if different than Report to): Same

PO#: 2015 WW78

Project Name/#:

ALS Quote #:

TAT: [X] Normal-Standard TAT is 10 business days. [ ] Rush-Subject to ALS approval and surcharges.

Date Required:

Approved By:

Email? [X] -Y

Fax? [ ] -Y No.:

***Container Type	G
***Container Size	1000ml
Preservative	<6.0°C

ANALYSES/METHOD REQUESTED

T: As, Cd, Cr

T: Cu, Pb, Hg

T: Mo, Ni, Sc

T: Ag, Zn

Enter Number of Containers Per Analysis

	Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix
1	60025 AWTF Biosolids					
2	(Cont. from page 1)					
3						
4						
5	Report: Mg/Kg - dry weight					
6						
7						
8						

Receipt Information (completed by Sample Receiver)

Performed In: BKS

Cooler Temp: 2°C

Therm. ID: TH309

No. of Coolers:

Notes:

Custody seals Present?	(if present) Seals intact?	Received on Ice?	COC/Labels complete/accurate?	Container in good condition?
Y	Y	Y	Y	Y
N	N	N	N	N

Correct containers?	Correct sample volume?	Correct preservation?	Headspace/Volatiles?	Circle appropriate Y or N.
Y	Y	Y	Y	
N	N	N	N	

SAMPLED BY (Please Print): Isaac E Green

LOGGED BY (signature): DATE: TIME:

REVIEWED BY (signature): DATE: TIME:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Isaac E Green	9-15-15	0945	2 Jorge Garcia	9/15/15	945
3 Jorge Garcia			4 R. Schaeffer	9/15/15	1030
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] (other)

SOWA Forms? yes [ ] yes [ ] yes [ ] yes [ ]

State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ]

EDDs Required? [ ] If yes, format type: Other

Enter PWSID No.

DOD Criteria Required?

ALS FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite **Matrix: Al=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY ***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

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November 6, 2015

Mr. Randy Schaffer
Capital Region Water-AWTF (fka/Harrisburg)
Advanced WW Treatment Facility
1662 S. Cameron St.
Harrisburg, PA 17104

Certificate of Analysis

Project Name:	**Form 43**	Workorder:	**2103081**
Purchase Order:	**2015-WW-78**	Workorder ID:	**60148**

Dear Mr. Schaffer:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, October 21, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Amy K Borden (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Jess Rosentel

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Amy K Borden

Ms. Amy K Borden
Project Coordinator

ALS Environmental

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SAMPLE SUMMARY

Workorder: 2103081 60148

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2103081001	60148 AWTF Biosolids	Solid	10/20/2015 09:18	10/21/2015 10:51	Collected by Client

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 2103081 60148

Lab ID: **2103081001** Date Collected: 10/20/2015 09:18 Matrix: Solid

Sample ID: **60148 AWTF Biosolids** Date Received: 10/21/2015 10:51

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP VOLATILE ORGANICS										
Benzene	ND		ug/L	20.0	SW846 8260B			10/28/15 13:26	DD	A
2-Butanone	ND		ug/L	200	SW846 8260B			10/28/15 13:26	DD	A
Carbon Tetrachloride	ND		ug/L	20.0	SW846 8260B			10/28/15 13:26	DD	A
Chlorobenzene	ND		ug/L	20.0	SW846 8260B			10/28/15 13:26	DD	A
Chloroform	ND		ug/L	20.0	SW846 8260B			10/28/15 13:26	DD	A
1,2-Dichloroethane	ND		ug/L	20.0	SW846 8260B			10/28/15 13:26	DD	A
1,1-Dichloroethene	ND		ug/L	20.0	SW846 8260B			10/28/15 13:26	DD	A
Tetrachloroethene	ND		ug/L	20.0	SW846 8260B			10/28/15 13:26	DD	A
Trichloroethene	ND		ug/L	20.0	SW846 8260B			10/28/15 13:26	DD	A
Vinyl Chloride	ND		ug/L	20.0	SW846 8260B			10/28/15 13:26	DD	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	62 - 133	SW846 8260B			10/28/15 13:26	DD	A
4-Bromofluorobenzene (S)	120	3	%	79 - 114	SW846 8260B			10/28/15 13:26	DD	A
Dibromofluoromethane (S)	96		%	78 - 116	SW846 8260B			10/28/15 13:26	DD	A
Toluene-d8 (S)	85.7		%	76 - 127	SW846 8260B			10/28/15 13:26	DD	A
PCBs										
Total Polychlorinated Biphenyl	ND		mg/kg	0.38	SW846 8082A	10/29/15	BS	10/29/15 18:29	EGO	A
Aroclor-1016	ND		mg/kg	0.38	SW846 8082A	10/29/15	BS	10/29/15 18:29	EGO	A
Aroclor-1221	ND		mg/kg	0.38	SW846 8082A	10/29/15	BS	10/29/15 18:29	EGO	A
Aroclor-1232	ND		mg/kg	0.38	SW846 8082A	10/29/15	BS	10/29/15 18:29	EGO	A
Aroclor-1242	ND		mg/kg	0.38	SW846 8082A	10/29/15	BS	10/29/15 18:29	EGO	A
Aroclor-1248	ND		mg/kg	0.38	SW846 8082A	10/29/15	BS	10/29/15 18:29	EGO	A
Aroclor-1254	ND		mg/kg	0.38	SW846 8082A	10/29/15	BS	10/29/15 18:29	EGO	A
Aroclor-1260	ND		mg/kg	0.38	SW846 8082A	10/29/15	BS	10/29/15 18:29	EGO	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyls (S)	71.2		%	46 - 120	SW846 8082A	10/29/15	BS	10/29/15 18:29	EGO	A
Tetrachloro-m-xylene (S)	91.6		%	52 - 115	SW846 8082A	10/29/15	BS	10/29/15 18:29	EGO	A
WET CHEMISTRY										
Cyanide, Reactive	ND		ppm	10	SW-846 7.3CN	10/22/15	THB	10/27/15 07:50	LJF	A
Free Liquids	Negative				SW846 9095B			10/30/15 13:00	EMW	A
Hexane Extractable Material	75100		mg/kg	1000	SW846 9071B			10/25/15 12:00	AT	A
Ignitability	not ignitable	2			SW846 1030			10/22/15 09:00	BPC	A
Moisture	80.5		%	0.1	S2540G-11			11/4/15 13:35	EMW	A
pH	7.82	1	pH_Units		SW846 9045D			10/24/15 11:44	MSA	A

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ANALYTICAL RESULTS

Workorder: 2103081 60148

Lab ID: **2103081001** Date Collected: 10/20/2015 09:18 Matrix: Solid

Sample ID: **60148 AWTF Biosolids** Date Received: 10/21/2015 10:51

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Silica Gel Treated HEM	15000		mg/kg	1000	SW846 9071B			10/25/15 12:00	AT	A
Solids, Total Volatile	67.9		%	1.0	S2540G-11			11/4/15 13:35	RMM	A
Sulfide, Reactive	ND		ppm	6.2	SW846 7.3	10/22/15	THB	10/22/15 16:30	THB	A
Total Solids	19.5	4	%	0.1	S2540G-11			11/4/15 13:35	EMW	A
TCLP METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	10/25/15	JPS	10/26/15 13:26	SRT	A1
Barium, Total	ND		mg/L	2.8	SW846 6010C	10/25/15	JPS	10/26/15 13:26	SRT	A1
Cadmium, Total	ND		mg/L	0.011	SW846 6010C	10/25/15	JPS	10/26/15 13:26	SRT	A1
Chromium, Total	ND		mg/L	0.028	SW846 6010C	10/25/15	JPS	10/26/15 13:26	SRT	A1
Copper, Total	ND		mg/L	0.055	SW846 6010C	10/25/15	JPS	10/26/15 13:26	SRT	A1
Lead, Total	ND		mg/L	0.033	SW846 6010C	10/25/15	JPS	10/26/15 13:26	SRT	A1
Mercury, Total	ND		mg/L	0.0020	SW846 7470A	10/26/15	MNP	10/26/15 14:57	MNP	A2
Nickel, Total	ND		mg/L	0.11	SW846 6010C	10/25/15	JPS	10/26/15 13:26	SRT	A1
Selenium, Total	ND		mg/L	0.11	SW846 6010C	10/25/15	JPS	10/26/15 13:26	SRT	A1
Silver, Total	ND		mg/L	0.022	SW846 6010C	10/25/15	JPS	10/26/15 13:26	SRT	A1
Zinc, Total	1.0		mg/L	0.11	SW846 6010C	10/25/15	JPS	10/26/15 13:26	SRT	A1
TCLP SEMI-VOLATILES										
mp-Cresol	ND		ug/L	160	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
o-Cresol	ND		ug/L	160	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
1,4-Dichlorobenzene	ND		ug/L	60.0	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
2,4-Dinitrotoluene	ND		ug/L	60.0	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
Hexachlorobenzene	ND		ug/L	60.0	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
Hexachlorobutadiene	ND		ug/L	60.0	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
Hexachloroethane	ND		ug/L	60.0	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
Nitrobenzene	ND		ug/L	60.0	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
Pentachlorophenol	ND		ug/L	320	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
Pyridine	ND		ug/L	160	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
2,4,5-Trichlorophenol	ND		ug/L	160	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
2,4,6-Trichlorophenol	ND		ug/L	160	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	95.2		%	40 - 125	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
2-Fluorobiphenyl (S)	57.5		%	50 - 110	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
2-Fluorophenol (S)	45.3		%	20 - 75	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
Nitrobenzene-d5 (S)	62.9		%	40 - 110	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
Phenol-d5 (S)	29.5		%	13 - 49	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A
Terphenyl-d14 (S)	94.6		%	50 - 122	SW846 8270D	10/23/15	VLM	10/23/15 16:57	CGS	A

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ANALYTICAL RESULTS

Workorder: 2103081 60148

Lab ID: **2103081001** Date Collected: 10/20/2015 09:18 Matrix: Solid

Sample ID: **60148 AWTF Biosolids** Date Received: 10/21/2015 10:51

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP PESTICIDES										
gamma-BHC	ND		ug/L	0.50	SW846 8081B	10/23/15	LEH	10/26/15 09:57	RWS	A
Chlordane	ND		ug/L	10.0	SW846 8081B	10/23/15	LEH	10/26/15 09:57	RWS	A
Endrin	ND		ug/L	0.50	SW846 8081B	10/23/15	LEH	10/26/15 09:57	RWS	A
Heptachlor	ND		ug/L	0.50	SW846 8081B	10/23/15	LEH	10/26/15 09:57	RWS	A
Heptachlor Epoxide	ND		ug/L	0.50	SW846 8081B	10/23/15	LEH	10/26/15 09:57	RWS	A
Methoxychlor	ND		ug/L	0.50	SW846 8081B	10/23/15	LEH	10/26/15 09:57	RWS	A
Toxaphene	ND		ug/L	20.0	SW846 8081B	10/23/15	LEH	10/26/15 09:57	RWS	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyls (S)	80.2		%	30 - 140	SW846 8081B	10/23/15	LEH	10/26/15 09:57	RWS	A
Tetrachloro-m-xylene (S)	68.2		%	30 - 123	SW846 8081B	10/23/15	LEH	10/26/15 09:57	RWS	A
TCLP HERBICIDES										
2,4-D	ND		ug/L	4.0	SW846 8151A	10/23/15	JSR	10/26/15 10:04	KJH	A
2,4,5-TP	ND		ug/L	6.0	SW846 8151A	10/23/15	JSR	10/26/15 10:04	KJH	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4-Dichlorophenylacetic acid (S)	106		%	14 - 172	SW846 8151A	10/23/15	JSR	10/26/15 10:04	KJH	A
ASTM LEACHATE										
Ammonia-N	74.4		mg/L	2.50	D6919-09			10/27/15 01:14	JAM	A
Chemical Oxygen Demand (COD)	316		mg/L	15	EPA 410.4			10/27/15 05:30	JAM	A
Oil/Grease Silica Gel Treated	ND		mg/L	3.2	EPA 1664B			10/23/15 13:00	AT	A
Total Solids	414		mg/L	5	S2540B-11			10/23/15 13:45	RMM	A

Ms. Amy K Borden
Project Coordinator

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PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2103081001	1	60148 AWTF Biosolids	SW846 9045D	pH
The solid pH measured in water was 7.818 at 18.4 degrees C.				
2103081001	2	60148 AWTF Biosolids	SW846 1030	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
2103081001	3	60148 AWTF Biosolids	SW846 8260B	4-Bromofluorobenzene
The surrogate 4-Bromofluorobenzene for method SW846 8260B was outside of control limits. The % Recovery was reported as 120 and the control limits were 79 to 114. This result was reported at a dilution of 20.				
2103081001	4	60148 AWTF Biosolids	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				

Friday, November 06, 2015 1:12:12 PM

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Middletown, PA 17057
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F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of

Courier:

Tracking #:

* 2 1 0 3 0 8 1 *

Co. Name: HBG AWTF

Contact (Report to): RANDY SCHEFFER Phone: 939-7370

Address: 1612 S. CAMERON STREET
HBG, PA 17104

Bill to (if different than Report to): SAME

PO#: 2015-WW-78

Project Name/#:

ALS Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.

Date Required:

Approved By:

Email? [X] -Y

Fax? [ ] -Y No.:

	Container Type	Container Size		Preservative
	G	1000		4°

ANALYSES/METHOD REQUESTED

DEP FORM 43

	Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Enter Number of Containers Per Analysis
1	60148 AWTF BIOSOLIDS		10-20-15	0918	G	SL	1
2							
3							
4							
5							
6							
7							
8							

10/21/15 2233

Reference to:

Cooler Temp: 3.6°C

Therm. ID: 204

No. of Coolers:

Notes:

Circle appropriate Y or N.	Container in good condition?	COC/Labels complete/accurate?	Received on Ice?	(If present) Seals intact?	Custody seals Present?
Y N	Y	Y	Y	Y	Y
Y N	N	N	N	N	N
Y N	N	N	N	N	N
Y N	N	N	N	N	N
Y N	N	N	N	N	N

Correct containers? Correct sample volume? Correct preservation? Headspace/Volatiles?

SAMPLED BY (Please Print): Brian L. Mountain

Project Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1	10-20-15	0920	2	10/20/15	0932
3	10/21/15	1051	4	10/21/15	1018
5			6	10/21/15	1015
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] other

EDDs Required? [ ] If yes, format type:

SDWA Forms? ⇨ yes [ ] yes [ ] yes [ ] yes [ ]

State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ] Other

**EPA/PWSID No.

DOD Criteria Required?

ALS FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite

**Matrix: Al=Air; DW=Drinking Water; GW=Groundwater; Oi=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY

***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Rev 01-2013

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December 15, 2015

Mr. Randy Schaffer
Capital Region Water-AWTF (fka/Harrisburg)
Advanced WW Treatment Facility
1662 S. Cameron St.
Harrisburg, PA 17104

Certificate of Analysis

Project Name:	**Biosolids MM/DD/YY**	Workorder:	**2109920**
Purchase Order:	**2015WW78**	Workorder ID:	**Biosolids 11/24/15**

Dear Mr. Schaffer:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, November 24, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Amy K Borden (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Jess Rosentel

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2109920 Biosolids 11/24/15

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2109920001	60243 AWTF Biosolids	Solid	11/24/2015 08:16	11/24/2015 10:45	Collected by Client
2109920002	60244 AWTF Biosolids	Solid	11/24/2015 08:31	11/24/2015 10:45	Collected by Client
2109920003	60245 AWTF Biosolids	Solid	11/24/2015 08:46	11/24/2015 10:45	Collected by Client
2109920004	60246 AWTF Biosolids	Solid	11/24/2015 09:01	11/24/2015 10:45	Collected by Client
2109920005	60247 AWTF Biosolids	Solid	11/24/2015 09:16	11/24/2015 10:45	Collected by Client
2109920006	60248 AWTF Biosolids	Solid	11/24/2015 09:31	11/24/2015 10:45	Collected by Client
2109920007	60249 AWTF Biosolids	Solid	11/24/2015 09:46	11/24/2015 10:45	Collected by Client
2109920008	60250 AWTF Biosolids	Solid	11/24/2015 09:46	11/24/2015 10:45	Collected by Client

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SAMPLE SUMMARY

Workorder: 2109920 Biosolids 11/24/15

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 2109920 Biosolids 11/24/15

Lab ID: **2109920001** Date Collected: 11/24/2015 08:16 Matrix: Solid
Sample ID: **60243 AWTF Biosolids** Date Received: 11/24/2015 10:45

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	82.4		%	0.1	S2540G-11		11/25/15 11:30	EMW	A
Total Solids	17.6		%	0.1	S2540G-11		11/25/15 11:30	EMW	A
MICROBIOLOGY									
Fecal Coliforms	23800	1	col/gm Dry Wt	5.67	SM9222D+EPA 625/R-92/013 APX F		11/24/15 15:32	LLJ	A

Amy K Borden

Ms. Amy K Borden
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2109920 Biosolids 11/24/15

Lab ID: **2109920002** Date Collected: 11/24/2015 08:31 Matrix: Solid

Sample ID: **60244 AWTF Biosolids** Date Received: 11/24/2015 10:45

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	82.3		%	0.1	S2540G-11		11/25/15 11:30	EMW	A
Total Solids	17.7		%	0.1	S2540G-11		11/25/15 11:30	EMW	A
MICROBIOLOGY									
Fecal Coliforms	17500	1	col/gm Dry Wt	5.65	SM9222D+EPA 625/R-92/013 APX F		11/24/15 15:32	LLJ	A

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ANALYTICAL RESULTS

Workorder: 2109920 Biosolids 11/24/15

Lab ID: **2109920003** Date Collected: 11/24/2015 08:46 Matrix: Solid
Sample ID: **60245 AWTF Biosolids** Date Received: 11/24/2015 10:45

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	83.1		%	0.1	S2540G-11		11/25/15 11:30	EMW	A
Total Solids	16.9		%	0.1	S2540G-11		11/25/15 11:30	EMW	A
MICROBIOLOGY									
Fecal Coliforms	24800	1	col/gm Dry Wt	5.91	SM9222D+EPA 625/R-92/013 APX F		11/24/15 15:32	LLJ	A

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ANALYTICAL RESULTS

Workorder: 2109920 Biosolids 11/24/15

Lab ID: **2109920004** Date Collected: 11/24/2015 09:01 Matrix: Solid

Sample ID: **60246 AWTF Biosolids** Date Received: 11/24/2015 10:45

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	83.1		%	0.1	S2540G-11		11/25/15 11:30	EMW	A
Total Solids	16.9		%	0.1	S2540G-11		11/25/15 11:30	EMW	A
MICROBIOLOGY									
Fecal Coliforms	18900	1	col/gm Dry Wt	5.90	SM9222D+EPA 625/R-92/013 APX F		11/24/15 15:32	LLJ	A

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ANALYTICAL RESULTS

Workorder: 2109920 Biosolids 11/24/15

Lab ID: **2109920005** Date Collected: 11/24/2015 09:16 Matrix: Solid

Sample ID: **60247 AWTF Biosolids** Date Received: 11/24/2015 10:45

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	82.4		%	0.1	S2540G-11		11/25/15 11:30	EMW	A
Total Solids	17.6		%	0.1	S2540G-11		11/25/15 11:30	EMW	A
MICROBIOLOGY									
Fecal Coliforms	130000	1	col/gm Dry Wt	56.7	SM9222D+EPA 625/R-92/013 APX F		11/24/15 15:32	LLJ	A

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ANALYTICAL RESULTS

Workorder: 2109920 Biosolids 11/24/15

Lab ID: **2109920006** Date Collected: 11/24/2015 09:31 Matrix: Solid

Sample ID: **60248 AWTF Biosolids** Date Received: 11/24/2015 10:45

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	81.8		%	0.1	S2540G-11		11/25/15 11:30	EMW	A
Total Solids	18.2		%	0.1	S2540G-11		11/25/15 11:30	EMW	A
MICROBIOLOGY									
Fecal Coliforms	127000	1	col/gm Dry Wt	55.0	SM9222D+EPA 625/R-92/013 APX F		11/24/15 15:32	LLJ	A

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ANALYTICAL RESULTS

Workorder: 2109920 Biosolids 11/24/15

Lab ID: **2109920007** Date Collected: 11/24/2015 09:46 Matrix: Solid

Sample ID: **60249 AWTF Biosolids** Date Received: 11/24/2015 10:45

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
WET CHEMISTRY									
Moisture	81.9		%	0.1	S2540G-11		11/25/15 11:30	EMW	A
Total Solids	18.1		%	0.1	S2540G-11		11/25/15 11:30	EMW	A
MICROBIOLOGY									
Fecal Coliforms	18200	1	col/gm Dry Wt	5.53	SM9222D+EPA 625/R-92/013 APX F		11/24/15 15:32	LLJ	A

Amy K Borden

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ANALYTICAL RESULTS

Workorder: 2109920 Biosolids 11/24/15

Lab ID: **2109920008** Date Collected: 11/24/2015 09:46 Matrix: Solid
Sample ID: **60250 AWTF Biosolids** Date Received: 11/24/2015 10:45

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
PCBs										
Total Polychlorinated Biphenyl	ND		mg/kg	0.19	SW846 8082A	12/4/15	GEC	12/7/15 13:36	EGO	A
Aroclor-1016	ND		mg/kg	0.19	SW846 8082A	12/4/15	GEC	12/7/15 13:36	EGO	A
Aroclor-1221	ND		mg/kg	0.19	SW846 8082A	12/4/15	GEC	12/7/15 13:36	EGO	A
Aroclor-1232	ND		mg/kg	0.19	SW846 8082A	12/4/15	GEC	12/7/15 13:36	EGO	A
Aroclor-1242	ND		mg/kg	0.19	SW846 8082A	12/4/15	GEC	12/7/15 13:36	EGO	A
Aroclor-1248	ND		mg/kg	0.19	SW846 8082A	12/4/15	GEC	12/7/15 13:36	EGO	A
Aroclor-1254	ND		mg/kg	0.19	SW846 8082A	12/4/15	GEC	12/7/15 13:36	EGO	A
Aroclor-1260	ND		mg/kg	0.19	SW846 8082A	12/4/15	GEC	12/7/15 13:36	EGO	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyls (S)	53.3		%	46 - 120	SW846 8082A	12/4/15	GEC	12/7/15 13:36	EGO	A
Tetrachloro-m-xylene (S)	48.5	2	%	52 - 115	SW846 8082A	12/4/15	GEC	12/7/15 13:36	EGO	A
WET CHEMISTRY										
Ammonia-nitrogen, Total	1.4		%	0.0044	S4500NH3BD-97	12/6/15	J1H	12/7/15 09:25	J1H	A
Cyanide, Total	ND		mg/kg	1.5	SW846 9012B	11/25/15	MMA	11/30/15 13:30	C_W	A
Hexane Extractable Material	61900		mg/kg	1190	SW846 9071B			12/2/15 13:00	AT	A
Moisture	83.1		%	0.1	S2540G-11			11/25/15 11:30	EMW	A
pH	7.38	1	pH_Units		SW846 9045D			11/25/15 05:32	MSA	A
Phosphorus, Total	27900		mg/kg	2930	EPA 365.1	12/13/15	NV	12/14/15 04:45	LJF	A
Silica Gel Treated HEM	14200		mg/kg	1190	SW846 9071B			12/2/15 13:00	AT	A
Tot. Kjeldahl Nitrogen,(Moist)	10300		mg/kg	556	S4500NH3D	12/10/15	J1H	12/14/15 19:30	NJA	A
Total Kjeldahl Nitrogen	60900		mg/kg	3290	S4500NH3D	12/10/15	J1H	12/14/15 19:30	NJA	A
Total Solids	16.9		%	0.1	S2540G-11			11/25/15 11:30	EMW	A
METALS										
Arsenic, Total	ND		mg/kg	10.4	SW846 6010C	12/1/15	JPS	12/2/15 05:12	TSS	A2
Cadmium, Total	ND		mg/kg	2.6	SW846 6010C	12/1/15	JPS	12/2/15 05:12	TSS	A2
Chromium, Total	29.7		mg/kg	5.2	SW846 6010C	12/1/15	JPS	12/2/15 05:12	TSS	A2
Copper, Total	504		mg/kg	10.4	SW846 6010C	12/1/15	JPS	12/2/15 05:12	TSS	A2
Iron, Total	36100		mg/kg	52.0	SW846 6010C	12/1/15	JPS	12/2/15 05:12	TSS	A2
Lead, Total	57.9		mg/kg	10.4	SW846 6010C	12/1/15	JPS	12/2/15 05:12	TSS	A2
Mercury, Total	1.1		mg/kg	0.26	SW846 7471B	12/8/15	MNP	12/8/15 11:48	MNP	A3
Molybdenum, Total	16.6		mg/kg	10.4	SW846 6010C	12/1/15	JPS	12/2/15 05:12	TSS	A2
Nickel, Total	28.1		mg/kg	10.4	SW846 6010C	12/1/15	JPS	12/2/15 05:12	TSS	A2
Potassium, Total	1160		mg/kg	260	SW846 6010C	12/1/15	JPS	12/2/15 05:12	TSS	A2
Selenium, Total	ND		mg/kg	26.0	SW846 6010C	12/1/15	JPS	12/2/15 05:12	TSS	A2
Silver, Total	2.9		mg/kg	2.6	SW846 6010C	12/1/15	JPS	12/2/15 05:12	TSS	A2

ALS Environmental

34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2109920 Biosolids 11/24/15

Lab ID: **2109920008** Date Collected: 11/24/2015 09:46 Matrix: Solid
Sample ID: **60250 AWTF Biosolids** Date Received: 11/24/2015 10:45

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Total	2040		mg/kg	10.4	SW846 6010C	12/1/15	JPS	12/2/15 05:12	TSS	A2

Ms. Amy K Borden
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2109920001	1	60243 AWTF Biosolids	SM9222D+EPA 625/R-92/013 APX F	Fecal Coliforms
This sample was analyzed approximately 7 hours after sampling.				
2109920002	1	60244 AWTF Biosolids	SM9222D+EPA 625/R-92/013 APX F	Fecal Coliforms
This sample was analyzed approximately 6 hours & 45 minutes after sampling.				
2109920003	1	60245 AWTF Biosolids	SM9222D+EPA 625/R-92/013 APX F	Fecal Coliforms
This sample was analyzed approximately 6 hours & 35 minutes after sampling.				
2109920004	1	60246 AWTF Biosolids	SM9222D+EPA 625/R-92/013 APX F	Fecal Coliforms
This sample was analyzed approximately 6 hours & 20 minutes after sampling.				
2109920005	1	60247 AWTF Biosolids	SM9222D+EPA 625/R-92/013 APX F	Fecal Coliforms
This sample was analyzed approximately 6 hours & 10 minutes after sampling.				
2109920006	1	60248 AWTF Biosolids	SM9222D+EPA 625/R-92/013 APX F	Fecal Coliforms
This sample was analyzed approximately 5 hours & 55 minutes after sampling.				
2109920007	1	60249 AWTF Biosolids	SM9222D+EPA 625/R-92/013 APX F	Fecal Coliforms
This sample was analyzed approximately 5 hours & 40 minutes after sampling.				
2109920008	1	60250 AWTF Biosolids	SW846 9045D	pH
The solid pH measured in water was 7.379 at 18.2 degrees C.				
2109920008	2	60250 AWTF Biosolids	SW846 8082A	Tetrachloro-m-xylene
The surrogate Tetrachloro-m-xylene for method SW846 8082A was outside of control limits. The % Recovery was reported as 48.5 and the control limits were 52 to 115. This result was reported at a dilution of 1.				

ALS Environmental

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of 2

Courier:

Tracking #:

* 2 1 0 9 9 2 0 *

Co. Name: HBG AWTF

Contact (Report to): L. SCHAFFER

Phone: 939-7270

Address: 1662 S. CAMERON ST
HBG, PA 17104

Bill to (if different than Report to): SAME

PO#: 2015WW78

Project Name/#:

ALS Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.

Date Required:

Approved By:

Email? [X] -Y

Fax? [ ] -Y No.:

***Container Type	PI	/G
***Container Size	125ml	1000ml
Preservative	No, S, O	4°C

Performed In: AM

Cooler Temp: 1°C

Therm. ID: TH-294

No. of Coolers:

Notes:

ANALYSES/METHOD REQUESTED

Enter Number of Containers Per Analysis

	Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Fecal Coliform	Potassium	Phosphorus, T	Iron	TKN	Ammonia-N	PCB's	Cyanide, T	pH	Oil + Grease
1	60243 AWTF BIOSOLIDS		11/24	8:16	G	SL	1									
2	60244 AWTF BIOSOLIDS			8:31	G	SL	1									
3	60245 AWTF BIOSOLIDS			8:46	G	SL	1									
4	60246 AWTF BIOSOLIDS			9:01	G	SL	1									
5	60247 AWTF BIOSOLIDS			9:16	G	SL	1									
6	60248 AWTF BIOSOLIDS			9:31	G	SL	1									
7	60249 AWTF BIOSOLIDS			9:46	G	SL	1									
8	60250 AWTF BIOSOLIDS			9:46	C	SL		1	X	X	X	X	X	X	X	X

AT 11/24/15

Sample Description/Location	Custody seals Present?	(If present) Seals intact?	Received on ice?	COC/Labels complete/accurate?	Container in good condition?
1 60243 AWTF BIOSOLIDS	Y	Y	Y	Y	Y
2 60244 AWTF BIOSOLIDS	N	N	N	N	N
3 60245 AWTF BIOSOLIDS	Y	Y	Y	Y	Y
4 60246 AWTF BIOSOLIDS	Y	Y	Y	Y	Y
5 60247 AWTF BIOSOLIDS	Y	Y	Y	Y	Y
6 60248 AWTF BIOSOLIDS	Y	Y	Y	Y	Y
7 60249 AWTF BIOSOLIDS	Y	Y	Y	Y	Y
8 60250 AWTF BIOSOLIDS	Y	Y	Y	Y	Y

Correct containers? Y N
Correct sample volume? Y N
Correct preservation? Y N
Headspace/Volatiles? Y N
Circle appropriate Y or N.

SAMPLED BY (Please Print): Bryan Genesse

Project Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Bryan Genesse - CRW	11/24	10:08am	2 [signature]	11-24-15	10/16
3 [signature]	11/24	10 45	4 [signature] ALS	11/24/15	1045
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] NEW

EDDs Required? [ ] If yes, format type:

SDWA Forms? yes [ ] yes [ ] yes [ ] yes [ ]

State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ]

Other

DOD Criteria Required?

ALS FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite **Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY ***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

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Middletown, PA 17057
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F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Courier:
Tracking #:

2109920

Co. Name: HBG AWTF
Contact (Report to): L. SCHAFFER Phone: 9397270
Address: 1662 S. CAMERON ST
HBG, PA 17104

Bill to (if different than Report to): SAME
PO#: 2015 WWTP
Project Name/#:
ALS Quote #:
TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.
Date Required:
Approved By:
Email? [X] Y
Fax? [ ] Y No.:

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	***Container Type	***Container Size	***Preservative	Total: As, Cd, Cr	Total: Cu, Pb, Hg	Total: Mo, Ni, Se	Total: Ag, Zn	
						G	100mL	2+0C					
1 60250 AWTF BIOSOLIDS		11/24	9:46	C	SL				X	X	X	X	AG 11/24/15
2													
3 Continued from													
4 page 1													
5													
6 (Report mg/kg dry wt)													
7													
8													

Enter Number of Containers Per Analysis

Receipt Information (completed by Sample Receiving)
Performed by: VM
Cooler Temp: 1°C
Therm. ID: TH214
No. of Coolers:
Notes:

	Correct containers?	Correct sample volume?	Correct preservation?	Headspace/Volatiles?	Circle appropriate Y or N.
	Y	Y	Y	Y	
	N	N	N	N	N
	Custody seals Present?	(if present) Seals intact?	Received on Ice?	COC/Labels complete/accurate?	Container in good condition?
	Y	Y	Y	Y	Y

SAMPLED BY (Please Print): Bryan Geresse
Project Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Bryan Geresse (CRL)	11/24	10:08	2 Jorge Garcia	11-24-15	10:16
3 Jorge Garcia	11/24	10 45	4 ALS	11/24/15	1045
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] other
EDDs Required? [ ] If yes, format type:
SDWA Forms? ⇨ yes [ ] yes [ ] yes [ ]
State Samples Collected In? MD [ ] NJ [ ] NY [ ] PA [ ]
Other
DOD Criteria Required?

ALS FIELD SERVICES
[ ] Pickup
[ ] Labor
[ ] Composite Sampling
[ ] Rental Equipment
[ ] Other

* G=Grab; C=Composite
**Matrix: Al=Air; DW=Drinking Water; GW=Groundwater; Oil=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater
***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY

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Tuesday, December 15, 2015 5:14:40 PM
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ALS

Appendix I

CAPITAL REGION WATER
CONVEYANCE SYSTEM

2015

Conveyance System	Size Range (Inches)	Approximate Length (Feet)	Division and Flow Regulators	Servicing Pump Station	Collection Systems Served
Interceptor:					
Spring Creek	18 - 34	11,500	No	Spring Creek	Harrisburg, Swatara, Paxtang, Susquehanna, Penbrook, Lower Paxton
Hemlock	8 - 24	3,800	Yes to Paxton Creek	Spring Creek	Harrisburg
Front Street	30 - 43	21,000	Yes to Susquehanna River	Front Street	Harrisburg, Susquehanna
Paxton Creek	48 - 60	14,000	Yes to Paxton Creek	Front Street	Harrisburg, Susquehanna, Lower Paxton, Penbrook
Paxton Creek Relief	48	4,900	No	Front Street	Harrisburg, Susquehanna, Lower Paxton, Penbrook
Asylum Run	15 - 24	8,200	No	Front Street	Harrisburg, Susquehanna, Lower Paxton, Penbrook
Total		63,400			
Force Main:					
Front Street	48	7,000	No	Front Street	Harrisburg, Susquehanna, Lower Paxton, Penbrook
Spring Creek	20	50	No	Spring Creek	Harrisburg, Swatara, Paxtang, Susquehanna, Penbrook, Lower Paxton
Total		7,050			
Collection System:	8 - 4'7"x7'	696,960	No	Market Street, City Island I and II	Comprised of 80% combined sewers, 20% sanitary sewers and 3,637 City inlets and 1,014 private inlets.

Appendix J

Collection System Activity Report - 2015

Activity: Repair Storm Inlet

Date	Location	Comment
2/18/2015	16th & Herr Sts.	NW
2/18/2015	16th & Herr Sts.	
3/10/2015	25th & Greenwood Sts.	repaired inlet walls and patched with blacktop
3/12/2015	19th & Brookwood Sts.	
3/13/2015	Derry & Melrose Sts., E	rebuilt brick and reset frame
3/13/2015	4th & Chestnut Sts.	replaced frame and grate
3/16/2015	Penn & Schuylkill Sts., SW	
3/16/2015	Penn & Schuylkill Sts., NE	
3/17/2015	27th & Greenwood Sts.	
3/18/2015	25th & Greenwood Sts.	total rebuild of inlet
3/23/2015	Penn & Radnor Sts.	
3/23/2015	Carlise & Holly Sts.	repair and reset inlet
3/23/2015	Penn & Basin Sts.	NE & NW
3/26/2015	2nd & Vaughn Sts.	NE
3/26/2015	Cameron & Calder Sts.	
3/27/2015	4th & Reily Sts.	
3/31/2015	18th & Rudy	SE, NE
4/2/2015	18th & Derry Sts.	
4/6/2015	18th Street	
4/9/2015	Walnut & Court Sts.	
4/10/2015	18th & Brookwood Sts.	
4/13/2015	18th & Brookwood Sts.	S. at PPL
4/14/2015	18th & Brookwood Sts.	
4/17/2015	18th & Brookwood	NW
4/20/2015	18th & Brookwood Sts.	
4/22/2015	18th & Brookwood Sts.	
4/24/2015	4th & Peffer Sts.	NE
4/24/2015	4th & Peffer Sts.	
4/27/2015	South Front St.	Dock Street Entrance
4/27/2015	17th & Sycamore Sts.	NW
4/28/2015	Green & Boas Sts.	SW
4/29/2015	Penn & Muench Sts.	
5/4/2015	Verbeke NE corner of Mark	
5/8/2015	2322 N. 7th St.	
5/12/2015	10th & Shannon Sts.	
5/12/2015	Reily & Logan Sts.	
5/12/2015	Penn & Muench Sts.	NE
5/13/2015	Green & Muench Sts.	
5/13/2015	Paxton & Rolleston Sts.	
5/13/2015	Green & Shamokin Sts.	SW
5/13/2015	Green & Shamokin Sts.	NE
5/18/2015	2nd & Lewis Sts.	
5/18/2015	Green & Shamokin Sts.	
5/19/2015	18th & Sycamore Sts.	NE

6/2/2015	16th & Herr Sts.	
6/9/2015	Cameron Street	CSR Entrance
6/12/2015	14th & Wayne Sts.	
6/12/2015	800 Block of Paxton St.	
6/12/2015	800 Block of Paxton St.	
6/12/2015	916 14th St.	
6/15/2015	1200 Block of N. Cameron	W
6/15/2015	1100 Block of N. Cameron	W
6/17/2015	916 14th St.	
6/18/2015	15th & Revere Sts.	
6/22/2015	651 Boas St.	
6/23/2015	7th & Seneca Sts.	
6/24/2015	540 S. 19th St.	
6/25/2015	Sycamore Street	Between 13th & Cameron
6/25/2015	13th & Reese	
6/26/2015	18th & Sycamore Sts.	
6/29/2015	Jefferson & Camp Sts.	
6/30/2015	15th & Argyle Sts.	NE
7/1/2015	15th & Argyle	NW
7/2/2015	16th & Catherine	NW
7/2/2015	Capitol & Herr Sts.	SE
7/2/2015	16th & Catherine Sts.	NE
7/6/2015	Penn & Delaware Sts.	SE
7/6/2015	Penn & Delaware Sts.	NE
7/9/2015	20th & Market Sts.	
7/10/2015	14th & Cloverly	
7/13/2015	2022 Susquehanna St.	NW
7/13/2015	2022 Susquehanna St.	NE
7/16/2015	6th & Verbeke Sts.	SE
7/20/2015	Jefferson & Oxford Sts.	NW
7/20/2015	Jefferson & Oxford Sts.	SW
7/22/2015	Susquehanna & Kelker Sts.	
7/22/2015	Green & Hamilton Sts.	NE
7/28/2015	Green & Hamilton Sts.	NE
7/28/2015	Susquehanna & Geiger Sts	NE
7/29/2015	26th & Duke Sts.	
7/29/2015	Geiger & Green Sts.	SW
7/30/2015	Green & Geiger Sts.	NW
7/30/2015	State & Linn Sts.	SW
7/30/2015	Susquehanna & Clinton Sts	NE
8/3/2015	Thompson, Rear of 1422 D	
8/3/2015	S. 15th & Thompson Sts.	
8/3/2015	Kittatinny & Buckthorn St.	
8/4/2015	Penn & Dauphin Sts.	
8/5/2015	Green & Granite Sts.	
8/6/2015	Fulton & Dauphin STs.	
8/6/2015	Green & Harris Sts.	
8/7/2015	Green & Cumberland Sts.	
8/7/2015	4th & Reilly Sts.	
8/10/2015	1422 Derry Street in the Re	
8/10/2015	Kittatinny & Buckthorn Sts.	

8/10/2015	S. 15th & Thompson Sts.	
8/11/2015	14th & Sycamore Sts.	NE
8/11/2015	2nd & Sayford	SW
8/11/2015	2nd & Sayford	NW
8/12/2015	Union & Susquehanna Sts.	
8/13/2015	Forster & Susquehanna Sts	
8/14/2015	Susquehanna & Kelker Sts.	
8/18/2015	Logan & Delaware Sts.	
8/24/2015	Third & Market Sts.	NW
8/25/2015	Third & Market Sts.	NE
8/28/2015	Division & Reel Sts.	SE
8/31/2015	State & Linn Sts.	SE
8/31/2015	17th & State Sts.	SE
8/31/2015	4th & Division Sts.	NE
9/1/2015	2nd & Shamokin	NE
9/2/2015	Herr & James Sts.	N
9/3/2015	Penn & Herr Sts.	NE
9/3/2015	State & Linn Sts.	SW
9/4/2015	Green & Sassafrass Sts.	SE
9/4/2015	14th & Lowell Sts.	
9/8/2015	3rd & Edward Sts.	NE
9/8/2015	4th & Schuylkill Sts.	SE
9/8/2015	3rd & Edward Sts.	SW
9/9/2015	17th & Brookwood Sts.	
9/11/2015	Penn & Delaware	SW
9/11/2015	3rd St in front of William Pe	
9/11/2015	Green & Muench	NE
9/15/2015	6th & Woodland	SE
9/17/2015	Green & Muench Sts.	SW
9/18/2015	Penn & Herr Sts.	SE
9/18/2015	Green & Herr Sts.	NE
9/18/2015	Burma & Hatton Sts.	
9/21/2015	Kensington Street	Alley behind 2414 Kensington
9/21/2015	21st & Market Sts.	NE
9/22/2015	Hale & Swatara Sts	
9/25/2015	4th & Delaware Sts.	NE
9/28/2015	20th & Greenwood Sts.	NE
9/28/2015	4th & Delaware Sts.	SE
9/29/2015	Greenwood & Norwood Sts.	NE
9/30/2015	Hillside & Pentwater	
9/30/2015	Penn & Reily Sts.	
10/5/2015	4th & Muench Sts.	NE
10/6/2015	5th & Harris Sts.	SE
10/6/2015	1725 Sycamore St.	
10/6/2015	5th & Harris Sts.	NW
10/14/2015	2nd & Chestnut Sts.	SE
10/16/2015	3rd & Chestnut Sts.	

Activity: Sewer Line Inspection, Chemical Addition, Etc.

Date	*Location*	*Comment*
1/9/2015	Cameron & Allison Sts.	Good

1/9/2015	Rolleston & Pemberton Sts.	Good
1/9/2015	Rolleston & Paxton Sts.	Good
1/9/2015	17th & Revere Sts.	Good
1/9/2015	17th & Sumner Sts.	Good
1/9/2015	Meadowlark Place	Good
1/9/2015	17th & Putnam Sts.	Good
1/9/2015	Hudson & Pemberton Sts.	Good
1/9/2015	377 Hale St. (Rear)	flushed blocked line, clear
1/9/2015	528 Dunkle St.	Good
1/9/2015	Melrose & Knox Sts.	Good
1/9/2015	22nd & Kensington Sts.	Good
1/9/2015	Heather Place	Good
1/9/2015	2230 Kensington St.	Good
1/9/2015	2410 Berryhill St.	Good
1/9/2015	Yew Place	Good
1/9/2015	Hale St. & Rudy Road	Good
1/9/2015	Rolleston & Pemberton Sts.	Good
1/9/2015	Thomas & Market Sts.	Good
1/9/2015	2600 block of Green St.	Good
1/9/2015	17th & Hunter Sts.	Good
1/9/2015	15th & Calder Sts.	Good
1/9/2015	19th & Mulberry Sts.	Good
1/9/2015	15th & Liberty Sts.	Good
1/9/2015	20th & Berryhill Sts.	Good
1/9/2015	17th & Herr Sts.	Good
1/9/2015	2500 block of Green St.	Good
1/9/2015	1922 Chestnut St.	Good
1/9/2015	Waldo & Radnor Sts.	Good
1/9/2015	5th & Antoine Sts.	Good
1/9/2015	19th & Primrose Sts.	Good
1/9/2015	2700 block of Lexington ST	Good
1/9/2015	2700 block of Green St.	Good
1/9/2015	Carey & Market Sts.	Good
1/9/2015	2700 block of Reel Sts.	Good
1/9/2015	25th St. at John Harris HS	Good
1/9/2015	Chestnut & Honey Sts.	Good
1/30/2015	2200 Block of Swatara St.	Good
1/30/2015	1206 S. 18th St.	Good
1/30/2015	Hudson & Pemberton Sts.	displaced blockage, good
1/30/2015	528 Dunkle St.	Good
1/30/2015	Thomas & Market Sts.	Good
1/30/2015	Melrose & Knox Sts.	Good
1/30/2015	22nd & Kensington Sts.	Good
1/30/2015	Carey & Market Sts.	Good
1/30/2015	25th St. at John Harris HS	Good
1/30/2015	Wyatt & Croyden Sts.	Good
1/30/2015	2230 Kensington St.	Good
1/30/2015	2410 Berryhill St.	Good
1/30/2015	Heather Place	displaced blockage, good
1/30/2015	Hale St. & Rudy Road	Good
1/30/2015	377 Hale St. (Rear)	Good

1/30/2015	640 S. 25th St.	Good
1/30/2015	Yew Place	Good
1/30/2015	Meadowlark Place	Good
1/30/2015	15th & Liberty Sts.	Good
1/30/2015	17th & Herr Sts.	Good
1/30/2015	15th & Calder Sts.	Good
1/30/2015	1600 Block of Herr St.	Good
1/30/2015	19th & Primrose Sts.	Good
1/30/2015	2nd & Vine Sts.	Good
1/30/2015	Chestnut & Honey Sts.	Good
1/30/2015	17th & Hunter Sts.	Good
1/30/2015	19th & Mulberry Sts.	Good
1/30/2015	3rd & Wiconisco Sts.	Good
1/30/2015	21st & Chestnut Sts.	Good
1/30/2015	17th & Sumner Sts.	Good
1/30/2015	17th & Putnam Sts.	Good
1/30/2015	17th & Revere Sts.	Good
1/30/2015	5th & Antoine Sts.	Good
1/30/2015	2700 block of Green St.	Good
1/30/2015	2600 block of Green St.	Good
1/30/2015	2500 Block of Green St.	Good
1/30/2015	Waldo & Radnor Sts.	Good
1/30/2015	Cameron & Allison Sts.	Good
1/30/2015	5th & Angenese Sts.	Good
1/30/2015	Rolleston & Paxton Sts.	Good
1/30/2015	Penn & Antoine Sts.	Good
1/30/2015	2700 block of Lexington ST	Good
1/30/2015	2700 Block of Reel St.	Good
1/30/2015	2700 Block of N. 4th St.	Good
1/30/2015	Rolleston & Pemberton Sts.	Good
1/30/2015	1922 Chestnut St.	Good
2/6/2015	25 N. 4th St.	
2/10/2015	2600 Block of Green St.	Good
2/10/2015	2500 Block of Green St.	Good
2/10/2015	5th & Angenese Sts.	Good
2/10/2015	Waldo & Radnor Sts.	Good
2/10/2015	2700 Block of Green St.	Good
2/10/2015	3000 Block of N. 3rd St.	
2/10/2015	Pennwood & Antoine Sts.	Good
2/10/2015	2700 Block of Lexington St.	Good
2/10/2015	2700 Block of Reel St.	Good
2/10/2015	2700 Block of N. 4th St.	Good
2/10/2015	2nd & Vine Sts.	Good
2/10/2015	21st & Chestnut Sts.	Good
2/10/2015	1922 Chestnut Street	Good
2/10/2015	5th & Angenese Sts.	Reinspect sewer blockage from 2/9/15
2/10/2015	5th & Antoine Sts.	Good
2/12/2015	23 S. 18th St.	Check for possible sewer failure, sewer is not compromised
2/12/2015	2424 N. 5th St.	Check for possible sewer failure, line needs ccv'd
2/12/2015	1601 Green St.	Check for possible sewer failure, line needs cctv'd
2/17/2015	1111 N. 3rd St.	investigate sewer smell from manhole

2/17/2015	2127 Green St.	Check for possible sewer backup
2/17/2015	Elm & Jumper Sts.	Investigate sewer call
3/2/2015	1625 N. 2nd Street	
3/2/2015	2419 Logan Street	checked the main, everything was clear
3/2/2015	1105 N. 17th St.	checked the main, everything was clear, she may be on a party line
3/2/2015	245 Emerald Street	checked the main, everything was clear
3/9/2015	151 Royal Terrace	
3/13/2015	17th & Revere Sts.	Good
3/13/2015	Rolleston & Paxton Sts.	Good
3/13/2015	Rolleston & Pemberton Sts.	Good
3/13/2015	1206 S. 18th St.	Good
3/13/2015	Hudson & Pemberton Sts.	Good
3/13/2015	17th & Putnam Sts.	Good
3/13/2015	Melrose & Knox Sts.	Good
3/13/2015	Cameron & Allison Sts.	Good
3/13/2015	Hale Street & Rudy Road	Good
3/13/2015	377 Hale Street (rear)	Good
3/13/2015	640 S. 25th Street	Good
3/13/2015	Yew Place	Good
3/13/2015	Heather Place	Good
3/13/2015	528 Dunkle St.	Good
3/13/2015	17th & Sumner Sts.	Good
3/17/2015	17th & Sumner Sts.	Good
3/17/2015	17th & Revere Sts.	Good
3/17/2015	Rolleston & Paxton Sts.	Good
3/17/2015	17th & Putnam Sts.	Good
3/17/2015	Rolleston & Pemberton Sts.	Good
3/17/2015	Cameron & Allison Sts.	Good
3/18/2015	528 Dunkle Street	Good
3/18/2015	17th & Putnam Sts.	Good
3/18/2015	Rolleston & Paxton Sts.	Good
3/18/2015	17th & Sumner Streets	Good
3/18/2015	Cameron & Allison Sts.	Good
3/18/2015	2410 Berryhill Street	Good
3/18/2015	Hudson & Pemberton Sts.	Good
3/18/2015	Melrose & Knox Sts.	Good
3/18/2015	22nd & Kensington Sts.	Line Blocked, Flushed line
3/18/2015	Rolleston & Pemberton Sts.	Good
3/18/2015	1206 S. 18th Street	Good
3/18/2015	17th & Revere Sts.	Good
3/18/2015	2230 Kensington St.	Good
3/19/2015	Hudson & Pemberton Sts.	Good
3/19/2015	19th & Primrose Sts.	Good
3/19/2015	15th & Liberty Sts.	Good
3/19/2015	15th & Calder Sts.	Good
3/19/2015	1600 Block of Herr St.	Good
3/19/2015	3rd & Wiconisco Sts.	Good
3/19/2015	2700 Block of Reel St.	Good
3/19/2015	Pennwood & Antoine Sts.	Good
3/19/2015	Chestnut & Honey Sts.	Good
3/19/2015	528 Dunkle St.	Good

3/19/2015	2700 Block of Lexington St.	Good
3/19/2015	1206 S. 18th St.	Good
3/19/2015	Rolleston & Pemberton Sts.	Good
3/19/2015	Rolleston & Paxton Sts.	Good
3/19/2015	17th & Revere Sts.	Good
3/19/2015	17th & Putnam Sts.	Good
3/19/2015	17th & Sumner Sts.	Good
3/19/2015	Cameron & Allison Sts.	Good
3/19/2015	5th & Angenese Sts.	Good
3/19/2015	Yew Place	Good
3/19/2015	22nd & Kensington Sts.	Good
3/19/2015	2200 Block of Swatara St.	Good
3/19/2015	2230 Kensington St.	Good
3/19/2015	2410 Berryhill St.	Good
3/19/2015	Hale St. & Rudy Road	Good
3/19/2015	5th & Antoine Sts.	Good
3/19/2015	640 S. 25th St.	Good
3/19/2015	17th & Hunter Sts.	Good
3/19/2015	Melrose & Knox Sts.	Good
3/19/2015	Heather Place	Good
3/19/2015	Meadowlark Place	Good
3/19/2015	377 Hale St. (Rear)	Good
3/19/2015	Thomas & Market Sts.	Good
3/19/2015	Carey & Market Sts.	Good
3/19/2015	21st and Chestnut Sts.	Good
3/19/2015	25th St. at John Harris HS	Good
3/19/2015	1922 Chestnut St.	Good
3/19/2015	Wyatt & Croyden Sts.	Good
3/19/2015	19th & Mulberry Sts.	Good
3/23/2015	Rolleston & Paxton Sts.	Good
3/23/2015	Cameron & Allison Sts.	Good
3/23/2015	17th & Sumner Sts.	Good
3/23/2015	1206 S. 18th St.	Good
3/23/2015	22nd & Kensington Sts.	Good
3/23/2015	17th & Putnam Sts.	Good
3/23/2015	Rolleston & Pemberton Sts.	Good
3/23/2015	2410 Berryhill St.	Good
3/23/2015	2230 Kensington St.	Good
3/23/2015	17th & Revere Sts.	Good
3/23/2015	2200 Block of Swatara St.	Good
3/31/2015	Wallace & Muench Sts.	
3/31/2015	1100 Block of 17th Street	
4/1/2015	Meadowlark Place	Good
4/1/2015	1600 Block of Herr Street	Good
4/1/2015	Heather Place	Good
4/1/2015	Yew Place	Good
4/1/2015	Wyatt & Croyden Roads	Good
4/1/2015	25th Street at John Harris	Good
4/1/2015	Carey & Market Sts.	Good
4/1/2015	Thomas & Market Sts.	Good
4/1/2015	1922 Chestnut Street	Good

4/1/2015	21st & Chestnut Sts.	Good
4/1/2015	19th & Mulberry Sts.	Good
4/1/2015	17th & Hunter Sts.	Good
4/1/2015	Chestnut & Honey Sts.	Good
4/1/2015	15th & Calder Sts.	Good
4/1/2015	Cameron & Allison Sts.	Good
4/1/2015	17th & Herr Sts.	Good
4/1/2015	Hudson & Pemberton Sts.	Good
4/1/2015	Schuylkill & 5th Sts.	
4/1/2015	1500 Block of Sycamore St	
4/1/2015	Schuylkill & 5th Sts.	
4/1/2015	15th & Liberty Sts.	Good
4/1/2015	17th & Sumner Sts.	Good
4/1/2015	17th & Revere Sts.	Good
4/1/2015	Rolleston & Paxton Sts.	Good
4/1/2015	17th & Putnam Sts.	Good
4/1/2015	1206 S. 18th St.	Good
4/1/2015	640 S. 25th Street	Good
4/1/2015	528 Dunkle Street	Good
4/1/2015	Melrose & Knox Sts.	Good
4/1/2015	22nd & Kensington Sts.	Good
4/1/2015	2200 Block of Swatara St.	Good
4/1/2015	2230 Kensington Street	Good
4/1/2015	2410 Berryhill Street	Good
4/1/2015	Hale Street & Rudy Road	Good
4/1/2015	377 Hale Street (Rear)	Good
4/1/2015	Rolleston & Pemberton Sts.	Good
4/1/2015	19th & Primrose Sts.	Good
4/2/2015	1601 Green St.	
4/2/2015	1362 Mayflower St.	
4/10/2015	2034 N. 4th St.	
4/10/2015	122 Muench St.	
4/10/2015	Dunkle and Derry Sts	
4/10/2015	5th and Peffer Sts	
4/13/2015	Cloverly Terrace & Agnew	
4/13/2015	1463 S. 13th St.	
4/13/2015	2400 Block of Turner Alley	
4/14/2015	17th & Sycamore Sts.	
4/14/2015	107 Reily St.	
4/14/2015	Buttonwood	between North & Liberty Sts.
4/14/2015	State & Willow Sts.	
4/16/2015	1800 Block of Rudy Road	
4/16/2015	18th & Rudy	
4/16/2015	2nd & Cranberry	
4/16/2015	209 Bailey St.	
4/17/2015	Shanklin & Academy	
4/21/2015	1111 N. 3rd St.	
4/21/2015	2212 N. 5th St.	
4/29/2015	2934 Rumson Dr.	
5/4/2015	S. 14th & Kittatinny	
5/4/2015	638 & 640 Harris Sts.	

5/4/2015	15th & North Sts.	
5/4/2015	1508 Briggs Sts.	
5/5/2015	State Street	
5/5/2015	Buttonwood	Between State & Liberty Sts.
6/1/2015	Disbrow St.	
6/1/2015	115 South St.	
6/2/2015	Buttonwood	Between Liberty & North Sts.
6/2/2015	7th & Oxford Sts.	
6/3/2015	1839 Spencer St.	
6/3/2015	530 Emerald St.	
6/5/2015	4th & Lewis Sts.	
6/10/2015	Penn & Cumberland Sts.	
6/11/2015	1400 Block of Liberty St.	
6/24/2015	15th & Swatara Sts.	
6/24/2015	7th & Acorn	
6/24/2015	15th & Drummond St.	
6/24/2015	Evergreen & Kittatinny Sts.	
6/26/2015	1232 Rolleston St.	
6/26/2015	Seneca St CSO	
7/1/2015	1016 S. 17th St.	
7/13/2015	1932 N. 3rd St.	
7/29/2015	23rd & Brookwood Sts.	
7/29/2015	1935 Zarker Sts.	
7/29/2015	16th & Liberty Sts.	NE
8/4/2015	Heather Place	
8/4/2015	2215 Market St.	
8/4/2015	Heather Place	
8/4/2015	Heather Place	
8/4/2015	Heather Place & 29th St.	
8/5/2015	Sumner Road	
8/5/2015	Rolleston & Pemberton Sts.	
8/12/2015	20th & Paxton Sts.	
8/12/2015	12th & Cumberland Sts.	
8/13/2015	Susquehanna & Union Sts.	
8/13/2015	125 N. Summit St.	
8/13/2015	4th & Chestnut Sts.	
8/15/2015	Green & Hamilton Sts.	
8/18/2015	543 Camp Street	
8/25/2015	1512 North Street	
8/25/2015	2nd & Wiconisco Sts.	
8/31/2015	2100 Block of Chestnut St.	
9/25/2015	2700 Block of N. 4th St.	Good
9/25/2015	19th & Mulberry Sts.	Good
9/25/2015	Pennwood & Antoine Sts.	Good
9/25/2015	2700 Block of Lexington St.	Good
9/25/2015	2700 Block of Reel St.	Good
9/25/2015	2600 Block of Green St.	Good
9/25/2015	5th & Antoine Sts.	Good
9/25/2015	5th & Angenese Sts.	Good
9/25/2015	2500 Block of Green St.	Good
9/25/2015	19th & Primrose Sts.	Good

9/25/2015	Chestnut & Honey Sts.	Good
9/25/2015	Waldo & Radnor Sts.	Good
9/25/2015	15th & Calder Sts.	Good
9/25/2015	Hale Street & Rudy Road	Good
9/25/2015	2700 Block of Green St.	Good
9/25/2015	1922 Chestnut Street	Good
9/25/2015	25th Street at John Harris	Good
9/25/2015	17th & Herr Sts.	Good
9/25/2015	21st & Chestnut Sts.	Good
9/25/2015	Carey & Market Sts.	Good
9/25/2015	1600 Block of Herr Street	Good
9/25/2015	Thomas & Market Sts.	Good
9/25/2015	3rd & Wiconisco Sts.	Good
9/25/2015	17th & Hunter Sts.	Good

Activity: Televise Sewer

Date	*Location*	*Comment*
2/25/2015	Baum Street	
2/25/2015	Baum Street	line was cctv'd, approx. 180 LF of main is good
4/21/2015	Calder St.	Between Penn & Green Sts.
4/21/2015	2415 Swatara St.	
4/22/2015	2nd St. & Cranberry	
4/23/2015	2nd & Locust Sts.	
4/25/2015	Green Street	Between Boas & Union Sts.
4/25/2015	1700 Block of Sycamore St	
9/17/2015	630 Wiconisco St.	

Activity: Vactor Inlet

Date	*Location*	*Comment*
1/20/2015	Green & Shamokin	NW
1/20/2015	Green & Shamokin	SE
1/20/2015	Green & Wiconisco Sts.	NW
1/20/2015	Green & Shamokin	NE
1/20/2015	Green & Shamokin	SW
1/20/2015	Green & Wiconisco Sts.	SE
1/20/2015	Green & Wiconisco Sts.	NE
1/20/2015	Green & Wiconisco Sts.	SW
2/13/2015	Walnut & Summit Sts.	SE
2/13/2015	Walnut & Summit Sts.	SE
3/9/2015	25th & Greenwood Sts.	
3/9/2015	17th & Revere Sts.	
3/16/2015	Reily & Penn Sts., SW	
3/16/2015	Penn & Verbeke Sts., SE	
3/16/2015	Penn & Sayford Sts., SE	
3/16/2015	Penn & Sayford Sts., NE	
3/16/2015	Basin & Penn Sts., NE	
3/16/2015	Basin & Penn Sts., NW	
3/19/2015	18th & Holly Sts.	
3/19/2015	19th & Brookwood Sts.	
3/25/2015	Bartine Street	SE & NE
3/27/2015	6th & Forrest Sts.	

4/10/2015	Aberdeen & Stawberry	
4/10/2015	4th & Market Sts.	NE
4/17/2015	S. Summit & Christian Sts.	NW
4/17/2015	S. Summit & Christian Sts.	NE
4/17/2015	27 S. Summit St.	
4/22/2015	2nd St. & Cranberry	SW
4/28/2015	530 Emerald St.	
5/11/2015	Paxton & Rolleston Sts.	
5/11/2015	18th & Derry Sts.	
5/11/2015	2nd & Cranberry Sts.	
5/12/2015	10th & Shannon Sts.	
5/13/2015	Green & Shamokin Sts.	NW
5/28/2015	18th & Forster Sts.	NW
5/28/2015	18th & Forster Sts.	SE
5/28/2015	18th & Forster Sts.	NE
5/28/2015	18th & Forster Sts.	SW
5/28/2015	Muench & Wallace Sts.	SW
5/28/2015	Muench & Wallace Sts.	NW
6/1/2015	16th & Boas Sts.	NW
6/1/2015	16th & Herr Sts.	NW
6/9/2015	2nd & Market Sts.	NW
6/15/2015	Pine & River Sts.	NW
6/15/2015	Pine & River Sts.	SW
6/15/2015	15th & Revere Sts.	
6/24/2015	3218 Greenwood St.	W
6/24/2015	3218 Greenwood St.	E
6/30/2015	18th & Herr Sts.	
6/30/2015	16th & Cumberland Sts.	
6/30/2015	18th & Herr Sts.	
7/1/2015	16th & Naudain Sts.	SE
7/1/2015	16th & Catherine Sts.	SW
7/1/2015	16th & Naudain Sts.	NW
7/1/2015	16th & Naudain Sts.	NE
7/1/2015	16th & Catherine Sts.	SE
7/1/2015	16th & Catherine Sts.	NE
7/1/2015	16th & Naudain Sts.	SW
7/2/2015	Green & Seneca Sts.	SE
7/2/2015	Green & Seneca Sts.	SW
7/2/2015	Green & Seneca Sts.	NE
7/2/2015	Green & Seneca Sts.	NW
7/6/2015	Peffer & Susquehanna Sts.	NE
7/6/2015	S. 20th & Market Sts.	E
7/6/2015	N. 20th & Market Sts.	W
7/6/2015	N. 20th & Muench Sts.	E
7/6/2015	S. 20th & Market Sts.	W
7/8/2015	1716 N. 3rd St.	
7/8/2015	1720 N. 3rd St.	
7/8/2015	1719 N. 3rd St.	
7/8/2015	1721 N. 3rd St.	
7/10/2015	2201 Belleview Road	
7/10/2015	25th & Duke Sts.	NE, NW, SE, SW

7/10/2015	2nd & Market Sts.	
7/13/2015	13th & Market Sts.	NW
7/13/2015	15th & Market Sts.	NW
7/13/2015	13th & Bailey Sts.	NE
7/13/2015	12th & Magnolia Sts.	
7/14/2015	6th & Verbeke Sts.	
7/14/2015	1260 Derry St.	
7/14/2015	Derry Street - Deadend	
7/15/2015	Derry & Evergreen Sts.	
7/16/2015	15th & Argyle Sts.	
7/16/2015	16th & Catherine Sts.	
7/16/2015	15th & Naudain Sts.	
7/16/2015	Mulberry & Christian Sts.	
7/16/2015	356 Crescent St.	
7/16/2015	16th & Hunters Sts.	
7/17/2015	13th & Howard Sts.	
7/20/2015	26th & Duke Sts.	
7/21/2015	14th & Vernon Sts.	
7/21/2015	17th & Berryhill Sts.	
7/21/2015	16th & Zarker Sts.	
7/22/2015	Cameron & Market Sts.	
7/28/2015	16th & Liberty Sts.	
7/28/2015	Camp & Jefferson Sts.	NW
7/28/2015	Camp & Jefferson Sts.	NE
7/28/2015	Burchfield & Spencer Sts.	NE
7/28/2015	15th & Herr Sts.	
7/28/2015	16th & North Sts.	NW
7/28/2015	16th & North Sts.	SE
7/28/2015	Parkway & State Sts.	SW
7/28/2015	2214 Jefferson St.	
7/28/2015	20th & State Sts.	SW
7/28/2015	17th & Boas Sts.	
7/28/2015	Linn & State Sts.	SW
7/28/2015	Linn & State Sts.	SE
7/28/2015	20th & State Sts.	SE
7/28/2015	Camp & Jefferson Sts.	SW
7/29/2015	Delaware & Logan Sts.	NW
7/29/2015	Delaware & Logan Sts.	NE
7/29/2015	Delaware & Logan Sts.	SE
7/29/2015	Delaware & Logan Sts.	SW
7/29/2015	Logan & Geiger Sts.	SE
7/30/2015	909 N. 18th St.	SE
7/30/2015	909 N. 18th St.	NE
7/30/2015	18th & Forster Sts.	SE
7/30/2015	18th & Forster Sts.	SW
7/30/2015	909 N. 18th St.	NW
7/31/2015	17th & Brookwood Sts.	
7/31/2015	Brookwood at S. 16th St.	NE
7/31/2015	Kittatinny & Buckthorn Sts.	SW
7/31/2015	Swatara & Buckthorn	
7/31/2015	569 S. 16th St.	

7/31/2015	Thompson, Rear of 1422 D	
7/31/2015	Hunter & S. 15th St.	
7/31/2015	13th & Haehnlen Sts.	
7/31/2015	S. 15th & Thompson St.	
8/7/2015	Sycamore in front of School	
8/7/2015	13th & Sycamore Sts.	
8/10/2015	15th & Sycamore Sts.	
8/10/2015	15th & Hunter Sts.	
8/13/2015	Maclay & Atlas	
8/13/2015	Susquehanna & Kelker Sts.	SE
8/27/2015	4th & Emerald Sts.	NE
8/27/2015	4th & Emerald STs.	SW
8/27/2015	4th & Emerald Sts.	NW
8/27/2015	4th & Emerald Sts.	SE
8/27/2015	4th & Emerald Sts.	N
8/27/2015	21st & Berryhill Sts.	
8/27/2015	21st & Chestnut STs.	
8/27/2015	21st & Chestnut Sts.	
8/27/2015	21st & Berryhill Sts.	NE
8/27/2015	4th & Emerald Sts.	S
8/31/2015	18th & Mulberry Sts.	NE
8/31/2015	18th and Holly Sts.	SE
8/31/2015	18th & Holly Sts.	NE
8/31/2015	18th & Holly Sts.	NW
8/31/2015	18th & Mulberry Sts.	SE
8/31/2015	18th & Mulberry Sts.	NW
9/2/2015	15th & Regina Sts.	NE
9/2/2015	15th & Walnut Sts.	SE
9/2/2015	15th & Walnut Sts.	NE
9/2/2015	15th & State Sts.	SE
9/2/2015	16th & Elm Sts.	SW
9/2/2015	16th & Elm Sts.	NE, SE
9/2/2015	15th & Regina Sts.	SE
9/4/2015	16th & Walnut Sts.	SE
9/4/2015	14th & Lowell Sts.	E
9/4/2015	16th & Walnut Sts.	NE
9/4/2015	16th & Walnut Sts.	NW
9/4/2015	16th & Bombaugh Sts.	NW
9/4/2015	16th & Bombaugh Sts.	NE
9/4/2015	14th & Lowell Sts.	W
9/8/2015	16th & Regina Sts.	NE
9/8/2015	16th & Regina Sts.	SW
9/8/2015	16th & Park Sts.	SW
9/8/2015	16th & Park Sts.	SE
9/8/2015	17th & Brookwood Sts.	NW
9/8/2015	16th & Park Sts.	NW
9/9/2015	Mulberry between 17th & 1	S
9/9/2015	18th between Mullberry & B	NE
9/9/2015	18th & Bellevue	NW
9/9/2015	18th & Darlington Alley	SW
9/9/2015	N. 3rd & William Penn	E

9/10/2015	2216 Green St.	
9/14/2015	Penn & Woodbine Sts.	SW
9/14/2015	Burma middle of Street	
9/14/2015	6th & Woodbine Sts.	NE
9/14/2015	Penn & Woodbine Sts.	SE
9/14/2015	Penn & Woodbine Sts.	NW
9/17/2015	7th & Woodlawn Sts.	SE
9/21/2015	Kensington Street	Alley behind 2414 Kensington
9/22/2015	383 Hale Avenue	
9/24/2015	401 Emerald St.	NE
9/24/2015	5th & Emerald Sts.	SE
9/24/2015	444 Delaware St.	NE
9/28/2015	20th & Greenwood Sts.	NE
9/29/2015	Greenwood & Norwood Sts.	NE
10/5/2015	19th & State Sts.	NE
10/5/2015	16th & State Sts.	NE
10/5/2015	Green & Vaughn Sts.	SE
10/5/2015	5th & Harris Sts.	SE
10/5/2015	18th & State Sts.	SW
10/5/2015	18th & State Sts.	SE
10/5/2015	23rd & Market Sts.	S
10/5/2015	Green & Vaughn Sts.	NE
10/5/2015	2nd & Radnor Sts.	SW
10/5/2015	1621 5th St.	NE
10/5/2015	1621 5th St.	NW
10/5/2015	2nd & Radnor Sts.	SE
10/5/2015	5th & Harris Sts.	NW
10/5/2015	Green & Vaughn Sts.	NE
10/5/2015	5th & Harris Sts.	NE
10/16/2015	3rd & Chesnut Sts.	

Activity: Vactor Sewer Line

Date	*Location*	*Comment*
1/2/2015	917 N. 15th St.	
1/14/2015	377 Hale Street	
1/14/2015	22nd & Kensington Sts.	
1/14/2015	Heather Place	
1/20/2015	Cameron & Walnut Sts.	
1/23/2015	Paxton Street (VMC)	
2/2/2015	2800 Block of Watson	
2/6/2015	3014 N. 3rd St.	
2/9/2015	504 Edward St.	
3/4/2015	29th & Heather Place	
3/9/2015	15th & North Sts.	
3/9/2015	2102 Swatara St.	
3/9/2015	E Cameron & Walnut Sts.	
3/16/2015	621 Muench Street	
3/18/2015	22nd & Kensington Sts.	east to west
3/20/2015	Cumberland & Herr Sts.	CSO chamber
3/20/2015	Mulberry & Cameron Sts.	CSO chamber
4/7/2015	2226 Logan St.	

4/9/2015	1624 Berryhill St.	
4/13/2015	1463 S. 13th St.	
4/13/2015	2400 Block of Turner Alley	
4/15/2015	Buttonwood	between North & Liberty Sts.
4/16/2015	1900 Block of Holly St.	
4/17/2015	2nd & Cranberry	
4/23/2015	Seneca & Turner	
6/3/2015	1148 Derry St.	
6/4/2015	16th & North Sts.	
6/8/2015	1935 Holly St.	
6/15/2015	216 Cumberland St.	
6/30/2015	Liberty Street	
7/6/2015	223 Peffer St.	
7/9/2015	10th & Shannon CSO	
7/9/2015	15th & Cloverly Terrace	
7/10/2015	15th & Cloverly	
7/15/2015	23rd & Brookwood Sts.	
8/6/2015	1739 Susquehanna St.	

Activity: Vactor Storm Sewer

Date	*Location*	*Comment*
8/5/2015	Ivey Lane Playground	
8/13/2015	18th & Park Sts.	SW
8/13/2015	18th & Park Sts.	SE
8/13/2015	18th & Park Sts.	NE
8/13/2015	18th & Park Sts.	NW

Capital Region Water
Collection Activity Report - 2015
Cityworks Data

Description	Work Order Id	Actual Finish	Address	Asset Id
CCTV Sewer Pipe	416	10/20/2015		SSMH-002530, SSP-001556
	512	10/21/2015	R/W off Arsenal st going downstream from MH in the woods	0
	508	10/21/2015	R/W off Arsenal rd.	0
	481	10/21/2015	Reily - Asylum Run Investigation	SSMH-002903, SSP-003339
	676	11/24/2015	1025 SEVENTEENTH ST	SSP-000837
	989	12/2/2015	210 &214 Nth 14th St.	0
	1137	12/15/2015		SSMH-001872, SSMH-003067
	1141	12/15/2015		SSMH-001722, SSMH-001724
	1139	12/16/2015		SSMH-001724
	1142	12/16/2015		SSP-000794
	1183	12/22/2015	HARRIS ST & SUSQUEHANNA ST	SSMH-000882, SSP-000063
	1213	12/23/2015	2704 N. 5th Street	SSMH-000566, SSMH-000609, SSP-001477
	677	12/24/2015	1025 SEVENTEENTH ST	SSMH-001835
Flush Sewer Pipe	584	10/27/2015	1826 CAMERON ST	SSMH-000446, SSP-000393
	591	10/27/2015	Waldo St	SSMH-002865, SSP-000381, SSP-000382
	616	10/29/2015	377 Hale st (rear)	SSP-001790, SSP-001791
	797	11/16/2015	2201 Kensington Street	0
	1165	12/21/2015	2100 block kensington st and Central alley	SSMH-001919, SSMH-001941, SSMH-001942, SSMH-001943, SSP-001633, SSP-001634, SSP-001636
	1260	12/28/2015	1527 south 12th st	SSMH-001619, SSMH-001623, SSP-000721
Inspect Sewer Manhole	414	10/20/2015	SIXTEENTH ST & VERBEKE ST	0
	806	11/17/2015	FIFTEENTH ST & LIBERTY ST	SSMH-002372
Inspect Sewer Pipe	644	11/3/2015	1159 Derry Street	0

Capital Region Water
Collection Activity Report - 2015
Cityworks Data

Description	Work Order Id	Actual Finish	Address	Asset Id
Inspect Storm Manhole	794	11/16/2015		SWMH-000097, SWMH-000323, SWMH-000324, SWP-000961, SWP-001244, SWP-001247, SWP-001470, SWP-001475
Locate Sewer Manhole	502	10/20/2015	SEVENTEENTH ST & ARSENAL BLVD	0
	490	12/17/2015		SSMH-003200
Repair Sewer Manhole	537	10/26/2015		SSMH-000932
	796	11/13/2015	2100 Parkhill Lane, between Market & Chestnut Sts.	0
Repair Storm Inlet	523	10/14/2015	polyclinci & third	SWINLT-003629
	590	10/29/2015	TWENTIETH ST & ZARKER ST	SWINLT-002944
	553	10/30/2015	COURT ST & MARKET ST	SWINLT-001287
	480	11/3/2015	1421 MARKET ST	0
	673	11/6/2015	16 IVEY LN	0
	675	11/6/2015	2033 FORSTER ST	SWINLT-003241
	605	11/9/2015	HONEY ST & CHESTNUT ST	SWINLT-002590
	420	11/16/2015	GREEN ST & WICONISCO ST	SWINLT-000197, SWINLT-003748, SWINLT-003749, SWINLT-003750
	795	11/16/2015	GREEN ST & WICONISCO ST	SWINLT-000197
	805	11/17/2015	SUMMIT ST & CHRISTIAN ST	SWINLT-001994
	674	12/4/2015	POPLAR ST & FORSTER ST	SWINLT-003236
	1076	12/7/2015	FORSTER & POPLAR ST.	SWINLT-003150
	1077	12/7/2015	2230 FORSTER ST.	SWINLT-003241
	595	12/15/2015	GREEN ST & SCHUYLKILL ST	SWINLT-000190
	596	12/18/2015	THIRD ST & SCHUYLKILL ST	SWINLT-000433
	594	12/21/2015	GREEN ST & SCHUYLKILL ST	SWINLT-000191
Replace Sewer Manhole Cover	413	10/20/2015	in the area of 1361 vernon st.	SSMH-001761
	766	11/12/2015	TWENTY-FIRST ST & MARKET ST	SSMH-002636
	571	11/13/2015	21st & Market	SSMH-002636
Vacuum Inlet	497	10/27/2015	THIRD ST & SCHUYLKILL ST	SWINLT-000433
	556	10/27/2015	THOMPSON ST & THIRTEENTH ST, SW Corner	0
	554	10/27/2015	MULBERRY ST & EVERGREEN ST, SE Corner	0

Capital Region Water
Collection Activity Report - 2015
Cityworks Data

Description	Work Order Id	Actual Finish	Address	Asset Id
	496	10/27/2015	GREEN ST & SCHUYLKILL ST	SWINLT-000190, SWINLT-000191
	588	10/28/2015	TWENTIETH ST & ZARKER ST	SWINLT-002944

Appendix K

APPENDIX K-1

WEIR REHABILITATION REPORT

Weir Rehabilitation Report

CSO Number	Date	Location	Weir Type	Old Weir Height	Adjustment Amount	New Weir Height	Comments
005	9/7/1991	Front & Lewis	Straight	6.13	5.25	11.38	Raised weir with a redwood cap.
006	9/7/1991	Front & Geiger	Curved	6.13	5.25	11.38	Raised weir with a redwood cap.
006	10/2/2002	Front & Geiger	Curved	11.38	5.62	17.00	Raised weir with a concrete lintel.
007	9/9/1991	Front & Peffer	Curved	5.50	5.25	10.75	Raised weir with a redwood cap.
008	9/7/1991	Front & Muench	Straight	12.00	5.25	17.50	Raised weir with a redwood cap.
008	6/12/2001	Front & Muench	Straight	17.50	2.00	19.50	Raised weir with a concrete lintel.
009	9/8/1991	Front & Hamilton	Straight	9.00	5.25	14.25	Raised weir with a redwood cap.
010	9/10/1991	Front & Reilly	Curved	2.50	5.25	7.75	Raised weir with a redwood cap.
011	9/8/1991	Front & Calder	Curved	12.00	5.25	17.25	Raised weir with a redwood cap.
012	11/7/2002	Front & Verbeke	Straight	3.00	12.00	15.00	Raised weir with a concrete lintel.
013	9/8/1991	Front & Cumberland	Curved	9.25	5.25	14.50	Raised weir with a redwood cap.
014	6/4/2001	Front & Boas	Curved	13.50	5.00	18.50	Raised weir with a concrete lintel.
015	4/3/2001	Front & Forster	Straight	13.50	5.00	18.50	Raised weir with a concrete lintel.
017	6/12/2001	Front & Market	Curved	6.50	8.00	14.50	Raised weir with a concrete lintel.
021	1/14/2010	Cameron & Schuylkill	Straight	11.50	4.50	16.00	Replaced with concrete lintels
023	6/28/2001	Cameron & Calder	Curved	3.50	7.00	10.50	Raised weir with two layers of brick.
026	4/22/1994	Cameron & Cumberland	Straight	2.50	2.50	5.00	Raised weir with plastic.
026	6/26/2001	Cameron & Cumberland	Straight	5.00	16.00	21.00	Raised weir with a concrete lintel.
031	10/10/2003	Cameron & State	Straight	7.00	5.75	12.75	Raised weir with a concrete lintel.
033	6/22/2001	Cameron & Walnut (East	Straight	8.25	5.25	13.50	Raised weir with a redwood cap.
043	9/13/2001	Kittatinny & Cameron (N	Straight	8.75	8.00	16.75	Raised weir with a concrete lintel.
048	8/21/2003	Tenth & Shannon	Straight	11.00	15.00	26.00	Raised weir with concret lintels.
049	9/7/1991	Front & Schuylkill	Straight	6.50	5.25	11.75	Raised weir with a redwood cap.
049	6/1/2001	Front & Schuylkill	Straight	11.75	8.00	19.75	Raised weir with a concrete lintel.
050	9/7/1991	Seneca & Susquehanna	Curved	8.00	5.25	13.25	Raised weir with a redwood cap.
050	5/4/2001	Seneca & Susquehanna	Curved	13.25	2.00	15.25	Raised weir with a concrete lintel.
051	9/7/1991	Woodbine & Green	Straight	5.25	5.25	10.50	Raised weir with a redwood cap.
052	8/19/1991	Front & State	Straight	4.00	1.50	5.50	Raised weir with a redwood cap.
053	6/4/2001	Front & South	Curved	12.50	8.00	20.50	Raised weir with a concrete lintel.
056	5/30/2001	Front & Walnut	Curved	8.00	8.00	16.00	Raised weir with a concrete lintel.
061	10/2/2003	Tenth & Sycamore (059/	Curved	7.00	6.88	13.88	Raised weir with a concrete lintel.
062	5/31/2001	Shanois Street	Straight	3.50	2.00	5.50	Raised weir with aluminum plate.

APPENDIX K-2

PREVENTIVE MAINTENANCE REPORT

Preventive Maintenance Report - 2015

CSO Number: 008

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
2/25/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	bottles
11/5/2015	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	
11/23/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.

CSO Number: 009

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
10/21/201	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	

CSO Number: 010

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
10/21/201	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	

CSO Number: 011

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
10/22/201	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	

CSO Number: 013

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
9/17/2015	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	

CSO Number: 014

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
4/29/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.

CSO Number: 017

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
10/22/201	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	

CSO Number: 018

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
3/27/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Bottle
8/27/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Bottles
9/17/2015	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
10/21/201	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	

CSO Number: 019

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
5/15/2015	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	

CSO Number: 021

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
11/6/2015	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	
11/9/2015	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	

CSO Number: 022

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
11/6/2015	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	

CSO Number: 023

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
9/21/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	5 lbs.
11/30/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.

CSO Number: 025

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
6/9/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	75 lbs.
9/21/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	120 lbs.

CSO Number: 026

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
3/28/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
4/23/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	30 lbs.

6/9/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	100 lbs.
8/11/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
10/10/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
11/20/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
12/15/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.

CSO Number: 029

Date	*Adjust Weight*	*Debris Removal*	*Flush Intercepte*	*Grease*	*Parge Interior*	*Parge Chimney*	*Parge Weirs*	*Parge Brick*	*Recond. Chamber*	*Repair Chains*	*Repair Floats*	*Repair Weir*	*Reset Frames*	*Paint Metal*	*TideGate Clean*	*Vactor Chamber*	*Wash Chamber*	*Weir Adjust*	*Comments*
2/2/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	50 lbs.
3/29/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Brick
5/15/2015	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	

CSO Number: 031

Date	*Adjust Weight*	*Debris Removal*	*Flush Intercepte*	*Grease*	*Parge Interior*	*Parge Chimney*	*Parge Weirs*	*Parge Brick*	*Recond. Chamber*	*Repair Chains*	*Repair Floats*	*Repair Weir*	*Reset Frames*	*Paint Metal*	*TideGate Clean*	*Vactor Chamber*	*Wash Chamber*	*Weir Adjust*	*Comments*
11/4/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	100 lbs.
11/13/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	50 lbs.
11/30/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	75 lbs.

CSO Number: 032

Date	*Adjust Weight*	*Debris Removal*	*Flush Intercepte*	*Grease*	*Parge Interior*	*Parge Chimney*	*Parge Weirs*	*Parge Brick*	*Recond. Chamber*	*Repair Chains*	*Repair Floats*	*Repair Weir*	*Reset Frames*	*Paint Metal*	*TideGate Clean*	*Vactor Chamber*	*Wash Chamber*	*Weir Adjust*	*Comments*
3/18/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	30 lbs.
7/30/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
9/11/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lb.s

CSO Number: 033

Date	*Adjust Weight*	*Debris Removal*	*Flush Intercepte*	*Grease*	*Parge Interior*	*Parge Chimney*	*Parge Weirs*	*Parge Brick*	*Recond. Chamber*	*Repair Chains*	*Repair Floats*	*Repair Weir*	*Reset Frames*	*Paint Metal*	*TideGate Clean*	*Vactor Chamber*	*Wash Chamber*	*Weir Adjust*	*Comments*
1/3/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	50 lbs.
1/4/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	40 lbs.
1/5/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
1/11/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	25 lbs.
1/12/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
1/13/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	30 lbs.
1/15/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	25 lbs.
1/19/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	30 lbs.

1/24/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	40 lbs.
1/25/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
1/26/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	50 lbs.
2/8/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	100 lbs.
2/9/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
2/10/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	50 lbs.
2/11/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
2/12/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
2/13/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
2/14/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
2/15/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
2/16/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
2/17/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	100 lbs.
2/18/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
2/19/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	75 lbs.
2/23/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	25 lbs.
3/1/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	60 lbs.
3/2/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	50 lbs.
3/3/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
3/4/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
3/17/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
3/20/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	50 lbs.
3/22/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
3/23/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	40 lbs.
3/24/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	40 lbs.
3/26/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	30 lbs.
3/28/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
3/29/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
3/31/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	30 lbs.
4/2/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
4/6/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
4/7/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	40 lbs.
4/10/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
4/12/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	15 lbs.

4/13/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
4/14/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	10 lbs.
4/15/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs
4/16/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	15 lbs.
4/17/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
4/18/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
4/19/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
4/20/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	30 lbs.
4/20/2015	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	
4/23/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
4/29/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
4/30/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
5/4/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	30 lbs.
5/5/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
5/6/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	25 lbs.
5/10/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
5/17/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	100 lbs.
5/20/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	75 lbs.
5/23/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
5/24/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
5/29/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	25 lbs.
5/31/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	15 lbs.
6/1/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	25 lbs.
6/3/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
6/9/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	50 lbs.
6/15/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	40 lbs.
6/24/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
6/28/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	75 lbs.
6/30/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	50 lbs.
7/1/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	25 lbs.
7/6/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	25 lbs.
7/9/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
7/10/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	40 lbs.
7/14/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	40 lbs.

7/17/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
7/30/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
8/6/2015	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	
8/11/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
8/12/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
8/19/2015	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	
8/20/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
8/21/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
8/25/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	30 lbs.
8/31/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
9/13/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
9/20/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
10/2/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
10/4/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
10/10/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
10/14/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
10/22/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs
10/27/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	15 lbs.
10/29/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	100 lbs.
11/4/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
11/6/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
11/14/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
11/19/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	50 lbs.
11/20/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
12/2/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
12/3/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
12/10/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
12/15/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
12/21/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.
12/22/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
12/24/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	75 lbs.
12/26/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
12/29/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.

CSO Number: 039

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
11/9/2015	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	
11/30/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	100 lbs.

CSO Number: 043

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
2/26/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.

CSO Number: 044

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
8/19/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20 lbs.

CSO Number: 045

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
11/18/201	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	

CSO Number: 046

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
11/18/201	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	

CSO Number: 050

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
6/25/2015	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
10/26/201	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	

CSO Number: 051

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
11/2/2015	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	

CSO Number: 055

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
7/20/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	brick

CSO Number: 056

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
10/22/201	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	

CSO Number: 057

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
10/26/201	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	

CSO Number: 060

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
4/15/2015	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	
8/19/2015	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	

CSO Number: 061

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
1/26/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	3 bottles
8/19/2015	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	
9/21/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	75 lbs.

CSO Number: 063

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
3/3/2015	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	10 lbs.
4/14/2015	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	
4/15/2015	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	
10/28/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	bottle
12/21/201	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	5 lbs.

CSO Number: 064

Date	Adjust Weight	Debris Removal	Flush Intercepte	Grease	Parge Interior	Parge Chimney	Parge Weirs	Parge Brick	Recond. Chamber	Repair Chains	Repair Floats	Repair Weir	Reset Frames	Paint Metal	TideGate Clean	Vactor Chamber	Wash Chamber	Weir Adjust	Comments
4/13/2015	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	

APPENDIX K-3

COMBINED SEWER OVERFLOW REPORT

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
CSO-002		Influent Pipe:	42 in		Weir Length		108.5 in		Tributary Area:	N/A							
		Overflow Pipe:	48 in														
Jan-15						32.90	64.00	9/29/15			32,339	Hydraulic	Temporary pump failure				
CSO-004		Influent Pipe:	52 x 44 in		Weir Length		42 in		Tributary Area:	35.23 acres							
		Overflow Pipe:	46.75 x 42 in														
Jan-15	01/03/15 08:55	01/04/15 06:40	21.83	0.41	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:25	01/04/15 19:35	2.25	0.32	0.02	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
Feb-15	02/21/15 09:40	02/21/15 23:50	14.25	0.28	0.00	18.10	29.20	2/23/15			0	Snow Melt	snowmelt and 0.25 rain on 2/21/15				
Mar-15	03/07/15 16:15	03/07/15 18:25	2.25	0.01	0.00	21.30	28.40	3/8/15			0	Snow Melt	Unknown flow or duration.				
	03/07/15 16:15	03/07/15 18:25	2.25	0.01	0.00	21.30	28.40	3/10/15			0	Wooden Block	Unknown flow or duration.				
	03/13/15 21:05	03/14/15 14:40	17.67	0.63	0.01	46.80	56.80	3/14/15			0	Wooden Block	Unknown flow or duration.				
	03/26/15 17:30	03/27/15 06:10	12.75	0.35	0.03	25.20	48.50	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/09/15 21:15	04/09/15 22:30	1.33	0.08	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/16/15 23:25	04/17/15 03:50	4.50	0.13	0.01	19.00	26.30	4/17/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.99	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:25	04/21/15 03:50	8.50	1.53	0.08	40.20	57.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/06/15 06:35	05/06/15 11:25	4.92	0.16	0.01	20.60	39.90	5/6/15			0	Wooden Block	Unknown flow or duration.				
	05/17/15 08:40	05/17/15 11:10	2.58	0.09	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:55	05/19/15 03:20	10.50	0.83	0.05	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 11:45	05/27/15 15:10	3.50	1.57	0.09	17.60	51.10	5/27/15	12:47 PM	3:00 PM	2,054	Hydraulic					
	05/27/15 11:45	05/27/15 15:10	3.50	1.57	0.09	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	05/31/15 23:25	5.83	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:20	06/02/15 19:05	10.83	0.93	0.03	34.90	59.40	6/2/15	10:57 AM	8:00 PM	8,217	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:20	06/02/15 19:05	10.83	0.93	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:35	06/09/15 07:25	5.92	0.01	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:25	06/15/15 06:40	13.33	0.64	0.04	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 21:35	06/15/15 22:00	0.50	0.02	0.00	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/18/15 21:40	06/19/15 02:25	4.83	0.49	0.03	22.90	30.00	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:30	06/21/15 04:50	11.42	3.33	0.11	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:00	1.92	1.06	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:00	06/28/15 03:35	1.67	0.19	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
Jul-15	07/06/15 05:50	07/06/15 06:40	0.92	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/08/15 22:20	07/08/15 22:40	0.42	0.02	0.00	23.10	29.50	7/9/15			0	Wooden Block	Unknown flow or duration. 0.04 Rain on 7/8/15				
	07/09/15 16:25	07/09/15 21:20	5.00	0.37	0.03	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 00:05	08/11/15 12:40	12.67	0.54	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 00:05	08/11/15 12:40	12.67	0.54	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:15	13.33	1.56	0.04	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:25	1.92	0.29	0.02	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:20	08/30/15 15:25	0.17	0.00	0.00	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 09:25	09/10/15 17:50	8.50	0.75	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:55	09/12/15 18:50	8.00	0.57	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 12:05	09/30/15 01:15	13.25	2.15	0.07	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 10:35	10/03/15 11:00	24.50	1.08	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:05	10/09/15 17:15	2.25	0.35	0.03	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:55	10/29/15 00:25	24.58	2.01	0.04	44.90	64.90	10/28/15	1:10 PM	11:00 PM	7,595	Hydraulic					
	10/29/15 09:05	10/29/15 09:35	0.58	0.01	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:20	11/11/15 00:35	20.33	0.49	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15			0	Wooden Block	Unknown flow or duration.				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15			0	Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
CSO-005		Influent Pipe:	61.25 x 47 in		Weir Length	48.25 in			Tributary Area:	62.08 acres							
		Overflow Pipe:	48 x 60 in														
Aug-14	08/11/14 21:35	08/13/14 01:20	27.83	2.04	0.35	50.60	71.50	8/12/14; 8/13/14	9:50 AM	10:00 PM	12,495	Hydraulic		1	08/12/14 01:25	08/13/14 01:40	10.2
Sep-14	09/02/14 18:00	09/02/14 18:20	0.42	0.20	0.20	17.70	29.90	NOT DETECTED						2	09/02/14 18:25	09/02/14 18:40	2.4
	09/30/14 21:20	10/01/14 00:20	3.08	0.91	0.63	22.70	49.80	10/1/14				Wooden Block	Unknown flow or duration.	3	09/30/14 21:55	10/01/14 00:15	10.3
Oct-14	10/07/14 18:55	10/07/14 23:05	4.25	0.21	0.17	17.70	40.10	10/8/14				Wooden Block	Unknown flow or duration. 0.15 Rain on 10/7/14	4	10/07/14 22:30	10/07/14 23:00	4.6
	10/15/14 00:05	10/15/14 15:35	15.58	1.27	0.39	32.20	52.00	10/15/14; 10/16/14				Wooden Block	Unknown flow or duration.	5	10/15/14 03:05	10/15/14 15:30	8.4
	10/16/14 14:35	10/16/14 17:35	3.08	0.15	0.12	22.20	44.30	10/17/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 10/16/14	6	10/16/14 17:00	10/16/14 17:30	1.8
Nov-14	11/05/14 22:05	11/06/14 05:55	7.92	0.65	0.14	23.40	50.40	11/6/14				Wooden Block	Unknown flow or duration.	7	11/06/14 03:45	11/06/14 06:45	1.4
	11/23/14 21:30	11/24/14 03:10	5.75	0.58	0.24	20.10	34.40	11/24/14				Wooden Block	Unknown flow or duration.	8	11/24/14 01:25	11/24/14 03:05	2.4
	11/26/14 04:30	11/26/14 11:40	7.25	0.62	0.16	31.50	43.30	11/27/14				Wooden Block	Unknown flow or duration. 0.74 rain on 11/26/14	9	11/26/14 09:20	11/26/14 11:35	0.6
Dec-14	12/01/14 12:10	12/01/14 16:35	4.50	0.14	0.11	19.50	42.70	12/2/14				Wooden Block	Unknown flow or duration. 0.11 rain on 12/1/14	10	12/01/14 16:15	12/01/14 16:30	0.7
	12/02/14 09:15	12/02/14 19:05	9.92	0.20	0.16	22.30	44.60	12/3/14				Wooden Block	Unknown flow or duration. 0.22 rain on 12/2/14	11	12/02/14 18:30	12/02/14 19:00	2.0
	12/05/14 12:15	12/06/14 15:25	27.25	0.75	0.12	31.50	49.30	12/7/14				Wooden Block	Unknown flow or duration. 0.57 rain on 12/6/14	12	12/06/14 11:40	12/06/14 15:20	1.5
	12/22/14 13:45	12/24/14 05:50	40.17	0.65	0.14	24.80	43.00	12/24/14				Wooden Block	Unknown flow or duration.	13	12/24/14 04:15	12/24/14 05:45	2.0
Jan-15	01/03/15 07:55	01/03/15 16:40	8.83	0.28	0.08	26.90	45.40	NOT DETECTED						14	01/03/15 16:50	01/03/15 17:00	0.4
	01/04/15 16:25	01/04/15 18:35	2.25	0.33	0.19	25.40	46.20	1/5/15				Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15	15	01/04/15 18:30	01/04/15 19:15	2.3
	01/12/15 17:25	01/12/15 18:15	0.92	0.01	0.01	27.60	47.40	1/13/15				Wooden Block	Unknown flow or duration. 0.43 Rain on 1/12/15	NO OVERFLOW RECORDED			
Mar-15	03/10/15 13:55	03/10/15 20:35	6.75	0.32	0.08	38.80	54.70	NOT DETECTED						16	03/10/15 20:20	03/10/15 20:30	0.3
	03/13/15 21:05	03/14/15 03:20	6.33	0.36	0.10	46.80	56.80	3/14/15				Wooden Block	Unknown flow or duration.	17	03/14/15 02:15	03/14/15 03:15	0.8
	03/26/15 17:30	03/26/15 18:10	0.75	0.29	0.29	25.20	48.50	3/27/15				Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15	18	03/26/15 18:05	03/26/15 18:20	1.9
Apr-15	04/09/15 21:15	04/09/15 22:30	1.33	0.09	0.08	21.50	41.40	4/10/15				Wooden Block	Unknown flow or duration.	19	04/09/15 22:20	04/09/15 22:35	1.4
	04/20/15 01:15	04/20/15 06:40	5.50	0.95	0.38	40.20	57.60	4/20/15				Wooden Block	Unknown flow or duration.	20	04/20/15 03:10	04/20/15 06:35	3.8
	04/20/15 19:25	04/21/15 01:15	5.92	1.56	0.94	40.20	57.60	4/21/15				Wooden Block	Unknown flow or duration.		04/20/15 22:05	04/21/15 01:15	15.4
May-15	05/06/15 06:35	05/06/15 11:15	4.75	0.15	0.11	20.60	39.90	5/6/15				Wooden Block	Unknown flow or duration.	21	05/06/15 10:00	05/06/15 11:10	3.1
	05/16/15 16:00	05/16/15 17:10	1.25	0.22	0.22	16.70	42.80	5/17/15				Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15	22	05/16/15 17:00	05/16/15 17:25	5.7
	05/18/15 16:55	05/19/15 03:20	10.50	0.79	0.61	18.30	52.60	5/19/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15	23	05/18/15 21:20	05/19/15 03:25	12.2
	05/27/15 11:45	05/27/15 15:10	3.50	1.59	1.11	17.60	51.10	5/27/15; 5/28/15	12:50 PM	3:00 PM	2,295	Hydraulic		24	05/27/15 12:30	05/27/15 15:05	19.8
	05/31/15 17:40	05/31/15 23:25	5.83	0.18	0.17	17.30	42.20	6/1/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15	25	05/31/15 23:10	05/31/15 23:25	1.6
Jun-15	06/01/15 13:55	06/02/15 14:25	24.58	1.14	0.32	34.90	59.40	6/2/15; 6/3/15	10:58 AM	8:00 PM	9,180	Hydraulic	0.66 Rain on 6/1/15	26	06/02/15 08:55	06/02/15 14:20	2.0
	06/08/15 16:50	06/08/15 18:45	2.00	2.09	1.76	34.50	72.70	6/9/15				Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15	27	06/08/15 17:10	06/08/15 19:15	18.2
	06/14/15 17:25	06/14/15 18:45	1.42	0.56	0.51	26.60	59.20	6/15/15				Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15	28	06/14/15 17:45	06/14/15 18:55	5.6
	06/18/15 17:45	06/19/15 01:10	7.50	0.48	0.37	26.50	53.80	6/19/15				Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15	29	06/18/15 22:30	06/19/15 01:05	13.4
	06/20/15 17:25	06/21/15 02:25	9.08	3.35	1.31	43.10	74.30	6/21/15				Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15	30	06/20/15 18:05	06/21/15 02:50	21.4
	06/23/15 15:10	06/23/15 17:00	1.92	1.06	0.98	40.60	72.30	6/24/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15	31	06/23/15 15:40	06/23/15 17:05	12.7
	06/27/15 04:40	06/27/15 16:20	11.75	0.91	0.20	47.20	70.90	6/28/15				Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15	32	06/27/15 12:30	06/28/15 02:45	4.1
Jul-15	07/03/15 23:30	07/04/15 10:55	11.50	0.45	0.23	28.40	50.00	7/5/15				Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15	33	07/04/15 10:45	07/04/15 11:15	2.5
	07/09/15 16:25	07/09/15 17:55	1.58	0.32	0.31	24.50	47.90	7/10/15				Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15	34	07/09/15 17:45	07/09/15 18:15	14.3
	07/14/15 01:15	07/14/15 03:50	2.67	0.55	0.41	29.40	54.10	NOT DETECTED						35	07/14/15 03:10	07/14/15 03:50	7.1
	07/26/15 19:50	07/27/15 00:10	4.42	1.08	1.01	22.90	54.60	NOT DETECTED						36	07/26/15 23:10	07/27/15 00:05	16.6
Aug-15	08/10/15 12:00	08/10/15 12:40	0.75	0.10	0.10	20.20	41.60	8/11/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15	37	08/10/15 12:40	08/10/15 12:55	3.3
	08/11/15 01:00	08/11/15 12:45	11.83	0.52	0.29	20.50	44.60	8/12/15				Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15	38	08/11/15 01:50	08/11/15 12:55	8.0
	08/18/15 16:05	08/18/15 16:55	0.92	0.08	0.08	15.90	30.90	NOT DETECTED						39	08/18/15 16:25	08/18/15 17:00	7.0
	08/20/15 06:00	08/20/15 19:15	13.33	1.61	0.52	33.60	63.70	8/21/15				Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15	40	08/20/15 06:40	08/20/15 20:05	18.8
	08/24/15 14:30	08/24/15 16:25	2.00	0.26	0.26	20.20	47.40	8/25/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15	41	08/24/15 16:15	08/24/15 17:10	16.8
Sep-15	09/10/15 09:05	09/10/15 18:00	9.00	0.72	0.03	26.80	62.40	9/11/15				Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:35	09/12/15 18:50	8.33	0.54	0.02	24.70	53.70	9/13/15				Wooden Block	Unknown flow or duration.				
	09/29/15 12:05	09/30/15 01:15	13.25	2.23	0.07	32.90	64.00	9/30/15				Wooden Block	Unknown flow or duration.				
	10/02/15 10:35	10/03/15 11:00	24.50	1.07	0.03	28.10	52.70	10/3/15				Wooden Block	Unknown flow or duration.				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Oct-15	10/09/15 15:05	10/09/15 17:15	2.25	0.37	0.03	19.90	42.80	10/10/15				Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:50	10/29/15 00:25	24.67	1.98	0.03	44.90	64.90	10/28/15	1:11 PM	11:00 PM	8,775	Hydraulic					
	10/29/15 09:05	10/29/15 09:35	0.58	0.01	0.00	24.80	39.40	10/29/15				Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:15	11/11/15 00:35	20.42	0.49	0.01	22.30	37.90	11/10/15				Wooden Block	Unknown flow or duration.				
	11/10/15 04:15	11/11/15 00:35	20.42	0.49	0.01	22.30	37.90	11/11/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:20	11/12/15 09:50	2.58	0.13	0.01	18.10	40.90	11/12/15				Wooden Block	Unknown flow or duration.				
	11/19/15 03:15	11/19/15 21:40	18.50	0.41	0.01	21.00	43.30	11/19/15				Wooden Block	Unknown flow or duration.				
	11/19/15 03:15	11/19/15 21:40	18.50	0.41	0.01	21.00	43.30	11/20/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15				Wooden Block	Unknown flow or duration.				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15				Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15				Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15				Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15				Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15				Wooden Block	Unknown flow or duration.				
CSO-006		Influent Pipe:	48 in		Weir Length		58.5 in		Tributary Area:	18.26 acres							
		Overflow Pipe:	48 x 50 in														
Jan-15	01/03/15 08:55	01/04/15 06:45	21.92	0.43	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:25	01/04/15 19:35	2.25	0.28	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
	01/12/15 18:30	01/12/15 19:25	1.00	0.01	0.00	27.60	47.40	1/13/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/12/15				
Mar-15	03/04/15 05:05	03/05/15 17:55	36.92	0.65	0.01	31.50	48.00	3/4/15	10:43 AM	1:30 PM	988	Hydraulic					
	03/13/15 20:55	03/14/15 14:35	17.75	0.68	0.01	46.80	56.80	3/14/15			0	Wooden Block	Unknown flow or duration.				
	03/26/15 17:35	03/27/15 06:15	12.75	0.39	0.03	25.20	48.50	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/09/15 21:20	04/09/15 22:30	1.25	0.08	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/14/15 04:10	04/14/15 06:00	1.92	0.07	0.00	20.60	26.30	4/14/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.97	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:25	04/21/15 05:15	9.92	1.34	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/17/15 08:25	05/17/15 11:50	3.50	0.12	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:40	10.92	0.72	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 11:55	05/27/15 15:15	3.42	0.91	0.05	17.60	51.10	5/27/15	12:56 PM	3:00 PM	2,336	Hydraulic					
	05/27/15 11:55	05/27/15 15:15	3.42	0.91	0.05	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	05/31/15 23:45	6.17	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/01/15 13:55	06/02/15 19:10	29.33	1.33	0.03	34.90	59.40	6/2/15	10:25 AM	8:00 PM	11,096	Hydraulic	0.66 Rain on 6/1/15				
	06/01/15 13:55	06/02/15 19:10	29.33	1.33	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:30	06/09/15 07:25	6.00	0.01	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 01:25	06/14/15 06:30	5.17	0.12	0.01	26.60	59.20	6/14/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:15	06/15/15 06:45	13.58	0.69	0.04	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/18/15 17:40	06/19/15 02:25	8.83	0.50	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 04:55	11.67	3.00	0.10	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:00	1.92	0.92	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 22:20	07/01/15 03:30	5.25	0.12	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/03/15 23:30	07/04/15 11:15	11.83	0.32	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 05:45	07/06/15 06:35	0.92	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/09/15 17:15	07/09/15 21:20	4.17	0.35	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:05	08/11/15 12:50	11.83	0.57	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:05	08/11/15 12:50	11.83	0.57	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:15	13.33	1.30	0.04	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.44	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:10	08/30/15 15:35	0.50	0.06	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Sep-15	09/10/15 08:55	09/10/15 18:05	9.25	0.92	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.59	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 12:10	09/30/15 01:10	13.08	2.08	0.06	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 10:30	10/03/15 10:50	24.42	1.08	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 14:55	10/09/15 17:00	2.17	0.30	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:20	24.67	1.99	0.04	44.90	64.90	10/28/15	12:48 PM	11:00 PM	3,864	Hydraulic					
	10/29/15 09:05	10/29/15 09:30	0.50	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-007		Influent Pipe:	24.5 x 25.5 in		Weir Length		23 in		Tributary Area:	17.6 acres							
		Overflow Pipe:	24 in														
Mar-15	03/07/15 16:20	03/07/15 16:40	0.42	0.00	0.00	21.30	28.40	3/8/15			0	Snow Melt	Unknown flow or duration.				
	03/13/15 20:55	03/14/15 14:35	17.75	0.68	0.01	46.80	56.80	3/14/15			0	Wooden Block	Unknown flow or duration.				
	03/26/15 17:35	03/27/15 06:15	12.75	0.39	0.03	25.20	48.50	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
	03/31/15 11:50	03/31/15 16:05	4.33	0.05	0.00	21.20	34.60	4/1/15	9:20 AM	10:20 AM	144	Gate Blocked	Unblocked gate. 0.04 rain on 3/31/15				
Apr-15	04/09/15 21:20	04/09/15 22:30	1.25	0.08	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/14/15 04:10	04/14/15 06:00	1.92	0.07	0.00	20.60	26.30	4/14/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.97	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:25	04/21/15 05:15	9.92	1.33	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/06/15 06:35	05/06/15 11:25	4.92	0.13	0.01	20.60	39.90	5/6/15			0	Wooden Block	Unknown flow or duration.				
	05/17/15 08:40	05/17/15 11:50	3.25	0.11	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 00:20	05/18/15 00:30	0.25	0.00	0.00	18.30	52.60	5/18/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 5/17/15				
	05/18/15 16:50	05/19/15 03:40	10.92	0.73	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/21/15 05:50	05/21/15 08:50	3.08	0.01	0.00	18.90	31.90	5/27/15			0	Wooden Block	Unknown flow or duration.				
	05/27/15 12:05	05/27/15 15:15	3.25	0.88	0.05	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	05/31/15 23:45	6.17	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/01/15 14:00	06/02/15 19:10	29.25	1.33	0.03	34.90	59.40	6/2/15			0	Wooden Block	Unknown flow or duration. 0.66 Rain on 6/1/15				
	06/01/15 14:00	06/02/15 19:10	29.25	1.33	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:30	06/09/15 07:25	6.00	0.01	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 01:25	06/14/15 06:30	5.17	0.11	0.01	26.60	59.20	6/14/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/17/15 22:50	06/18/15 08:50	10.08	0.21	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:40	06/19/15 02:25	8.83	0.49	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 04:55	11.67	2.99	0.10	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:00	1.92	0.92	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 22:20	07/01/15 03:30	5.25	0.12	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/03/15 23:30	07/04/15 11:15	11.83	0.32	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 16:40	07/06/15 19:45	3.17	0.02	0.00	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:15	07/09/15 21:20	4.17	0.35	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.57	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.57	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:15	13.33	1.29	0.04	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.44	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:35	0.42	0.06	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:55	09/10/15 18:05	9.25	0.92	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.59	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 12:10	09/30/15 01:10	13.08	2.06	0.06	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
	10/02/15 10:30	10/03/15 10:50	24.42	1.08	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Oct-15	10/02/15 10:30	10/03/15 10:50	24.42	1.08	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 17:00	2.08	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:05	10/29/15 09:30	0.50	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:15	11/11/15 00:35	20.42	0.45	0.01	22.30	37.90	11/10/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 03:55	11/19/15 21:40	17.83	0.38	0.01	21.00	43.30	11/19/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 03:55	11/19/15 21:40	17.83	0.38	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15			0	Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-008		Influent Pipe: 31 in			Weir Length 43 in				Tributary Area: 38 acres								
		Overflow Pipe: 30 in															
Jan-15	01/03/15 08:55	01/04/15 06:45	21.92	0.43	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:25	01/04/15 19:35	2.25	0.27	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
	01/11/15 23:35	01/12/15 11:45	12.25	0.36	0.01	27.60	47.40	1/12/15	9:34 AM	12:00 PM	623	Hydraulic					
	01/12/15 18:30	01/12/15 19:25	1.00	0.02	0.00	27.60	47.40	1/13/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/12/15				
Feb-15	02/21/15 09:40	02/21/15 23:50	14.25	0.28	0.00	18.10	29.20	2/23/15			0	Snow Melt	snowmelt and 0.25 rain on 2/21/15				
Mar-15	03/07/15 16:20	03/07/15 16:40	0.42	0.00	0.00	21.30	28.40	3/8/15			0	Snow Melt	Unknown flow or duration.				
	03/07/15 16:20	03/07/15 16:40	0.42	0.00	0.00	21.30	28.40	3/10/15			0	Wooden Block	Unknown flow or duration.				
	03/13/15 20:55	03/14/15 14:35	17.75	0.68	0.01	46.80	56.80	3/14/15			0	Wooden Block	Unknown flow or duration.				
	03/26/15 17:35	03/27/15 06:15	12.75	0.40	0.03	25.20	48.50	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/08/15 09:10	04/08/15 10:30	1.42	0.08	0.01	22.20	45.70	4/9/15			0	Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15				
	04/09/15 21:20	04/09/15 22:30	1.25	0.08	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/14/15 04:10	04/14/15 06:00	1.92	0.07	0.00	20.60	26.30	4/14/15			0	Wooden Block	Unknown flow or duration.				
	04/16/15 23:25	04/17/15 03:25	4.08	0.12	0.01	19.00	26.30	4/17/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.97	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:25	04/21/15 05:15	9.92	1.31	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/18/15 16:50	05/19/15 03:40	10.92	0.78	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/21/15 05:50	05/21/15 08:50	3.08	0.01	0.00	18.90	31.90	5/27/15	1:00 PM	3:00 PM	498	Hydraulic					
	05/27/15 12:05	05/27/15 15:15	3.25	0.79	0.04	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	05/31/15 23:45	6.17	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/01/15 14:00	06/02/15 19:10	29.25	1.34	0.03	34.90	59.40	6/2/15	10:31 AM	8:00 PM	6,659	Hydraulic	0.66 Rain on 6/1/15				
	06/01/15 14:00	06/02/15 19:10	29.25	1.34	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/04/15 10:20	06/04/15 17:25	7.17	0.06	0.00	20.10	34.50	6/5/15			0	Wooden Block	Unknown flow or duration. 0.01 Rain on 6/3/15				
	06/09/15 01:30	06/09/15 07:25	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 01:25	06/14/15 06:30	5.17	0.13	0.01	26.60	59.20	6/14/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.70	0.05	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/17/15 22:50	06/18/15 08:50	10.08	0.21	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:40	06/19/15 02:25	8.83	0.52	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 04:55	11.67	2.96	0.10	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:00	1.92	0.94	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 22:20	07/01/15 03:30	5.25	0.13	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/03/15 23:30	07/04/15 11:15	11.83	0.33	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/09/15 17:15	07/09/15 21:20	4.17	0.34	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.57	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.57	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:15	13.33	1.30	0.04	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:15	13.33	1.30	0.04	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
	08/24/15 14:35	08/24/15 16:30	2.00	0.44	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:35	0.42	0.08	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:55	09/10/15 18:05	9.25	0.94	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.58	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 12:10	09/30/15 01:10	13.08	2.09	0.06	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 10:30	10/03/15 10:50	24.42	1.08	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/03/15 18:40	10/03/15 23:25	4.83	0.07	0.00	30.50	50.90	10/4/15			0	Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/03/15 18:40	10/03/15 23:25	4.83	0.07	0.00	30.50	50.90	10/4/15			0	Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:00	10/09/15 17:00	2.08	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:20	24.67	1.97	0.04	44.90	64.90	10/28/15	12:54 PM	11:00 PM	7,980	Hydraulic					
	10/29/15 09:05	10/29/15 09:30	0.50	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:15	11/11/15 00:35	20.42	0.45	0.01	22.30	37.90	11/10/15			0	Wooden Block	Unknown flow or duration.				
	11/10/15 04:15	11/11/15 00:35	20.42	0.45	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 03:55	11/19/15 21:40	17.83	0.38	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15			0	Wooden Block	Unknown flow or duration.				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15			0	Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15			0	Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-009		Influent Pipe:	30 in		Weir Length	30 in		Tributary Area:	65.25 acres								
		Overflow Pipe:	30 x 30.25 in														
Jan-15	01/03/15 08:55	01/04/15 06:45	21.92	0.43	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:25	01/04/15 19:35	2.25	0.26	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
	01/11/15 23:35	01/12/15 11:45	12.25	0.37	0.01	27.60	47.40	1/12/15	9:56 AM	12:00 PM	1,254	Hydraulic					
	01/12/15 18:30	01/12/15 19:25	1.00	0.02	0.00	27.60	47.40	1/13/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/12/15				
Mar-15	03/04/15 05:05	03/05/15 17:55	36.92	0.65	0.01	31.50	48.00	3/4/15	10:40 AM	1:30 PM	613	Hydraulic					
	03/04/15 05:05	03/05/15 17:55	36.92	0.65	0.01	31.50	48.00	3/5/15			0	Wooden Block	Unknown flow or duration.				
	03/13/15 20:55	03/14/15 14:35	17.75	0.70	0.01	46.80	56.80	3/14/15			0	Wooden Block	Unknown flow or duration.				
	03/26/15 17:35	03/27/15 06:15	12.75	0.40	0.03	25.20	48.50	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/08/15 09:10	04/08/15 10:30	1.42	0.11	0.01	22.20	45.70	4/8/15	10:19 AM	11:00 AM	470	Hydraulic					
	04/08/15 09:10	04/08/15 10:30	1.42	0.11	0.01	22.20	45.70	4/9/15			0	Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15				
	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/14/15 04:10	04/14/15 06:00	1.92	0.07	0.00	20.60	26.30	4/14/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.97	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.97	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:25	04/21/15 05:15	9.92	1.27	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
	04/22/15 01:15	04/22/15 20:05	18.92	0.07	0.01	34.90	47.40	4/23/15			0	Wooden Block	Unknown flow or duration. 0.06 Rain on 4/22/15				
May-15	05/06/15 06:35	05/06/15 11:25	4.92	0.09	0.00	20.60	39.90	5/6/15			0	Wooden Block	Unknown flow or duration.				
	05/17/15 08:40	05/17/15 11:50	3.25	0.14	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:40	10.92	0.86	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:05	05/27/15 15:15	3.25	0.63	0.02	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	05/31/15 23:45	6.17	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
	06/01/15 14:00	06/02/15 19:10	29.25	1.34	0.03	34.90	59.40	6/2/15	11:06 AM	8:00 PM	5,643	Hydraulic	0.66 Rain on 6/1/15				
	06/01/15 14:00	06/02/15 19:10	29.25	1.34	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:30	06/09/15 07:25	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Jun-15	06/14/15 01:25	06/14/15 06:30	5.17	0.15	0.01	26.60	59.20	6/14/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.73	0.05	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/17/15 22:50	06/18/15 08:50	10.08	0.21	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:40	06/19/15 02:25	8.83	0.55	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 04:55	11.67	2.89	0.10	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:00	1.92	0.98	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 22:20	07/01/15 03:30	5.25	0.15	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/03/15 23:30	07/04/15 11:15	11.83	0.34	0.02	28.40	50.00	7/4/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 7/1/15				
	07/03/15 23:30	07/04/15 11:15	11.83	0.34	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/09/15 17:15	07/09/15 21:20	4.17	0.33	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.57	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.57	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:15	13.33	1.33	0.04	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:15	13.33	1.33	0.04	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.42	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:35	0.42	0.11	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:55	09/10/15 18:05	9.25	0.97	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.58	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 12:10	09/30/15 01:10	13.08	2.15	0.07	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 10:30	10/03/15 10:50	24.42	1.09	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/03/15 18:40	10/03/15 23:25	4.83	0.07	0.00	30.50	50.90	10/4/15			0	Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:00	10/09/15 17:00	2.08	0.28	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:20	24.67	1.94	0.03	44.90	64.90	10/28/15	1:20 PM	11:00 PM	5,431	Hydraulic					
	10/29/15 09:05	10/29/15 09:30	0.50	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:15	11/11/15 00:35	20.42	0.45	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15	9:45 AM	2:00 PM	2,367	Hydraulic					
	11/19/15 03:55	11/19/15 21:40	17.83	0.37	0.01	21.00	43.30	11/19/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 03:55	11/19/15 21:40	17.83	0.37	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:30 AM	2:00 PM	676	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15			0	Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15			0	Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-010		Influent Pipe: 36 x 37 in			Weir Length 57 in				Tributary Area: 41.98 acres								
		Overflow Pipe: 36 x 37 in															
Aug-14	08/11/14 21:30	08/13/14 01:20	27.92	2.15	0.36	50.60	71.50	8/12/14; 8/13/14	10:08 AM	10:00 PM	11,985	Hydraulic		1	08/12/14 01:00	08/13/14 01:25	7.1
	08/17/14 07:25	08/17/14 10:00	2.67	0.09	0.08	23.10	41.10	8/18/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 8/17/14	2	08/17/14 09:35	08/17/14 09:55	1.0
	08/20/14 09:25	08/20/14 16:00	6.67	0.13	0.08	20.60	34.00	8/21/14; 8/22/14				Wooden Block	Unknown flow or duration. 0.05 Rain on 8/20/14	3	08/20/14 09:50	08/20/14 15:55	1.4
Sep-14	09/02/14 18:00	09/02/14 18:20	0.42	0.08	0.08	17.70	29.90	NOT DETECTED						4	09/02/14 18:20	09/02/14 18:30	1.5
	09/06/14 18:10	09/07/14 02:05	8.00	0.04	0.03	16.50	31.20	NOT DETECTED						5	09/10/14 11:35	09/10/14 11:35	1.8
	09/13/14 06:25	09/13/14 13:55	7.58	0.20	0.10	18.20	43.50	9/14/14				Wooden Block	Unknown flow or duration. 0.18 Rain on 9/13/14	6	09/13/14 08:15	09/13/14 14:20	3.7
	09/21/14 16:50	09/21/14 17:30	0.75	0.11	0.11	16.60	37.90	9/22/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 9/21/14	7	09/21/14 17:25	09/21/14 17:55	5.3
	09/25/14 00:35	09/25/14 09:30	9.00	0.25	0.10	19.90	41.60	9/25/14	9:40 AM	11:00 AM	1,275	Hydraulic		8	09/25/14 02:25	09/25/14 10:20	3.5
	09/30/14 21:20	10/01/14 00:40	3.42	1.01	0.74	22.70	49.80	10/1/14				Wooden Block	Unknown flow or duration.	9	09/30/14 21:55	10/01/14 00:40	8.7
	10/03/14 19:30	10/04/14 07:10	11.75	0.26	0.07	18.30	32.10	10/4/14				Wooden Block	Unknown flow or duration.	10	10/03/14 21:45	10/04/14 07:30	3.3

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Oct-14	10/07/14 19:20	10/07/14 23:15	4.00	0.18	0.14	17.70	40.10	10/8/14				Wooden Block	Unknown flow or duration. 0.15 Rain on 10/7/14	11	10/07/14 22:20	10/07/14 23:25	4.2
	10/10/14 21:10	10/11/14 08:30	11.42	0.30	0.07	17.50	26.50	10/11/14				Wooden Block	Unknown flow or duration.	12	10/11/14 00:45	10/11/14 08:45	3.3
	10/15/14 01:30	10/15/14 22:25	21.00	1.32	0.37	32.20	52.00	10/15/14; 10/16/14				Wooden Block	Unknown flow or duration.	13	10/15/14 02:00	10/15/14 22:45	5.7
	10/16/14 15:45	10/16/14 17:45	2.08	0.15	0.11	22.20	44.30	10/17/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 10/16/14	14	10/16/14 16:40	10/16/14 17:55	3.7
	10/16/14 15:45	10/16/14 17:45	2.08	0.15	0.11	22.20	44.30	NOT DETECTED						15	10/17/14 07:00	10/17/14 07:00	0.6
	10/22/14 11:05	10/22/14 12:40	1.67	0.02	0.01	16.50	23.20	NOT DETECTED						16	10/22/14 12:35	10/22/14 13:05	1.9
	10/29/14 04:50	10/29/14 14:40	9.92	0.11	0.04	17.50	23.20	NOT DETECTED						17	10/29/14 11:40	10/29/14 15:00	1.7
Nov-14	11/05/14 22:25	11/06/14 05:55	7.58	0.66	0.13	23.40	50.40	11/6/14				Wooden Block	Unknown flow or duration.	18	11/06/14 02:10	11/06/14 18:40	4.4
	11/16/14 19:10	11/17/14 14:15	19.17	0.55	0.09	23.70	44.90	11/17/14; 11/18/14	8:15 AM	1:27 PM	1,906	Hydraulic		19	11/16/14 21:50	11/17/14 15:35	3.4
	11/23/14 21:30	11/24/14 04:20	6.92	0.62	0.25	20.10	34.40	11/24/14				Wooden Block	Unknown flow or duration.	20	11/23/14 23:00	11/24/14 05:05	5.8
	11/23/14 21:30	11/24/14 04:20	6.92	0.62	0.25	20.10	34.40	11/25/14				Wooden Block	Unknown flow or duration. 0.57 rain on 11/24/14	21	11/25/14 04:25	11/25/14 09:50	3.9
	11/26/14 04:30	11/26/14 16:50	12.42	0.75	0.16	31.50	43.30	11/26/14; 11/27/14	8:35 AM	5:00 PM	3,086	Hydraulic		22	11/26/14 07:55	11/26/14 19:25	3.6
	11/26/14 04:30	11/26/14 16:50	12.42	0.75	0.16	31.50	43.30	NOT DETECTED						23	11/27/14 11:10	11/27/14 11:15	0.3
Dec-14	12/01/14 12:10	12/01/14 17:15	5.17	0.13	0.06	19.50	42.70	12/2/14				Wooden Block	Unknown flow or duration. 0.11 rain on 12/1/14	24	12/01/14 15:55	12/01/14 17:25	3.3
	12/02/14 10:45	12/02/14 22:50	12.17	0.25	0.18	22.30	44.60	12/3/14				Wooden Block	Unknown flow or duration. 0.22 rain on 12/2/14	25	12/02/14 18:10	12/03/14 00:30	5.3
	12/05/14 11:40	12/06/14 20:15	32.67	0.93	0.14	31.50	49.30	12/6/14; 12/7/14				Wooden Block	Unknown flow or duration.	26	12/05/14 15:40	12/06/14 20:45	4.2
	12/09/14 00:15	12/09/14 04:45	4.58	0.31	0.11	27.80	42.40	12/9/14				Wooden Block	Unknown flow or duration.	27	12/09/14 01:30	12/09/14 07:15	3.2
	12/16/14 10:05	12/16/14 13:25	3.42	0.11	0.09	21.70	35.40	12/17/14				Wooden Block	Unknown flow or duration. 0.15 rain on 12/16/14	28	12/16/14 12:15	12/16/14 13:45	3.3
	12/22/14 16:35	12/23/14 08:25	15.92	0.28	0.07	24.80	43.00	12/23/14				Wooden Block	Unknown flow or duration.	29	12/22/14 19:45	12/23/14 10:05	3.4
	12/23/14 22:10	12/24/14 16:10	18.08	0.56	0.15	35.20	43.00	12/24/14; 12/25/14	10:10 AM	4:00 PM	2,087	Hydraulic		30	12/24/14 02:05	12/25/14 04:40	4.9
Jan-15	01/03/15 08:00	01/04/15 05:45	21.83	0.43	0.09	26.90	45.40	1/4/15; 1/5/15				Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15	31	01/03/15 12:05	01/04/15 20:15	3.7
	01/11/15 22:35	01/12/15 10:45	12.25	0.37	0.08	27.60	47.40	1/12/15; 1/13/15	9:58 AM	12:00 PM	2,040	Hydraulic		32	01/12/15 06:55	01/12/15 13:20	3.4
	01/21/15 10:40	01/21/15 15:10	4.58	0.18	0.06	18.10	26.30	NOT DETECTED						33	01/22/15 12:35	01/22/15 12:45	1.4
	01/23/15 21:10	01/24/15 04:05	7.00	0.50	0.12	22.10	42.30	NOT DETECTED						34	01/24/15 12:55	01/24/15 16:25	1.6
	01/23/15 21:10	01/24/15 04:05	7.00	0.50	0.12	22.10	42.30	NOT DETECTED						35	01/25/15 13:30	01/25/15 20:05	1.3
Feb-15	02/01/15 15:30	02/02/15 09:50	18.42	0.28	0.05	23.90	43.10	NOT DETECTED						36	02/02/15 06:50	02/02/15 14:50	1.9
	02/21/15 08:40	02/21/15 22:50	14.25	0.27	0.04	18.10	29.20	NOT DETECTED						37	02/22/15 13:30	02/22/15 16:35	2.1
Mar-15	03/01/15 04:40	03/01/15 16:40	12.08	0.21	0.04	18.80	31.00	NOT DETECTED						38	03/02/15 11:05	03/02/15 15:00	1.8
	03/04/15 04:05	03/05/15 03:00	23.00	0.37	0.07	31.50	48.00	3/4/15	10:43 AM	1:30 PM	988	Hydraulic		39	03/04/15 08:15	03/05/15 02:55	3.1
	03/07/15 15:25	03/07/15 15:40	0.33	0.00	0.00	21.30	28.40	3/8/15; 3/9/15				Snow Melt	Unknown flow or duration.	40	03/08/15 11:35	03/08/15 17:15	2.2
	03/07/15 15:25	03/07/15 15:40	0.33	0.00	0.00	21.30	28.40	3/10/15				Wooden Block	Unknown flow or duration.	41	03/09/15 15:10	03/09/15 15:55	1.2
	03/10/15 13:55	03/11/15 00:50	11.00	0.42	0.08	38.80	54.70	NOT DETECTED						42	03/10/15 15:00	03/11/15 02:00	3.6
	03/13/15 20:55	03/14/15 10:35	13.75	0.69	0.11	46.80	56.80	3/14/15; 3/15/15	9:22 AM	10:30 AM	1,275	Hydraulic		43	03/13/15 22:25	03/14/15 12:00	3.6
	03/20/15 05:55	03/20/15 15:00	9.17	0.14	0.03	26.70	47.30	NOT DETECTED						44	03/21/15 13:00	03/21/15 14:10	1.8
	03/25/15 10:20	03/25/15 11:30	1.25	0.06	0.06	22.20	31.10	3/25/15	11:10 AM	11:50 AM	272	Hydraulic		45	03/25/15 11:00	03/25/15 11:45	1.5
	03/26/15 17:35	03/26/15 18:15	0.75	0.37	0.37	25.20	48.50	3/27/15				Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15	46	03/26/15 17:55	03/26/15 19:00	4.6
	03/31/15 11:50	03/31/15 14:45	3.00	0.05	0.03	21.20	34.60	NOT DETECTED						47	03/31/15 14:35	03/31/15 15:20	1.6
Apr-15	04/03/15 09:15	04/04/15 02:10	17.00	0.12	0.05	22.30	43.30	4/4/15				Wooden Block	Unknown flow or duration. 0.39 rain on 4/3/15	48	04/03/15 19:45	04/04/15 02:25	1.7
	04/07/15 17:10	04/07/15 18:20	1.25	0.03	0.02	20.60	29.80	4/8/15	10:21 AM	11:00 AM	765	Hydraulic		49	04/07/15 18:20	04/07/15 18:40	1.5
	04/08/15 09:10	04/08/15 10:30	1.42	0.11	0.09	22.20	45.70	4/9/15				Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15	50	04/08/15 09:40	04/08/15 11:30	4.1
	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.08	21.50	41.40	4/10/15				Wooden Block	Unknown flow or duration.	51	04/09/15 21:55	04/09/15 23:10	3.7
	04/10/15 13:50	04/10/15 15:15	1.50	0.04	0.04	21.70	32.60	NOT DETECTED						52	04/10/15 15:10	04/10/15 15:30	1.6
	04/14/15 04:10	04/14/15 05:40	1.58	0.05	0.05	20.60	26.30	4/14/15				Wooden Block	Unknown flow or duration.	53	04/14/15 05:00	04/14/15 05:35	2.4
	04/16/15 23:25	04/17/15 03:25	4.08	0.12	0.11	19.00	26.30	4/17/15				Wooden Block	Unknown flow or duration.	54	04/17/15 01:10	04/17/15 04:45	2.0
	04/20/15 01:15	04/20/15 09:40	8.50	0.96	0.34	40.20	57.60	4/20/15; 4/21/15	9:30 AM	1:30 PM	1,452	Wooden Block	Unknown flow or duration.	55	04/20/15 01:50	04/21/15 17:10	16.4
	04/22/15 05:15	04/22/15 14:10	9.00	0.06	0.06	34.90	47.40	4/23/15				Wooden Block	Unknown flow or duration. 0.06 Rain on 4/22/15	56	04/22/15 07:15	04/22/15 14:05	2.8
	04/22/15 05:15	04/22/15 14:10	9.00	0.06	0.06	34.90	47.40	NOT DETECTED						57	04/23/15 07:35	04/23/15 07:40	0.6
	04/30/15 19:35	04/30/15 21:25	1.92	0.03	0.03	20.10	31.80	NOT DETECTED						58	04/30/15 21:35	04/30/15 21:40	1.2
	05/06/15 06:35	05/06/15 11:25	4.92	0.09	0.03	20.60	39.90	5/6/15				Wooden Block	Unknown flow or duration.	59	05/06/15 07:55	05/06/15 20:15	2.9
	05/06/15 18:25	05/06/15 19:50	1.50	0.03	0.02	20.60	39.90	NOT DETECTED						60	05/11/15 10:50	05/11/15 10:50	1.6
	05/16/15 16:00	05/16/15 17:10	1.25	0.22	0.22	16.70	42.80	5/17/15				Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15	61	05/16/15 16:45	05/16/15 17:15	5.3

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
May-15	05/17/15 08:40	05/17/15 11:05	2.50	0.12	0.18	19.10	38.90	5/18/15				Wooden Block	Unknown flow or duration. 0.14 Rain on 5/17/15	62	05/17/15 10:40	05/17/15 11:00	1.9
	05/18/15 16:50	05/19/15 03:40	10.92	0.86	0.50	18.30	52.60	5/19/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15	63	05/18/15 21:10	05/19/15 03:35	19.9
	05/27/15 12:10	05/27/15 15:00	2.92	0.63	0.29	17.60	51.10	5/28/15				Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15	64	05/27/15 13:45	05/27/15 14:55	6.4
	05/31/15 17:40	05/31/15 23:20	5.75	0.16	0.13	17.30	42.20	6/1/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15	65	05/31/15 23:10	05/31/15 23:20	1.6
Jun-15	06/01/15 14:20	06/01/15 23:00	8.75	0.36	0.14	22.90	48.50	6/2/15; 6/3/15	11:06 AM	8:00 PM	9,180	Hydraulic	0.66 Rain on 6/1/15	66	06/01/15 16:10	06/02/15 13:45	4.1
	06/08/15 16:55	06/08/15 18:55	2.08	2.15	1.92	34.50	72.70	6/9/15				Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15	67	06/08/15 17:10	06/08/15 18:50	28.5
	06/14/15 05:50	06/14/15 06:30	0.75	0.15	0.15	26.60	59.20	6/14/15; 6/15/15				Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15	68	06/14/15 06:15	06/14/15 18:10	12.6
	06/17/15 22:50	06/18/15 02:35	3.83	0.17	0.12	26.50	53.80	6/18/15				Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15	69	06/18/15 02:15	06/18/15 02:30	2.8
	06/18/15 17:40	06/19/15 01:15	7.67	0.53	0.37	26.50	53.80	6/19/15				Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15		06/18/15 22:30	06/19/15 01:10	8.3
	06/20/15 17:20	06/21/15 02:10	8.92	2.88	1.20	43.10	74.30	6/21/15				Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15	70	06/20/15 18:30	06/21/15 02:25	26.2
	06/23/15 15:10	06/23/15 17:00	1.92	0.98	0.85	40.60	72.30	6/24/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15	71	06/23/15 15:40	06/23/15 17:05	17.5
	06/27/15 04:35	06/27/15 16:20	11.83	1.08	0.31	47.20	70.90	6/28/15; 6/29/15				Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15	72	06/27/15 10:30	06/28/15 02:45	6.3
	06/30/15 22:20	06/30/15 23:50	1.58	0.11	0.11	31.80	47.80	7/1/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15	73	06/30/15 23:30	06/30/15 23:45	2.8
Jul-15	07/03/15 23:30	07/04/15 11:15	11.83	0.34	0.23	28.40	50.00	7/4/15 - 7/6/15				Wooden Block	Unknown flow or duration. 0.02 Rain on 7/1/15	74	07/04/15 03:55	07/04/15 11:15	2.4
	07/08/15 22:20	07/08/15 22:45	0.50	0.04	0.04	23.10	29.50	NOT DETECTED						75	07/08/15 22:45	07/08/15 22:45	0.3
	07/09/15 17:20	07/09/15 17:55	0.67	0.27	0.27	24.50	47.90	7/10/15				Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15	76	07/09/15 17:50	07/09/15 17:55	3.1
	07/14/15 01:15	07/14/15 06:40	5.50	0.78	0.45	29.40	54.10	7/15/15				Wooden Block	Unknown flow or duration. 1.39 Rain on 7/14/15	77	07/14/15 03:05	07/14/15 06:50	3.4
	07/26/15 19:55	07/27/15 00:25	4.58	1.11	0.99	22.90	54.60	NOT DETECTED						78	07/26/15 23:05	07/27/15 00:30	24.3
	07/30/15 10:55	07/30/15 11:20	0.50	0.03	0.03	18.20	31.60	NOT DETECTED						79	07/30/15 11:15	07/30/15 11:20	1.2
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.57	0.25	20.50	44.60	8/11/15; 8/12/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15	80	08/11/15 01:40	08/11/15 12:50	8.5
	08/20/15 06:00	08/20/15 19:15	13.33	1.33	0.45	33.60	63.70	8/20/15; 8/21/15				Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15	81	08/20/15 06:20	08/20/15 19:25	5.1
	08/24/15 14:35	08/24/15 16:30	2.00	0.42	0.38	20.20	47.40	8/25/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15	82	08/24/15 16:10	08/24/15 16:45	4.8
	08/30/15 15:15	08/30/15 15:35	0.42	0.11	0.11	17.10	41.80	8/31/15				Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15	83	08/30/15 15:30	08/30/15 15:45	12.6
Sep-15	09/10/15 08:55	09/10/15 18:05	9.25	0.98	0.03	26.80	62.40	9/11/15				Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.58	0.02	24.70	53.70	9/13/15				Wooden Block	Unknown flow or duration.				
	09/29/15 11:55	09/30/15 01:15	13.42	2.15	0.07	32.90	64.00	9/30/15				Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 10:00	10/03/15 10:45	24.83	1.09	0.03	28.10	52.70	10/3/15				Wooden Block	Unknown flow or duration.				
	10/03/15 18:35	10/03/15 23:25	4.92	0.07	0.00	30.50	50.90	10/4/15				Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:00	10/09/15 16:50	1.92	0.28	0.02	19.90	42.80	10/10/15				Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:20	24.67	1.94	0.03	44.90	64.90	10/28/15	1:21 PM	11:00 PM	10,228	Hydraulic					
	10/29/15 09:05	10/29/15 09:20	0.33	0.04	0.00	24.80	39.40	10/29/15				Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:15	11/11/15 00:35	20.42	0.45	0.01	22.30	37.90	11/11/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15				Wooden Block	Unknown flow or duration.				
	11/19/15 03:55	11/19/15 21:40	17.83	0.37	0.01	21.00	43.30	11/20/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:31 AM	2:00 PM	1,274	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15				Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15				Wooden Block	Unknown flow or duration.				
	12/23/15 11:30	12/23/15 18:25	7.00	0.71	0.02	33.20	67.40	12/23/15				Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15				Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15				Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15				Wooden Block	Unknown flow or duration.				
CSO-011		Influent Pipe:	30 x 30 in		Weir Length	29.5 in		Tributary Area:	31.36 acres								
		Overflow Pipe:	30 in														
Jan-15	01/03/15 09:00	01/04/15 06:45	21.83	0.43	0.01	26.90	45.40	1/4/15	11:45 AM	1:00 PM	690	Line Blocked	Unblocked gate. 0.43 Rain on 1/3/15				
	01/12/15 18:35	01/12/15 19:25	0.92	0.02	0.00	27.60	47.40	1/13/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/12/15				
Mar-15	03/13/15 20:55	03/14/15 14:35	17.75	0.70	0.01	46.80	56.80	3/14/15	9:24 AM	10:30 AM	690	Hydraulic					
	03/13/15 20:55	03/14/15 14:35	17.75	0.70	0.01	46.80	56.80	3/15/15			0	Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15				
	03/26/15 17:35	03/27/15 06:40	13.17	0.40	0.03	22.80	29.00	3/27/15	10:15 AM	10:30 AM	49	Gate Blocked	Unblocked gate. 0.44 rain on 3/26/15				
	04/08/15 09:10	04/08/15 10:35	1.50	0.11	0.01	22.20	45.70	4/8/15	10:23 AM	11:00 AM	276	Hydraulic					

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Apr-15	04/09/15 21:20	04/09/15 22:30	1.25	0.08	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.96	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.26	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
	04/22/15 01:15	04/22/15 20:05	18.92	0.07	0.01	34.90	47.40	4/23/15			0	Wooden Block	Unknown flow or duration. 0.06 Rain on 4/22/15				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.13	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 00:20	05/18/15 00:35	0.33	0.00	0.00	18.30	52.60	5/18/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 5/17/15				
	05/18/15 16:50	05/19/15 03:45	11.00	0.87	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:10	05/27/15 15:15	3.17	0.61	0.02	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:10	9.58	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:05	06/02/15 19:10	11.17	0.99	0.03	34.90	59.40	6/2/15	11:07 AM	8:00 PM	4,968	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:05	06/02/15 19:10	11.17	0.99	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:20	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 05:50	06/14/15 06:30	0.75	0.14	0.01	26.60	59.20	6/14/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.73	0.05	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.21	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:40	06/19/15 02:30	8.92	0.55	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 04:55	11.67	2.87	0.10	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:00	1.92	0.97	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 22:20	07/01/15 03:35	5.33	0.14	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/03/15 23:30	07/04/15 11:15	11.83	0.34	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 16:40	07/06/15 19:45	3.17	0.03	0.00	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.33	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
	07/15/15 00:55	07/15/15 03:45	2.92	0.08	0.00	23.50	29.00	7/15/15			0	Wooden Block	Unknown flow or duration. 1.39 Rain on 7/14/15				
	07/26/15 19:55	07/27/15 00:25	4.58	1.08	0.08	22.90	54.60	7/27/15	11:00 AM	12:00 PM	197	Hydraulic	0.65 Rain on 7/26/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.57	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.57	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:15	13.33	1.32	0.04	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:15	13.33	1.32	0.04	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.42	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	0.98	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.58	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:55	09/30/15 01:15	13.42	2.13	0.07	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 10:00	10/03/15 10:45	24.83	1.08	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/03/15 18:35	10/03/15 23:25	4.92	0.07	0.00	30.50	50.90	10/4/15			0	Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:00	10/09/15 16:50	1.92	0.28	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:20	24.67	1.95	0.03	44.90	64.90	10/28/15	1:27 PM	11:00 PM	5,197	Hydraulic					
	10/29/15 09:05	10/29/15 09:20	0.33	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 03:55	11/19/15 21:40	17.83	0.37	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:32 AM	2:00 PM	665	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15	9:10 AM	6:00 PM	2,258	Hydraulic					
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15			0	Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-012		Influent Pipe:	36 in		Weir Length	36 in			Tributary Area:	22.04 acres							

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
		Overflow Pipe: 36 in															
Jan-15	01/03/15 09:00	01/04/15 06:45	21.83	0.44	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:25	01/04/15 19:35	2.25	0.25	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
Mar-15	03/26/15 17:35	03/27/15 06:40	13.17	0.39	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/08/15 09:10	04/08/15 10:35	1.50	0.11	0.01	22.20	45.70	4/8/15			0	Wooden Block	Unknown flow or duration.				
	04/09/15 21:20	04/09/15 22:30	1.25	0.08	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.96	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.25	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.13	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:45	11.00	0.90	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:10	05/27/15 15:15	3.17	0.58	0.02	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:10	9.58	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:05	06/02/15 19:10	11.17	0.97	0.03	34.90	59.40	6/2/15	11:10 AM	8:00 PM	4,203	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:05	06/02/15 19:10	11.17	0.97	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:20	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 05:50	06/14/15 06:30	0.75	0.14	0.01	26.60	59.20	6/14/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.75	0.05	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.21	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:40	06/19/15 02:30	8.92	0.56	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 04:55	11.67	2.83	0.10	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:00	1.92	0.98	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 22:20	07/01/15 03:35	5.33	0.14	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/03/15 23:30	07/04/15 11:15	11.83	0.35	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.32	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:15	13.33	1.34	0.04	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:15	13.33	1.34	0.04	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/30/15 15:15	08/30/15 15:35	0.42	0.11	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	0.99	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.59	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:55	09/30/15 01:15	13.42	2.10	0.06	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/09/15 15:00	10/09/15 16:50	1.92	0.28	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:20	24.67	1.97	0.03	44.90	64.90	10/28/15	1:28 PM	11:00 PM	6,346	Hydraulic					
	10/29/15 09:05	10/29/15 09:20	0.33	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/19/15 03:55	11/19/15 21:40	17.83	0.37	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:33 AM	2:00 PM	812	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15			0	Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15			0	Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-013		Influent Pipe: 23.5 in			Weir Length 46 in				Tributary Area: 16.55 acres								
		Overflow Pipe: 24 in															
Jan-15	01/04/15 17:25	01/04/15 19:35	2.25	0.24	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
Mar-15	03/26/15 17:35	03/27/15 06:40	13.17	0.38	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Apr-15	04/09/15 21:20	04/09/15 22:30	1.25	0.08	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.23	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.13	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:50	11.08	0.97	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:10	05/27/15 15:15	3.17	0.52	0.02	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:10	9.58	0.17	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.94	0.03	34.90	59.40	6/2/15	11:10 AM	8:00 PM	4,401	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.94	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:20	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Gate Blocked	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 05:50	06/14/15 06:35	0.83	0.14	0.01	26.60	59.20	6/14/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.78	0.05	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/18/15 17:40	06/19/15 02:30	8.92	0.57	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.77	0.09	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:00	1.92	0.99	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 22:20	07/01/15 03:35	5.33	0.14	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/03/15 23:30	07/04/15 11:20	11.92	0.36	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/03/15 23:30	07/04/15 11:20	11.92	0.36	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.32	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:35	13.67	1.37	0.04	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:35	13.67	1.37	0.04	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.42	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:35	0.42	0.10	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.01	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.60	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	2.04	0.06	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:45	30.33	1.08	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 16:50	1.92	0.28	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:20	24.67	2.00	0.03	44.90	64.90	10/28/15	1:29 PM	11:00 PM	8,113	Hydraulic					
	10/29/15 09:05	10/29/15 09:20	0.33	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/19/15 03:55	11/19/15 21:40	17.83	0.36	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:34 AM	2:00 PM	1,036	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-014		Influent Pipe: 34.5 in			Weir Length 47 in				Tributary Area: 24.15 acres								
		Overflow Pipe: 31 in															
Aug-14	08/08/14 13:10	08/12/14 21:00	103.92	2.14	0.34	17.80	29.20	8/12/14; 8/13/14	10:16 AM	10:00 PM	10,728	Hydraulic		1	08/12/14 01:10	08/12/14 20:55	9.2
	08/17/14 07:25	08/17/14 10:05	2.75	0.10	0.08	23.10	41.10	8/18/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 8/17/14	2	08/17/14 09:35	08/17/14 10:00	1.2
Sep-14	09/13/14 06:25	09/13/14 12:15	5.92	0.18	0.12	18.20	43.50	9/14/14				Wooden Block	Unknown flow or duration. 0.18 Rain on 9/13/14	3	09/13/14 11:45	09/13/14 12:10	1.2
	09/21/14 16:50	09/21/14 17:30	0.75	0.11	0.11	16.60	37.90	9/22/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 9/21/14	4	09/21/14 17:25	09/21/14 17:45	4.4
	09/25/14 00:30	09/25/14 09:30	9.08	0.27	0.11	19.90	41.60	9/25/14; 9/26/14				Wooden Block	Unknown flow or duration.	5	09/25/14 08:40	09/25/14 09:25	1.6
	09/30/14 21:15	10/01/14 00:35	3.42	1.03	0.74	22.70	49.80	10/1/14				Wooden Block	Unknown flow or duration.	6	09/30/14 21:55	10/01/14 00:30	13.2
	10/03/14 19:30	10/04/14 06:25	11.00	0.25	0.08	18.30	32.10	10/4/14				Wooden Block	Unknown flow or duration.	7	10/03/14 22:00	10/04/14 06:35	1.9
	10/07/14 19:20	10/07/14 22:55	3.67	0.15	0.13	17.70	40.10	10/8/14				Wooden Block	Unknown flow or duration. 0.15 Rain on 10/7/14	8	10/07/14 22:20	10/07/14 22:50	4.2

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Oct-14	10/10/14 21:10	10/11/14 05:10	8.08	0.24	0.12	17.50	26.50	NOT DETECTED						9	10/11/14 05:00	10/11/14 05:05	0.3
	10/15/14 01:30	10/15/14 16:30	15.08	1.13	0.36	32.20	52.00	10/15/14; 10/16/14				Wooden Block	Unknown flow or duration.	10	10/15/14 02:45	10/15/14 16:35	19.8
	10/16/14 15:45	10/16/14 17:30	1.83	0.14	0.11	22.20	44.30	10/17/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 10/16/14	11	10/16/14 16:50	10/16/14 17:25	1.8
Nov-14	11/05/14 22:05	11/06/14 05:55	7.92	0.67	0.14	23.40	50.40	11/6/14				Wooden Block	Unknown flow or duration.	12	11/06/14 03:00	11/06/14 07:05	1.9
	11/16/14 19:10	11/17/14 10:50	15.75	0.48	0.09	23.70	44.90	11/17/14				Wooden Block	Unknown flow or duration.	13	11/17/14 00:25	11/17/14 11:50	1.1
	11/16/14 19:10	11/17/14 10:50	15.75	0.48	0.09	23.70	44.90	11/24/14				Wooden Block	Unknown flow or duration.	14	11/23/14 00:00	11/24/14 02:50	4.6
	11/26/14 04:30	11/26/14 11:05	6.67	0.56	0.16	31.50	43.30	11/26/14; 11/27/14	8:45 AM	5:00 PM	2,681	Hydraulic		15	11/26/14 08:05	11/26/14 11:00	1.4
Dec-14	12/01/14 12:10	12/01/14 16:35	4.50	0.12	0.13	19.50	42.70	12/2/14				Wooden Block	Unknown flow or duration. 0.11 rain on 12/1/14	16	12/01/14 16:10	12/01/14 16:30	1.0
	12/02/14 10:45	12/02/14 18:05	7.42	0.22	0.18	22.30	44.60	12/3/14				Wooden Block	Unknown flow or duration. 0.22 rain on 12/2/14	17	12/02/14 18:15	12/02/14 19:20	2.3
	12/05/14 11:40	12/06/14 15:40	28.08	0.88	0.14	31.50	49.30	12/7/14				Wooden Block	Unknown flow or duration. 0.57 rain on 12/6/14	18	12/05/14 17:15	12/06/14 16:00	1.8
	12/09/14 00:15	12/09/14 04:00	3.83	0.28	0.11	27.80	42.40	12/9/14				Wooden Block	Unknown flow or duration.	19	12/09/14 02:30	12/09/14 03:55	0.8
	12/16/14 10:05	12/16/14 12:10	2.17	0.11	0.10	21.70	35.40	12/17/14				Wooden Block	Unknown flow or duration. 0.15 rain on 12/16/14	20	12/16/14 12:25	12/16/14 12:45	0.6
	12/22/14 16:35	12/22/14 20:30	4.00	0.14	0.07	20.60	40.40	NOT DETECTED						21	12/22/14 20:10	12/22/14 20:50	1.1
	12/22/14 16:35	12/22/14 20:30	4.00	0.14	0.07	20.60	40.40	NOT DETECTED						22	12/23/14 09:20	12/23/14 09:40	1.2
	12/23/14 21:45	12/24/14 07:50	10.17	0.44	0.16	35.20	43.00	NOT DETECTED						23	12/24/14 03:55	12/24/14 09:05	2.8
	12/25/14 00:40	12/25/14 03:30	2.92	0.13	0.07	25.00	37.60	12/25/14				Wooden Block	Unknown flow or duration.	24	12/25/14 03:25	12/25/14 03:45	0.9
Jan-15	01/03/15 08:00	01/03/15 21:40	13.75	0.39	0.10	26.90	45.40	1/4/15				Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15	25	01/03/15 12:15	01/03/15 22:25	1.5
	01/04/15 16:25	01/04/15 18:35	2.25	0.23	0.16	25.40	46.20	1/5/15				Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15	26	01/04/15 18:25	01/04/15 19:25	1.8
	01/11/15 21:10	01/12/15 10:45	13.67	0.38	0.08	27.60	47.40	1/12/15; 1/13/15	10:05 AM	12:00 PM	1,826	Hydraulic		27	01/12/15 08:05	01/12/15 11:30	1.5
Mar-15	03/04/15 04:05	03/04/15 23:55	19.92	0.33	0.07	31.50	48.00	3/5/15				Wooden Block	Unknown flow or duration.	28	03/04/15 13:15	03/04/15 23:50	0.5
	03/10/15 13:55	03/11/15 00:30	10.67	0.41	0.09	38.80	54.70	NOT DETECTED						29	03/10/15 17:35	03/11/15 00:35	0.7
	03/13/15 20:55	03/14/15 07:20	10.50	0.63	0.11	46.80	56.80	3/14/15				Wooden Block	Unknown flow or duration.	30	03/13/15 23:30	03/14/15 07:20	1.4
	03/26/15 17:35	03/26/15 18:15	0.75	0.33	0.33	25.20	48.50	3/27/15				Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15	31	03/26/15 17:55	03/26/15 18:35	12.9
Apr-15	04/08/15 09:10	04/08/15 10:35	1.50	0.15	0.12	22.20	45.70	4/8/15; 4/9/15	10:33 AM	11:00 AM	456	Hydraulic		32	04/08/15 09:45	04/08/15 10:45	2.1
	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.08	21.50	41.40	4/10/15				Wooden Block	Unknown flow or duration.	33	04/09/15 22:20	04/09/15 22:45	1.5
	04/14/15 04:10	04/14/15 05:20	1.25	0.05	0.05	20.60	26.30	NOT DETECTED						34	04/14/15 05:05	04/14/15 05:15	0.8
	04/20/15 01:15	04/20/15 06:40	5.50	0.89	0.33	40.20	57.60	4/20/15				Wooden Block	Unknown flow or duration.	35	04/20/15 02:05	04/20/15 06:35	5.5
	04/20/15 19:20	04/21/15 01:15	6.00	1.15	0.69	40.20	57.60	4/21/15				Wooden Block	Unknown flow or duration.		04/20/15 22:05	04/21/15 01:15	17.4
May-15	05/06/15 06:35	05/06/15 08:05	1.58	0.05	0.03	20.60	39.90	5/6/15				Wooden Block	Unknown flow or duration.	36	05/06/15 07:55	05/06/15 08:05	0.8
	05/16/15 16:00	05/16/15 17:30	1.58	0.20	0.19	16.70	42.80	5/17/15				Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15	37	05/16/15 16:45	05/16/15 17:25	10.3
	05/17/15 08:30	05/17/15 11:20	2.92	0.13	0.13	19.10	38.90	5/18/15				Wooden Block	Unknown flow or duration. 0.14 Rain on 5/17/15	38	05/17/15 10:35	05/17/15 11:15	1.7
	05/18/15 16:50	05/19/15 03:50	11.08	1.08	0.44	18.30	52.60	5/19/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15	39	05/18/15 17:15	05/19/15 03:50	16.0
	05/27/15 12:10	05/27/15 15:05	3.00	0.47	0.31	17.60	51.10	5/28/15				Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15	40	05/27/15 13:40	05/27/15 15:00	10.6
	05/31/15 17:40	05/31/15 23:20	5.75	0.16	0.14	17.30	42.20	6/1/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15	41	05/31/15 23:00	05/31/15 23:25	4.8
Jun-15	06/01/15 14:10	06/01/15 23:00	8.92	0.39	0.14	22.90	48.50	6/2/15; 6/3/15	11:13 AM	8:00 PM	8,445	Hydraulic	0.66 Rain on 6/1/15	42	06/01/15 16:10	06/02/15 15:00	5.3
	06/08/15 16:55	06/08/15 18:55	2.08	2.12	1.89	34.50	72.70	6/9/15				Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15	43	06/08/15 17:10	06/08/15 19:00	22.8
	06/14/15 05:50	06/14/15 06:35	0.83	0.16	0.16	26.60	59.20	6/14/15; 6/15/15				Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15	44	06/14/15 06:15	06/14/15 18:15	22.4
	06/15/15 21:00	06/15/15 21:55	1.00	0.06	0.06	22.90	32.00	NOT DETECTED						45	06/15/15 21:50	06/15/15 22:00	1.2
	06/17/15 22:35	06/18/15 02:45	4.25	0.17	0.12	26.50	53.80	6/19/15				Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15	46	06/18/15 02:15	06/18/15 02:40	1.3
	06/18/15 17:40	06/19/15 01:20	7.75	0.59	0.43	26.50	53.80	NOT DETECTED							06/18/15 22:30	06/19/15 01:15	18.5
	06/20/15 17:20	06/21/15 02:10	8.92	2.69	1.09	43.10	74.30	6/21/15				Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15	47	06/20/15 18:25	06/21/15 02:30	18.3
	06/23/15 15:10	06/23/15 17:00	1.92	1.06	0.91	40.60	72.30	6/24/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15	48	06/23/15 15:40	06/23/15 17:15	19.7
	06/27/15 04:35	06/27/15 16:20	11.83	1.11	0.35	47.20	70.90	6/28/15				Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15	49	06/27/15 10:25	06/28/15 02:50	6.3
	06/30/15 22:20	07/01/15 00:05	1.83	0.12	0.13	31.80	47.80	7/1/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15	50	06/30/15 23:30	07/01/15 00:00	1.9
Jul-15	07/03/15 23:30	07/04/15 11:20	11.92	0.37	0.23	28.40	50.00	7/5/15				Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15	51	07/04/15 03:50	07/04/15 11:20	4.6
	07/06/15 16:35	07/06/15 17:00	0.50	0.03	0.03	25.20	50.20	NOT DETECTED						52	07/06/15 17:00	07/06/15 17:05	0.2
	07/09/15 17:20	07/09/15 17:55	0.67	0.26	0.26	24.50	47.90	7/10/15				Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15	53	07/09/15 17:40	07/09/15 18:00	10.0
	07/14/15 01:15	07/14/15 06:40	5.50	1.10	0.56	29.40	54.10	NOT DETECTED						54	07/14/15 03:00	07/14/15 07:00	12.5
	07/21/15 18:15	07/21/15 18:45	0.58	0.08	0.08	20.00	28.60	NOT DETECTED						55	07/23/15 14:20	07/23/15 14:20	1.1
	07/26/15 19:55	07/27/15 00:25	4.58	0.91	0.81	22.90	54.60	NOT DETECTED						56	07/26/15 23:05	07/27/15 00:35	18.9
	07/26/15 19:55	07/27/15 00:25	4.58	0.91	0.81	22.90	54.60	NOT DETECTED						57	07/27/15 13:10	07/27/15 13:25	1.1

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Aug-15	08/10/15 11:50	08/10/15 12:35	0.83	0.10	0.10	20.20	41.60	NOT DETECTED						58	08/10/15 12:25	08/10/15 12:30	0.8
	08/11/15 01:15	08/11/15 12:50	11.67	0.57	0.26	20.50	44.60	8/11/15; 8/12/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15	59	08/11/15 01:35	08/11/15 13:00	12.7
	08/20/15 06:00	08/20/15 19:35	13.67	1.50	0.57	33.60	63.70	8/20/15; 8/21/15				Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15	60	08/20/15 06:20	08/20/15 19:30	17.2
	08/20/15 06:00	08/20/15 19:35	13.67	1.50	0.57	33.60	63.70	8/21/15				Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15	NO OVERFLOW RECORDED			
	08/20/15 06:00	08/20/15 19:35	13.67	1.50	0.57	33.60	63.70	8/22/15						NO OVERFLOW RECORDED			
	08/24/15 14:35	08/24/15 16:30	2.00	0.42	0.37	20.20	47.40	NOT DETECTED						61	08/24/15 16:15	08/24/15 16:45	19.3
	08/30/15 15:15	08/30/15 15:35	0.42	0.11	0.11	17.10	41.80	8/31/15				Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15	62	08/30/15 15:30	08/30/15 15:45	2.0
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.03	0.03	26.80	62.40	9/11/15				Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.61	0.02	24.70	53.70	9/13/15				Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	2.03	0.06	32.90	64.00	9/30/15				Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:45	30.33	1.08	0.03	28.10	52.70	10/3/15				Wooden Block	Unknown flow or duration.				
	10/03/15 18:35	10/03/15 23:25	4.92	0.07	0.00	30.50	50.90	10/4/15				Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15				Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:20	24.67	1.99	0.03	44.90	64.90	10/28/15	1:30 PM	11:00 PM	8,113	Hydraulic					
	10/29/15 09:05	10/29/15 09:20	0.33	0.04	0.00	24.80	39.40	10/29/15				Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:15	11/11/15 00:35	20.42	0.44	0.01	22.30	37.90	11/11/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15	9:58 AM	2:05 PM	3,416	Hydraulic					
	11/19/15 03:55	11/19/15 21:40	17.83	0.36	0.01	21.00	43.30	11/19/15				Wooden Block	Unknown flow or duration.				
	11/19/15 03:55	11/19/15 21:40	17.83	0.36	0.01	21.00	43.30	11/20/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:35 AM	2:00 PM	2,989	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15				Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15				Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15				Box Blocked	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15				Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15				Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15				Wooden Block	Unknown flow or duration.				
CSO-015		Influent Pipe: 36 x 36.25 in			Weir Length 57 in			Tributary Area: 18.85 acres									
		Overflow Pipe: 36 in															
Jan-15	01/03/15 09:00	01/04/15 06:40	21.75	0.46	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:30	01/04/15 19:30	2.08	0.23	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
	01/11/15 22:10	01/12/15 11:45	13.67	0.38	0.01	27.60	47.40	1/12/15	10:04 AM	12:00 PM	2,888	Hydraulic					
Mar-15	03/26/15 17:40	03/27/15 06:40	13.08	0.36	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/08/15 09:10	04/08/15 10:35	1.50	0.16	0.01	22.20	45.70	4/8/15	10:30 AM	11:00 AM	722	Hydraulic					
	04/08/15 09:10	04/08/15 10:35	1.50	0.16	0.01	22.20	45.70	4/9/15			0	Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15				
	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/10/15 13:50	04/10/15 15:15	1.50	0.04	0.00	21.70	32.60	4/11/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 4/10/15				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.17	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
	04/22/15 01:15	04/22/15 20:05	18.92	0.07	0.00	34.90	47.40	4/23/15			0	Wooden Block	Unknown flow or duration. 0.06 Rain on 4/22/15				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.14	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.11	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:10	05/27/15 15:15	3.17	0.46	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:10	9.58	0.17	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
	06/02/15 08:00	06/02/15 19:05	11.17	0.92	0.03	34.90	59.40	6/2/15	11:16 AM	8:00 PM	13,357	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:05	11.17	0.92	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/04/15 10:20	06/04/15 17:20	7.08	0.04	0.00	20.10	34.50	6/5/15			0	Wooden Block	Unknown flow or duration. 0.01 Rain on 6/3/15				
	06/09/15 01:25	06/09/15 07:20	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 05:55	06/14/15 06:35	0.75	0.16	0.01	26.60	59.20	6/14/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.82	0.06	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Jun-15	06/15/15 21:00	06/15/15 21:55	1.00	0.06	0.00	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.63	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.67	0.09	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:00	1.92	1.08	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 22:20	07/01/15 03:30	5.25	0.15	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/03/15 23:30	07/04/15 11:20	11.92	0.36	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 05:45	07/06/15 06:40	1.00	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.31	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.57	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.57	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:35	13.67	1.54	0.05	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:35	13.67	1.54	0.05	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.41	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:35	0.42	0.11	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.04	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.61	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	2.02	0.06	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:45	30.33	1.08	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:15	24.58	2.00	0.03	44.90	64.90	10/28/15	1:31 PM	11:00 PM	10,051	Hydraulic					
	10/29/15 09:05	10/29/15 09:20	0.33	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:15	11/11/15 00:30	20.33	0.44	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15	10:00 AM	2:05 PM	1,468	Hydraulic					
	11/19/15 04:55	11/19/15 17:35	12.75	0.36	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:37 AM	2:00 PM	1,285	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15			0	Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15			0	Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-016		Influent Pipe: 24 in			Weir Length 19 in			Tributary Area: 6.3 acres									
		Overflow Pipe: 24 in															
Mar-15	03/04/15 05:05	03/05/15 18:00	37.00	0.64	0.01	31.50	48.00	3/4/15			0	Wooden Block	Unknown flow or duration.				
	03/07/15 16:30	03/07/15 16:40	0.25	0.00	0.00	21.30	28.40	3/9/15			0	Snow Melt	Unknown flow or duration.				
	03/26/15 17:40	03/27/15 06:15	12.67	0.38	0.03	25.20	48.50	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/08/15 09:10	04/08/15 10:35	1.50	0.15	0.01	22.20	45.70	4/8/15	9:54 AM	11:00 AM	765	Hydraulic					
	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.21	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/18/15 16:50	05/19/15 03:45	11.00	1.05	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:10	05/27/15 15:15	3.17	0.49	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
Jun-15	06/02/15 08:05	06/02/15 19:05	11.08	0.91	0.03	34.90	59.40	6/2/15			0	Wooden Block	Unknown flow or duration. 0.66 Rain on 6/1/15				
	06/09/15 01:25	06/09/15 07:20	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.79	0.06	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.60	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 04:55	11.67	2.76	0.09	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
	06/23/15 15:10	06/23/15 17:00	1.92	1.05	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
Jul-15	07/09/15 17:20	07/09/15 21:20	4.08	0.31	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.57	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.57	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:15	13.33	1.45	0.05	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.41	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.02	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/29/15 12:10	09/30/15 01:15	13.17	2.05	0.06	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 10:00	10/03/15 10:45	24.83	1.08	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:15	24.58	1.98	0.03	44.90	64.90	10/28/15	1:45 PM	11:00 PM	3,265	Hydraulic					
	10/29/15 09:05	10/29/15 09:20	0.33	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:15	11/11/15 00:30	20.33	0.44	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-017		Influent Pipe:	27 in		Weir Length	68 in		Tributary Area:	9.31 acres								
		Overflow Pipe:	30 in														
Mar-15	03/26/15 17:40	03/27/15 06:40	13.08	0.33	0.02	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.10	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/06/15 06:35	05/06/15 11:25	4.92	0.08	0.00	20.60	39.90	5/6/15			0	Wooden Block	Unknown flow or duration.				
	05/17/15 08:30	05/17/15 11:50	3.42	0.14	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.24	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/21/15 05:50	05/21/15 08:50	3.08	0.02	0.00	18.90	31.90	5/27/15			0	Wooden Block	Unknown flow or duration.				
	05/27/15 12:15	05/27/15 15:10	3.00	0.43	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.17	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.93	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:25	6.08	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 05:55	06/14/15 06:35	0.75	0.16	0.01	26.60	59.20	6/14/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.89	0.06	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 21:00	06/15/15 21:55	1.00	0.06	0.00	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.68	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.48	0.08	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.15	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 23:15	07/01/15 03:35	4.42	0.16	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/06/15 16:35	07/06/15 19:40	3.17	0.06	0.00	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/08/15 22:25	07/08/15 22:50	0.50	0.02	0.00	23.10	29.50	7/9/15			0	Wooden Block	Unknown flow or duration. 0.04 Rain on 7/8/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.30	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.59	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.59	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.74	0.06	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.74	0.06	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.42	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:10	08/30/15 15:35	0.50	0.08	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.06	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:25	09/12/15 18:55	8.58	0.65	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
	09/29/15 09:45	09/30/15 01:15	15.58	1.99	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:45	30.33	1.07	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:15	24.58	2.01	0.03	44.90	64.90	10/28/15	1:57 PM	11:00 PM	11,358	Hydraulic					
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:10	11/11/15 00:30	20.42	0.43	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.16	0.01	18.10	40.90	11/12/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 05:00	11/19/15 17:35	12.67	0.35	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:45 AM	2:00 PM	1,424	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-018		Influent Pipe: 23 in			Weir Length 37.5 in				Tributary Area: 19.15 acres								
		Overflow Pipe: 24 in															
Jan-15	01/03/15 09:00	01/04/15 06:40	21.75	0.48	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:35	01/04/15 19:30	2.00	0.20	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
	01/11/15 22:10	01/12/15 19:30	21.42	0.41	0.01	27.60	47.40	1/12/15	10:22 AM	12:00 PM	1,339	Hydraulic					
Feb-15	02/21/15 09:40	02/21/15 23:50	14.25	0.25	0.00	18.10	29.20	2/23/15			0	Snow Melt	snowmelt and 0.25 rain on 2/21/15				
Mar-15	03/13/15 20:55	03/14/15 14:35	17.75	0.72	0.01	46.80	56.80	3/14/15			0	Wooden Block	Unknown flow or duration.				
	03/26/15 17:40	03/27/15 06:40	13.08	0.32	0.02	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/03/15 09:15	04/04/15 02:10	17.00	0.21	0.01	22.30	43.30	4/4/15			0	Wooden Block	Unknown flow or duration. 0.39 rain on 4/3/15				
	04/08/15 09:15	04/08/15 10:35	1.42	0.19	0.01	22.20	45.70	4/9/15			0	Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15				
	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.08	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
	04/22/15 01:20	04/22/15 20:10	18.92	0.07	0.00	34.90	47.40	4/23/15			0	Wooden Block	Unknown flow or duration. 0.06 Rain on 4/22/15				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.14	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.27	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/21/15 05:50	05/21/15 08:50	3.08	0.02	0.00	18.90	31.90	5/27/15	1:53 PM	3:00 PM	765	Hydraulic					
	05/27/15 12:15	05/27/15 15:10	3.00	0.42	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.18	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.93	0.03	34.90	59.40	6/2/15	11:40 AM	8:00 PM	6,311	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.93	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:25	6.08	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 05:55	06/14/15 06:35	0.75	0.16	0.01	26.60	59.20	6/14/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.90	0.07	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 21:00	06/15/15 21:55	1.00	0.06	0.00	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.70	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.43	0.08	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.18	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 23:15	07/01/15 03:35	4.42	0.16	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/09/15 17:20	07/09/15 21:20	4.08	0.30	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.59	0.03	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.59	0.03	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Aug-15	08/20/15 06:00	08/20/15 19:40	13.75	1.79	0.06	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.79	0.06	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.42	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:10	08/30/15 15:35	0.50	0.08	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.07	0.02	26.80	62.40	9/10/15	10:00 AM	3:00 PM	3,480	Hydraulic	Unknown flow or duration.				
	09/10/15 08:50	09/10/15 18:05	9.33	1.07	0.02	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:25	09/12/15 18:55	8.58	0.65	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 09:45	09/30/15 01:15	15.58	1.99	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:45	30.33	1.07	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/03/15 18:35	10/03/15 23:25	4.92	0.07	0.00	30.50	50.90	10/4/15			0	Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:15	24.58	2.01	0.03	44.90	64.90	10/28/15	2:05 PM	11:00 PM	6,264	Hydraulic					
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:10	11/11/15 00:30	20.42	0.43	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.16	0.01	18.10	40.90	11/12/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 05:00	11/19/15 17:35	12.67	0.35	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:50 AM	2:00 PM	787	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15			0	Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15			0	Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-019		Influent Pipe: 18 in			Weir Length 18 in			Tributary Area: 23.26 acres									
		Overflow Pipe: 18 in															
Mar-15	03/13/15 20:55	03/14/15 14:35	17.75	0.72	0.01	46.80	56.80	3/14/15	9:51 AM	10:30 AM	136	Hydraulic					
	03/26/15 17:40	03/27/15 06:40	13.08	0.32	0.02	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/09/15 21:25	04/09/15 22:30	1.17	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.07	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.14	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.29	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/21/15 05:50	05/21/15 08:50	3.08	0.02	0.00	18.90	31.90	5/27/15	1:59 PM	3:00 PM	765	Hydraulic					
	05/27/15 12:30	05/27/15 15:10	2.75	0.42	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.18	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.93	0.03	34.90	59.40	6/2/15	11:44 AM	8:00 PM	6,311	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.93	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 07:20	06/09/15 07:25	0.17	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 05:55	06/14/15 06:35	0.75	0.17	0.01	26.60	59.20	6/14/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.91	0.07	22.90	32.00	6/15/15			0	Gate Closed	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.71	0.04	26.50	53.80	6/19/15	10:20 AM	10:45 AM	136	Hydraulic	0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.40	0.08	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.19	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
Jul-15	07/09/15 17:20	07/09/15 21:20	4.08	0.30	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.59	0.03	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.59	0.03	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.83	0.07	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.83	0.07	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
	08/24/15 14:50	08/24/15 16:30	1.75	0.42	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.07	0.02	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:25	09/12/15 17:20	7.00	0.66	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 09:45	09/30/15 01:15	15.58	1.99	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:45	30.33	1.07	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:15	24.58	2.00	0.03	44.90	64.90	10/28/15	2:07 PM	11:00 PM	3,006	Hydraulic					
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Dec-15	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-020		Influent Pipe:	24 in		Weir Length		20 in		Tributary Area:	1.89 acres							
		Overflow Pipe:	24 in														
Apr-15	04/09/15 21:25	04/09/15 22:35	1.25	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.94	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.02	0.05	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/17/15 08:30	05/17/15 11:55	3.50	0.14	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.17	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.92	0.03	34.90	59.40	6/2/15	11:47 AM	8:00 PM	1,583	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.92	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.92	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 07:20	06/09/15 07:25	0.17	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/15/15 20:55	06/15/15 21:55	1.08	0.07	0.01	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.78	0.05	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.22	0.07	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.27	0.09	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:30	1.50	0.15	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
Jul-15	07/06/15 05:45	07/06/15 06:05	0.42	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 16:00	07/06/15 19:00	3.08	0.12	0.01	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.29	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/20/15 06:00	08/20/15 19:45	13.83	1.85	0.06	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
Sep-15	09/10/15 09:05	09/10/15 18:10	9.17	1.11	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/29/15 09:45	09/30/15 01:15	15.58	1.91	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/27/15 23:45	10/29/15 00:15	24.58	2.00	0.03	44.90	64.90	10/28/15			0	Wooden Block	Unknown flow or duration.				
	10/29/15 09:10	10/29/15 09:25	0.33	0.02	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-021		Influent Pipe:	51 in		Weir Length		40 in		Tributary Area:	73.89 acres							
		Overflow Pipe:	51 in														
Aug-14	08/03/14 15:40	08/03/14 20:55	5.33	0.16	0.08	22.70	38.40	NOT DETECTED						1	08/03/14 20:30	08/03/14 20:50	4.3
	08/11/14 21:35	08/13/14 05:35	32.08	2.22	0.38	50.60	71.50	8/12/14	9:30 AM	10:00 PM	12,750	Hydraulic		2	08/12/14 01:20	08/13/14 14:40	37.1
	08/17/14 07:25	08/17/14 10:05	2.75	0.10	0.08	23.10	41.10	NOT DETECTED						3	08/17/14 09:55	08/17/14 10:00	1.8
	08/20/14 09:25	08/20/14 16:00	6.67	0.12	0.08	20.60	34.00	NOT DETECTED						4	08/20/14 09:55	08/20/14 16:00	5.2
Sep-14	09/13/14 06:25	09/13/14 12:15	5.92	0.17	0.09	18.20	43.50	NOT DETECTED						5	09/13/14 12:00	09/13/14 12:15	3.1
	09/16/14 04:35	09/16/14 06:00	1.50	0.01	0.03	15.60	22.10	NOT DETECTED						6	09/18/14 11:10	09/18/14 11:10	5.6
	09/21/14 16:50	09/21/14 17:30	0.75	0.09	0.09	16.60	37.90	NOT DETECTED						7	09/21/14 17:35	09/21/14 17:45	2.4
	09/21/14 16:50	09/21/14 17:30	0.75	0.09	0.09	16.60	37.90	NOT DETECTED						8	09/23/14 11:30	09/23/14 13:05	7.9
	09/25/14 00:40	09/25/14 09:05	8.50	0.24	0.09	19.90	41.60	NOT DETECTED						9	09/25/14 09:05	09/25/14 09:35	3.5
	09/30/14 21:20	10/01/14 00:35	3.33	1.01	0.72	22.70	49.80	10/1/14				Wooden Block	Unknown flow or duration.	10	09/30/14 22:00	10/01/14 00:50	24.7
Oct-14	10/03/14 19:30	10/03/14 23:45	4.33	0.15	0.07	19.20	39.70	NOT DETECTED						11	10/03/14 22:00	10/03/14 23:55	3.2
	10/07/14 01:05	10/07/14 01:20	0.33	0.02	0.02	17.70	40.10	10/8/14				Wooden Block	Unknown flow or duration. 0.15 Rain on 10/7/14	12	10/07/14 11:15	10/07/14 23:00	8.2

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA				
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Oct-14	10/15/14 00:05	10/15/14 16:55	16.92	1.17	0.36	32.20	52.00	10/16/14				Wooden Block	Unknown flow or duration. 1.15 Rain on 10/15/14	13	10/15/14 02:50	10/15/14 16:50	26.3
	10/16/14 15:45	10/16/14 17:35	1.92	0.14	0.11	22.20	44.30	NOT DETECTED						14	10/16/14 16:50	10/16/14 17:30	5.6
Nov-14	11/05/14 22:05	11/06/14 05:55	7.92	0.64	0.13	23.40	50.40	NOT DETECTED						15	11/06/14 03:20	11/06/14 07:15	12.8
	11/16/14 20:00	11/17/14 12:05	16.17	0.50	0.09	23.70	44.90	NOT DETECTED						16	11/17/14 10:50	11/17/14 12:00	4.6
	11/23/14 21:30	11/24/14 04:20	6.92	0.62	0.25	20.10	34.40	NOT DETECTED						17	11/24/14 00:05	11/24/14 04:35	13.5
	11/26/14 04:30	11/26/14 11:45	7.33	0.63	0.16	31.50	43.30	NOT DETECTED						18	11/26/14 08:40	11/26/14 11:40	7.6
Dec-14	12/01/14 12:10	12/01/14 16:40	4.58	0.13	0.11	19.50	42.70	NOT DETECTED						19	12/01/14 16:10	12/01/14 16:35	3.1
	12/02/14 10:45	12/02/14 19:10	8.50	0.22	0.17	22.30	44.60	12/3/14				Wooden Block	Unknown flow or duration. 0.22 rain on 12/2/14	20	12/02/14 18:25	12/02/14 19:20	6.7
	12/05/14 12:15	12/05/14 21:25	9.25	0.27	0.08	26.90	40.40	NOT DETECTED						21	12/05/14 17:20	12/05/14 21:20	2.7
	12/06/14 09:25	12/06/14 15:40	6.33	0.41	0.13	31.50	49.30	12/7/14				Wooden Block	Unknown flow or duration. 0.57 rain on 12/6/14	22	12/06/14 11:20	12/06/14 16:00	12.6
	12/09/14 00:15	12/09/14 04:00	3.83	0.24	0.11	27.80	42.40	NOT DETECTED						23	12/09/14 03:15	12/09/14 03:55	3.6
	12/22/14 16:40	12/22/14 20:30	3.92	0.13	0.07	20.60	40.40	NOT DETECTED						24	12/22/14 20:40	12/22/14 20:50	1.1
	12/22/14 16:40	12/22/14 20:30	3.92	0.13	0.07	20.60	40.40	NOT DETECTED						25	12/23/14 09:35	12/23/14 09:40	0.7
	12/23/14 21:45	12/24/14 06:00	8.33	0.35	0.14	35.20	43.00	12/25/14				Wooden Block	Unknown flow or duration.	26	12/24/14 04:05	12/24/14 05:55	8.7
Jan-00						#DIV/0!	#DIV/0!	1/5/15				Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
Mar-15	03/04/15 04:05	03/04/15 21:40	17.67	0.21	0.05	31.50	48.00	NOT DETECTED						27	03/04/15 20:45	03/04/15 21:35	1.3
	03/10/15 13:55	03/10/15 21:00	7.17	0.34	0.09	38.80	54.70	NOT DETECTED						28	03/10/15 17:45	03/10/15 21:00	7.4
	03/11/15 05:15	03/11/15 05:15	0.08	0.00	0.07	40.90	46.60	NOT DETECTED						29	03/11/15 20:20	03/12/15 00:30	9.7
	03/13/15 21:00	03/14/15 14:40	17.75	0.67	0.11	46.80	56.80	3/15/15				Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15	30	03/14/15 01:40	03/14/15 23:30	15.1
	03/26/15 17:30	03/26/15 21:05	3.67	0.37	0.36	25.20	48.50	3/27/15				Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15	31	03/26/15 18:00	03/26/15 23:25	16.3
Apr-15	04/08/15 09:15	04/08/15 10:25	1.25	0.04	0.04	22.20	45.70	NOT DETECTED						32	04/08/15 09:50	04/08/15 10:45	4.0
	04/09/15 21:20	04/09/15 22:30	1.25	0.07	0.07	21.50	41.40	NOT DETECTED						33	04/09/15 22:20	04/09/15 22:50	3.9
	04/20/15 01:15	04/20/15 07:10	6.00	0.94	0.36	40.20	57.60	4/20/15				Wooden Block	Unknown flow or duration.	34	04/20/15 02:55	04/20/15 07:05	24.4
	04/20/15 19:25	04/21/15 05:15	9.92	1.40	0.81	41.20	53.60	NOT DETECTED							04/20/15 20:30	04/21/15 23:15	43.7
	04/22/15 11:20	04/22/15 13:10	1.92	0.06	0.06	34.90	47.40	4/22/15				Wooden Block	Unknown flow or duration. 0.21 Rain on 4/21/15	35	04/22/15 13:20	04/22/15 13:20	0.4
May-15	05/06/15 06:35	05/06/15 09:50	3.33	0.12	0.09	20.60	39.90	NOT DETECTED						36	05/06/15 09:55	05/06/15 10:15	7.1
	05/16/15 16:05	05/16/15 17:10	1.17	0.20	0.20	16.70	42.80	5/17/15				Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15	37	05/16/15 16:50	05/16/15 17:35	17.6
	05/17/15 08:40	05/17/15 11:15	2.67	0.10	0.09	19.10	38.90							38	05/17/15 10:50	05/17/15 11:20	3.7
	05/18/15 16:50	05/19/15 03:20	10.58	0.66	0.51	18.30	52.60	5/19/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15	39	05/18/15 21:15	05/19/15 03:45	25.7
	05/27/15 11:55	05/27/15 15:15	3.42	1.14	0.82	17.60	51.10	NOT DETECTED						40	05/27/15 12:35	05/27/15 15:40	30.1
	05/31/15 17:40	05/31/15 23:20	5.75	0.15	0.15	17.30	42.20	6/1/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15	41	05/31/15 23:05	05/31/15 23:35	10.8
Jun-15	06/01/15 13:55	06/02/15 14:45	24.92	1.28	0.35	34.90	59.40	6/2/15; 6/3/15	10:00 AM	8:00 PM	10,200	Hydraulic	0.66 Rain on 6/1/15	42	06/02/15 09:50	06/02/15 14:40	9.2
	06/08/15 16:55	06/08/15 18:50	2.00	2.15	1.83	34.50	72.70	6/9/15				Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15	43	06/08/15 17:15	06/09/15 00:30	60.2
	06/14/15 17:20	06/14/15 18:45	1.50	0.60	0.52	26.60	59.20	6/15/15				Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15	44	06/14/15 18:50	06/14/15 18:55	1.5
	06/18/15 17:45	06/19/15 01:45	8.08	0.46	0.31	26.50	53.80	6/19/15				Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15	45	06/18/15 22:35	06/19/15 01:40	11.3
	06/20/15 17:25	06/21/15 04:55	11.58	3.09	1.22	43.10	74.30	6/22/15				Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15	46	06/20/15 18:50	06/21/15 18:25	48.5
	06/23/15 15:20	06/23/15 17:00	1.75	0.91	0.83	40.60	72.30	6/24/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15	47	06/23/15 16:15	06/23/15 19:55	19.1
	06/27/15 04:40	06/27/15 16:20	11.75	1.02	0.24	47.20	70.90	6/28/15				Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15	48	06/27/15 13:00	06/28/15 02:55	14.9
	06/30/15 22:20	07/01/15 03:30	5.25	0.11	0.07	29.20	48.30	7/1/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15	NO OVERFLOW RECORDED			
Jul-15	07/09/15 17:15	07/09/15 17:55	0.75	0.31	0.31	24.50	47.90	7/10/15				Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15	49	07/09/15 17:45	07/09/15 18:30	6.7
	07/14/15 01:15	07/14/15 06:10	5.00	0.59	0.47	29.40	54.10	NOT DETECTED						50	07/14/15 03:10	07/14/15 06:05	7.6
	07/26/15 19:55	07/27/15 00:25	4.58	0.96	0.84	22.90	54.60	NOT DETECTED						51	07/26/15 23:35	07/27/15 01:05	23.3
Aug-15	08/11/15 01:05	08/11/15 12:45	11.75	0.56	0.26	20.50	44.60	8/11/15; 8/12/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15	52	08/11/15 01:45	08/11/15 13:05	5.5
	08/20/15 06:00	08/20/15 19:15	13.33	1.31	0.44	33.60	63.70	8/21/15				Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15	53	08/20/15 13:45	08/20/15 20:10	16.3
	08/24/15 14:30	08/24/15 16:30	2.08	0.44	0.42	20.20	47.40	8/25/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15	54	08/24/15 16:25	08/24/15 17:20	14.6
Sep-15	09/10/15 09:00	09/10/15 18:00	9.08	0.87	0.03	26.80	62.40	9/11/15				Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:35	09/12/15 18:55	8.42	0.59	0.02	24.70	53.70	9/13/15				Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 10:35	10/03/15 10:50	24.33	1.09	0.03	28.10	52.70	10/3/15				Wooden Block	Unknown flow or duration.				
	10/03/15 18:50	10/03/15 23:25	4.67	0.07	0.00	30.50	50.90	10/4/15				Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:05	10/09/15 17:15	2.25	0.31	0.02	19.90	42.80	10/10/15				Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:50	10/29/15 00:20	24.58	2.01	0.04	44.90	64.90	10/28/15	11:11 AM	11:00 PM	8,719	Hydraulic					

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
	10/29/15 09:05	10/29/15 09:30	0.50	0.03	0.00	24.80	39.40	10/29/15				Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:15	11/11/15 00:35	20.42	0.47	0.01	22.30	37.90	11/11/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/19/15 03:50	11/19/15 21:40	17.92	0.39	0.01	21.00	43.30	11/20/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15				Wooden Block	Unknown flow or duration.				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15				Wooden Block	Unknown flow or duration.				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15				Wooden Block	Unknown flow or duration.				
CSO-022		Influent Pipe: 36 in			Weir Length 36 in				Tributary Area: 8.08 acres								
		Overflow Pipe: 36 in															
Mar-15	03/13/15 21:00	03/14/15 14:40	17.75	0.67	0.01	46.80	56.80	3/15/15			0	Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15				
Apr-15	04/08/15 09:15	04/08/15 10:25	1.25	0.05	0.00	22.20	45.70	4/9/15			0	Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15				
	04/22/15 01:15	04/22/15 13:10	12.00	0.07	0.01	34.90	47.40	4/22/15			0	Wooden Block	Unknown flow or duration. 0.21 Rain on 4/21/15				
May-15	05/17/15 08:40	05/17/15 11:15	2.67	0.10	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/31/15 17:40	05/31/15 23:20	5.75	0.15	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/01/15 13:55	06/02/15 19:10	29.33	1.32	0.03	34.90	59.40	6/2/15	10:00 AM	8:00 PM	7,650	Hydraulic	0.66 Rain on 6/1/15				
	06/01/15 13:55	06/02/15 19:10	29.33	1.32	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:30	06/09/15 07:25	6.00	0.01	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.68	0.04	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/18/15 17:45	06/19/15 02:25	8.75	0.47	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/23/15 15:20	06/23/15 17:00	1.75	0.89	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
Jul-15	07/09/15 17:15	07/09/15 21:20	4.17	0.36	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:05	08/11/15 12:45	11.75	0.58	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:05	08/11/15 12:45	11.75	0.58	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:15	13.33	1.27	0.03	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:30	08/24/15 16:30	2.08	0.45	0.04	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Oct-15	10/09/15 15:05	10/09/15 17:15	2.25	0.30	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:05	10/29/15 09:30	0.50	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/19/15 03:50	11/19/15 21:40	17.92	0.38	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
CSO-023		Influent Pipe: 12 in			Weir Length 27 in				Tributary Area: 9.4 acres								
		Overflow Pipe: 12 in															
Mar-15	03/26/15 17:40	03/27/15 06:40	13.08	0.38	0.03	22.80	29.00	3/27/15			0	Gate Blocked	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/20/15 19:25	04/21/15 05:20	10.00	1.23	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/18/15 16:50	05/19/15 03:40	10.92	0.91	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:10	05/27/15 15:15	3.17	0.49	0.02	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:10	9.58	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/09/15 01:25	06/09/15 07:20	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.79	0.05	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 21:35	06/15/15 21:55	0.42	0.02	0.00	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/17/15 22:50	06/18/15 08:50	10.08	0.21	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:25	8.75	0.52	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:25	06/21/15 04:55	11.58	2.70	0.09	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:00	1.92	0.91	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/29/15			0	Wooden Block	Unknown flow or duration. 0.36 Rain on 6/28/15				
	06/30/15 22:20	07/01/15 03:35	5.33	0.13	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/06/15 16:40	07/06/15 19:00	2.42	0.05	0.00	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.33	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
	08/11/15 01:20	08/11/15 12:50	11.58	0.60	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Aug-15	08/20/15 06:00	08/20/15 19:15	13.33	1.28	0.03	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.41	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:35	0.42	0.08	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/29/15 11:55	09/30/15 01:15	13.42	1.97	0.06	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/09/15 15:00	10/09/15 16:55	2.00	0.28	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:05	10/29/15 09:20	0.33	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Dec-15	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
CSO-024		Influent Pipe: 36 in			Weir Length 36 in			Tributary Area: 75.29 acres									
		Overflow Pipe: 36 in															
Jan-15	01/03/15 08:55	01/04/15 06:45	21.92	0.43	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:25	01/04/15 19:35	2.25	0.26	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
Mar-15	03/26/15 17:35	03/27/15 06:40	13.17	0.39	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/08/15 09:10	04/08/15 10:30	1.42	0.07	0.01	22.20	45.70	4/9/15			0	Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15				
	04/09/15 21:20	04/09/15 22:30	1.25	0.08	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:25	04/21/15 05:20	10.00	1.29	0.06	41.20	53.60	4/21/15	9:55 AM	11:00 AM	280	Hydraulic					
May-15	05/17/15 08:40	05/17/15 11:50	3.25	0.11	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/27/15 12:05	05/27/15 15:15	3.25	0.72	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:10	9.58	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/01/15 14:00	06/02/15 19:10	29.25	1.32	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:25	6.08	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 01:25	06/14/15 06:30	5.17	0.11	0.01	26.60	59.20	6/14/15	6:40 AM	7:40 AM	280	Hydraulic	0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.73	0.05	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/18/15 17:40	06/19/15 02:25	8.83	0.50	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/23/15 15:10	06/23/15 17:00	1.92	0.91	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/29/15			0	Wooden Block	Unknown flow or duration. 0.36 Rain on 6/28/15				
Jul-15	07/03/15 23:30	07/04/15 11:15	11.83	0.33	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/08/15 22:20	07/08/15 22:45	0.50	0.05	0.00	23.10	29.50	7/9/15			0	Wooden Block	Unknown flow or duration. 0.04 Rain on 7/8/15				
	07/09/15 17:15	07/09/15 21:20	4.17	0.34	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/20/15 06:00	08/20/15 19:15	13.33	1.28	0.03	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.43	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Sep-15	09/29/15 11:55	09/30/15 01:15	13.42	2.02	0.06	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/09/15 15:00	10/09/15 17:00	2.08	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:05	10/29/15 09:30	0.50	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:15	11/11/15 00:35	20.42	0.45	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.14	0.01	18.10	40.90	11/12/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 03:55	11/19/15 21:40	17.83	0.37	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15			0	Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
CSO-025		Influent Pipe: 34 x 29.5 in			Weir Length 30.5 in			Tributary Area: 12.26 acres									
		Overflow Pipe: 34 x 31 in															
Mar-15	03/13/15 21:00	03/14/15 14:35	17.67	0.69	0.01	46.80	56.80	3/15/15			0	Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15				
	03/26/15 17:40	03/27/15 06:40	13.08	0.37	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.22	0.06	41.20	53.60	4/21/15	9:49 AM	11:00 AM	291	Hydraulic					
	04/22/15 01:15	04/22/15 20:05	18.92	0.07	0.00	34.90	47.40	4/22/15			0	Wooden Block	Unknown flow or duration. 0.21 Rain on 4/21/15				
	04/22/15 01:15	04/22/15 20:05	18.92	0.07	0.00	34.90	47.40	4/23/15			0	Wooden Block	Unknown flow or duration. 0.06 Rain on 4/22/15				
May-15	05/17/15 08:45	05/17/15 11:25	2.75	0.11	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 00:25	05/18/15 00:40	0.33	0.00	0.00	18.30	52.60	5/18/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 5/17/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
May-15	05/18/15 16:50	05/19/15 03:45	11.00	0.94	0.03	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:10	05/27/15 15:15	3.17	0.48	0.02	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
Jun-15	06/01/15 14:15	06/02/15 19:10	29.00	1.32	0.03	34.90	59.40	6/2/15	9:50 AM	8:00 PM	7,860	Hydraulic	0.66 Rain on 6/1/15				
	06/01/15 14:15	06/02/15 19:10	29.00	1.32	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:20	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.80	0.05	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/18/15 17:45	06/19/15 02:25	8.75	0.53	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/21/15 19:10	06/21/15 19:30	0.42	0.02	0.00	48.40	59.70	6/22/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15				
	06/23/15 15:10	06/23/15 17:00	1.92	0.92	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/30/15 22:20	07/01/15 03:35	5.33	0.14	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/06/15 16:00	07/06/15 19:00	3.08	0.05	0.00	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.32	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:20	08/11/15 12:50	11.58	0.61	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:20	08/11/15 12:50	11.58	0.61	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:20	13.42	1.30	0.03	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:20	13.42	1.30	0.03	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.40	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:35	0.42	0.08	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:55	09/10/15 18:05	9.25	1.00	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.65	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	1.97	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/29/15 09:05	10/29/15 09:20	0.33	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/19/15 05:05	11/19/15 21:40	16.67	0.37	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
CSO-026		Influent Pipe:	30.75 x 30 in		Weir Length	28 in			Tributary Area:	38.76 acres							
		Overflow Pipe:	30 in														
Jan-15	01/11/15 23:40	01/12/15 11:50	12.25	0.36	0.01	27.60	47.40	1/12/15	8:58 AM	12:00 PM	693	Hydraulic					
Mar-15	03/26/15 17:40	03/27/15 06:40	13.08	0.36	0.03	22.80	29.00	3/27/15	8:45 AM	9:00 AM	57	Gate Blocked	unblocked gate. 0.44 rain on 3/26/15				
Apr-15	04/20/15 19:20	04/21/15 05:20	10.08	1.20	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/18/15 16:50	05/19/15 03:45	11.00	1.03	0.03	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:10	05/27/15 15:15	3.17	0.42	0.02	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
Jun-15	06/02/15 08:05	06/02/15 19:10	11.17	1.01	0.03	34.90	59.40	6/2/15	9:50 AM	8:00 PM	6,480	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:05	06/02/15 19:10	11.17	1.01	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:20	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.86	0.06	22.90	32.00	6/15/15			0	Gate Blocked	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/18/15 17:45	06/19/15 02:25	8.75	0.54	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/21/15 19:10	06/21/15 19:30	0.42	0.02	0.00	48.40	59.70	6/22/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15				
	06/23/15 15:10	06/23/15 17:00	1.92	0.94	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
Jul-15	07/09/15 17:20	07/09/15 21:20	4.08	0.32	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:20	08/11/15 12:50	11.58	0.61	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:20	08/11/15 12:50	11.58	0.61	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:20	13.42	1.36	0.04	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.37	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Sep-15	09/29/15 11:50	09/30/15 01:15	13.50	1.94	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/29/15 09:05	10/29/15 09:20	0.33	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15	8:40 AM	12:30 PM	675	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
CSO-027		Influent Pipe:	24 in		Weir Length		24 in		Tributary Area:	6.98 acres							
		Overflow Pipe:	30 in														
Mar-15	03/13/15 21:00	03/14/15 14:35	17.67	0.69	0.01	46.80	56.80	3/15/15			0	Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15				
	03/26/15 17:40	03/27/15 06:40	13.08	0.38	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:25	04/21/15 05:20	10.00	1.23	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
	04/22/15 01:15	04/22/15 20:05	18.92	0.07	0.00	34.90	47.40	4/22/15			0	Wooden Block	Unknown flow or duration. 0.21 Rain on 4/21/15				
May-15	05/18/15 16:50	05/19/15 03:40	10.92	0.91	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/31/15 17:40	06/01/15 03:10	9.58	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/01/15 14:20	06/02/15 19:10	28.92	1.31	0.03	34.90	59.40	6/2/15	9:31 AM	8:00 PM	5,911	Hydraulic	0.66 Rain on 6/1/15				
	06/01/15 14:20	06/02/15 19:10	28.92	1.31	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:20	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.79	0.05	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 21:35	06/15/15 21:55	0.42	0.02	0.00	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/18/15 17:45	06/19/15 02:25	8.75	0.52	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/21/15 19:10	06/21/15 19:30	0.42	0.02	0.00	48.40	59.70	6/22/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15				
	06/23/15 15:10	06/23/15 17:00	1.92	0.91	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
Jul-15	07/09/15 17:20	07/09/15 21:20	4.08	0.33	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:20	08/11/15 12:50	11.58	0.61	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:20	08/11/15 12:50	11.58	0.61	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:15	13.33	1.28	0.03	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.41	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:35	0.42	0.08	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/29/15 11:55	09/30/15 01:15	13.42	1.97	0.06	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 10:00	10/03/15 10:50	24.92	1.06	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 16:55	2.00	0.28	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:05	10/29/15 09:20	0.33	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15			0	Wooden Block	Unknown flow or duration.				
Dec-15	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
CSO-028		Influent Pipe:	45 x 36 in		Weir Length		40 in		Tributary Area:	43.62 acres							
		Overflow Pipe:	43 x 37.5 in														
Jan-15	01/03/15 09:00	01/04/15 06:45	21.83	0.44	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:30	01/04/15 19:35	2.17	0.23	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
Mar-15	03/13/15 20:55	03/14/15 14:35	17.75	0.69	0.01	46.80	56.80	3/14/15			0	Wooden Block	Unknown flow or duration.				
	03/26/15 17:40	03/27/15 06:40	13.08	0.38	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/03/15 09:15	04/04/15 02:10	17.00	0.12	0.00	22.30	43.30	4/4/15			0	Wooden Block	Unknown flow or duration. 0.39 rain on 4/3/15				
	04/08/15 09:15	04/08/15 10:35	1.42	0.09	0.01	22.20	45.70	4/9/15			0	Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15				
	04/09/15 21:20	04/09/15 22:30	1.25	0.08	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/16/15 23:25	04/17/15 03:25	4.08	0.12	0.01	19.00	26.30	4/17/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.22	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
	04/22/15 01:15	04/22/15 20:05	18.92	0.07	0.00	34.90	47.40	4/22/15	9:35 AM	10:30 AM	306	Gate Closed	Opened gate. 0.21 Rain on 4/21/15				
	04/22/15 01:15	04/22/15 20:05	18.92	0.07	0.00	34.90	47.40	4/23/15			0	Wooden Block	Unknown flow or duration. 0.06 Rain on 4/22/15				
May-15	05/06/15 06:35	05/06/15 11:25	4.92	0.10	0.00	20.60	39.90	5/6/15			0	Wooden Block	Unknown flow or duration.				
	05/17/15 08:30	05/17/15 11:50	3.42	0.11	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 00:20	05/18/15 00:35	0.33	0.00	0.00	18.30	52.60	5/18/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 5/17/15				
	05/18/15 16:50	05/19/15 03:50	11.08	0.93	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:10	05/27/15 15:15	3.17	0.48	0.02	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:10	9.58	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.97	0.03	34.90	59.40	6/2/15	9:30 AM	8:00 PM	9,030	Hydraulic	0.66 Rain on 6/1/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.97	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:20	6.00	0.00	0.00	27.00	37.50	6/9/15	9:35 AM	9:50 AM	77	Gate Closed	Opened gate. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.79	0.05	22.90	32.00	6/15/15			0	Gate Closed	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 21:00	06/15/15 21:55	1.00	0.03	0.00	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.53	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/21/15 19:10	06/21/15 19:30	0.42	0.02	0.00	48.40	59.70	6/22/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15				
	06/23/15 15:10	06/23/15 17:00	1.92	0.92	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 22:20	07/01/15 03:35	5.33	0.13	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/03/15 23:30	07/04/15 11:20	11.92	0.35	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.33	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.60	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.60	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:35	13.67	1.30	0.04	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:35	13.67	1.30	0.04	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.41	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:35	0.42	0.08	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.00	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.64	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	1.98	0.06	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:45	30.33	1.06	0.03	28.10	52.70	10/3/15	6:40 AM	11:00 AM	1,097	Hydraulic					
	10/03/15 18:35	10/03/15 23:25	4.92	0.07	0.00	30.50	50.90	10/4/15			0	Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:00	10/09/15 16:50	1.92	0.28	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:20	24.67	2.05	0.04	44.90	64.90	10/28/15	10:50 AM	11:00 PM	9,275	Hydraulic					
	10/29/15 09:05	10/29/15 09:20	0.33	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:15	11/11/15 00:35	20.42	0.43	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15			0	Wooden Block	Unknown flow or duration.				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15			0	Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15			0	Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-029		Influent Pipe: 18 in			Weir Length 18 in			Tributary Area: 28.6 acres									
		Overflow Pipe: 22 x 18 in															
Jan-15	01/03/15 09:00	01/04/15 06:45	21.83	0.46	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:30	01/04/15 19:35	2.17	0.22	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
	01/11/15 22:10	01/12/15 11:50	13.75	0.36	0.01	27.60	47.40	1/12/15	9:10 AM	12:00 PM	415	Hydraulic					
	01/12/15 18:35	01/12/15 19:30	1.00	0.02	0.00	27.60	47.40	1/13/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/12/15				
Mar-15	03/13/15 20:55	03/14/15 14:35	17.75	0.69	0.01	46.80	56.80	3/15/15			0	Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15				
	03/26/15 17:40	03/27/15 06:40	13.08	0.36	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/03/15 09:15	04/04/15 02:10	17.00	0.12	0.00	22.30	43.30	4/4/15	7:30 AM	9:30 AM	302	Line Blocked	Unblocked gate. 0.39 rain on 4/3/15				
	04/08/15 09:15	04/08/15 10:35	1.42	0.09	0.01	22.20	45.70	4/9/15			0	Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15				
	04/20/15 01:15	04/20/15 09:40	8.50	0.96	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.20	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.10	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 00:20	05/18/15 00:40	0.42	0.01	0.00	18.30	52.60	5/18/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 5/17/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.00	0.03	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
May-15	05/18/15 16:50	05/19/15 03:50	11.08	1.00	0.03	18.30	52.60	5/20/15	9:25 AM	11:50 AM	1,063	Line Blocked	Flushed line. 0.41 Rain on 5/19/15				
	05/27/15 12:10	05/27/15 15:15	3.17	0.44	0.02	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	1.00	0.03	34.90	59.40	6/2/15	9:41 AM	8:00 PM	4,462	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	1.00	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:25	6.08	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.84	0.06	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.21	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.54	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/21/15 19:10	06/21/15 19:30	0.42	0.02	0.00	48.40	59.70	6/22/15	9:15 AM	10:15 AM	151	Hydraulic	0.4 Rain on 6/21/15				
	06/23/15 15:10	06/23/15 17:05	2.00	0.93	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 22:20	07/01/15 03:35	5.33	0.15	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/03/15 23:30	07/04/15 11:20	11.92	0.35	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 05:45	07/06/15 06:40	1.00	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 16:00	07/06/15 19:40	3.75	0.07	0.00	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.32	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.61	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.61	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.34	0.04	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.34	0.04	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.34	0.04	33.60	63.70	8/24/15	8:40 AM	1:10 PM	1,503	Line Blocked	Flushed line.				
	08/24/15 14:35	08/24/15 16:30	2.00	0.38	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:40	0.50	0.08	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.01	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.66	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	1.95	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/03/15 18:35	10/03/15 23:25	4.92	0.07	0.00	30.50	50.90	10/4/15			0	Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:00	10/09/15 16:50	1.92	0.28	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:05	10/29/15 09:25	0.42	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:10	11/11/15 00:35	20.50	0.42	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 05:05	11/19/15 21:40	16.67	0.36	0.01	21.00	43.30	11/19/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 05:05	11/19/15 21:40	16.67	0.36	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15			0	Wooden Block	Unknown flow or duration.				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15	9:00 AM	6:00 PM	3,006	Hydraulic					
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15			0	Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-030		Influent Pipe: 50 in			Weir Length 47 in				Tributary Area: 24.97 acres								
		Overflow Pipe: 45 in															
Mar-15	03/26/15 17:40	03/27/15 06:40	13.08	0.37	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/20/15 19:20	04/21/15 05:20	10.08	1.20	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.12	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/27/15 12:10	05/27/15 15:15	3.17	0.47	0.02	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.96	0.03	34.90	59.40	6/2/15	9:35 AM	8:00 PM	10,258	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.96	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Jun-15	06/09/15 01:25	06/09/15 07:20	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.81	0.06	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.56	0.03	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/21/15 19:10	06/21/15 19:30	0.42	0.02	0.00	48.40	59.70	6/22/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15				
	06/23/15 15:10	06/23/15 17:00	1.92	0.97	0.07	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
Jul-15	07/06/15 05:45	07/06/15 06:40	1.00	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.32	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.60	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.60	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:35	13.67	1.38	0.04	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:35	13.67	1.38	0.04	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.41	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:35	0.42	0.09	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.01	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.64	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	1.98	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:45	30.33	1.06	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 16:50	1.92	0.28	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:05	10/29/15 09:20	0.33	0.04	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/19/15 05:05	11/19/15 21:40	16.67	0.36	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-031		Influent Pipe:	60 x 48 in		Weir Length		46 in		Tributary Area:	171.48 acres							
		Overflow Pipe:	60 x 48 in														
Aug-14	08/03/14 04:45	08/03/14 05:55	1.25	0.05	0.04	22.70	38.40	8/3/14; 8/4/14				Wooden Block	Unknown flow or duration.	1	08/03/14 05:25	08/03/14 21:50	10.5
	08/11/14 21:35	08/13/14 01:20	27.83	2.42	0.54	50.60	71.50	8/12/14; 8/13/14				Wooden Block	Unknown flow or duration.	2	08/12/14 01:15	08/13/14 03:30	35.7
	08/17/14 07:25	08/17/14 10:25	3.08	0.12	0.08	23.10	41.10	8/18/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 8/17/14	3	08/17/14 09:40	08/17/14 10:30	4.8
	08/20/14 09:25	08/20/14 16:15	6.92	0.08	0.05	20.60	34.00	NOT DETECTED						4	08/20/14 15:50	08/20/14 16:10	1.7
Sep-14	09/13/14 06:25	09/13/14 12:20	6.00	0.18	0.12	18.20	43.50	9/14/14				Wooden Block	Unknown flow or duration. 0.18 Rain on 9/13/14	5	09/13/14 11:50	09/13/14 12:45	4.2
	09/21/14 16:55	09/21/14 17:30	0.67	0.10	0.10	16.60	37.90	9/22/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 9/21/14	6	09/21/14 17:30	09/21/14 18:05	7.9
	09/25/14 00:25	09/25/14 09:40	9.33	0.29	0.12	19.90	41.60	9/25/14; 9/26/14	8:30 AM	11:00 AM	850	Hydraulic		7	09/25/14 07:25	09/25/14 10:35	6.8
	09/30/14 21:15	10/01/14 00:40	3.50	1.04	0.75	22.70	49.80	10/1/14				Wooden Block	Unknown flow or duration.	8	09/30/14 21:55	10/01/14 01:20	27.5
Oct-14	10/03/14 19:30	10/04/14 07:55	12.50	0.29	0.09	18.30	32.10	10/4/14				Wooden Block	Unknown flow or duration.	9	10/03/14 22:00	10/04/14 07:50	4.6
	10/07/14 19:25	10/07/14 23:15	3.92	0.17	0.13	17.70	40.10	10/8/14				Wooden Block	Unknown flow or duration. 0.15 Rain on 10/7/14	10	10/07/14 22:30	10/07/14 23:25	8.1
	10/10/14 21:10	10/11/14 08:30	11.42	0.30	0.07	17.50	26.50	10/11/14; 10/12/14				Wooden Block	Unknown flow or duration.	11	10/11/14 01:15	10/11/14 08:40	3.4
	10/15/14 01:30	10/15/14 22:25	21.00	1.16	0.31	32.20	52.00	10/15/14; 10/16/14	8:45 AM	8:50 AM	85	Wooden Block	Unknown flow or duration.	12	10/15/14 03:05	10/16/14 00:30	29.8
	10/16/14 15:45	10/16/14 17:55	2.25	0.16	0.12	22.20	44.30	10/17/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 10/16/14	13	10/16/14 16:50	10/16/14 18:15	6.5
	10/22/14 11:05	10/22/14 12:40	1.67	0.02	0.01	16.50	23.20	NOT DETECTED						14	10/22/14 12:50	10/22/14 13:00	1.1
Nov-14	11/05/14 22:20	11/06/14 05:55	7.67	0.65	0.13	23.40	50.40	11/6/14				Wooden Block	Unknown flow or duration.	15	11/06/14 02:45	11/06/14 18:30	7.3
	11/16/14 20:15	11/17/14 14:25	18.25	0.54	0.09	23.70	44.90	11/17/14; 11/18/14	8:51 AM	1:50 PM	1,700	Hydraulic		16	11/17/14 00:30	11/17/14 15:50	5.3
	11/23/14 21:30	11/24/14 04:20	6.92	0.61	0.25	20.10	34.40	11/24/14				Wooden Block	Unknown flow or duration.	17	11/23/14 23:50	11/24/14 06:20	15.5
	11/26/14 04:30	11/26/14 16:50	12.42	0.74	0.16	31.50	43.30	11/26/14; 11/27/14	8:25 AM	5:00 PM	8,126	Hydraulic		18	11/26/14 07:45	11/27/14 15:25	7.5
	12/01/14 12:10	12/01/14 17:15	5.17	0.12	0.06	19.50	42.70	12/2/14				Wooden Block	Unknown flow or duration. 0.11 rain on 12/1/14	19	12/01/14 15:55	12/01/14 18:45	4.9
	12/02/14 10:45	12/02/14 22:55	12.25	0.25	0.17	22.30	44.60	12/3/14				Wooden Block	Unknown flow or duration. 0.22 rain on 12/2/14	20	12/02/14 18:05	12/03/14 01:10	9.9
	12/05/14 11:40	12/06/14 20:25	32.83	0.93	0.13	31.50	49.30	12/6/14; 12/7/14				Wooden Block	Unknown flow or duration.	21	12/05/14 16:05	12/06/14 21:00	8.6

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Dec-14	12/09/14 00:20	12/09/14 04:45	4.50	0.29	0.10	27.80	42.40	12/9/14				Wooden Block	Unknown flow or duration.	22	12/09/14 02:10	12/09/14 15:25	4.8
	12/16/14 10:05	12/16/14 13:30	3.50	0.12	0.10	21.70	35.40	12/17/14				Wooden Block	Unknown flow or duration. 0.15 rain on 12/16/14	23	12/16/14 12:25	12/16/14 13:50	4.9
	12/22/14 16:35	12/23/14 08:25	15.92	0.29	0.07	24.80	43.00	NOT DETECTED						24	12/22/14 20:05	12/23/14 10:10	5.2
	12/23/14 22:15	12/24/14 16:10	18.00	0.57	0.15	35.20	43.00	12/24/14; 12/25/14	8:50 AM	4:00 PM	2,465	Hydraulic		25	12/24/14 02:10	12/25/14 04:40	8.7
Jan-15	01/03/15 07:55	01/03/15 21:40	13.83	0.40	0.10	26.90	45.40	1/4/15				Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15	26	01/03/15 12:15	01/03/15 23:20	6.9
	01/04/15 16:30	01/04/15 18:35	2.17	0.21	0.14	25.40	46.20	1/5/15				Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15	27	01/04/15 18:35	01/04/15 20:20	8.5
	01/11/15 21:10	01/12/15 10:50	13.75	0.36	0.08	27.60	47.40	1/12/15; 1/13/15	8:42 AM	12:00 PM	3,107	Hydraulic		28	01/12/15 07:30	01/12/15 13:10	6.5
	01/21/15 10:40	01/21/15 15:25	4.83	0.18	0.06	18.10	26.30	NOT DETECTED						29	01/22/15 12:55	01/22/15 13:00	0.6
	01/23/15 21:05	01/24/15 04:00	7.00	0.49	0.11	22.10	42.30	NOT DETECTED						30	01/24/15 14:35	01/24/15 16:30	1.2
Feb-15	02/01/15 15:20	02/02/15 09:50	18.58	0.29	0.06	23.90	43.10	2/3/15				Wooden Block	Unknown flow or duration. 0.21 Rain on 2/2/15	31	02/02/15 09:20	02/02/15 14:20	1.5
	02/21/15 08:40	02/21/15 23:00	14.42	0.27	0.04	18.10	29.20	2/23/15				Snow Melt	snowmelt and 0.25 rain on 2/21/15	32	02/22/15 13:20	02/22/15 16:40	2.2
Mar-15	03/01/15 04:40	03/01/15 16:40	12.08	0.22	0.04	18.80	31.00	NOT DETECTED						33	03/02/15 12:20	03/02/15 14:30	1.0
	03/04/15 04:05	03/05/15 02:50	22.83	0.36	0.07	31.50	48.00	3/5/15				Wooden Block	Unknown flow or duration.	34	03/04/15 12:40	03/05/15 02:45	4.0
	03/07/15 15:35	03/07/15 15:45	0.25	0.00	0.00	21.30	28.40	NOT DETECTED						35	03/08/15 12:35	03/08/15 17:35	2.4
	03/10/15 13:55	03/11/15 02:10	12.33	0.43	0.09	38.80	54.70	NOT DETECTED						36	03/10/15 15:25	03/11/15 03:05	7.9
	03/13/15 20:55	03/14/15 14:35	17.75	0.69	0.11	46.80	56.80	3/14/15; 3/15/15	8:04 AM	10:30 AM	850	Hydraulic		37	03/13/15 23:05	03/14/15 19:20	9.0
	03/26/15 17:40	03/27/15 06:40	13.08	0.35	0.32	22.80	29.00	3/27/15				Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15	38	03/26/15 18:05	03/27/15 08:35	32.8
	03/31/15 11:45	03/31/15 14:45	3.08	0.04	0.03	21.20	34.60	NOT DETECTED						39	03/31/15 15:05	03/31/15 15:30	3.3
Apr-15	04/03/15 09:15	04/04/15 02:10	17.00	0.13	0.04	22.30	43.30	NOT DETECTED						40	04/03/15 20:05	04/04/15 02:35	3.2
	04/08/15 09:15	04/08/15 10:35	1.42	0.10	0.08	22.20	45.70	NOT DETECTED						41	04/08/15 10:00	04/08/15 11:30	8.7
	04/09/15 21:20	04/09/15 22:30	1.25	0.08	0.07	21.50	41.40	NOT DETECTED						42	04/09/15 22:25	04/09/15 23:20	6.2
	04/14/15 04:10	04/14/15 05:50	1.75	0.06	0.05	20.60	26.30	NOT DETECTED						43	04/14/15 05:15	04/14/15 05:45	4.1
	04/16/15 23:10	04/17/15 01:20	2.25	0.11	0.10	19.00	26.30	NOT DETECTED						44	04/17/15 01:30	04/17/15 01:45	3.4
	04/20/15 01:15	04/20/15 09:40	8.50	0.96	0.33	40.20	57.60	4/20/15	9:00 AM	10:00 AM	340	Hydraulic		45	04/20/15 02:05	04/20/15 09:50	16.1
	04/20/15 21:55	04/21/15 05:25	7.58	1.15	0.73	41.20	53.60	4/21/15; 4/23/15				Wooden Block	Unknown flow or duration.		04/20/15 22:10	04/22/15 13:55	33.7
May-15	05/06/15 06:35	05/06/15 10:45	4.25	0.07	0.04	20.60	39.90	NOT DETECTED						46	05/06/15 08:10	05/06/15 10:40	4.7
	05/16/15 16:00	05/16/15 17:40	1.75	0.18	0.17	16.70	42.80	5/17/15				Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15	47	05/16/15 16:55	05/16/15 18:00	16.5
	05/17/15 08:30	05/17/15 11:50	3.42	0.10	0.09	19.10	38.90	5/18/15				Wooden Block	Unknown flow or duration. 0.14 Rain on 5/17/15	48	05/17/15 10:50	05/17/15 11:55	6.5
	05/18/15 16:50	05/19/15 03:50	11.08	1.07	0.45	18.30	52.60	5/19/15; 5/20/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15	49	05/18/15 17:25	05/19/15 14:55	28.8
	05/18/15 16:50	05/19/15 03:50	11.08	1.07	0.45	18.30	52.60	NOT DETECTED						50	05/20/15 08:25	05/20/15 08:30	3.6
	05/27/15 12:15	05/27/15 15:10	3.00	0.41	0.30	17.60	51.10	5/28/15				Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15	51	05/27/15 13:45	05/27/15 15:45	26.1
	05/31/15 17:40	06/01/15 00:00	6.42	0.15	0.11	17.30	42.20	6/1/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15	52	05/31/15 23:10	06/01/15 00:00	9.5
Jun-15	06/01/15 14:10	06/01/15 23:00	8.92	0.34	0.13	22.90	48.50	6/2/15; 6/3/15	9:26 AM	8:00 PM	10,038	Hydraulic	0.66 Rain on 6/1/15	53	06/01/15 16:20	06/02/15 20:05	18.7
	06/04/15 10:25	06/04/15 10:30	0.17	0.00	0.00	20.10	34.50	NOT DETECTED						54	06/04/15 11:00	06/04/15 11:05	4.4
	06/08/15 16:55	06/08/15 18:55	2.08	2.11	1.88	34.50	72.70	6/9/15	9:15 AM	9:30 AM	85	Gate Closed	Opened gate. 1.94 Rain on 6/8/15	55	06/08/15 17:15	06/09/15 09:35	71.5
	06/14/15 05:55	06/14/15 06:35	0.75	0.09	0.09	26.60	59.20	6/15/15				Gate Closed	Unknown flow or duration. 1.01 Rain on 6/14/15	56	06/14/15 06:25	06/15/15 09:20	37.6
	06/17/15 22:35	06/18/15 03:30	5.00	0.19	0.12	26.50	53.80	6/18/15				Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15	57	06/18/15 01:50	06/18/15 03:25	8.6
	06/18/15 17:45	06/19/15 02:30	8.83	0.55	0.36	26.50	53.80	6/19/15				Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15		06/18/15 22:35	06/19/15 02:30	28.2
	06/20/15 17:20	06/21/15 05:00	11.75	2.41	0.83	43.10	74.30	6/22/15				Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15	58	06/20/15 18:35	06/21/15 13:40	40.7
	06/23/15 15:10	06/23/15 17:05	2.00	0.96	0.84	40.60	72.30	6/24/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15	59	06/23/15 15:45	06/23/15 19:20	33.7
	06/27/15 04:35	06/27/15 16:20	11.83	1.10	0.37	47.20	70.90	6/28/15				Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15	60	06/27/15 09:20	06/28/15 04:55	28.7
	06/30/15 22:20	07/01/15 00:15	2.00	0.15	0.15	31.80	47.80	NOT DETECTED						61	06/30/15 23:40	07/01/15 00:55	7.7
Jul-15	07/03/15 23:30	07/04/15 11:20	11.92	0.35	0.22	28.40	50.00	7/5/15				Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15	62	07/04/15 03:05	07/04/15 12:30	11.4
	07/06/15 16:00	07/06/15 17:05	1.17	0.06	0.06	25.20	50.20	7/7/15				Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15	63	07/06/15 17:00	07/06/15 17:55	13.4
	07/08/15 22:25	07/08/15 22:50	0.50	0.03	0.03	23.10	29.50	NOT DETECTED						64	07/08/15 23:10	07/08/15 23:20	4.3
	07/09/15 17:20	07/09/15 17:55	0.67	0.26	0.26	24.50	47.90	7/10/15				Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15	65	07/09/15 17:45	07/09/15 18:40	24.6
	07/14/15 01:15	07/14/15 06:40	5.50	1.18	0.54	29.40	54.10	NOT DETECTED						66	07/14/15 02:30	07/14/15 08:35	36.7
	07/15/15 00:55	07/15/15 01:20	0.50	0.10	0.10	23.50	29.00	7/15/15				Wooden Block	Unknown flow or duration. 1.39 Rain on 7/14/15	67	07/15/15 01:25	07/15/15 02:00	8.8
	07/21/15 18:00	07/21/15 18:50	0.92	0.07	0.07	20.00	28.60	NOT DETECTED						68	07/21/15 18:55	07/21/15 19:10	3.6
	07/26/15 20:25	07/27/15 00:25	4.08	0.83	0.73	22.90	54.60	NOT DETECTED						69	07/26/15 23:25	07/27/15 01:20	36.1
	07/30/15 11:00	07/30/15 11:35	0.67	0.04	0.04	18.20	31.60	NOT DETECTED						70	07/30/15 11:35	07/30/15 11:45	2.9

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Aug-15	08/10/15 11:55	08/10/15 13:00	1.17	0.07	0.07	20.20	41.60	8/11/15; 8/12/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15	71	08/10/15 13:15	08/11/15 13:40	21.0
	08/20/15 06:00	08/20/15 19:40	13.75	1.40	0.46	33.60	63.70	8/20/15; 8/21/15				Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15	72	08/20/15 06:30	08/20/15 21:15	31.6
	08/24/15 14:35	08/24/15 16:30	2.00	0.36	0.33	20.20	47.40	8/25/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15	73	08/24/15 16:25	08/24/15 17:40	32.5
	08/30/15 15:15	08/30/15 15:40	0.50	0.07	0.07	17.10	41.80	8/31/15				Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15	74	08/30/15 15:40	08/30/15 17:00	27.1
Sep-15	09/10/15 08:50	09/10/15 18:10	9.42	1.03	0.02	26.80	62.40	9/11/15				Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.67	0.02	24.70	53.70	9/13/15				Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	1.93	0.05	32.90	64.00	9/30/15				Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:55	30.50	1.05	0.02	28.10	52.70	10/3/15	6:38 AM	11:00 AM	3,668	Hydraulic					
	10/03/15 18:30	10/03/15 23:25	5.00	0.07	0.00	30.50	50.90	10/4/15				Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:00	10/09/15 16:55	2.00	0.28	0.02	19.90	42.80	10/10/15				Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:20	24.67	2.09	0.03	44.90	64.90	10/28/15	10:45 AM	11:00 PM	10,572	Hydraulic					
	10/29/15 09:05	10/29/15 09:25	0.42	0.04	0.00	24.80	39.40	10/29/15				Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:10	11/11/15 00:35	20.50	0.42	0.01	22.30	37.90	11/11/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15	8:15 AM	12:15 PM	1,200	Hydraulic					
	11/19/15 05:05	11/19/15 21:40	16.67	0.35	0.01	21.00	43.30	11/19/15				Wooden Block	Unknown flow or duration.				
	11/19/15 05:05	11/19/15 21:40	16.67	0.35	0.01	21.00	43.30	11/20/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15				Wooden Block	Unknown flow or duration.				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15	8:50 AM	6:00 PM	2,775	Hydraulic					
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15				Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15				Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15				Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15				Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15	8:50 AM	1:30 PM	4,099	Hydraulic					
CSO-032		Influent Pipe:	19.5 x 21 in		Weir Length		20 in		Tributary Area:		14.86 acres						
		Overflow Pipe:	19.5 in														
Jan-15	01/03/15 09:00	01/04/15 06:40	21.75	0.48	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
Mar-15	03/13/15 20:55	03/14/15 14:35	17.75	0.72	0.01	46.80	56.80	3/15/15			0	Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15				
Apr-15	04/08/15 09:15	04/08/15 10:35	1.42	0.17	0.01	22.20	45.70	4/9/15			0	Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15				
	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.13	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/06/15 06:35	05/06/15 11:25	4.92	0.08	0.00	20.60	39.90	5/6/15			0	Wooden Block	Unknown flow or duration.				
	05/18/15 16:50	05/19/15 03:50	11.08	1.19	0.03	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:15	05/27/15 15:10	3.00	0.43	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.17	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.93	0.03	34.90	59.40	6/2/15	9:24 AM	8:00 PM	6,016	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.93	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:25	6.08	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.86	0.06	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.65	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/21/15 19:10	06/21/15 19:25	0.33	0.01	0.00	48.40	59.70	6/22/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.11	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
Jul-15	07/06/15 16:00	07/06/15 19:40	3.75	0.05	0.00	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.31	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.64	0.05	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.64	0.05	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
	08/24/15 14:35	08/24/15 16:30	2.00	0.41	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:40	0.50	0.09	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.05	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.63	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	1.99	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:50	30.42	1.07	0.03	28.10	52.70	10/3/15	6:30 AM	11:00 AM	581	Hydraulic					
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:20	24.67	2.02	0.03	44.90	64.90	10/28/15			0	Wooden Block	Unknown flow or duration.				
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 05:05	11/19/15 17:35	12.58	0.36	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15	8:44 AM	6:00 PM	1,193	Hydraulic					
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
CSO-033		Influent Pipe: 25 in			Weir Length 24 in				Tributary Area: 19.38 acres								
		Overflow Pipe: 24 in															
Mar-15	03/26/15 17:40	03/27/15 06:40	13.08	0.33	0.02	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/20/15 19:20	04/21/15 05:20	10.08	1.12	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/18/15 16:50	05/19/15 03:50	11.08	1.21	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:15	05/27/15 15:10	3.00	0.41	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.17	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.98	0.03	34.90	59.40	6/2/15	9:24 AM	8:00 PM	1,669	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.98	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:25	6.08	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.92	0.07	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.63	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/21/15 19:10	06/21/15 19:30	0.42	0.01	0.00	48.40	59.70	6/22/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.09	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
Jul-15	07/03/15 23:30	07/04/15 11:20	11.92	0.34	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.30	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.60	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.60	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.63	0.05	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.63	0.05	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.37	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:40	0.50	0.07	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.06	0.02	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/29/15 11:50	09/30/15 01:15	13.50	1.94	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:50	30.42	1.06	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Gate Blocked	Unblocked gate. 1.92 Rain on 10/28/15				
Nov-15	11/19/15 05:05	11/19/15 17:35	12.58	0.35	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-034		Influent Pipe: 50 in			Weir Length 34.5 in				Tributary Area: 67.05 acres								
		Overflow Pipe: 48 in															
Jan-15	01/03/15 09:00	01/04/15 06:45	21.83	0.48	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:35	01/04/15 19:35	2.08	0.19	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
	01/11/15 22:10	01/12/15 11:50	13.75	0.38	0.01	27.60	47.40	1/12/15	8:31 AM	12:00 PM	952	Hydraulic					

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
	01/12/15 18:35	01/12/15 19:30	1.00	0.02	0.00	27.60	47.40	1/13/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/12/15				
Mar-15	03/13/15 20:55	03/14/15 14:35	17.75	0.70	0.01	46.80	56.80	3/14/15	7:41 AM	10:30 AM	748	Hydraulic					
	03/13/15 20:55	03/14/15 14:35	17.75	0.70	0.01	46.80	56.80	3/15/15			0	Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15				
	03/26/15 17:40	03/27/15 06:40	13.08	0.33	0.02	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/20/15 01:15	04/20/15 09:40	8.50	0.96	0.03	40.20	57.60	4/20/15	8:45 AM	10:00 AM	303	Hydraulic					
	04/20/15 19:20	04/21/15 05:20	10.08	1.11	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
	04/22/15 01:20	04/22/15 20:10	18.92	0.07	0.00	34.90	47.40	4/23/15			0	Wooden Block	Unknown flow or duration. 0.06 Rain on 4/22/15				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.12	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 00:20	05/18/15 00:40	0.42	0.01	0.00	18.30	52.60	5/18/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 5/17/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.21	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:15	05/27/15 15:10	3.00	0.41	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.99	0.03	34.90	59.40	6/2/15	9:20 AM	8:00 PM	8,032	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.99	0.03	34.90	59.40	6/3/15	9:00 AM	2:00 PM	1,360	Line Blocked	Unblocked line. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:25	6.08	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.93	0.07	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.63	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/21/15 19:10	06/21/15 19:30	0.42	0.01	0.00	48.40	59.70	6/22/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.09	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
Jul-15	07/03/15 23:30	07/04/15 11:20	11.92	0.33	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 05:45	07/06/15 06:40	1.00	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 16:00	07/06/15 19:40	3.75	0.11	0.01	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.30	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.60	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.60	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.63	0.05	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.63	0.05	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.37	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Sep-15	09/29/15 11:50	09/30/15 01:15	13.50	1.94	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:50	30.42	1.06	0.03	28.10	52.70	10/3/15	6:25 AM	11:00 AM	2,880	Hydraulic					
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:20	24.67	2.06	0.03	44.90	64.90	10/28/15	10:37 AM	11:00 PM	8,000	Hydraulic					
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:10	11/11/15 00:35	20.50	0.42	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 05:05	11/19/15 17:35	12.58	0.35	0.01	21.00	43.30	11/19/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 05:05	11/19/15 17:35	12.58	0.35	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15			0	Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15	8:40 AM	1:20 PM	3,040	Hydraulic					
CSO-037		Influent Pipe:	66 x 48.25 in		Weir Length		47.7 in		Tributary Area:		79.53 acres						
		Overflow Pipe:	66 x 48.25 in														
	10/01/14 00:00	10/01/14 00:40	0.75	0.06	0.01	17.50	48.40	10/1/14				Wooden Block	Unknown flow or duration.	1	10/01/14 00:00	10/01/14 00:45	3.5
	10/03/14 19:30	10/03/14 23:45	4.33	0.14	0.07	19.20	39.70	10/4/14				Wooden Block	Unknown flow or duration.	2	10/03/14 23:40	10/04/14 00:00	3.0
Oct-14	10/07/14 19:25	10/07/14 23:05	3.75	0.15	0.13	17.70	40.10	10/8/14				Wooden Block	Unknown flow or duration. 0.15 Rain on 10/7/14	3	10/07/14 22:30	10/07/14 23:00	6.2

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Oct-14	10/15/14 01:30	10/15/14 16:50	15.42	1.10	0.36	32.20	52.00	10/15/14; 10/16/14				Wooden Block	Unknown flow or duration.	4	10/15/14 03:05	10/15/14 16:45	15.8
	10/16/14 15:45	10/16/14 16:40	1.00	0.06	0.07	22.20	44.30	10/17/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 10/16/14	5	10/16/14 15:55	10/16/14 16:35	4.3
	10/20/14 18:50	10/21/14 03:00	8.25	0.07	0.12	16.50	23.10	10/21/14				Wooden Block	Unknown flow or duration.	NO OVERFLOW RECORDED			
Nov-14	11/05/14 22:20	11/06/14 05:55	7.67	0.67	0.14	23.40	50.40	11/6/14; 11/7/14				Wooden Block	Unknown flow or duration.	6	11/06/14 03:15	11/06/14 07:15	4.6
	11/16/14 19:10	11/17/14 12:10	17.08	0.48	0.09	23.70	44.90	11/17/14				Wooden Block	Unknown flow or duration.	7	11/17/14 10:35	11/17/14 12:05	3.4
	11/23/14 21:30	11/24/14 03:05	5.67	0.57	0.24	20.10	34.40	11/24/14				Wooden Block	Unknown flow or duration.	8	11/24/14 00:15	11/24/14 03:00	9.6
	11/26/14 04:30	11/26/14 11:50	7.42	0.64	0.16	31.50	43.30	11/27/14				Wooden Block	Unknown flow or duration. 0.74 rain on 11/26/14	9	11/26/14 08:40	11/26/14 11:45	3.2
	11/26/14 04:30	11/26/14 11:50	7.42	0.64	0.16	31.50	43.30	NOT DETECTED						10	11/28/14 08:15	11/28/14 08:45	3.7
Dec-14	12/01/14 12:10	12/01/14 16:40	4.58	0.12	0.10	19.50	42.70	NOT DETECTED						11	12/01/14 16:20	12/01/14 16:35	2.3
	12/02/14 10:45	12/02/14 18:10	7.50	0.22	0.17	22.30	44.60	12/3/14				Wooden Block	Unknown flow or duration. 0.22 rain on 12/2/14	12	12/02/14 18:20	12/02/14 19:30	6.0
	12/05/14 11:40	12/05/14 21:55	10.33	0.31	0.08	26.90	40.40	NOT DETECTED						13	12/05/14 17:35	12/05/14 21:50	1.3
	12/06/14 09:55	12/06/14 15:40	5.83	0.41	0.13	31.50	49.30	12/7/14				Wooden Block	Unknown flow or duration. 0.57 rain on 12/6/14	14	12/06/14 11:25	12/06/14 16:10	4.5
	12/09/14 00:20	12/09/14 04:05	3.83	0.28	0.11	27.80	42.40	12/9/14				Wooden Block	Unknown flow or duration.	15	12/09/14 03:00	12/09/14 04:00	1.4
	12/16/14 10:05	12/16/14 12:10	2.17	0.12	0.10	21.70	35.40	NOT DETECTED						16	12/16/14 12:30	12/16/14 12:55	2.2
	12/22/14 16:35	12/22/14 20:30	4.00	0.14	0.07	20.60	40.40	NOT DETECTED						17	12/22/14 20:40	12/22/14 20:50	1.5
	12/22/14 16:35	12/22/14 20:30	4.00	0.14	0.07	20.60	40.40	NOT DETECTED						18	12/23/14 09:30	12/23/14 09:50	2.4
	12/23/14 21:55	12/24/14 07:50	10.00	0.44	0.16	35.20	43.00	12/24/14				Wooden Block	Unknown flow or duration.	19	12/24/14 04:10	12/24/14 09:20	5.5
	12/25/14 00:40	12/25/14 03:30	2.92	0.14	0.07	25.00	37.60	12/25/14				Wooden Block	Unknown flow or duration.	20	12/25/14 03:30	12/25/14 03:45	2.3
Jan-15	01/03/15 08:00	01/03/15 21:15	13.33	0.41	0.10	26.90	45.40	1/4/15				Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15	21	01/03/15 16:30	01/03/15 21:10	3.8
	01/04/15 16:30	01/04/15 18:35	2.17	0.22	0.15	25.40	46.20	1/5/15				Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15	22	01/04/15 18:50	01/04/15 19:35	4.6
	01/11/15 21:10	01/12/15 10:50	13.75	0.39	0.08	27.60	47.40	1/12/15; 1/13/15	8:30 AM	12:00 PM	1,232	Hydraulic		23	01/12/15 08:15	01/12/15 11:40	3.4
Mar-15	03/04/15 04:05	03/05/15 00:00	20.00	0.33	0.07	31.50	48.00	3/5/15				Wooden Block	Unknown flow or duration.	24	03/04/15 13:25	03/04/15 23:55	2.2
	03/10/15 13:55	03/10/15 21:00	7.17	0.34	0.09	38.80	54.70	NOT DETECTED						25	03/10/15 17:45	03/10/15 20:55	3.6
	03/13/15 20:55	03/14/15 07:20	10.50	0.63	0.11	46.80	56.80	3/14/15				Wooden Block	Unknown flow or duration.	26	03/13/15 23:45	03/14/15 07:35	3.8
	03/26/15 17:40	03/26/15 18:15	0.67	0.31	0.31	25.20	48.50	3/27/15				Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15	27	03/26/15 18:00	03/26/15 18:45	18.5
Apr-15	04/08/15 09:15	04/08/15 10:35	1.42	0.17	0.14	22.20	45.70	4/9/15				Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15	28	04/08/15 09:55	04/08/15 11:00	4.1
	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.08	21.50	41.40	4/10/15				Wooden Block	Unknown flow or duration.	29	04/09/15 22:35	04/09/15 22:50	2.3
	04/14/15 04:10	04/14/15 06:05	2.00	0.07	0.05	20.60	26.30	4/17/15				Wooden Block	Unknown flow or duration.	30	04/16/15 10:55	04/16/15 10:55	1.0
	04/20/15 01:15	04/20/15 06:55	5.75	0.89	0.32	40.20	57.60	4/20/15				Wooden Block	Unknown flow or duration.	31	04/20/15 02:15	04/20/15 06:50	7.5
	04/20/15 19:20	04/21/15 02:20	7.08	1.12	0.69	40.20	57.60	4/21/15				Wooden Block	Unknown flow or duration.		04/20/15 22:10	04/21/15 02:45	15.8
	04/22/15 01:15	04/22/15 13:10	12.00	0.06	0.05	34.90	47.40	4/23/15				Wooden Block	Unknown flow or duration. 0.06 Rain on 4/22/15	32	04/22/15 13:10	04/22/15 13:30	1.8
May-15	05/06/15 06:35	05/06/15 08:10	1.67	0.05	0.03	20.60	39.90	5/6/15				Wooden Block	Unknown flow or duration.	33	05/06/15 08:05	05/06/15 08:10	1.2
	05/16/15 16:00	05/16/15 17:30	1.58	0.19	0.18	16.70	42.80	5/17/15				Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15	34	05/16/15 16:55	05/16/15 17:25	9.9
	05/17/15 08:30	05/17/15 11:25	3.00	0.13	0.12	19.10	38.90	5/18/15				Wooden Block	Unknown flow or duration. 0.14 Rain on 5/17/15	35	05/17/15 10:50	05/17/15 11:20	2.7
	05/18/15 16:50	05/19/15 03:50	11.08	1.19	0.40	18.30	52.60	5/19/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15	36	05/18/15 17:20	05/19/15 04:05	28.4
	05/27/15 12:10	05/27/15 15:15	3.17	0.43	0.32	17.60	51.10	5/28/15				Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15	37	05/27/15 13:45	05/27/15 15:15	19.3
	05/31/15 17:40	05/31/15 23:40	6.08	0.16	0.14	17.30	42.20	6/1/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15	38	05/31/15 23:05	05/31/15 23:35	6.1
Jun-15	06/01/15 14:10	06/01/15 23:00	8.92	0.41	0.15	22.90	48.50	6/2/15; 6/3/15	9:17 AM	8:00 PM	10,621	Hydraulic	0.66 Rain on 6/1/15	39	06/01/15 16:15	06/02/15 15:15	13.5
	06/08/15 16:55	06/08/15 18:55	2.08	2.08	1.88	34.50	72.70	6/9/15				Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15	40	06/08/15 17:15	06/08/15 20:45	51.0
	06/14/15 05:55	06/14/15 06:35	0.75	0.16	0.16	26.60	59.20	6/15/15				Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15	41	06/14/15 06:25	06/14/15 18:35	35.9
	06/15/15 21:00	06/15/15 21:55	1.00	0.06	0.06	22.90	32.00	6/16/15				Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15	42	06/15/15 22:00	06/15/15 22:10	3.7
	06/17/15 22:35	06/18/15 02:55	4.42	0.18	0.12	26.50	53.80	6/18/15				Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15	43	06/18/15 02:20	06/18/15 02:50	6.9
	06/18/15 17:45	06/19/15 01:35	7.92	0.64	0.46	26.50	53.80	6/19/15				Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15		06/18/15 22:35	06/19/15 01:30	18.2
	06/20/15 17:20	06/21/15 03:50	10.58	2.57	1.00	43.10	74.30	6/21/15				Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15	44	06/20/15 18:30	06/21/15 04:35	41.4
	06/23/15 15:10	06/23/15 17:05	2.00	1.11	0.95	40.60	72.30	6/24/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15	45	06/23/15 15:40	06/23/15 17:35	30.5
	06/27/15 04:35	06/27/15 16:20	11.83	1.13	0.38	47.20	70.90	6/28/15				Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15	46	06/27/15 10:35	06/28/15 03:00	14.8
	06/30/15 22:20	06/30/15 23:55	1.67	0.12	0.12	31.80	47.80	7/1/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15	47	06/30/15 23:40	06/30/15 23:50	2.2
Jul-15	07/03/15 23:30	07/04/15 11:20	11.92	0.36	0.22	28.40	50.00	7/5/15				Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15	48	07/04/15 10:45	07/04/15 11:35	6.0
	07/06/15 16:00	07/06/15 17:05	1.17	0.03	0.03	25.20	50.20	7/7/15				Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15	49	07/06/15 17:00	07/06/15 17:20	5.6
	07/09/15 17:20	07/09/15 17:55	0.67	0.25	0.25	24.50	47.90	7/10/15				Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15	50	07/09/15 17:40	07/09/15 18:15	18.3
	07/14/15 01:15	07/14/15 06:40	5.50	1.28	0.73	29.40	54.10	NOT DETECTED						51	07/14/15 02:25	07/14/15 07:10	26.2

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
	07/26/15 20:25	07/27/15 00:15	3.92	0.77	0.70	22.90	54.60	NOT DETECTED						52	07/26/15 23:15	07/27/15 00:10	16.1
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.28	20.50	44.60	8/11/15; 8/12/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15	53	08/11/15 01:40	08/11/15 12:55	14.2
	08/20/15 06:00	08/20/15 19:20	13.42	1.63	0.66	33.60	63.70	8/20/15; 8/21/15				Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15	54	08/20/15 06:25	08/20/15 19:20	16.4
	08/24/15 14:35	08/24/15 16:30	2.00	0.41	0.60	20.20	47.40	8/25/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15	55	08/24/15 16:20	08/24/15 16:35	17.3
	08/30/15 15:15	08/30/15 15:40	0.50	0.09	0.09	17.10	41.80	8/31/15				Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15	56	08/30/15 15:40	08/30/15 15:50	4.8
Sep-15	09/10/15 08:50	09/10/15 14:30	5.75	1.04	0.31	26.80	62.40	9/11/15				Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15	57	09/10/15 10:00	09/10/15 15:05	10.1
	09/12/15 10:30	09/12/15 17:25	7.00	0.63	0.24	24.70	53.70	9/13/15				Wooden Block	Unknown flow or duration.	58	09/12/15 13:00	09/12/15 17:45	5.6
	09/29/15 11:50	09/30/15 01:15	13.50	1.99	0.66	32.90	64.00	9/30/15				Wooden Block	Unknown flow or duration.	59	09/29/15 17:50	09/30/15 01:20	22.7
Oct-15	10/02/15 04:30	10/03/15 09:40	29.25	1.01	0.32	28.10	52.70	10/3/15	6:25 AM	11:00 AM	3,591	Hydraulic		60	10/02/15 16:55	10/03/15 09:35	12.3
	10/03/15 21:40	10/03/15 22:35	1.00	0.05	0.07	30.50	50.90	10/4/15				Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15	61	10/03/15 22:35	10/03/15 22:40	0.3
	10/03/15 21:40	10/03/15 22:35	1.00	0.05	0.07	30.50	50.90	NOT DETECTED						62	10/05/15 18:20	10/05/15 18:20	0.5
	10/09/15 15:00	10/09/15 16:10	1.25	0.24	0.24	19.90	42.80	10/10/15				Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15	63	10/09/15 15:20	10/09/15 16:05	10.5
	10/27/15 23:45	10/28/15 20:55	21.25	1.94	0.41	44.90	64.90	10/28/15; 10/29/15	10:35 AM	11:00 PM	3,463	Hydraulic		64	10/28/15 07:30	10/28/15 20:50	14.6
Nov-15	11/10/15 04:10	11/11/15 00:35	20.50	0.43	0.01	22.30	37.90	11/11/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15				Wooden Block	Unknown flow or duration.				
	11/19/15 05:05	11/19/15 21:40	16.67	0.36	0.01	21.00	43.30	11/19/15				Wooden Block	Unknown flow or duration.				
	11/19/15 05:05	11/19/15 21:40	16.67	0.36	0.01	21.00	43.30	11/20/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15				Wooden Block	Unknown flow or duration.				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15				Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15				Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15				Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15				Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15				Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15	8:15 AM	1:15 PM	3,990	Hydraulic					
CSO-038		Influent Pipe:	30 in		Weir Length	30 in			Tributary Area:	21.82 acres							
		Overflow Pipe:	30 in														
Jan-15	01/03/15 09:00	01/04/15 06:40	21.75	0.48	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:35	01/04/15 19:30	2.00	0.21	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
Mar-15	03/13/15 20:55	03/14/15 14:35	17.75	0.72	0.01	46.80	56.80	3/14/15			0	Wooden Block	Unknown flow or duration.				
	03/26/15 17:40	03/27/15 06:40	13.08	0.34	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/14/15 04:10	04/14/15 06:05	2.00	0.06	0.00	20.60	26.30	4/14/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.13	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.14	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.19	0.03	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.17	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.93	0.03	34.90	59.40	6/2/15			0	Wooden Block	Unknown flow or duration. 0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.93	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:25	6.08	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.86	0.06	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 21:00	06/15/15 21:55	1.00	0.06	0.00	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.65	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.56	0.08	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.11	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 23:15	07/01/15 03:35	4.42	0.15	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/03/15 23:30	07/04/15 11:20	11.92	0.35	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 16:00	07/06/15 19:40	3.75	0.06	0.00	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.31	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.64	0.05	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.64	0.05	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.41	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:40	0.50	0.09	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.05	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.63	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	1.99	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:50	30.42	1.07	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/19/15 05:05	11/19/15 17:35	12.58	0.36	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-039		Influent Pipe:	24 in		Weir Length		20.5 in		Tributary Area:	22.37 acres							
		Overflow Pipe:	24 in														
Mar-15	03/04/15 05:10	03/05/15 18:00	36.92	0.64	0.01	31.50	48.00	3/5/15	8:40 AM	8:50 AM	42	Gate Blocked	Unblocked gate.				
Apr-15	04/20/15 19:20	04/21/15 05:20	10.08	1.11	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
	04/22/15 01:20	04/22/15 20:10	18.92	0.06	0.00	34.90	47.40	4/23/15			0	Wooden Block	Unknown flow or duration. 0.06 Rain on 4/22/15				
May-15	05/17/15 08:40	05/17/15 11:50	3.25	0.12	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.22	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:30	05/27/15 15:10	2.75	0.41	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.98	0.03	34.90	59.40	6/2/15	9:15 AM	8:00 PM	5,020	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.98	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 07:20	06/09/15 07:25	0.17	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.93	0.07	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 21:00	06/15/15 21:55	1.00	0.04	0.00	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.63	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/21/15 19:10	06/21/15 19:25	0.33	0.01	0.00	48.40	59.70	6/22/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.09	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/29/15			0	Wooden Block	Unknown flow or duration. 0.36 Rain on 6/28/15				
	06/30/15 23:15	07/01/15 03:35	4.42	0.17	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/06/15 05:45	07/06/15 06:10	0.50	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 16:00	07/06/15 19:00	3.08	0.11	0.01	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.30	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
	07/15/15 01:00	07/15/15 03:40	2.75	0.11	0.01	23.50	29.00	7/15/15			0	Wooden Block	Unknown flow or duration. 1.39 Rain on 7/14/15				
Aug-15	08/11/15 01:20	08/11/15 12:50	11.58	0.60	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.64	0.05	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.64	0.05	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:40	08/24/15 16:30	1.92	0.37	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.06	0.02	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/29/15 11:50	09/30/15 01:15	13.50	1.93	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Oct-15	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/01/15 07:20	11/01/15 07:30	0.25	0.01	0.00	17.20	28.90	11/9/15	9:00 AM	11:06 AM	760	Box Blocked	Unblocked box.				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15			0	Wooden Block	Unknown flow or duration.				
Dec-15	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
CSO-040		Influent Pipe:	18 in		Weir Length		23 in		Tributary Area:	9.55 acres							
		Overflow Pipe:	18 in														
Mar-15	03/13/15 20:55	03/14/15 14:35	17.75	0.70	0.01	46.80	56.80	3/15/15			0	Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15				
	03/26/15 17:40	03/27/15 06:40	13.08	0.33	0.02	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/08/15 09:15	04/08/15 10:35	1.42	0.14	0.01	22.20	45.70	4/9/15			0	Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15				
	04/20/15 19:20	04/21/15 05:20	10.08	1.11	0.06	41.20	53.60	4/21/15	9:09 AM	11:00 AM	744	Hydraulic					
	04/22/15 01:20	04/22/15 20:10	18.92	0.07	0.00	34.90	47.40	4/22/15	9:05 AM	10:30 AM	226	Hydraulic	0.21 Rain on 4/21/15				
	04/22/15 01:20	04/22/15 20:10	18.92	0.07	0.00	34.90	47.40	4/24/15	8:15 AM	9:45 AM	227	Line Blocked	Flushed line. 0.06 rain on 4/22/15				
May-15	05/27/15 12:15	05/27/15 15:10	3.00	0.41	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.17	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.98	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:25	6.08	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.93	0.07	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.63	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/21/15 19:10	06/21/15 19:25	0.33	0.01	0.00	48.40	59.70	6/22/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.09	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
Jul-15	07/03/15 23:30	07/04/15 11:20	11.92	0.33	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 05:45	07/06/15 06:40	1.00	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.30	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/20/15 06:00	08/20/15 19:40	13.75	1.64	0.05	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.37	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.06	0.02	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/29/15 11:50	09/30/15 01:15	13.50	1.94	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/19/15 05:05	11/19/15 17:35	12.58	0.35	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15			0	Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
CSO-041		Influent Pipe:	18.5 x 21 in		Weir Length		20 in		Tributary Area:	3.18 acres							
		Overflow Pipe:	16.5 x 19.5 in														
Mar-15	03/13/15 20:55	03/14/15 14:35	17.75	0.71	0.01	46.80	56.80	3/15/15			0	Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15				
	03/26/15 17:40	03/27/15 06:40	13.08	0.34	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.13	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.14	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.19	0.03	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:15	05/27/15 15:10	3.00	0.43	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.17	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.94	0.03	34.90	59.40	6/2/15	9:15 AM	8:00 PM	4,568	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.94	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:25	6.08	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.87	0.06	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.65	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/21/15 19:10	06/21/15 19:25	0.33	0.01	0.00	48.40	59.70	6/22/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
	06/23/15 15:10	06/23/15 17:05	2.00	1.11	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
Jul-15	07/06/15 05:45	07/06/15 06:40	1.00	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 16:00	07/06/15 19:40	3.75	0.06	0.00	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.31	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.64	0.05	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.41	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.05	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.64	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	1.98	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:50	30.42	1.07	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
CSO-042		Influent Pipe:	24 in		Weir Length		30 in		Tributary Area:	4.88 acres							
		Overflow Pipe:	24 in														
Jan-15	01/03/15 09:00	01/04/15 06:40	21.75	0.49	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:40	01/04/15 19:30	1.92	0.19	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
	01/11/15 22:10	01/12/15 11:50	13.75	0.38	0.01	27.60	47.40	1/12/15	8:13 AM	12:00 PM	2,070	Hydraulic					
	01/12/15 18:35	01/12/15 19:30	1.00	0.02	0.00	27.60	47.40	1/13/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/12/15				
Feb-15	02/21/15 09:40	02/22/15 00:00	14.42	0.26	0.00	18.10	29.20	2/23/15			0	Snow Melt	snowmelt and 0.25 rain on 2/21/15				
Mar-15	03/04/15 05:10	03/05/15 18:00	36.92	0.64	0.01	31.50	48.00	3/9/15			0	Snow Melt	Unknown flow or duration.				
	03/13/15 21:00	03/14/15 14:35	17.67	0.70	0.01	46.80	56.80	3/15/15			0	Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15				
	03/26/15 17:40	03/27/15 06:40	13.08	0.33	0.02	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/03/15 09:20	04/04/15 02:10	16.92	0.18	0.01	22.30	43.30	4/4/15			0	Wooden Block	Unknown flow or duration. 0.39 rain on 4/3/15				
	04/08/15 09:15	04/08/15 10:35	1.42	0.14	0.01	22.20	45.70	4/9/15			0	Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15				
	04/09/15 21:25	04/09/15 22:30	1.17	0.08	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/14/15 04:10	04/14/15 06:05	2.00	0.06	0.00	20.60	26.30	4/14/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.96	0.03	40.20	57.60	4/20/15	8:25 AM	10:00 AM	204	Hydraulic					
	04/20/15 19:20	04/21/15 05:20	10.08	1.11	0.06	41.20	53.60	4/21/15			0	Wooden Block					
	04/22/15 01:20	04/22/15 20:10	18.92	0.07	0.00	34.90	47.40	4/23/15			0	Wooden Block	Unknown flow or duration. 0.06 Rain on 4/22/15				
May-15	05/06/15 06:35	05/06/15 11:25	4.92	0.08	0.00	20.60	39.90	5/6/15	8:22 AM	11:25 AM	1,656	Hydraulic					
	05/17/15 08:40	05/17/15 11:50	3.25	0.12	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 00:25	05/18/15 00:40	0.33	0.01	0.00	18.30	52.60	5/18/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 5/17/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.22	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:30	05/27/15 15:10	2.75	0.41	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.17	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.98	0.03	34.90	59.40	6/2/15	9:07 AM	8:00 PM	5,934	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.98	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 07:20	06/09/15 07:25	0.17	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.93	0.07	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.63	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/21/15 19:10	06/21/15 19:25	0.33	0.01	0.00	48.40	59.70	6/22/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.09	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 23:15	07/01/15 03:35	4.42	0.18	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/06/15 16:00	07/06/15 19:00	3.08	0.11	0.01	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.30	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
	07/15/15 01:00	07/15/15 03:40	2.75	0.11	0.01	23.50	29.00	7/15/15			0	Wooden Block	Unknown flow or duration. 1.39 Rain on 7/14/15				
Aug-15	08/11/15 01:20	08/11/15 12:50	11.58	0.60	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:20	08/11/15 12:50	11.58	0.60	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.64	0.05	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.64	0.05	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:40	08/24/15 16:30	1.92	0.37	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:20	08/30/15 15:40	0.42	0.07	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.06	0.02	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 17:25	7.00	0.68	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	1.94	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:50	30.42	1.06	0.03	28.10	52.70	10/3/15	6:10 AM	11:00 AM	1,587	Hydraulic					
	10/03/15 18:35	10/03/15 23:25	4.92	0.07	0.00	30.50	50.90	10/4/15			0	Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:20	24.67	2.06	0.03	44.90	64.90	10/28/15			0	Wooden Block	Unknown flow or duration.				
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:10	11/11/15 00:20	20.25	0.42	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/19/15 05:05	11/19/15 17:35	12.58	0.35	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15			0	Wooden Block	Unknown flow or duration.				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15			0	Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15	8:05 AM	1:10 PM	1,670	Hydraulic					
CSO-043		Influent Pipe:	18 in		Weir Length		18 in		Tributary Area:	4.9 acres							
		Overflow Pipe:	19 x 18 in														
Mar-15	03/13/15 20:55	03/14/15 14:35	17.75	0.70	0.01	46.80	56.80	3/15/15			0	Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15				
	03/26/15 17:40	03/27/15 06:40	13.08	0.33	0.02	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/20/15 19:20	04/21/15 05:20	10.08	1.09	0.06	41.20	53.60	4/21/15			0	Wooden Block					
May-15	05/17/15 08:30	05/17/15 11:55	3.50	0.12	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.25	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:30	05/27/15 15:10	2.75	0.41	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.97	0.03	34.90	59.40	6/2/15	9:07 AM	8:00 PM	1,462	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.97	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 07:20	06/09/15 07:25	0.17	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.94	0.07	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.66	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/21/15 19:10	06/21/15 19:25	0.33	0.01	0.00	48.40	59.70	6/22/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.12	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.15	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 23:15	07/01/15 03:35	4.42	0.18	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/09/15 17:20	07/09/15 21:20	4.08	0.30	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:55	11.75	0.60	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:45	13.83	1.67	0.05	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:45	13.83	1.67	0.05	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:40	08/24/15 16:30	1.92	0.38	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Sep-15	09/29/15 09:45	09/30/15 01:15	15.58	1.93	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:10	10/03/15 10:50	30.75	1.06	0.03	28.10	52.70	10/3/15	6:10 AM	11:00 AM	917	Hydraulic					
	10/03/15 18:35	10/03/15 23:25	4.92	0.07	0.00	30.50	50.90	10/4/15			0	Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Oct-15	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/19/15 05:05	11/19/15 17:35	12.58	0.35	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15			0	Wooden Block	Unknown flow or duration.				
CSO-044		Influent Pipe:	36 in		Weir Length		36 in		Tributary Area:	44.07 acres							
		Overflow Pipe:	36 in														
Jan-15	01/03/15 09:00	01/04/15 06:45	21.83	0.50	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:40	01/04/15 19:30	1.92	0.18	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
	01/11/15 22:10	01/12/15 19:30	21.42	0.41	0.01	27.60	47.40	1/12/15	8:05 AM	12:00 PM	1,088	Hydraulic					
	01/11/15 22:10	01/12/15 19:30	21.42	0.41	0.01	27.60	47.40	1/13/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/12/15				
Mar-15	03/04/15 05:10	03/05/15 18:00	36.92	0.64	0.01	31.50	48.00	3/9/15			0	Snow Melt	Unknown flow or duration.				
	03/13/15 20:55	03/14/15 14:35	17.75	0.71	0.01	46.80	56.80	3/14/15	7:17 AM	10:30 AM	884	Hydraulic					
	03/13/15 20:55	03/14/15 14:35	17.75	0.71	0.01	46.80	56.80	3/15/15			0	Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15				
	03/26/15 17:40	03/27/15 06:40	13.08	0.32	0.02	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/03/15 09:15	04/04/15 02:10	17.00	0.27	0.01	22.30	43.30	4/4/15			0	Wooden Block	Unknown flow or duration. 0.39 rain on 4/3/15				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.05	0.05	41.20	53.60	4/21/15			0	Wooden Block					
May-15	05/18/15 16:50	05/19/15 03:50	11.08	1.33	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:30	05/27/15 15:10	2.75	0.43	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.94	0.03	34.90	59.40	6/2/15	8:58 AM	8:00 PM	8,415	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.94	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 07:20	06/09/15 07:25	0.17	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/12/15 16:20	06/12/15 23:10	6.92	0.08	0.00	20.00	28.40	6/13/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.96	0.07	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.73	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.26	0.07	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.21	0.09	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.15	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 23:15	07/01/15 03:35	4.42	0.18	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/06/15 16:00	07/06/15 19:00	3.08	0.12	0.01	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.29	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:55	11.75	0.62	0.03	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/20/15 06:00	08/20/15 19:45	13.83	1.77	0.06	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:45	13.83	1.77	0.06	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:40	08/24/15 16:30	1.92	0.40	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Sep-15	09/10/15 08:50	09/10/15 18:10	9.42	1.10	0.02	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:25	09/12/15 17:25	7.08	0.70	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 09:45	09/30/15 01:15	15.58	1.92	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:10	10/03/15 10:50	30.75	1.06	0.03	28.10	52.70	10/3/15	6:06 AM	11:00 AM	3,340	Hydraulic					
	10/03/15 18:35	10/03/15 23:25	4.92	0.07	0.00	30.50	50.90	10/4/15			0	Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Dec-15	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-045		Influent Pipe:	34 x 30 in		Weir Length		30 in		Tributary Area:	5.61 acres							
		Overflow Pipe:	30 x 30 in														
Jan-15	01/11/15 22:10	01/12/15 19:30	21.42	0.41	0.01	27.60	47.40	1/12/15	8:10 AM	12:00 PM	851	Hydraulic					
Mar-15	03/13/15 20:55	03/14/15 14:35	17.75	0.72	0.01	46.80	56.80	3/14/15	7:12 AM	10:30 AM	738	Hydraulic					
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.92	0.03	34.90	59.40	6/2/15	9:00 AM	8:00 PM	7,007	Hydraulic	0.66 Rain on 6/1/15				
Oct-15	10/02/15 04:10	10/03/15 10:50	30.75	1.07	0.03	28.10	52.70	10/3/15	6:00 AM	11:00 AM	2,785	Hydraulic					

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
CSO-046		Influent Pipe:	18 in		Weir Length	15 in			Tributary Area:	5.61 acres							
		Overflow Pipe:	18 in														
Mar-15	03/13/15 20:55	03/14/15 14:35	17.75	0.72	0.01	46.80	56.80	3/14/15	7:12 AM	10:30 AM	318	Hydraulic					
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.92	0.03	34.90	59.40	6/2/15	9:00 AM	8:00 PM	3,036	Hydraulic	0.66 Rain on 6/1/15				
CSO-048		Influent Pipe:	60.25 x 66 in		Weir Length	60 in			Tributary Area:	682.64 acres							
		Overflow Pipe:	60 in														
Aug-14	08/03/14 04:45	08/03/14 05:55	1.25	0.05	0.04	22.70	38.40	8/3/14				Wooden Block	Unknown flow or duration.	1	08/03/14 05:35	08/03/14 22:40	7.5
	08/11/14 21:00	08/13/14 01:50	28.92	2.43	0.69	50.60	71.50	8/12/14; 8/13/14				Wooden Block	Unknown flow or duration.	2	08/12/14 01:30	08/13/14 04:25	57.3
	08/17/14 07:30	08/17/14 10:25	3.00	0.12	0.08	23.10	41.10	8/18/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 8/17/14	3	08/17/14 09:55	08/17/14 10:55	4.0
Sep-14	09/13/14 06:25	09/13/14 12:25	6.08	0.18	0.12	18.20	43.50	9/14/14				Wooden Block	Unknown flow or duration. 0.18 Rain on 9/13/14	4	09/13/14 11:05	09/13/14 13:10	5.4
	09/21/14 16:55	09/21/14 20:05	3.25	0.19	0.10	16.60	37.90	9/22/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 9/21/14	5	09/21/14 17:50	09/21/14 21:10	8.8
	09/25/14 00:15	09/25/14 11:15	11.08	0.36	0.13	19.90	41.60	9/25/14; 9/26/14	7:50 AM	11:00 AM	4,141	Hydraulic		6	09/25/14 07:35	09/25/14 11:40	7.9
	09/30/14 21:20	10/01/14 00:50	3.58	0.92	0.65	22.70	49.80	10/1/14				Wooden Block	Unknown flow or duration.	7	09/30/14 22:05	10/01/14 02:55	30.2
Oct-14	10/03/14 19:30	10/04/14 07:55	12.50	0.31	0.12	18.30	32.10	10/4/2014; 10/5/14				Wooden Block	Unknown flow or duration.	8	10/03/14 22:20	10/04/14 08:25	4.5
	10/07/14 19:25	10/07/14 23:20	4.00	0.14	0.11	17.70	40.10	10/8/14				Wooden Block	Unknown flow or duration. 0.15 Rain on 10/7/14	9	10/07/14 22:40	10/07/14 23:55	5.4
	10/10/14 21:10	10/11/14 08:30	11.42	0.32	0.09	17.50	26.50	NOT DETECTED						10	10/11/14 01:30	10/11/14 08:55	4.2
	10/15/14 01:25	10/15/14 22:25	21.08	1.19	0.31	32.20	52.00	10/15/14; 10/16/14	12:30 PM	11:00 PM	13,377	Hydraulic		11	10/15/14 03:15	10/16/14 00:10	34.6
	10/16/14 15:45	10/16/14 18:05	2.42	0.13	0.08	22.20	44.30	10/17/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 10/16/14	12	10/16/14 17:00	10/16/14 19:25	7.1
Nov-14	11/05/14 22:15	11/06/14 05:55	7.75	0.65	0.13	23.40	50.40	11/6/14; 11/7/14	8:01 AM	9:00 AM	1,274	Hydraulic		13	11/06/14 03:00	11/06/14 08:45	10.3
	11/16/14 20:10	11/17/14 13:30	17.42	0.53	0.09	23.70	44.90	11/17/14; 11/18/14	1:20 PM	3:00 PM	795	Hydraulic		14	11/17/14 08:50	11/17/14 13:30	7.3
	11/23/14 21:25	11/24/14 04:20	7.00	0.58	0.22	20.10	34.40	11/24/14				Wooden Block	Unknown flow or duration.	15	11/24/14 00:20	11/24/14 05:40	17.7
	11/26/14 04:30	11/26/14 16:50	12.42	0.73	0.16	31.50	43.30	11/27/14				Wooden Block	Unknown flow or duration. 0.74 rain on 11/26/14	16	11/26/14 08:25	11/26/14 19:50	8.6
Dec-14	12/01/14 12:10	12/01/14 17:15	5.17	0.13	0.05	19.50	42.70	NOT DETECTED						17	12/01/14 16:35	12/01/14 17:50	3.2
	12/02/14 09:45	12/02/14 20:45	11.08	0.22	0.17	22.30	44.60	12/3/14				Wooden Block	Unknown flow or duration. 0.22 rain on 12/2/14	18	12/02/14 18:30	12/02/14 21:15	10.8
	12/05/14 11:40	12/06/14 20:25	32.83	0.92	0.12	31.50	49.30	12/6/14; 12/7/14				Wooden Block	Unknown flow or duration.	19	12/05/14 17:30	12/07/14 00:45	9.8
	12/08/14 00:00	12/09/14 04:45	4.83	0.31	0.10	24.90	45.70	12/9/14; 12/10/14	8:05 AM	9:00 AM	454	Hydraulic		20	12/09/14 02:35	12/09/14 08:55	7.5
	12/16/14 10:05	12/16/14 13:30	3.50	0.12	0.11	21.70	35.40	NOT DETECTED						21	12/16/14 12:40	12/16/14 14:35	4.5
	12/22/14 16:35	12/23/14 10:40	18.17	0.29	0.08	24.80	43.00	12/23/14				Wooden Block	Unknown flow or duration.	22	12/22/14 20:25	12/23/14 10:35	6.2
	12/23/14 22:40	12/24/14 16:10	17.58	0.57	0.15	35.20	43.00	12/24/14; 12/25/14	7:50 AM	4:00 PM	10,511	Hydraulic		23	12/24/14 02:45	12/25/14 05:50	10.2
Jan-15	01/03/15 08:00	01/03/15 21:45	13.83	0.44	0.12	26.90	45.40	1/4/15				Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15	24	01/03/15 12:35	01/04/15 00:20	9.0
	01/04/15 16:35	01/04/15 18:35	2.08	0.16	0.11	25.40	46.20	1/5/15				Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15	25	01/04/15 18:50	01/04/15 21:50	10.7
	01/11/15 21:10	01/12/15 10:50	13.75	0.36	0.08	27.60	47.40	1/12/15; 1/13/15	8:00 AM	12:00 PM	1,816	Hydraulic		26	01/12/15 07:55	01/12/15 15:00	8.9
Feb-15	02/01/15 15:20	02/02/15 10:50	19.58	0.29	0.06	23.90	43.10	NOT DETECTED						27	02/02/15 09:40	02/02/15 15:40	3.8
	02/21/15 08:40	02/21/15 23:00	14.42	0.27	0.04	18.10	29.20	NOT DETECTED						28	02/22/15 14:35	02/22/15 17:15	3.4
Mar-15	03/01/15 04:40	03/01/15 18:55	14.33	0.22	0.04	18.80	31.00	NOT DETECTED						29	03/02/15 12:05	03/02/15 15:45	2.9
	03/04/15 04:10	03/05/15 03:35	23.50	0.37	0.07	31.50	48.00	3/5/15				Wooden Block	Unknown flow or duration.	30	03/04/15 11:10	03/05/15 03:30	6.1
	03/07/15 15:45	03/07/15 15:50	0.17	0.00	0.00	21.30	28.40	3/9/15				Snow Melt	Unknown flow or duration.	31	03/08/15 13:00	03/08/15 18:25	4.3
	03/07/15 15:45	03/07/15 15:50	0.17	0.00	0.00	21.30	28.40	NOT DETECTED						32	03/09/15 16:35	03/09/15 16:55	0.2
	03/10/15 13:55	03/11/15 05:15	15.42	0.42	0.09	38.80	54.70	NOT DETECTED						33	03/10/15 15:45	03/12/15 01:30	8.3
	03/13/15 20:55	03/14/15 14:35	17.75	0.71	0.11	46.80	56.80	3/14/15; 3/15/15	7:09 AM	10:30 AM	4,140	Hydraulic		34	03/13/15 23:20	03/15/15 11:40	10.8
	03/20/15 05:55	03/20/15 15:00	9.17	0.14	0.03	26.70	47.30	NOT DETECTED						35	03/21/15 13:35	03/21/15 14:40	2.1
	03/26/15 17:40	03/26/15 18:25	0.83	0.28	0.28	25.20	48.50	3/27/15				Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15	36	03/26/15 18:05	03/26/15 20:50	38.9
Apr-15	04/03/15 09:15	04/03/15 19:35	10.42	0.22	0.14	22.30	43.30	4/4/15				Wooden Block	Unknown flow or duration. 0.39 rain on 4/3/15	37	04/03/15 16:10	04/03/15 20:55	8.6
	04/08/15 09:15	04/08/15 10:40	1.50	0.14	0.12	22.20	45.70	NOT DETECTED						38	04/08/15 10:10	04/08/15 12:25	9.3
	04/09/15 21:25	04/09/15 22:35	1.25	0.08	0.08	21.50	41.40	NOT DETECTED						39	04/09/15 22:40	04/09/15 23:30	4.1
	04/20/15 01:15	04/20/15 09:40	8.50	0.96	0.30	40.20	57.60	4/20/15 - 4/23/15	Multiple Discontinuous Measurement		8,281	Hydraulic		40	04/20/15 02:25	04/22/15 14:40	45.4
May-15	05/16/15 16:05	05/16/15 17:45	1.75	0.20	0.19	16.70	42.80	5/17/15				Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15	41	05/16/15 17:05	05/16/15 18:05	13.2
	05/17/15 08:30	05/17/15 11:55	3.50	0.10	0.09	19.10	38.90	NOT DETECTED						42	05/17/15 11:05	05/17/15 11:55	3.2
	05/18/15 16:50	05/19/15 04:00	11.25	1.32	0.62	18.30	52.60	5/19/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15	43	05/18/15 17:25	05/19/15 05:50	41.5
	05/27/15 12:15	05/27/15 15:10	3.00	0.42	0.32	17.60	51.10	NOT DETECTED						44	05/27/15 13:50	05/27/15 16:40	28.7
	05/31/15 17:40	05/31/15 23:40	6.08	0.14	0.07	17.30	42.20	6/1/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15	45	05/31/15 23:15	05/31/15 23:35	4.0

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Jun-15	06/01/15 14:15	06/01/15 23:00	8.83	0.41	0.15	22.90	48.50	6/2/15; 6/3/15	8:55 AM	8:00 PM	14,014	Hydraulic	0.66 Rain on 6/1/15	46	06/01/15 16:30	06/02/15 19:55	26.4
	06/08/15 17:00	06/08/15 18:55	2.00	1.94	1.78	34.50	72.70	6/9/15				Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15	47	06/08/15 17:20	06/09/15 00:15	100.7
	06/12/15 16:15	06/12/15 23:10	7.00	0.06	0.04	20.00	28.40	6/13/15				Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15	NO OVERFLOW RECORDED			
	06/14/15 05:55	06/14/15 06:35	0.75	0.09	0.09	26.60	59.20	6/15/15				Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15	48	06/14/15 06:35	06/14/15 20:45	69.3
	06/15/15 20:55	06/15/15 22:00	1.17	0.03	0.03	22.90	32.00	NOT DETECTED						49	06/15/15 22:05	06/15/15 22:35	2.9
	06/17/15 22:35	06/18/15 04:00	5.50	0.21	0.13	26.50	53.80	NOT DETECTED						50	06/18/15 01:55	06/18/15 04:25	8.6
	06/18/15 17:45	06/19/15 02:30	8.83	0.66	0.45	26.50	53.80	6/18/15; 6/19/15				Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15		06/18/15 22:40	06/19/15 04:10	36.3
	06/20/15 17:20	06/21/15 05:00	11.75	2.11	0.68	43.10	74.30	6/21/15 - 6/25/15	Multiple Discontinuous Measurement		7,088	Hydraulic	2.04 Rain on 6/20/15	51	06/20/15 18:30	06/24/15 23:40	79.7
	06/23/15 15:10	06/23/15 17:05	2.00	1.19	1.03	40.60	72.30	6/26/15				Wooden Block	Unknown flow or duration. 0.03 Rain on 6/25/15	52	06/25/15 13:20	06/25/15 20:00	0.4
	06/27/15 04:35	06/27/15 16:20	11.83	1.14	0.42	47.20	70.90	6/28/15 - 7/1/15	Multiple Discontinuous Measurement		3,002	Hydraulic	1.15 Rain on 6/27/15	53	06/27/15 09:15	07/01/15 13:35	54.3
Jul-15	07/03/15 23:30	07/04/15 11:25	12.00	0.30	0.16	28.40	50.00	NOT DETECTED						54	07/04/15 04:15	07/04/15 14:10	9.3
	07/06/15 15:55	07/06/15 19:00	3.17	0.27	0.25	25.20	50.20	7/7/15				Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15	55	07/06/15 16:55	07/06/15 23:20	28.3
	07/06/15 15:55	07/06/15 19:00	3.17	0.27	0.25	25.20	50.20	NOT DETECTED						56	07/07/15 13:40	07/07/15 13:40	0.4
	07/09/15 17:20	07/09/15 17:55	0.67	0.23	0.23	24.50	47.90	7/10/15				Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15	57	07/09/15 17:45	07/09/15 19:25	26.0
	07/14/15 01:15	07/14/15 06:45	5.58	1.34	0.69	29.40	54.10	7/14/15; 7/15/15	8:15 AM	10:15 AM	2,548	Hydraulic		58	07/14/15 02:40	07/14/15 09:20	46.9
	07/26/15 20:25	07/27/15 01:40	5.33	0.65	0.56	22.90	54.60	NOT DETECTED						59	07/26/15 23:40	07/27/15 02:15	36.2
Aug-15	08/10/15 11:50	08/10/15 13:05	1.33	0.03	0.02	20.20	41.60	8/11/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15	60	08/10/15 13:15	08/10/15 13:30	3.6
	08/11/15 01:35	08/11/15 12:55	11.42	0.54	0.31	20.50	44.60	8/12/15				Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15	61	08/11/15 01:45	08/11/15 14:25	23.6
	08/20/15 06:00	08/20/15 20:00	14.08	1.67	0.62	33.60	63.70	8/20/15; 8/21/15	8:30 AM	8:30 PM	13,356	Hydraulic	0.03 Rain on 8/18/15	62	08/20/15 06:45	08/20/15 22:15	76.0
	08/24/15 14:35	08/24/15 16:35	2.08	0.32	0.32	20.20	47.40	8/25/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15	63	08/24/15 16:25	08/24/15 18:15	31.4
	08/30/15 15:15	08/30/15 15:45	0.58	0.04	0.04	17.10	41.80	8/31/15				Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15	64	08/30/15 15:50	08/30/15 16:25	6.6
Sep-15	09/10/15 08:50	09/10/15 14:30	5.75	1.12	0.31	26.80	62.40	9/11/15				Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15	65	09/10/15 10:15	09/10/15 16:25	15.5
	09/12/15 10:25	09/12/15 17:35	7.25	0.70	0.22	24.70	53.70	9/13/15				Wooden Block	Unknown flow or duration.	66	09/12/15 13:05	09/12/15 18:40	11.4
	09/29/15 09:45	09/30/15 01:15	15.58	1.88	0.52	32.90	64.00	9/30/15				Wooden Block	Unknown flow or duration.	67	09/29/15 17:55	09/30/15 04:05	44.0
Oct-15	10/02/15 04:05	10/03/15 10:55	30.92	1.05	0.02	28.10	52.70	10/3/15	6:05 AM	11:00 AM	5,565	Hydraulic					
	10/03/15 18:30	10/03/15 23:25	5.00	0.07	0.00	30.50	50.90	10/4/15				Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15				Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:30	24.83	2.03	0.03	44.90	64.90	10/28/15	10:10 AM	11:00 PM	14,191	Hydraulic					
	10/29/15 09:05	10/29/15 09:30	0.50	0.03	0.00	24.80	39.40	10/29/15				Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 03:45	11/11/15 00:35	20.92	0.42	0.01	22.30	37.90	11/11/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15				Wooden Block	Unknown flow or duration.				
	11/19/15 05:05	11/19/15 17:35	12.58	0.35	0.01	21.00	43.30	11/20/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15				Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15				Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15				Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15				Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15				Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15				Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15	7:50 AM	1:00 PM	5,843	Hydraulic					
CSO-049		Influent Pipe:	54 in		Weir Length	103 in			Tributary Area:	29.42 acres							
		Overflow Pipe:	62.5 x 36.25 in														
Aug-14	08/11/14 21:30	08/13/14 01:20	27.92	2.20	0.38	50.60	71.50	8/12/14; 8/13/14	9:33 AM	10:00 PM	15,138	Hydraulic		1	08/12/14 01:25	08/13/14 01:15	7.4
Sep-14	09/13/14 06:25	09/13/14 13:55	7.58	0.20	0.09	18.20	43.50	NOT DETECTED						2	09/13/14 14:15	09/13/14 17:40	1.1
	09/25/14 00:40	09/25/14 14:20	13.75	0.25	0.09	19.90	41.60	9/26/14				Wooden Block	Unknown flow or duration. 0.32 Rain on 9/25/14	NO OVERFLOW RECORDED			
	09/30/14 21:15	10/01/14 00:30	3.33	1.00	0.72	22.70	49.80	10/1/14				Wooden Block	Unknown flow or duration.	3	09/30/14 22:00	10/01/14 00:25	9.5
Oct-14	10/07/14 18:55	10/07/14 23:00	4.17	0.18	0.14	17.70	40.10	10/8/14				Wooden Block	Unknown flow or duration. 0.15 Rain on 10/7/14	4	10/07/14 22:35	10/07/14 22:55	3.3
	10/10/14 21:10	10/11/14 08:30	11.42	0.26	0.06	17.50	26.50	10/12/14				Wooden Block	Unknown flow or duration. 0.26 Rain on 10/11/14	NO OVERFLOW RECORDED			
	10/15/14 00:05	10/15/14 15:10	15.17	1.11	0.36	32.20	52.00	10/15/14; 10/16/14				Wooden Block	Unknown flow or duration.	5	10/15/14 03:10	10/15/14 15:05	7.6
	10/16/14 15:45	10/16/14 17:35	1.92	0.14	0.11	22.20	44.30	NOT DETECTED						6	10/16/14 17:10	10/16/14 17:30	1.4

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
	10/20/14 18:40	10/21/14 03:00	8.42	0.07	0.09	16.50	23.10	10/21/14				Wooden Block	Unknown flow or duration.	NO OVERFLOW RECORDED			
Nov-14	11/05/14 22:05	11/06/14 05:55	7.92	0.64	0.13	23.40	50.40	11/6/14				Wooden Block	Unknown flow or duration.	7	11/06/14 03:45	11/06/14 06:40	1.8
	11/23/14 21:30	11/24/14 02:50	5.42	0.59	0.25	20.10	34.40	11/24/14				Wooden Block	Unknown flow or duration.	8	11/24/14 01:25	11/24/14 02:55	3.0
	11/26/14 04:30	11/26/14 11:35	7.17	0.62	0.16	31.50	43.30	NOT DETECTED						9	11/26/14 09:45	11/26/14 11:30	1.3
Dec-14	12/02/14 10:45	12/02/14 19:05	8.42	0.21	0.17	22.30	44.60	12/3/14				Wooden Block	Unknown flow or duration. 0.22 rain on 12/2/14	10	12/02/14 18:30	12/02/14 19:00	2.2
	12/05/14 12:15	12/06/14 12:35	24.42	0.66	0.13	31.50	49.30	12/7/14				Wooden Block	Unknown flow or duration. 0.57 rain on 12/6/14	11	12/06/14 11:40	12/06/14 12:30	1.9
	12/22/14 16:40	12/24/14 04:30	35.92	0.63	0.14	24.80	43.00	12/24/14				Wooden Block	Unknown flow or duration.	12	12/24/14 04:15	12/24/14 04:50	2.7
Jan-15	01/03/15 07:55	01/03/15 16:25	8.58	0.29	0.10	26.90	45.40	NOT DETECTED						13	01/03/15 16:55	01/03/15 16:55	0.3
	01/04/15 16:25	01/04/15 18:35	2.25	0.29	0.18	25.40	46.20	1/5/15				Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15	14	01/04/15 18:25	01/04/15 19:20	3.4
	01/11/15 22:40	01/12/15 10:45	12.17	0.33	0.08	27.60	47.40	NOT DETECTED						15	01/12/15 10:25	01/12/15 10:50	0.6
Mar-15	03/10/15 13:55	03/10/15 21:00	7.17	0.34	0.09	38.80	54.70	NOT DETECTED						16	03/10/15 20:05	03/10/15 21:05	2.0
	03/13/15 21:00	03/14/15 07:15	10.33	0.61	0.11	46.80	56.80	3/14/15				Wooden Block	Unknown flow or duration.	17	03/14/15 01:55	03/14/15 07:40	2.2
	03/26/15 17:30	03/26/15 18:10	0.75	0.36	0.36	25.20	48.50	3/27/15				Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15	18	03/26/15 18:00	03/26/15 18:40	5.2
Apr-15	04/08/15 09:10	04/08/15 10:30	1.42	0.04	0.04	22.20	45.70	4/8/15; 4/9/15	10:14 AM	11:00 AM	908	Hydraulic		19	04/08/15 09:55	04/08/15 11:00	2.3
	04/09/15 21:20	04/09/15 22:30	1.25	0.07	0.07	21.50	41.40	4/10/15				Wooden Block	Unknown flow or duration.	20	04/09/15 22:25	04/10/15 14:10	2.2
	04/14/15 04:10	04/14/15 06:00	1.92	0.06	0.05	20.60	26.30	NOT DETECTED						21	04/14/15 11:20	04/14/15 12:25	1.2
	04/20/15 01:15	04/20/15 07:05	5.92	0.93	0.36	40.20	57.60	4/20/15				Wooden Block	Unknown flow or duration.	22	04/20/15 03:00	04/20/15 07:00	4.6
	04/20/15 19:25	04/21/15 01:15	5.92	1.39	0.81	40.20	57.60	4/21/15				Wooden Block	Unknown flow or duration.		04/20/15 20:40	04/21/15 01:25	11.4
May-15	05/06/15 06:30	05/06/15 09:50	3.42	0.12	0.09	20.60	39.90	NOT DETECTED						23	05/06/15 10:05	05/06/15 10:10	1.6
	05/16/15 16:00	05/16/15 17:10	1.25	0.20	0.20	16.70	42.80	5/17/15				Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15	24	05/16/15 16:55	05/16/15 17:25	6.6
	05/18/15 16:50	05/18/15 22:00	5.25	0.54	0.51	18.30	52.60	5/19/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15	25	05/18/15 21:15	05/18/15 21:55	10.7
	05/27/15 11:55	05/27/15 15:10	3.33	1.16	0.84	17.60	51.10	5/27/15; 5/28/15	12:53 PM	3:00 PM	2,422	Hydraulic		26	05/27/15 12:35	05/27/15 15:05	11.1
	05/31/15 17:40	05/31/15 23:20	5.75	0.15	0.15	17.30	42.20	6/1/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15	27	05/31/15 23:10	05/31/15 23:30	4.0
Jun-15	06/01/15 13:55	06/02/15 14:30	24.67	1.26	0.35	34.90	59.40	6/2/15; 6/3/15	11:00 AM	8:00 PM	10,899	Hydraulic	0.66 Rain on 6/1/15	28	06/02/15 08:55	06/02/15 14:25	4.3
	06/08/15 16:55	06/08/15 18:50	2.00	2.15	1.82	34.50	72.70	6/9/15				Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15	29	06/08/15 17:10	06/08/15 19:10	16.7
	06/14/15 01:20	06/14/15 06:30	5.25	0.10	0.10	26.60	59.20	6/15/15				Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15	30	06/14/15 06:30	06/14/15 18:00	5.2
	06/18/15 17:40	06/19/15 01:15	7.67	0.45	0.31	26.50	53.80	6/19/15				Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15	31	06/18/15 22:30	06/19/15 01:10	8.8
	06/20/15 17:20	06/21/15 02:25	9.17	3.09	1.22	43.10	74.30	6/21/15				Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15	32	06/20/15 18:35	06/21/15 02:35	15.8
	06/23/15 15:20	06/23/15 17:00	1.75	0.92	0.83	40.60	72.30	6/24/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15	33	06/23/15 15:45	06/23/15 17:15	11.4
	06/27/15 04:40	06/27/15 16:20	11.75	1.02	0.24	47.20	70.90	6/28/15				Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15	34	06/27/15 12:50	06/28/15 02:45	4.1
	06/30/15 22:20	07/01/15 00:00	1.75	0.07	0.06	31.80	47.80	7/1/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15	35	06/30/15 23:45	06/30/15 23:55	2.0
Jul-15	07/03/15 23:30	07/04/15 10:55	11.50	0.32	0.19	28.40	50.00	7/5/15				Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15	36	07/04/15 10:45	07/04/15 11:20	3.4
	07/08/15 22:15	07/08/15 22:45	0.58	0.06	0.06	23.10	29.50	7/9/15				Wooden Block	Unknown flow or duration. 0.04 Rain on 7/8/15	37	07/08/15 22:50	07/08/15 23:00	2.6
	07/09/15 17:15	07/09/15 17:55	0.75	0.31	0.31	24.50	47.90	7/10/15				Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15	38	07/09/15 17:45	07/09/15 18:15	8.8
	07/14/15 01:10	07/14/15 03:50	2.75	0.56	0.47	29.40	54.10	NOT DETECTED						39	07/14/15 03:05	07/14/15 03:50	8.6
	07/26/15 19:55	07/27/15 00:25	4.58	0.98	0.85	22.90	54.60	NOT DETECTED						40	07/26/15 23:30	07/27/15 00:20	15.6
Aug-15	08/10/15 11:50	08/10/15 12:40	0.92	0.16	0.16	20.20	41.60	8/11/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15	41	08/10/15 12:30	08/10/15 12:55	4.6
	08/11/15 01:05	08/11/15 12:45	11.75	0.56	0.26	20.50	44.60	8/12/15				Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15	42	08/11/15 01:40	08/11/15 13:00	7.4
	08/20/15 06:00	08/20/15 19:15	13.33	1.32	0.44	33.60	63.70	8/21/15				Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15	43	08/20/15 07:35	08/20/15 19:35	9.1
	08/24/15 14:30	08/24/15 16:30	2.08	0.44	0.42	20.20	47.40	NOT DETECTED						44	08/24/15 16:20	08/24/15 16:50	10.0
Sep-15	09/10/15 09:00	09/10/15 14:25	5.50	0.87	0.34	26.80	62.40	9/11/15				Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15	45	09/10/15 12:10	09/10/15 14:40	3.3
	09/12/15 10:35	09/12/15 15:25	4.92	0.46	0.26	24.70	53.70	9/13/15				Wooden Block	Unknown flow or duration.	46	09/12/15 13:15	09/12/15 15:20	3.4
	09/29/15 12:15	09/30/15 01:10	13.00	2.04	0.74	32.90	64.00	9/30/15				Wooden Block	Unknown flow or duration.	47	09/29/15 18:05	09/30/15 01:45	9.2
Oct-15	10/02/15 10:35	10/03/15 10:50	24.33	1.09	0.03	28.10	52.70	10/3/15				Wooden Block	Unknown flow or duration.				
	10/09/15 14:55	10/09/15 17:15	2.42	0.32	0.02	19.90	42.80	10/10/15				Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:50	10/29/15 00:20	24.58	2.01	0.04	44.90	64.90	10/28/15	1:15 PM	11:00 PM	11,310	Hydraulic					
	10/29/15 09:05	10/29/15 09:30	0.50	0.03	0.00	24.80	39.40	10/29/15				Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:15	11/11/15 00:35	20.42	0.47	0.01	22.30	37.90	11/11/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15				Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Dec-15	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15				Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15				Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15				Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15				Wooden Block	Unknown flow or duration.				
CSO-050		Influent Pipe:	48 in		Weir Length		46 in		Tributary Area:	40.88 acres							
		Overflow Pipe:	48 in														
Aug-14	08/03/14 15:35	08/03/14 20:50	5.33	0.16	0.08	22.70	38.40	NOT DETECTED						1	08/03/14 20:35	08/03/14 20:45	1.6
	08/11/14 21:30	08/13/14 01:15	27.83	2.22	0.37	50.60	71.50	8/12/14; 8/13/14	9:55 AM	10:00 PM	10,956	Hydraulic		2	08/12/14 01:20	08/13/14 01:10	10.5
	08/17/14 07:25	08/17/14 10:00	2.67	0.09	0.08	23.10	41.10	NOT DETECTED						3	08/17/14 09:35	08/17/14 09:55	3.0
	08/20/14 09:25	08/20/14 15:55	6.58	0.12	0.08	20.60	34.00	8/21/14				Wooden Block	Unknown flow or duration. 0.05 Rain on 8/20/14	4	08/20/14 09:45	08/20/14 15:50	4.3
Sep-14	09/13/14 06:25	09/13/14 12:15	5.92	0.16	0.09	18.20	43.50	NOT DETECTED						5	09/13/14 12:00	09/13/14 12:10	2.3
	09/21/14 16:50	09/21/14 19:55	3.17	0.11	0.09	16.60	37.90	9/22/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 9/21/14	6	09/21/14 17:30	09/21/14 20:05	4.6
	09/25/14 00:40	09/25/14 14:20	13.75	0.25	0.09	19.90	41.60	9/26/14				Wooden Block	Unknown flow or duration. 0.32 Rain on 9/25/14	NO OVERFLOW RECORDED			
	09/30/14 21:15	10/01/14 00:35	3.42	1.02	0.74	22.70	49.80	10/1/14				Wooden Block	Unknown flow or duration.	7	09/30/14 21:55	10/01/14 00:30	16.5
Oct-14	10/07/14 18:55	10/07/14 23:00	4.17	0.18	0.14	17.70	40.10	10/8/14				Wooden Block	Unknown flow or duration. 0.15 Rain on 10/7/14	8	10/07/14 22:25	10/07/14 22:55	7.4
	10/15/14 00:05	10/15/14 15:40	15.67	1.09	0.35	32.20	52.00	10/15/14; 10/16/14				Wooden Block	Unknown flow or duration.	9	10/15/14 02:45	10/15/14 15:35	14.2
	10/16/14 15:45	10/16/14 17:25	1.75	0.13	0.11	22.20	44.30	NOT DETECTED						10	10/16/14 17:00	10/16/14 17:20	3.9
Nov-14	11/05/14 22:05	11/06/14 05:55	7.92	0.64	0.13	23.40	50.40	11/6/14				Wooden Block	Unknown flow or duration.	11	11/06/14 03:35	11/06/14 07:00	4.5
	11/16/14 20:00	11/17/14 10:50	14.92	0.49	0.09	23.70	44.90	11/17/14				Wooden Block	Unknown flow or duration.	12	11/17/14 11:45	11/17/14 11:45	0.8
	11/23/14 21:30	11/24/14 02:50	5.42	0.58	0.25	20.10	34.40	11/24/14				Wooden Block	Unknown flow or duration.	13	11/24/14 00:30	11/24/14 02:55	6.2
	11/26/14 04:30	11/26/14 11:30	7.08	0.61	0.16	31.50	43.30	11/27/14				Wooden Block	Unknown flow or duration. 0.74 rain on 11/26/14	14	11/26/14 09:00	11/26/14 11:25	3.5
Dec-14	12/01/14 12:10	12/01/14 16:30	4.42	0.12	0.12	19.50	42.70	12/2/14				Wooden Block	Unknown flow or duration. 0.11 rain on 12/1/14	15	12/01/14 16:10	12/01/14 16:25	3.1
	12/02/14 10:45	12/02/14 19:05	8.42	0.22	0.17	22.30	44.60	12/3/14				Wooden Block	Unknown flow or duration. 0.22 rain on 12/2/14	16	12/02/14 18:20	12/02/14 19:00	5.6
	12/05/14 12:15	12/06/14 15:25	27.25	0.79	0.13	31.50	49.30	12/7/14				Wooden Block	Unknown flow or duration. 0.57 rain on 12/6/14	17	12/06/14 11:20	12/06/14 15:20	4.5
	12/22/14 16:40	12/24/14 05:45	37.17	0.65	0.14	24.80	43.00	12/24/14				Wooden Block	Unknown flow or duration.	18	12/24/14 04:05	12/24/14 05:40	5.5
Jan-15	01/03/15 07:55	01/03/15 20:40	12.83	0.35	0.09	26.90	45.40	1/4/15				Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15	19	01/03/15 16:25	01/03/15 20:45	3.5
	01/04/15 16:25	01/04/15 18:35	2.25	0.28	0.17	25.40	46.20	1/5/15				Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15	20	01/04/15 18:15	01/04/15 19:15	5.3
	01/11/15 22:40	01/12/15 10:45	12.17	0.34	0.08	27.60	47.40	1/12/15; 1/13/15				Wooden Block	Unknown flow or duration.	21	01/12/15 10:00	01/12/15 11:10	3.4
	01/23/15 20:25	01/24/15 04:05	7.75	0.50	0.11	22.10	42.30	1/25/15				Snow Melt	snowmelt and 0.34 rain on 1/24/15	NO OVERFLOW RECORDED			
Mar-15	03/07/15 15:15	03/07/15 15:45	0.58	0.01	0.01	21.30	28.40	3/8/15				Snow Melt	Unknown flow or duration.	NO OVERFLOW RECORDED			
	03/10/15 13:55	03/10/15 20:45	6.92	0.33	0.09	38.80	54.70	NOT DETECTED						22	03/10/15 20:00	03/10/15 20:40	2.8
	03/13/15 21:00	03/14/15 07:15	10.33	0.61	0.11	46.80	56.80	3/14/15				Wooden Block	Unknown flow or duration.	23	03/13/15 23:50	03/14/15 07:40	4.2
	03/26/15 17:30	03/26/15 18:10	0.75	0.36	0.36	25.20	48.50	3/27/15				Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15	24	03/26/15 17:55	03/26/15 18:30	10.7
Apr-15	04/08/15 09:10	04/08/15 10:30	1.42	0.05	0.05	22.20	45.70	4/8/15; 4/9/15	9:59 AM	11:00 AM	913	Hydraulic		25	04/08/15 09:45	04/08/15 10:55	4.8
	04/09/15 21:20	04/09/15 22:30	1.25	0.07	0.07	21.50	41.40	4/10/15				Wooden Block	Unknown flow or duration.	26	04/09/15 22:15	04/09/15 22:50	4.4
	04/16/15 23:25	04/17/15 03:40	4.33	0.12	0.11	19.00	26.30	4/17/15				Wooden Block	Unknown flow or duration.	NO OVERFLOW RECORDED			
	04/20/15 01:15	04/20/15 09:40	8.50	0.97	0.35	40.20	57.60	4/20/15; 4/21/15				Wooden Block	Unknown flow or duration.	27	04/20/15 02:10	04/22/15 13:55	19.9
May-15	05/06/15 06:30	05/06/15 09:50	3.42	0.11	0.08	20.60	39.90	5/6/15	10:02 AM	1:48 PM	3,424	Hydraulic		28	05/06/15 09:55	05/06/15 10:05	5.4
	05/16/15 16:00	05/16/15 17:10	1.25	0.20	0.20	16.70	42.80	5/17/15				Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15	29	05/16/15 16:45	05/16/15 17:25	12.7
	05/17/15 08:40	05/17/15 11:15	2.67	0.10	0.09	19.10	38.90	5/17/15				Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15	30	05/17/15 10:45	05/17/15 11:15	2.6
	05/18/15 16:50	05/19/15 03:20	10.58	0.67	0.50	18.30	52.60	5/19/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15	31	05/18/15 21:15	05/19/15 03:35	17.1
	05/27/15 11:55	05/27/15 15:15	3.42	1.00	0.69	17.60	51.10	5/27/15; 5/28/15	12:32 PM	3:00 PM	812	Hydraulic		32	05/27/15 12:30	05/27/15 15:10	18.3
	05/31/15 17:40	05/31/15 23:20	5.75	0.16	0.14	17.30	42.20	6/1/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15	33	05/31/15 23:05	05/31/15 23:25	7.7
Jun-15	06/01/15 13:55	06/02/15 14:30	24.67	1.28	0.35	34.90	59.40	6/2/15; 6/3/15	10:47 AM	8:00 PM	8,445	Hydraulic	0.66 Rain on 6/1/15	34	06/01/15 16:10	06/02/15 14:25	7.7
	06/08/15 16:55	06/08/15 18:50	2.00	2.17	1.87	34.50	72.70	6/9/15				Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15	35	06/08/15 17:10	06/08/15 19:20	24.3
	06/14/15 01:20	06/14/15 06:30	5.25	0.10	0.10	26.60	59.20	6/15/15				Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15	36	06/14/15 06:15	06/14/15 18:45	9.9
	06/17/15 22:50	06/18/15 02:40	3.92	0.16	0.12	26.50	53.80	6/18/15				Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15	37	06/18/15 02:15	06/18/15 02:35	3.9
	06/18/15 17:40	06/19/15 01:35	8.00	0.46	0.32	26.50	53.80	6/19/15				Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15		06/18/15 22:25	06/19/15 01:30	15.7
	06/20/15 17:20	06/21/15 02:25	9.17	3.03	1.19	43.10	74.30	6/21/15				Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15	38	06/20/15 18:25	06/21/15 02:55	23.3
	06/23/15 15:20	06/23/15 17:00	1.75	0.90	0.81	40.60	72.30	6/24/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15	39	06/23/15 15:35	06/23/15 17:30	19.8
	06/27/15 04:40	06/27/15 16:20	11.75	1.03	0.26	47.20	70.90	6/28/15				Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15	40	06/27/15 12:15	06/28/15 02:40	7.4

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
	06/30/15 22:20	06/30/15 23:55	1.67	0.08	0.07	31.80	47.80	7/1/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15	41	06/30/15 23:30	06/30/15 23:50	7.3
Jul-15	07/03/15 23:30	07/04/15 10:55	11.50	0.31	0.18	28.40	50.00	7/5/15				Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15	42	07/04/15 10:35	07/04/15 11:20	8.8
	07/06/15 16:40	07/06/15 19:45	3.17	0.02	0.02	25.20	50.20	7/7/15				Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15	NO OVERFLOW RECORDED			
	07/08/15 22:15	07/08/15 22:45	0.58	0.07	0.07	23.10	29.50	7/9/15				Wooden Block	Unknown flow or duration. 0.04 Rain on 7/8/15	43	07/08/15 22:40	07/08/15 23:00	8.0
	07/09/15 17:15	07/09/15 17:55	0.75	0.30	0.30	24.50	47.90	7/10/15				Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15	44	07/09/15 17:40	07/09/15 18:10	14.0
	07/14/15 01:10	07/14/15 03:50	2.75	0.57	0.48	29.40	54.10	NOT DETECTED						45	07/14/15 03:00	07/14/15 03:50	17.5
	07/26/15 19:55	07/27/15 00:25	4.58	0.98	0.85	22.90	54.60	NOT DETECTED						46	07/26/15 23:05	07/27/15 00:30	23.3
Aug-15	08/10/15 11:50	08/10/15 12:40	0.92	0.16	0.16	20.20	41.60	8/11/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15	47	08/10/15 12:25	08/10/15 12:50	8.0
	08/11/15 01:05	08/11/15 12:45	11.75	0.57	0.26	20.50	44.60	8/12/15				Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15	48	08/11/15 01:35	08/11/15 12:55	12.4
	08/18/15 16:00	08/18/15 16:30	0.58	0.08	0.08	15.90	30.90	NOT DETECTED						49	08/18/15 16:25	08/18/15 16:25	0.1
	08/20/15 06:00	08/20/15 19:15	13.33	1.28	0.42	33.60	63.70	8/20/15; 8/21/15				Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15	50	08/20/15 06:20	08/20/15 19:35	14.9
	08/24/15 14:30	08/24/15 16:30	2.08	0.45	0.43	20.20	47.40	8/25/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15	51	08/24/15 16:15	08/24/15 16:40	19.2
Sep-15	09/10/15 09:00	09/10/15 18:00	9.08	0.89	0.03	26.80	62.40	9/11/15				Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:35	09/12/15 18:55	8.42	0.59	0.02	24.70	53.70	9/13/15				Wooden Block	Unknown flow or duration.				
	09/29/15 12:15	09/30/15 01:10	13.00	2.03	0.06	32.90	64.00	9/30/15				Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 10:35	10/03/15 10:50	24.33	1.07	0.03	28.10	52.70	10/3/15				Wooden Block	Unknown flow or duration.				
	10/03/15 18:50	10/03/15 23:25	4.67	0.07	0.00	30.50	50.90	10/4/15				Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 14:55	10/09/15 17:15	2.42	0.30	0.02	19.90	42.80	10/10/15				Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:50	10/29/15 00:20	24.58	2.02	0.04	44.90	64.90	10/28/15	12:59 PM	11:00 PM	8,910	Hydraulic					
	10/29/15 09:05	10/29/15 09:30	0.50	0.03	0.00	24.80	39.40	10/29/15				Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:15	11/11/15 00:35	20.42	0.46	0.01	22.30	37.90	11/10/15				Wooden Block	Unknown flow or duration.				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:12 AM	2:00 PM	1,159	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15				Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15				Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15				Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15				Wooden Block	Unknown flow or duration.				
CSO-051.1		Influent Pipe: 54 x 43.75 in			Weir Length 38 in				Tributary Area: 54.58 acres								
		Overflow Pipe: 61.5 x 48 in															
Sep-14	09/30/14 00:00	10/01/14 00:35	0.67	0.04	0.01	22.70	49.80	10/1/14						1	10/01/14 00:00	10/01/14 00:30	2.6
Oct-14	10/03/14 19:25	10/03/14 23:45	4.42	0.15	0.07	19.20	39.70	10/4/14						2	10/03/14 22:00	10/03/14 23:50	1.3
	10/07/14 18:55	10/07/14 23:00	4.17	0.18	0.14	17.70	40.10	10/8/14						3	10/07/14 22:25	10/07/14 22:55	6.7
	10/15/14 01:35	10/15/14 16:30	15.00	1.14	0.35	32.20	52.00	10/15/14; 10/16/14						4	10/15/14 02:45	10/15/14 16:35	15.6
	10/16/14 15:45	10/16/14 17:25	1.75	0.13	0.11	22.20	44.30	NOT DETECTED						5	10/16/14 16:50	10/16/14 17:20	2.6
Nov-14	11/05/14 22:05	11/06/14 05:55	7.92	0.64	0.14	23.40	50.40	11/6/14						6	11/06/14 03:15	11/06/14 07:05	3.6
	11/16/14 20:05	11/17/14 10:50	14.83	0.49	0.09	23.70	44.90	11/17/14						7	11/17/14 10:50	11/17/14 11:50	1.5
	11/23/14 21:30	11/24/14 04:20	6.92	0.62	0.25	20.10	34.40	11/24/14						8	11/24/14 00:00	11/24/14 04:30	5.4
	11/26/14 04:30	11/26/14 11:40	7.25	0.63	0.16	31.50	43.30	11/27/14						9	11/26/14 08:30	11/26/14 11:35	2.6
Dec-14	12/01/14 12:10	12/01/14 16:30	4.42	0.12	0.12	19.50	42.70	12/2/14						10	12/01/14 16:10	12/01/14 16:25	1.6
	12/02/14 10:45	12/02/14 19:10	8.50	0.22	0.17	22.30	44.60	12/3/14						11	12/02/14 18:20	12/02/14 19:20	4.5
	12/05/14 12:15	12/05/14 20:35	8.42	0.27	0.08	26.90	40.40	NOT DETECTED						12	12/05/14 17:25	12/05/14 21:15	0.9
	12/06/14 09:20	12/06/14 15:40	6.42	0.41	0.13	31.50	49.30	12/7/14						13	12/06/14 11:15	12/06/14 15:55	3.6
	12/09/14 00:15	12/09/14 03:55	3.75	0.24	0.11	27.80	42.40	12/9/14						14	12/09/14 03:10	12/09/14 03:50	1.4
	12/22/14 16:40	12/22/14 20:30	3.92	0.13	0.07	20.60	40.40	NOT DETECTED						15	12/22/14 20:35	12/22/14 20:45	0.8
	12/22/14 16:40	12/22/14 20:30	3.92	0.13	0.07	20.60	40.40	NOT DETECTED						16	12/23/14 09:30	12/23/14 09:35	1.1
	12/23/14 21:40	12/24/14 05:50	8.25	0.34	0.14	35.20	43.00	12/24/14						17	12/24/14 04:00	12/24/14 05:45	4.7
Jan-15	01/03/15 07:55	01/03/15 21:05	13.25	0.36	0.09	26.90	45.40	1/4/15						18	01/03/15 15:35	01/03/15 21:00	2.4
	01/04/15 16:25	01/04/15 18:35	2.25	0.28	0.17	25.40	46.20	1/5/15						19	01/04/15 18:15	01/04/15 19:20	3.7
	01/11/15 22:40	01/12/15 10:45	12.17	0.34	0.08	27.60	47.40	NOT DETECTED						20	01/12/15 09:25	01/12/15 11:10	2.2
	03/04/15 04:05	03/04/15 21:30	17.50	0.21	0.05	31.50	48.00	NOT DETECTED						21	03/04/15 20:45	03/04/15 21:25	0.6

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Mar-15	03/10/15 13:55	03/10/15 20:40	6.83	0.33	0.09	38.80	54.70	NOT DETECTED						22	03/10/15 19:55	03/10/15 20:35	1.4
	03/13/15 21:00	03/14/15 07:15	10.33	0.61	0.11	46.80	56.80	3/14/15						23	03/14/15 01:45	03/14/15 07:15	1.9
	03/26/15 17:35	03/26/15 18:10	0.67	0.36	0.36	25.20	48.50	3/27/15						24	03/26/15 17:55	03/26/15 18:20	13.1
Apr-15	04/08/15 09:10	04/08/15 10:30	1.42	0.05	0.05	22.20	45.70	4/8/15	9:54 AM	11:00 AM	765			25	04/08/15 09:45	04/08/15 10:35	2.2
	04/09/15 21:20	04/09/15 22:30	1.25	0.07	0.07	21.50	41.40	4/10/15						26	04/09/15 22:20	04/09/15 22:40	1.4
	04/14/15 04:10	04/14/15 06:00	1.92	0.07	0.05	20.60	26.30	4/14/15						NO OVERFLOW RECORDED			
	04/16/15 23:25	04/17/15 03:25	4.08	0.12	0.11	19.00	26.30	4/17/15						NO OVERFLOW RECORDED			
	04/20/15 01:15	04/20/15 06:40	5.50	0.91	0.35	40.20	57.60	4/20/15						27	04/20/15 02:55	04/20/15 06:35	6.8
	04/20/15 19:25	04/21/15 01:15	5.92	1.34	0.78	40.20	57.60	4/21/15							04/20/15 20:25	04/21/15 01:40	27.3
May-15	05/06/15 06:30	05/06/15 09:50	3.42	0.11	0.08	20.60	39.90	5/6/15	9:58 AM	1:45 PM	2,869			28	05/06/15 09:55	05/06/15 10:10	3.8
	05/16/15 16:00	05/16/15 17:10	1.25	0.20	0.20	16.70	42.80	5/17/15						29	05/16/15 16:45	05/16/15 17:25	19.4
	05/17/15 08:40	05/17/15 11:15	2.67	0.10	0.09	19.10	38.90							30	05/17/15 10:45	05/17/15 11:15	1.6
	05/18/15 16:50	05/19/15 03:20	10.58	0.67	0.49	18.30	52.60	5/19/15						31	05/18/15 21:15	05/19/15 03:35	22.2
	05/27/15 11:55	05/27/15 15:15	3.42	0.99	0.68	17.60	51.10	5/27/15; 5/28/15	12:30 PM	3:00 PM	680			32	05/27/15 12:25	05/27/15 15:15	21.9
	05/31/15 17:40	05/31/15 23:20	5.75	0.16	0.14	17.30	42.20	6/1/15						33	05/31/15 23:05	05/31/15 23:25	7.7
Jun-15	06/01/15 13:55	06/02/15 14:30	24.67	1.28	0.35	34.90	59.40	6/2/15; 6/3/15	10:45 AM	8:00 PM	7,076			34	06/01/15 16:10	06/02/15 14:25	9.5
	06/04/15 16:45	06/04/15 17:25	0.75	0.04	0.04	20.10	34.50	6/5/15						NO OVERFLOW RECORDED			
	06/08/15 16:55	06/08/15 18:50	2.00	2.17	1.87	34.50	72.70	6/9/15						35	06/08/15 17:10	06/08/15 19:20	34.8
	06/14/15 01:25	06/14/15 06:30	5.17	0.10	0.10	26.60	59.20	6/14/15; 6/15/15						36	06/14/15 06:15	06/14/15 18:10	13.9
	06/17/15 22:50	06/18/15 02:45	4.00	0.16	0.12	26.50	53.80	6/18/15						37	06/18/15 02:15	06/18/15 02:40	3.5
	06/18/15 17:40	06/19/15 01:30	7.92	0.45	0.32	26.50	53.80	6/19/15							06/18/15 22:25	06/19/15 01:25	22.6
	06/20/15 17:20	06/21/15 02:25	9.17	3.02	1.18	43.10	74.30	6/21/15						38	06/20/15 18:25	06/21/15 03:05	32.7
	06/21/15 19:05	06/21/15 20:20	1.33	0.03	0.03	48.40	59.70	6/22/15						NO OVERFLOW RECORDED			
	06/23/15 15:20	06/23/15 17:00	1.75	0.89	0.81	40.60	72.30	6/24/15						39	06/23/15 15:40	06/23/15 17:25	23.4
	06/27/15 04:40	06/27/15 16:20	11.75	1.03	0.26	47.20	70.90	6/28/15						40	06/27/15 10:30	06/28/15 02:50	7.6
	06/28/15 02:05	06/28/15 02:25	0.42	0.06	0.06	39.00	54.80	6/29/15						NO OVERFLOW RECORDED			
	06/30/15 07:55	06/30/15 15:20	7.50	0.10	0.08	31.80	47.80	7/1/15						41	06/30/15 15:25	07/01/15 00:10	9.6
Jul-15	07/03/15 23:30	07/04/15 10:55	11.50	0.31	0.18	28.40	50.00	7/5/15						42	07/04/15 03:55	07/04/15 11:30	11.0
	07/08/15 22:15	07/08/15 22:45	0.58	0.07	0.07	23.10	29.50	7/9/15						43	07/08/15 22:40	07/08/15 23:05	8.4
	07/09/15 17:15	07/09/15 17:55	0.75	0.30	0.30	24.50	47.90	7/10/15						44	07/09/15 17:40	07/09/15 18:10	15.5
	07/14/15 01:10	07/14/15 06:35	5.50	0.64	0.48	29.40	54.10	7/15/15						45	07/14/15 03:05	07/14/15 06:55	20.5
	07/26/15 20:20	07/27/15 00:25	4.17	0.96	0.84	22.90	54.60	NOT DETECTED						46	07/26/15 23:05	07/27/15 00:45	38.1
Aug-15	08/10/15 11:50	08/10/15 12:40	0.92	0.16	0.16	20.20	41.60	8/11/15						47	08/10/15 12:25	08/10/15 12:50	4.8
	08/11/15 01:05	08/11/15 12:45	11.75	0.58	0.26	20.50	44.60	8/11/15; 8/12/15						48	08/11/15 01:35	08/11/15 12:55	14.0
	08/18/15 16:00	08/18/15 16:35	0.67	0.08	0.08	15.90	30.90	NOT DETECTED						49	08/18/15 16:25	08/18/15 16:30	0.5
	08/20/15 06:00	08/20/15 19:15	13.33	1.27	0.42	33.60	63.70	8/20/15; 8/21/15						50	08/20/15 06:20	08/20/15 19:45	20.5
	08/24/15 14:35	08/24/15 16:30	2.00	0.45	0.43	20.20	47.40	8/25/15						51	08/24/15 16:15	08/24/15 16:55	24.6
	08/24/15 14:35	08/24/15 16:30	2.00	0.45	0.43	20.20	47.40	NOT DETECTED						52	08/27/15 08:35	08/27/15 08:35	0.4
	08/30/15 15:15	08/30/15 15:35	0.42	0.04	0.04	17.10	41.80	NOT DETECTED						53	08/30/15 15:40	08/30/15 15:40	0.5
Sep-15	09/10/15 09:00	09/10/15 14:25	5.50	0.89	0.34	26.80	62.40	9/11/15						54	09/10/15 10:05	09/10/15 14:50	6.8
	09/12/15 10:35	09/12/15 16:20	5.83	0.58	0.26	24.70	53.70	9/13/15						55	09/12/15 12:55	09/12/15 16:15	6.7
	09/29/15 12:15	09/30/15 01:10	13.00	2.02	0.70	32.90	64.00	9/30/15						56	09/29/15 17:50	09/30/15 01:55	21.8
Oct-15	10/02/15 10:35	10/03/15 10:10	23.67	1.05	0.33	28.10	52.70	10/3/15						57	10/02/15 16:40	10/03/15 10:20	9.5
	10/03/15 22:25	10/03/15 22:50	0.50	0.01	0.06	30.50	50.90	10/4/15						58	10/03/15 22:30	10/03/15 22:45	1.9
	10/09/15 14:55	10/09/15 16:00	1.17	0.26	0.26	19.90	42.80	10/10/15						59	10/09/15 15:15	10/09/15 15:55	14.1
	10/27/15 23:50	10/28/15 21:00	21.25	1.97	0.45	44.90	64.90	10/28/15; 10/29/15	12:27 PM	11:00 PM	8,910			60	10/28/15 07:20	10/28/15 20:55	13.6
Nov-15	11/10/15 04:15	11/11/15 00:35	20.42	0.46	0.01	22.30	37.90	11/11/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.14	0.01	18.10	40.90	11/12/15	9:20 AM	1:30 PM	1,313	Hydraulic					
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:10 AM	2:00 PM	1,159	Hydraulic					
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15				Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Dec-15	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15				Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15				Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15				Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15				Wooden Block	Unknown flow or duration.				
CSO-052		Influent Pipe:	31 x 36 in		Weir Length		51 in		Tributary Area:	21.66 acres							
		Overflow Pipe:	32.5 x 36.25														
Aug-14	08/06/14 15:15	08/12/14 21:00	149.83	2.15	0.35	17.90	28.90	8/12/14; 8/13/14	10:20 AM	10:00 PM	12,232	Hydraulic		1	08/12/14 01:05	08/12/14 20:55	6.5
	08/17/14 07:35	08/17/14 10:05	2.58	0.10	0.08	23.10	41.10	8/18/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 8/17/14	2	08/17/14 09:35	08/17/14 10:00	3.9
	08/20/14 09:25	08/20/14 15:50	6.50	0.09	0.08	20.60	34.00	NOT DETECTED						3	08/20/14 15:40	08/20/14 15:45	2.0
	08/21/14 16:50	08/21/14 17:30	0.75	0.10	0.10	19.90	35.20	NOT DETECTED						4	08/21/14 17:35	08/21/14 17:35	1.3
Sep-14	09/13/14 06:25	09/13/14 12:15	5.92	0.18	0.12	18.20	43.50	NOT DETECTED						5	09/13/14 11:45	09/13/14 12:10	2.7
	09/21/14 16:50	09/21/14 20:00	3.25	0.18	0.10	16.60	37.90	9/22/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 9/21/14	6	09/21/14 17:25	09/21/14 20:10	3.4
	09/25/14 00:30	09/25/14 09:35	9.17	0.28	0.12	19.90	41.60	9/25/14; 9/26/14				Wooden Block	Unknown flow or duration.	7	09/25/14 07:55	09/25/14 09:50	3.4
	09/30/14 21:15	10/01/14 00:35	3.42	1.02	0.73	22.70	49.80	10/1/14				Wooden Block	Unknown flow or duration.	8	09/30/14 22:00	10/01/14 00:35	6.5
Oct-14	10/03/14 19:30	10/04/14 07:10	11.75	0.25	0.06	18.30	32.10	10/4/14				Wooden Block	Unknown flow or duration.	9	10/03/14 21:55	10/04/14 07:30	3.7
	10/07/14 19:20	10/07/14 23:00	3.75	0.15	0.13	17.70	40.10	10/8/14				Wooden Block	Unknown flow or duration. 0.15 Rain on 10/7/14	10	10/07/14 22:20	10/07/14 22:55	3.6
	10/10/14 21:10	10/11/14 08:15	11.17	0.31	0.11	17.50	26.50	10/11/14; 10/12/14				Wooden Block	Unknown flow or duration.	11	10/11/14 04:55	10/11/14 08:10	1.4
	10/15/14 01:30	10/15/14 17:55	16.50	1.14	0.36	32.20	52.00	10/15/14; 10/16/14				Wooden Block	Unknown flow or duration.	12	10/15/14 02:45	10/15/14 17:50	7.0
	10/16/14 15:45	10/16/14 17:30	1.83	0.15	0.12	22.20	44.30	10/17/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 10/16/14	13	10/16/14 16:50	10/16/14 17:25	2.8
	10/20/14 20:30	10/21/14 03:00	6.58	0.07	0.10	16.50	23.10	10/21/14				Wooden Block	Unknown flow or duration.	NO OVERFLOW RECORDED			
Nov-14	11/05/14 22:05	11/06/14 05:55	7.92	0.67	0.14	23.40	50.40	11/6/14				Wooden Block	Unknown flow or duration.	14	11/06/14 02:30	11/06/14 18:20	4.1
	11/16/14 19:10	11/17/14 12:00	16.92	0.47	0.09	23.70	44.90	11/17/14; 11/18/14				Wooden Block	Unknown flow or duration.	15	11/17/14 00:30	11/17/14 11:55	3.0
	11/23/14 21:30	11/24/14 04:20	6.92	0.61	0.24	20.10	34.40	11/24/14				Wooden Block	Unknown flow or duration.	16	11/23/14 23:55	11/24/14 04:30	3.6
	11/26/14 04:30	11/26/14 14:05	9.67	0.67	0.16	31.50	43.30	11/26/14	8:50 AM	5:00 PM	3,053	Hydraulic		17	11/26/14 08:00	11/26/14 14:00	3.6
Dec-14	12/01/14 12:10	12/01/14 16:45	4.67	0.12	0.05	19.50	42.70	NOT DETECTED						18	12/01/14 16:10	12/01/14 16:40	2.3
	12/02/14 10:45	12/02/14 18:05	7.42	0.22	0.17	22.30	44.60	12/3/14				Wooden Block	Unknown flow or duration. 0.22 rain on 12/2/14	19	12/02/14 18:15	12/02/14 19:25	3.5
	12/05/14 11:40	12/06/14 15:40	28.08	0.88	0.13	31.50	49.30	12/6/14; 12/7/14				Wooden Block	Unknown flow or duration.	20	12/05/14 17:00	12/06/14 16:05	3.5
	12/09/14 00:15	12/09/14 04:40	4.50	0.32	0.11	27.80	42.40	12/9/14				Wooden Block	Unknown flow or duration.	21	12/09/14 02:15	12/09/14 06:10	1.9
	12/16/14 10:05	12/16/14 12:10	2.17	0.11	0.10	21.70	35.40	NOT DETECTED						22	12/16/14 12:20	12/16/14 12:55	2.1
	12/22/14 16:35	12/22/14 20:30	4.00	0.14	0.07	20.60	40.40	12/23/14				Wooden Block	Unknown flow or duration.	23	12/22/14 20:00	12/22/14 20:50	2.3
	12/22/14 16:35	12/22/14 20:30	4.00	0.14	0.07	20.60	40.40	12/24/14				Wooden Block	Unknown flow or duration.	24	12/23/14 09:20	12/23/14 09:40	2.7
	12/23/14 21:45	12/24/14 07:50	10.17	0.44	0.16	35.20	43.00							25	12/24/14 02:15	12/24/14 09:15	5.0
	12/25/14 00:40	12/25/14 03:30	2.92	0.14	0.07	25.00	37.60	12/25/14				Wooden Block	Unknown flow or duration.	26	12/25/14 02:45	12/25/14 03:40	2.6
Jan-15	01/03/15 08:00	01/03/15 21:40	13.75	0.41	0.10	26.90	45.40	1/4/15				Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15	27	01/03/15 12:15	01/03/15 22:30	4.3
	01/04/15 16:30	01/04/15 18:30	2.08	0.22	0.15	25.40	46.20	1/5/15				Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15	28	01/04/15 18:25	01/04/15 19:25	6.0
	01/11/15 21:10	01/12/15 10:45	13.67	0.38	0.08	27.60	47.40	1/12/15; 1/13/15	10:13 AM	12:00 PM	648	Hydraulic		29	01/12/15 07:30	01/12/15 11:40	2.8
Mar-15	03/04/15 04:05	03/05/15 00:20	20.33	0.34	0.07	31.50	48.00	3/5/15				Wooden Block	Unknown flow or duration.	30	03/04/15 13:25	03/05/15 00:15	0.6
	03/07/15 15:30	03/07/15 15:40	0.25	0.00	0.00	21.30	28.40	3/8/15				Snow Melt	Unknown flow or duration.	NO OVERFLOW RECORDED			
	03/10/15 13:55	03/11/15 00:30	10.67	0.41	0.09	38.80	54.70	3/10/15				Wooden Block	Unknown flow or duration.	31	03/10/15 17:50	03/11/15 00:35	0.8
	03/13/15 20:55	03/14/15 07:15	10.42	0.63	0.11	46.80	56.80	NOT DETECTED						32	03/13/15 23:30	03/14/15 07:30	1.3
	03/14/15 14:35	03/14/15 14:35	0.08	0.00	0.04	46.80	56.80	3/15/15				Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15	NO OVERFLOW RECORDED			
	03/26/15 17:40	03/26/15 18:15	0.67	0.31	0.31	25.20	48.50	3/27/15				Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15	33	03/26/15 18:05	03/26/15 18:20	5.6
Apr-15	04/03/15 09:15	04/04/15 02:10	17.00	0.16	0.05	22.30	43.30	4/4/15				Wooden Block	Unknown flow or duration. 0.39 rain on 4/3/15	NO OVERFLOW RECORDED			
	04/08/15 09:10	04/08/15 10:35	1.50	0.16	0.14	22.20	45.70	4/8/15; 4/9/15	10:37 AM	11:00 AM	520	Hydraulic		34	04/08/15 09:50	04/08/15 10:50	3.9
	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.08	21.50	41.40	4/10/15				Wooden Block	Unknown flow or duration.	35	04/09/15 22:20	04/09/15 22:45	2.9
	04/14/15 04:10	04/14/15 05:20	1.25	0.05	0.05	20.60	26.30	4/14/15				Wooden Block	Unknown flow or duration.	36	04/14/15 05:05	04/14/15 05:20	2.1
	04/20/15 01:15	04/20/15 06:40	5.50	0.88	0.32	40.20	57.60	4/20/15				Wooden Block	Unknown flow or duration.	37	04/20/15 01:50	04/20/15 06:35	5.1
	04/20/15 19:20	04/21/15 01:15	6.00	1.12	0.69	40.20	57.60	4/21/15				Wooden Block	Unknown flow or duration.		04/20/15 22:05	04/21/15 01:15	7.8
	04/22/15 01:15	04/22/15 13:10	12.00	0.06	0.05	34.90	47.40	4/23/15				Wooden Block	Unknown flow or duration. 0.06 Rain on 4/22/15	38	04/22/15 12:55	04/22/15 13:20	1.9
	04/22/15 20:05	04/22/15 20:05	0.08	0.00	0.01	34.90	47.40	NOT DETECTED						39	04/30/15 19:15	04/30/15 23:55	5.9

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
May-15	05/06/15 06:35	05/06/15 08:05	1.58	0.05	0.03	20.60	39.90	5/6/15				Wooden Block	Unknown flow or duration.	40	05/06/15 08:05	05/06/15 08:05	0.5
	05/16/15 16:00	05/16/15 17:30	1.58	0.19	0.19	16.70	42.80	5/17/15				Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15	41	05/16/15 17:00	05/16/15 17:25	1.9
	05/17/15 08:30	05/17/15 11:10	2.75	0.13	0.12	19.10	38.90	5/18/15				Wooden Block	Unknown flow or duration. 0.14 Rain on 5/17/15	42	05/17/15 10:45	05/17/15 11:05	1.3
	05/18/15 16:50	05/19/15 03:50	11.08	1.16	0.41	18.30	52.60	5/19/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15	43	05/18/15 17:20	05/19/15 03:50	8.9
	05/27/15 12:10	05/27/15 15:10	3.08	0.44	0.32	17.60	51.10	5/28/15				Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15	44	05/27/15 13:45	05/27/15 15:05	4.6
	05/31/15 17:40	05/31/15 23:20	5.75	0.16	0.14	17.30	42.20	6/1/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15	45	05/31/15 23:10	05/31/15 23:25	0.8
Jun-15	06/01/15 14:10	06/01/15 23:00	8.92	0.40	0.15	22.90	48.50	6/2/15; 6/3/15	11:19 AM	8:00 PM	8,848	Hydraulic	0.66 Rain on 6/1/15	46	06/01/15 16:15	06/02/15 15:05	1.4
	06/04/15 10:20	06/04/15 17:20	7.08	0.03	0.03	20.10	34.50	6/5/15				Wooden Block	Unknown flow or duration. 0.01 Rain on 6/3/15	NO OVERFLOW RECORDED			
	06/08/15 16:55	06/08/15 18:50	2.00	2.09	1.88	34.50	72.70	6/9/15				Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15	48	06/08/15 17:15	06/08/15 19:00	11.0
	06/14/15 05:55	06/14/15 06:35	0.75	0.16	0.16	26.60	59.20	6/14/15; 6/15/15				Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15	49	06/14/15 06:45	06/14/15 18:25	7.5
	06/15/15 21:00	06/15/15 21:55	1.00	0.06	0.06	22.90	32.00	6/16/15				Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15	50	06/15/15 21:55	06/15/15 22:10	1.3
	06/17/15 22:35	06/18/15 02:55	4.42	0.18	0.12	26.50	53.80	6/18/15				Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15	51	06/18/15 01:55	06/18/15 02:50	1.2
	06/18/15 17:45	06/19/15 01:30	7.83	0.62	0.45	26.50	53.80	6/19/15				Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15		06/18/15 22:35	06/19/15 01:25	4.3
	06/19/15 16:55	06/19/15 16:55	0.08	0.00	0.08	22.90	30.00	NOT DETECTED						52	06/19/15 21:00	06/19/15 21:00	0.1
	06/20/15 17:20	06/21/15 02:10	8.92	2.61	1.03	43.10	74.30	6/21/15				Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15	53	06/20/15 18:30	06/21/15 02:30	8.2
	06/23/15 15:10	06/23/15 17:00	1.92	1.10	0.94	40.60	72.30	6/24/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15	54	06/23/15 15:40	06/23/15 17:25	7.9
	06/27/15 04:35	06/27/15 16:20	11.83	1.13	0.37	47.20	70.90	6/28/15				Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15	55	06/27/15 10:30	06/28/15 02:55	2.0
	06/30/15 22:20	07/01/15 00:15	2.00	0.13	0.13	31.80	47.80	7/1/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15	56	06/30/15 23:35	07/01/15 00:10	1.9
Jul-15	07/03/15 23:30	07/04/15 11:20	11.92	0.36	0.22	28.40	50.00	7/5/15				Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15	57	07/04/15 04:00	07/04/15 11:35	2.0
	07/06/15 16:35	07/06/15 16:55	0.42	0.03	0.03	25.20	50.20	7/6/15; 7/7/15				Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15	58	07/06/15 17:00	07/06/15 17:20	1.6
	07/09/15 17:20	07/09/15 17:50	0.58	0.26	0.26	24.50	47.90	7/9/15; 7/10/15				Wooden Block	Unknown flow or duration. 0.04 Rain on 7/8/15	59	07/09/15 17:45	07/09/15 18:10	2.3
	07/14/15 01:15	07/14/15 06:35	5.42	1.23	0.68	29.40	54.10	7/15/15				Wooden Block	Unknown flow or duration. 1.39 Rain on 7/14/15	60	07/14/15 02:30	07/14/15 07:15	5.0
	07/26/15 20:25	07/27/15 00:25	4.08	0.83	0.74	22.90	54.60	NOT DETECTED						61	07/26/15 23:10	07/27/15 01:05	5.1
	07/30/15 11:00	07/30/15 11:30	0.58	0.05	0.05	18.20	31.60	NOT DETECTED						62	07/30/15 11:25	07/30/15 11:40	1.3
Aug-15	08/10/15 11:50	08/10/15 12:40	0.92	0.09	0.09	20.20	41.60	NOT DETECTED						63	08/10/15 12:25	08/10/15 13:00	1.2
	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.27	20.50	44.60	8/11/15; 8/12/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15	64	08/11/15 01:40	08/11/15 13:30	3.6
	08/20/15 06:00	08/20/15 19:35	13.67	1.59	0.63	33.60	63.70	8/20/15; 8/21/15				Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15	65	08/20/15 06:30	08/20/15 20:05	4.6
	08/24/15 14:35	08/24/15 16:30	2.00	0.42	0.38	20.20	47.40	8/25/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15	66	08/24/15 16:20	08/24/15 17:20	5.4
	08/24/15 14:35	08/24/15 16:30	2.00	0.42	0.38	20.20	47.40	8/28/15	10:50 AM	2:05 PM	66,000	Hydraulic	Flow monitoring program	67	08/28/15 10:55	08/28/15 14:00	0.9
	08/30/15 15:15	08/30/15 15:35	0.42	0.10	0.10	17.10	41.80	8/30/15; 8/31/15	3:30 PM	4:20 PM	75,000	Hydraulic	Flow monitoring program	68	08/30/15 15:35	08/30/15 16:10	2.7
	08/30/15 15:15	08/30/15 15:35	0.42	0.10	0.01	17.10	41.80	9/1/15				Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.05	0.03	26.80	62.40	9/10/15	9:50 AM	3:00 PM	4,725	Hydraulic	Unknown flow or duration.				
	09/10/15 08:50	09/10/15 18:05	9.33	1.05	0.03	26.80	62.40	9/11/15				Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.62	0.02	24.70	53.70	9/13/15				Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	2.01	0.06	32.90	64.00	9/30/15				Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:45	30.33	1.07	0.03	28.10	52.70	10/3/15				Wooden Block	Unknown flow or duration.				
	10/03/15 18:35	10/03/15 23:25	4.92	0.07	0.00	30.50	50.90	10/4/15				Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15				Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:15	24.58	2.01	0.03	44.90	64.90	10/28/15	1:47 PM	11:00 PM	0	Hydraulic					
	10/29/15 09:05	10/29/15 09:20	0.33	0.03	0.00	24.80	39.40	10/29/15				Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/19/15 04:55	11/19/15 17:35	12.75	0.36	0.01	21.00	43.30	11/19/15				Wooden Block	Unknown flow or duration.				
	11/19/15 04:55	11/19/15 17:35	12.75	0.36	0.01	21.00	43.30	11/20/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:40 AM	2:00 PM	1,014	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15	10:40 AM	6:00 PM	6,525	Hydraulic					
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/17/15	10:02 AM	10:30 AM	450	Hydraulic					
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15				Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15				Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15				Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15				Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15				Wooden Block	Unknown flow or duration.				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
CSO-053		Influent Pipe: 32 x 38 in			Weir Length 71 in				Tributary Area: 8.04 acres								
		Overflow Pipe: 31 x 38 in															
Jan-15	01/11/15 22:10	01/12/15 11:45	13.67	0.38	0.01	27.60	47.40	1/12/15			0	Wooden Block	Unknown flow or duration.				
Mar-15	03/26/15 17:40	03/27/15 06:40	13.08	0.35	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.14	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.14	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/27/15 12:10	05/27/15 15:15	3.17	0.44	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
Jun-15	06/02/15 08:00	06/02/15 19:05	11.17	0.93	0.03	34.90	59.40	6/2/15			0	Wooden Block	Unknown flow or duration. 0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:05	11.17	0.93	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:20	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.85	0.06	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 21:00	06/15/15 21:55	1.00	0.06	0.00	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.65	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.60	0.09	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:00	1.92	1.10	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
Jul-15	07/06/15 16:35	07/06/15 19:45	3.25	0.05	0.00	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.31	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:35	13.67	1.61	0.05	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:35	13.67	1.61	0.05	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.42	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:35	0.42	0.10	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.05	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.62	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	2.00	0.06	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:15	24.58	2.01	0.03	44.90	64.90	10/28/15	1:48 PM	11:00 PM	12,192	Hydraulic					
	10/29/15 09:05	10/29/15 09:20	0.33	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/19/15 04:55	11/19/15 17:35	12.75	0.36	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:41 AM	2:00 PM	1,485	Hydraulic					
Dec-15	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-054		Influent Pipe: 24.5 in			Weir Length 31 in				Tributary Area: 6.55 acres								
		Overflow Pipe: 24.5 in															
Jan-15	01/03/15 09:00	01/04/15 06:40	21.75	0.48	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:30	01/04/15 19:30	2.08	0.22	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
Mar-15	03/07/15 16:30	03/07/15 16:40	0.25	0.00	0.00	21.30	28.40	3/8/15			0	Snow Melt	Unknown flow or duration.				
	03/26/15 17:40	03/27/15 06:40	13.08	0.34	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.13	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.14	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.19	0.03	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:10	05/27/15 15:15	3.17	0.43	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:10	9.58	0.17	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
	06/02/15 08:00	06/02/15 19:05	11.17	0.93	0.03	34.90	59.40	6/2/15			0	Wooden Block	Unknown flow or duration. 0.66 Rain on 6/1/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Jun-15	06/02/15 08:00	06/02/15 19:05	11.17	0.93	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:20	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 05:55	06/14/15 06:35	0.75	0.16	0.01	26.60	59.20	6/14/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.86	0.06	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 21:00	06/15/15 21:55	1.00	0.06	0.00	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.65	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.58	0.08	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:00	1.92	1.11	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 22:20	07/01/15 03:30	5.25	0.15	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/03/15 23:30	07/04/15 11:20	11.92	0.36	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 16:35	07/06/15 19:45	3.25	0.05	0.00	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/08/15 22:20	07/08/15 22:45	0.50	0.02	0.00	23.10	29.50	7/9/15			0	Wooden Block	Unknown flow or duration. 0.04 Rain on 7/8/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.31	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:35	13.67	1.63	0.05	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:35	13.67	1.63	0.05	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.41	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:35	0.42	0.09	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.05	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.63	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	2.00	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:45	30.33	1.07	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:15	24.58	2.01	0.03	44.90	64.90	10/28/15	1:49 PM	11:00 PM	5,319	Hydraulic					
	10/29/15 09:05	10/29/15 09:20	0.33	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:42 AM	2:00 PM	650	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-055		Influent Pipe: 27 x 30 in			Weir Length 31.5 in			Tributary Area: 13.28 acres									
		Overflow Pipe: 17.5 in															
Jan-15	01/04/15 17:35	01/04/15 19:30	2.00	0.22	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
	01/11/15 22:10	01/12/15 11:45	13.67	0.39	0.01	27.60	47.40	1/12/15			0	Wooden Block	Unknown flow or duration.				
Mar-15	03/26/15 17:40	03/27/15 06:40	13.08	0.34	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.13	0.06	41.20	53.60	4/21/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.14	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.19	0.03	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:15	05/27/15 15:10	3.00	0.43	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:10	9.58	0.18	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
	06/02/15 08:00	06/02/15 19:05	11.17	0.93	0.03	34.90	59.40	6/2/15			0	Wooden Block	Unknown flow or duration. 0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:05	11.17	0.93	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/04/15 16:40	06/04/15 17:15	0.67	0.02	0.00	20.10	34.50	6/5/15			0	Wooden Block	Unknown flow or duration. 0.01 Rain on 6/3/15				
	06/09/15 01:25	06/09/15 07:20	6.00	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Jun-15	06/14/15 05:55	06/14/15 06:35	0.75	0.16	0.01	26.60	59.20	6/14/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.86	0.06	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 21:00	06/15/15 21:55	1.00	0.06	0.00	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.66	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.58	0.08	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:00	1.92	1.11	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 23:15	07/01/15 03:30	4.33	0.15	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/03/15 23:30	07/04/15 11:20	11.92	0.36	0.02	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 05:45	07/06/15 06:40	1.00	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 16:35	07/06/15 19:40	3.17	0.05	0.00	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.31	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
	07/15/15 00:55	07/15/15 03:35	2.75	0.07	0.00	23.50	29.00	7/15/15			0	Wooden Block	Unknown flow or duration. 1.39 Rain on 7/14/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:35	13.67	1.64	0.06	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:35	13.67	1.64	0.06	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.42	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:35	0.42	0.09	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.05	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:30	09/12/15 18:55	8.50	0.63	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:50	09/30/15 01:15	13.50	1.99	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:30	10/03/15 10:45	30.33	1.07	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:15	24.58	2.02	0.03	44.90	64.90	10/28/15	1:53 PM	11:00 PM	5,265	Hydraulic					
	10/29/15 09:05	10/29/15 09:20	0.33	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/19/15 05:05	11/19/15 17:35	12.58	0.36	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:43 AM	2:00 PM	660	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-056		Influent Pipe: 32 in			Weir Length 47.5 in			Tributary Area: 8.62 acres									
		Overflow Pipe: 18.5 in															
Jan-15	01/03/15 09:00	01/04/15 06:40	21.75	0.48	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:35	01/04/15 19:30	2.00	0.22	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
Mar-15	03/13/15 20:55	03/14/15 14:35	17.75	0.72	0.01	46.80	56.80	3/14/15			0	Wooden Block	Unknown flow or duration.				
	03/26/15 17:40	03/27/15 06:40	13.08	0.34	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/10/15 13:45	04/10/15 15:15	1.58	0.04	0.00	21.70	32.60	4/11/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 4/10/15				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.13	0.06	41.20	53.60	4/21/15	10:00 AM	1:45 PM	1,218	Hydraulic					
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.14	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.19	0.03	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 12:15	05/27/15 15:10	3.00	0.43	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.17	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.93	0.03	34.90	59.40	6/2/15			0	Wooden Block	Unknown flow or duration. 0.66 Rain on 6/1/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.93	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:25	06/09/15 07:25	6.08	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.86	0.06	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 21:00	06/15/15 21:55	1.00	0.06	0.00	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/17/15 22:35	06/18/15 08:50	10.33	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.66	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.57	0.08	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.12	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.13	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
Jul-15	07/06/15 16:35	07/06/15 19:40	3.17	0.05	0.00	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.31	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
	07/15/15 00:55	07/15/15 03:35	2.75	0.07	0.00	23.50	29.00	7/15/15			0	Wooden Block	Unknown flow or duration. 1.39 Rain on 7/14/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.58	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.64	0.06	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.64	0.06	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.42	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:10	08/30/15 15:35	0.50	0.09	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.05	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:25	09/12/15 18:55	8.58	0.63	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 09:45	09/30/15 01:15	15.58	1.99	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:15	24.58	2.01	0.03	44.90	64.90	10/28/15	1:55 PM	11:00 PM	7,929	Hydraulic					
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/19/15 05:00	11/19/15 17:35	12.67	0.36	0.01	21.00	43.30	11/19/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 05:00	11/19/15 17:35	12.67	0.36	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:45 AM	2:00 PM	995	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-057		Influent Pipe: 36 in			Weir Length 37.5 in				Tributary Area: 13.88 acres								
		Overflow Pipe: 32 x 32 in															
Feb-15	02/21/15 09:40	02/21/15 23:50	14.25	0.25	0.00	18.10	29.20	2/22/15	8:45 AM	9:30 AM	1,083	Gate Blocked	0.25 rain on 2/21/15. Unblocked gate.				
Mar-15	03/07/15 16:35	03/07/15 16:35	0.08	0.00	0.00	21.30	28.40	3/10/15			0	Wooden Block	Unknown flow or duration.				
	03/26/15 17:40	03/27/15 06:40	13.08	0.33	0.02	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/08/15 09:15	04/08/15 10:35	1.42	0.18	0.01	22.20	45.70	4/8/15			0	Wooden Block	Unknown flow or duration.				
	04/09/15 21:20	04/09/15 22:30	1.25	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.09	0.06	41.20	53.60	4/21/15			0	Hydraulic					
	04/22/15 01:20	04/22/15 20:10	18.92	0.07	0.00	34.90	47.40	4/29/15	11:30 AM	12:15 PM	1,083	Gate Blocked	Unblocked gate.				
May-15	05/17/15 08:30	05/17/15 11:50	3.42	0.14	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:50	11.08	1.25	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/21/15 05:50	05/21/15 08:50	3.08	0.02	0.00	18.90	31.90	5/27/15	1:53 PM	3:00 PM	1,444	Hydraulic					
	05/27/15 12:15	05/27/15 15:10	3.00	0.43	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.17	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.93	0.03	34.90	59.40	6/2/15	11:40 AM	8:00 PM	12,274	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.93	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/04/15 16:40	06/04/15 17:15	0.67	0.01	0.00	20.10	34.50	6/5/15			0	Wooden Block	Unknown flow or duration. 0.01 Rain on 6/3/15				
	06/09/15 01:25	06/09/15 07:25	6.08	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 05:55	06/14/15 06:35	0.75	0.16	0.01	26.60	59.20	6/14/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Jun-15	06/14/15 17:20	06/15/15 06:45	13.50	0.89	0.07	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 21:00	06/15/15 21:55	1.00	0.06	0.00	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.69	0.04	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.46	0.08	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.16	0.08	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.14	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
Jul-15	07/06/15 16:35	07/06/15 19:40	3.17	0.06	0.00	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/08/15 22:25	07/08/15 22:50	0.50	0.02	0.00	23.10	29.50	7/9/15			0	Wooden Block	Unknown flow or duration. 0.04 Rain on 7/8/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.30	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:15	08/11/15 12:50	11.67	0.59	0.02	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:50	11.67	0.59	0.02	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.75	0.06	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:40	13.75	1.75	0.06	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:35	08/24/15 16:30	2.00	0.42	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:10	08/30/15 15:35	0.50	0.08	0.01	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 08:50	09/10/15 18:05	9.33	1.06	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:25	09/12/15 18:55	8.58	0.65	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 09:45	09/30/15 01:15	15.58	1.99	0.05	32.90	64.00	9/30/15	11:50 AM	8:15 PM	4,961	Hydraulic	Flow from 9/30/15 - 10/1/15				
Oct-15	10/02/15 04:30	10/03/15 10:45	30.33	1.07	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:15	24.58	2.01	0.03	44.90	64.90	10/28/15	2:02 PM	11:00 PM	6,264	Hydraulic					
	10/29/15 09:05	10/29/15 09:25	0.42	0.03	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:10	11/11/15 00:30	20.42	0.43	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.16	0.01	18.10	40.90	11/12/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 05:00	11/19/15 17:35	12.67	0.35	0.01	21.00	43.30	11/19/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 05:00	11/19/15 17:35	12.67	0.35	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15	10:47 AM	2:00 PM	787	Hydraulic					
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-058		Influent Pipe: 21 in			Weir Length 44 in			Tributary Area: 7.89 acres									
		Overflow Pipe: 21 in															
Apr-15	04/09/15 21:25	04/09/15 22:35	1.25	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
May-15	05/18/15 16:50	05/19/15 03:50	11.08	1.37	0.04	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/21/15 05:50	05/21/15 08:55	3.17	0.02	0.00	18.90	31.90	5/27/15			0	Wooden Block	Unknown flow or duration.				
Jun-15	06/09/15 07:20	06/09/15 07:25	0.17	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.97	0.07	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.77	0.05	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.25	0.07	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/28/15 02:05	06/28/15 03:35	1.58	0.15	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
Jul-15	07/09/15 17:20	07/09/15 21:20	4.08	0.29	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
	07/26/15 20:30	07/27/15 01:35	5.17	0.59	0.04	22.90	54.60	7/27/15	11:45 AM	12:45 PM	302	Hydraulic	0.65 Rain on 7/26/15				
Aug-15	08/20/15 06:00	08/20/15 19:45	13.83	1.84	0.06	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:50	08/24/15 16:30	1.75	0.42	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Sep-15	09/29/15 09:45	09/30/15 01:15	15.58	1.93	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:10	10/03/15 10:45	30.67	1.07	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:00	10/09/15 16:50	1.92	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:15	24.58	2.00	0.03	44.90	64.90	10/28/15	2:09 PM	11:00 PM	7,149	Hydraulic					
	10/29/15 09:05	10/29/15 09:25	0.42	0.02	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
CSO-059		Influent Pipe:	54 x 44.5 in		Weir Length	54.2 in			Tributary Area:	153.69 acres							
		Overflow Pipe:	54 x 44.5 in														
Sep-14	09/21/14 16:55	09/21/14 17:30	0.67	0.10	0.10	16.60	37.90	9/22/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 9/21/14	1	09/21/14 17:45	09/21/14 17:45	1.3
	09/25/14 00:25	09/25/14 14:25	14.08	0.31	0.12	19.90	41.60	9/25/14				Hydraulic		NO OVERFLOW RECORDED			
	09/25/14 00:25	09/25/14 14:25	14.08	0.31	0.12	19.90	41.60	9/26/14				Wooden Block	Unknown flow or duration. 0.32 Rain on 9/25/14	NO OVERFLOW RECORDED			
	09/30/14 21:20	10/01/14 00:45	3.50	0.99	0.70	22.70	49.80	10/1/14				Wooden Block	Unknown flow or duration.	NO OVERFLOW RECORDED			
Oct-14	10/03/14 19:30	10/04/14 07:55	12.50	0.30	0.10	18.30	32.10	10/4/14				Wooden Block	Unknown flow or duration.	NO OVERFLOW RECORDED			
	10/03/14 19:30	10/04/14 07:55	12.50	0.30	0.10	18.30	32.10	10/5/14				Wooden Block	Unknown flow or duration. 0.15 Rain on 10/4/14	NO OVERFLOW RECORDED			
	10/07/14 19:25	10/07/14 23:15	3.92	0.16	0.12	17.70	40.10	10/8/14				Wooden Block	Unknown flow or duration. 0.15 Rain on 10/7/14	NO OVERFLOW RECORDED			
	10/10/14 21:10	10/11/14 08:30	11.42	0.31	0.08	17.50	26.50	10/11/14				Wooden Block	Unknown flow or duration.	NO OVERFLOW RECORDED			
	10/10/14 21:10	10/11/14 08:30	11.42	0.31	0.08	17.50	26.50	10/12/14				Wooden Block	Unknown flow or duration. 0.26 Rain on 10/11/14	NO OVERFLOW RECORDED			
	10/15/14 01:30	10/15/14 14:20	12.92	0.83	0.32	32.20	52.00	10/15/14 - 10/17/14				Wooden Block	Unknown flow or duration.	2	10/15/14 11:25	10/15/14 14:15	2.4
Nov-14	11/05/14 22:20	11/06/14 05:55	7.67	0.65	0.13	23.40	50.40	11/6/14				Wooden Block	Unknown flow or duration.	3	11/06/14 04:15	11/06/14 06:50	2.0
	11/16/14 20:15	11/17/14 14:25	18.25	0.54	0.09	23.70	44.90	11/17/14				Wooden Block		NO OVERFLOW RECORDED			
	11/23/14 21:30	11/24/14 02:10	4.75	0.54	0.24	22.30	49.80	11/24/14				Wooden Block	Unknown flow or duration.	4	11/24/14 01:20	11/24/14 02:05	2.1
	11/26/14 04:30	11/26/14 16:50	12.42	0.74	0.16	31.50	43.30	11/26/14	8:00 AM	5:00 PM	3,730	Hydraulic		NO OVERFLOW RECORDED			
	11/26/14 04:30	11/26/14 16:50	12.42	0.74	0.16	31.50	43.30	11/27/14				Wooden Block	Unknown flow or duration. 0.74 rain on 11/26/14	NO OVERFLOW RECORDED			
Dec-14	12/02/14 10:50	12/02/14 18:10	7.42	0.21	0.17	22.30	44.60	12/3/14				Wooden Block	Unknown flow or duration. 0.22 rain on 12/2/14	5	12/02/14 18:30	12/02/14 18:30	1.0
	12/05/14 11:40	12/06/14 14:45	27.17	0.85	0.13	31.50	49.30	12/6/14; 12/7/14				Wooden Block	Unknown flow or duration.	6	12/06/14 11:50	12/06/14 15:10	4.0
	12/09/14 00:25	12/09/14 04:45	4.42	0.30	0.10	27.80	42.40	12/9/14				Wooden Block	Unknown flow or duration.	NO OVERFLOW RECORDED			
	12/22/14 16:40	12/24/14 05:50	37.25	0.67	0.15	24.80	43.00	12/23/14				Wooden Block	Unknown flow or duration.	NO OVERFLOW RECORDED			
	12/22/14 16:40	12/24/14 05:50	37.25	0.67	0.15	24.80	43.00	12/24/14; 12/25/14				Wooden Block	Unknown flow or duration.	7	12/24/14 04:20	12/24/14 05:45	3.8
Jan-15	01/03/15 08:00	01/03/15 16:25	8.50	0.30	0.11	26.90	45.40	1/4/15				Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15	8	01/03/15 16:55	01/03/15 16:55	1.5
	01/04/15 16:35	01/04/15 18:35	2.08	0.19	0.13	25.40	46.20	1/5/15				Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15	9	01/04/15 19:00	01/04/15 19:00	2.3
	01/11/15 21:10	01/12/15 18:30	21.42	0.39	0.08	27.60	47.40	1/12/15	8:21 AM	12:00 PM	4,459	Hydraulic		NO OVERFLOW RECORDED			
	01/11/15 21:10	01/12/15 18:30	21.42	0.39	0.08	27.60	47.40	1/13/15				Wooden Block	Unknown flow or duration. 0.43 Rain on 1/12/15	NO OVERFLOW RECORDED			
Mar-15	03/07/15 15:45	03/07/15 15:45	0.08	0.00	0.00	21.30	28.40	3/9/15				Snow Melt	Unknown flow or duration.	NO OVERFLOW RECORDED			
	03/13/15 21:00	03/14/15 03:20	6.42	0.37	0.11	46.80	56.80	3/14/15; 3/15/15	7:27 AM	10:30 AM	3,567	Hydraulic		10	03/14/15 03:00	03/14/15 03:15	2.9
	03/26/15 17:40	03/26/15 18:20	0.75	0.30	0.30	25.20	48.50	3/27/15				Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15	11	03/26/15 18:15	03/26/15 18:40	1.8
Apr-15	04/03/15 09:20	04/04/15 02:10	16.92	0.17	0.06	22.30	43.30	4/4/15				Wooden Block	Unknown flow or duration. 0.39 rain on 4/3/15	NO OVERFLOW RECORDED			
	04/08/15 09:15	04/08/15 10:40	1.50	0.12	0.10	22.20	45.70	4/9/15				Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15	12	04/08/15 10:20	04/08/15 10:35	1.7
	04/09/15 21:25	04/09/15 22:35	1.25	0.08	0.08	21.50	41.40	4/10/15				Wooden Block	Unknown flow or duration.	13	04/09/15 22:50	04/09/15 22:50	0.2
	04/14/15 04:10	04/14/15 06:05	2.00	0.06	0.05	20.60	26.30	4/14/15				Wooden Block	Unknown flow or duration.	NO OVERFLOW RECORDED			
	04/20/15 01:15	04/20/15 05:50	4.67	0.84	0.32	40.20	57.60	4/20/15				Wooden Block		14	04/20/15 03:05	04/20/15 05:45	2.3
	04/20/15 17:50	04/21/15 01:20	7.58	1.08	0.70	40.20	57.60	4/21/15; 4/22/15				Wooden Block			04/20/15 22:30	04/21/15 01:35	20.3
May-15	05/16/15 16:05	05/16/15 17:15	1.25	0.18	0.18	16.70	42.80	5/17/15; 5/18/15				Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15	15	05/16/15 17:10	05/16/15 17:10	2.0
	05/18/15 16:50	05/19/15 03:35	10.83	1.18	0.53	18.30	52.60	5/19/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15	16	05/18/15 17:25	05/19/15 03:30	5.0
	05/27/15 12:15	05/27/15 14:20	2.17	0.31	0.30	17.60	51.10	5/28/15				Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15	17	05/27/15 13:50	05/27/15 14:15	1.8
	05/31/15 17:40	05/31/15 23:20	5.75	0.14	0.30	17.30	42.20	6/1/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15	18	05/31/15 23:10	05/31/15 23:15	1.4
Jun-15	06/01/15 14:15	06/01/15 16:40	2.50	0.13	0.11	22.90	48.50	6/2/15	9:10 AM	8:00 PM	12,781	Hydraulic	0.66 Rain on 6/1/15	19	06/01/15 16:35	06/01/15 16:35	0.6
	06/02/15 08:00	06/02/15 14:00	6.08	0.93	0.40	34.90	59.40	6/3/15				Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15	20	06/02/15 09:10	06/02/15 13:55	1.3
	06/08/15 17:00	06/08/15 18:55	2.00	2.05	1.85	34.50	72.70	6/9/15				Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15	21	06/08/15 17:20	06/08/15 19:30	23.6
	06/14/15 17:20	06/14/15 18:40	1.42	0.88	0.82	26.60	59.20	6/15/15				Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15	22	06/14/15 17:35	06/14/15 18:35	15.8
	06/17/15 22:35	06/18/15 02:40	4.17	0.17	0.13	26.50	53.80	6/18/15				Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15	23	06/18/15 02:30	06/18/15 02:35	1.1
	06/18/15 17:45	06/19/15 01:30	7.83	0.57	0.40	26.50	53.80	6/19/15				Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15		06/18/15 22:35	06/19/15 01:25	5.0
	06/20/15 17:25	06/21/15 03:45	10.42	2.26	0.75	43.10	74.30	6/21/15				Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15	24	06/20/15 18:40	06/21/15 03:40	17.1
	06/23/15 15:10	06/23/15 17:05	2.00	1.05	0.91	40.60	72.30	6/24/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15	25	06/23/15 15:45	06/23/15 17:30	16.4
	06/27/15 04:35	06/27/15 16:20	11.83	1.12	0.39	47.20	70.90	6/28/15				Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15	26	06/27/15 12:50	06/28/15 02:45	7.1
	06/30/15 22:25	06/30/15 23:50	1.50	0.15	0.15	31.80	47.80	NOT DETECTED						27	06/30/15 23:40	06/30/15 23:45	1.3
	07/03/15 23:30	07/04/15 11:20	11.92	0.34	0.20	28.40	50.00	NOT DETECTED						28	07/04/15 10:55	07/04/15 11:15	1.1
	07/06/15 16:00	07/06/15 17:10	1.25	0.11	0.11	25.20	50.20	7/7/15				Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15	29	07/06/15 17:00	07/06/15 17:20	1.4

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA				
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Jul-15	07/09/15 17:20	07/09/15 17:55	0.67	0.25	0.25	24.50	47.90	7/9/15; 7/10/15				Wooden Block	Unknown flow or duration. 0.04 Rain on 7/8/15	30	07/09/15 17:45	07/09/15 18:10	1.7
	07/14/15 01:15	07/14/15 06:40	5.50	1.35	0.67	29.40	54.10	NOT DETECTED						31	07/14/15 02:40	07/14/15 06:50	12.4
	07/26/15 20:25	07/26/15 23:55	3.58	0.70	0.68	22.90	54.60	NOT DETECTED						32	07/26/15 23:35	07/26/15 23:50	11.3
Aug-15	08/11/15 01:20	08/11/15 12:55	11.67	0.61	0.27	20.50	44.60	8/11/15; 8/12/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15	33	08/11/15 01:40	08/11/15 13:05	0.9
	08/20/15 06:00	08/20/15 19:40	13.75	1.56	0.56	33.60	63.70	8/20/15; 8/21/15				Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15	34	08/20/15 06:40	08/20/15 19:55	7.1
	08/24/15 14:35	08/24/15 16:30	2.00	0.34	0.32	20.20	47.40	8/25/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15	35	08/24/15 16:40	08/24/15 16:50	0.6
	08/30/15 15:20	08/30/15 15:40	0.42	0.07	0.07	17.10	41.80	8/31/15				Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15	36	08/30/15 15:40	08/30/15 15:55	1.9
Sep-15	09/10/15 08:50	09/10/15 14:30	5.75	1.05	0.29	26.80	62.40	9/11/15				Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15	37	09/10/15 10:15	09/10/15 14:50	0.9
	09/12/15 10:30	09/12/15 16:15	5.83	0.66	0.25	24.70	53.70	9/13/15				Wooden Block	Unknown flow or duration.	38	09/12/15 13:55	09/12/15 16:10	0.7
	09/29/15 11:50	09/30/15 01:15	13.50	1.91	0.54	32.90	64.00	9/30/15				Wooden Block	Unknown flow or duration.	39	09/29/15 18:15	09/30/15 01:55	4.0
Oct-15	10/02/15 04:10	10/03/15 10:50	30.75	1.05	0.02	28.10	52.70	10/3/15	6:13 AM	11:00 AM	3,924	Hydraulic					
	10/03/15 18:30	10/03/15 23:25	5.00	0.07	0.00	30.50	50.90	10/4/15				Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:00	10/09/15 16:50	1.92	0.28	0.02	19.90	42.80	10/10/15				Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:25	24.75	2.07	0.03	44.90	64.90	10/28/15	10:25 AM	11:00 PM	3,588	Hydraulic	Unknown flow or duration.				
	10/29/15 09:05	10/29/15 09:30	0.50	0.04	0.00	24.80	39.40	10/29/15				Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 04:10	11/11/15 00:35	20.50	0.42	0.01	22.30	37.90	11/11/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.15	0.01	18.10	40.90	11/12/15				Wooden Block	Unknown flow or duration.				
	11/19/15 05:05	11/19/15 17:35	12.58	0.35	0.01	21.00	43.30	11/20/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
	11/30/15 21:45	12/01/15 15:00	17.33	0.74	0.01	28.60	52.10	12/1/15				Wooden Block	Unknown flow or duration.				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15				Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/14/15 16:25	12/14/15 22:30	6.17	0.14	0.01	17.70	39.40	12/15/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 12/14/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15				Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15				Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15				Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15				Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15				Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15	8:10 AM	1:10 PM	4,130	Hydraulic					
CSO-060		Influent Pipe: 18 in			Weir Length 13 in				Tributary Area: 18.38 acres								
		Overflow Pipe: 12 in															
Mar-15	03/26/15 17:45	03/27/15 06:40	13.00	0.31	0.02	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/03/15 09:15	04/04/15 02:00	16.83	0.31	0.02	22.30	43.30	4/4/15			0	Wooden Block	Unknown flow or duration. 0.39 rain on 4/3/15				
	04/20/15 01:15	04/20/15 09:40	8.50	0.94	0.03	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:20	10.08	1.02	0.05	41.20	53.60	4/21/15			0	Wooden Block					
May-15	05/18/15 16:50	05/19/15 03:50	11.08	1.39	0.05	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 13:15	05/27/15 15:10	2.00	0.45	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.17	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 08:00	06/02/15 19:10	11.25	0.92	0.03	34.90	59.40	6/2/15	8:52 AM	8:00 PM	1,243	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 08:00	06/02/15 19:10	11.25	0.92	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 07:20	06/09/15 07:25	0.17	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	0.98	0.07	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.78	0.05	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.22	0.07	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:05	2.00	1.27	0.09	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:05	06/28/15 03:30	1.50	0.15	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 23:15	07/01/15 03:35	4.42	0.18	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/06/15 05:45	07/06/15 06:05	0.42	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 16:00	07/06/15 19:00	3.08	0.12	0.01	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.29	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
	08/11/15 01:15	08/11/15 12:55	11.75	0.63	0.03	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:15	08/11/15 12:55	11.75	0.63	0.03	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Aug-15	08/20/15 06:00	08/20/15 19:45	13.83	1.85	0.06	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:45	13.83	1.85	0.06	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 14:55	08/24/15 16:30	1.67	0.42	0.04	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Sep-15	09/10/15 09:05	09/10/15 18:10	9.17	1.11	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/29/15 09:45	09/30/15 01:15	15.58	1.91	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:10	10/03/15 10:40	30.58	1.07	0.03	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/09/15 15:05	10/09/15 16:50	1.83	0.29	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/29/15 09:10	10/29/15 09:25	0.33	0.02	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Dec-15	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-061		Influent Pipe:	45 in		Weir Length		62 in		Tributary Area:	55.24 acres							
		Overflow Pipe:	48 in														
Jan-15	01/03/15 09:00	01/04/15 06:45	21.83	0.51	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:45	01/04/15 19:30	1.83	0.15	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
Mar-15	03/13/15 20:50	03/14/15 14:35	17.83	0.72	0.01	46.80	56.80	3/14/15	7:02 AM	10:30 AM	1,323	Hydraulic					
	03/13/15 20:50	03/14/15 14:35	17.83	0.72	0.01	46.80	56.80	3/15/15			0	Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15				
Apr-15	04/03/15 09:15	04/04/15 02:00	16.83	0.34	0.02	22.30	43.30	4/4/15			0	Wooden Block	Unknown flow or duration. 0.39 rain on 4/3/15				
	04/08/15 09:15	04/08/15 10:40	1.50	0.20	0.01	22.20	45.70	4/9/15			0	Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15				
	04/09/15 21:25	04/09/15 22:35	1.25	0.09	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.02	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:25	10.17	0.99	0.05	41.20	53.60	4/21/15			0	Wooden Block					
May-15	05/17/15 08:25	05/17/15 12:00	3.67	0.13	0.01	19.10	38.90	5/17/15			0	Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15				
	05/18/15 16:50	05/19/15 03:55	11.17	1.46	0.05	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 13:15	05/27/15 15:10	2.00	0.48	0.03	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.16	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 07:55	06/02/15 19:10	11.33	0.92	0.03	34.90	59.40	6/2/15	8:50 AM	8:00 PM	11,682	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 07:55	06/02/15 19:10	11.33	0.92	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:40	06/09/15 07:25	5.83	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/12/15 14:40	06/12/15 23:10	8.58	0.08	0.00	20.00	28.40	6/13/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	1.04	0.08	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 20:55	06/15/15 21:55	1.08	0.07	0.01	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/18/15 17:45	06/19/15 02:30	8.83	0.79	0.05	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.15	0.06	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/21/15 19:15	06/21/15 19:25	0.25	0.01	0.00	48.40	59.70	6/22/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/21/15				
	06/28/15 02:05	06/28/15 03:30	1.50	0.19	0.01	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 23:10	07/01/15 03:35	4.50	0.18	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/03/15 23:30	07/04/15 11:25	12.00	0.28	0.01	28.40	50.00	7/5/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 05:45	07/06/15 06:05	0.42	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 15:55	07/06/15 19:00	3.17	0.25	0.02	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.28	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
Aug-15	08/11/15 01:05	08/11/15 12:55	11.92	0.65	0.03	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/20/15 06:00	08/20/15 19:55	14.00	1.77	0.06	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:55	14.00	1.77	0.06	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/30/15 15:15	08/30/15 15:40	0.50	0.03	0.00	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 09:00	09/10/15 18:15	9.33	1.19	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:25	09/12/15 17:30	7.17	0.72	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 09:45	09/30/15 01:15	15.58	1.88	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:05	10/03/15 10:45	30.75	1.06	0.02	28.10	52.70	10/3/15	5:55 AM	11:00 AM	5,755	Hydraulic					
	10/09/15 15:05	10/09/15 16:50	1.83	0.31	0.02	19.90	42.80	10/10/15			0	Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:25	24.75	1.98	0.03	44.90	64.90	10/28/15			0	Wooden Block	Unknown flow or duration.				
	10/29/15 09:10	10/29/15 09:30	0.42	0.02	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Nov-15	11/10/15 03:40	11/11/15 00:30	20.92	0.43	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/19/15 05:00	11/19/15 17:35	12.67	0.35	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15			0	Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/17/15 07:35	12/17/15 15:25	7.92	0.32	0.01	21.40	36.50	12/18/15			0	Wooden Block	Unknown flow or duration. 0.32 Rain on 12/17/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15			0	Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-062		Influent Pipe:	15.25 in		Weir Length		25 in		Tributary Area:	9.44 acres							
		Overflow Pipe:	12 in														
Aug-14	08/11/14 21:00	08/12/14 20:50	23.92	2.25	0.58	50.60	71.50	8/12/14; 8/13/14				Wooden Block	Unknown flow or duration.	1	08/12/14 01:10	08/12/14 20:45	25.3
	08/17/14 07:40	08/17/14 10:00	2.42	0.09	0.07	23.10	41.10	8/18/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 8/17/14	2	08/17/14 09:35	08/17/14 09:55	5.1
	08/21/14 16:40	08/21/14 17:30	0.92	0.41	0.41	19.90	35.20	8/22/14				Wooden Block	Unknown flow or duration. 0.02 Rain on 8/21/14	3	08/21/14 17:10	08/21/14 17:25	12.5
Sep-14	09/13/14 06:35	09/13/14 11:50	5.33	0.14	0.10	18.20	43.50	9/14/14				Wooden Block	Unknown flow or duration. 0.18 Rain on 9/13/14	4	09/13/14 10:20	09/13/14 11:45	5.5
	09/21/14 16:55	09/21/14 20:05	3.25	0.26	0.20	16.60	37.90	9/22/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 9/21/14	5	09/21/14 19:55	09/21/14 20:10	23.8
	09/25/14 00:20	09/25/14 09:10	8.92	0.34	0.14	19.90	41.60	9/26/14				Wooden Block	Unknown flow or duration. 0.32 Rain on 9/25/14	6	09/25/14 07:05	09/25/14 09:05	2.1
	09/30/14 21:20	09/30/14 23:35	2.33	0.84	0.69	22.70	49.80	10/1/14				Wooden Block	Unknown flow or duration.	7	09/30/14 21:55	09/30/14 23:30	25.3
Oct-14	10/03/14 19:55	10/03/14 23:40	3.83	0.17	0.14	19.20	39.70	10/4/14				Wooden Block	Unknown flow or duration.	8	10/03/14 23:30	10/03/14 23:35	2.6
	10/07/14 19:30	10/07/14 22:40	3.25	0.10	0.09	17.70	40.10	10/8/14				Wooden Block	Unknown flow or duration. 0.15 Rain on 10/7/14	9	10/07/14 22:20	10/07/14 22:35	2.9
	10/15/14 01:25	10/15/14 15:25	14.08	1.03	0.40	32.20	52.00	10/15/14; 10/16/14				Wooden Block	Unknown flow or duration.	10	10/15/14 02:55	10/15/14 15:20	26.9
	10/16/14 15:45	10/16/14 17:20	1.67	0.10	0.07	22.20	44.30	10/17/14				Wooden Block	Unknown flow or duration. 0.13 Rain on 10/16/14	11	10/16/14 16:50	10/16/14 17:15	3.2
Nov-14	11/05/14 22:20	11/06/14 05:55	7.67	0.68	0.14	23.40	50.40	11/6/14				Wooden Block	Unknown flow or duration.	12	11/06/14 03:05	11/06/14 06:40	2.6
	11/23/14 21:25	11/24/14 04:20	7.00	0.57	0.21	20.10	34.40	11/24/14				Wooden Block	Unknown flow or duration.	13	11/24/14 00:25	11/24/14 04:25	6.7
	11/26/14 04:30	11/26/14 09:45	5.33	0.40	0.16	31.50	43.30	11/27/14				Wooden Block	Unknown flow or duration. 0.74 rain on 11/26/14	14	11/26/14 09:30	11/26/14 09:40	2.8
Dec-14	12/02/14 09:40	12/02/14 18:25	8.83	0.23	0.18	22.30	44.60	12/3/14				Wooden Block	Unknown flow or duration. 0.22 rain on 12/2/14	15	12/02/14 18:15	12/02/14 18:50	4.7
	12/05/14 12:15	12/05/14 20:50	8.67	0.30	0.08	26.90	40.40	12/6/14				Wooden Block	Unknown flow or duration.	16	12/05/14 21:05	12/05/14 21:05	1.1
	12/06/14 09:10	12/06/14 15:40	6.58	0.42	0.11	31.50	49.30	12/7/14				Wooden Block	Unknown flow or duration. 0.57 rain on 12/6/14	17	12/06/14 11:30	12/06/14 15:45	3.0
	12/16/14 10:05	12/16/14 12:10	2.17	0.12	0.11	21.70	35.40	NOT DETECTED						18	12/16/14 12:25	12/16/14 12:35	0.9
	12/22/14 16:35	12/22/14 20:15	3.75	0.11	0.06	20.60	40.40	12/23/14				Wooden Block	Unknown flow or duration.	19	12/22/14 20:30	12/22/14 20:30	0.4
	12/23/14 08:35	12/24/14 05:30	21.00	0.35	0.14	24.80	43.00	12/24/14				Wooden Block	Unknown flow or duration.	20	12/24/14 04:00	12/24/14 05:25	3.4
	12/25/14 00:45	12/25/14 03:30	2.83	0.13	0.07	25.00	37.60	12/25/14				Wooden Block	Unknown flow or duration.	21	12/25/14 03:20	12/25/14 03:25	3.0
Jan-15	01/03/15 08:00	01/03/15 20:20	12.42	0.41	0.11	26.90	45.40	1/4/15				Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15	22	01/03/15 16:40	01/03/15 20:40	0.2
	01/04/15 16:45	01/04/15 18:30	1.83	0.14	0.11	25.40	46.20	1/5/15				Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15	23	01/04/15 18:50	01/04/15 19:15	3.9
Mar-15	03/13/15 20:50	03/14/15 02:50	6.08	0.35	0.11	38.70	56.60	3/14/15				Wooden Block	Unknown flow or duration.	24	03/14/15 02:45	03/14/15 02:45	0.7
	03/26/15 17:45	03/26/15 18:20	0.67	0.36	0.36	25.20	48.50	3/27/15				Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15	25	03/26/15 18:00	03/26/15 18:25	25.1
Apr-15	04/03/15 09:15	04/04/15 02:00	16.83	0.38	0.29	22.30	43.30	4/4/15				Wooden Block	Unknown flow or duration. 0.39 rain on 4/3/15	26	04/03/15 15:50	04/04/15 02:05	10.9
	04/08/15 09:15	04/08/15 10:25	1.25	0.19	0.20	22.20	45.70	4/9/15				Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15	27	04/08/15 09:55	04/08/15 10:20	4.3
	04/09/15 21:25	04/09/15 22:35	1.25	0.10	0.19	21.50	41.40	4/10/15				Wooden Block	Unknown flow or duration.	28	04/09/15 22:25	04/09/15 22:30	1.3
	04/20/15 01:15	04/20/15 06:25	5.25	0.87	0.29	40.20	57.60	4/20/15				Wooden Block	Unknown flow or duration.	29	04/20/15 02:50	04/20/15 06:20	9.7
	04/20/15 19:20	04/21/15 01:05	5.83	0.94	0.61	40.20	57.60	4/21/15				Wooden Block			04/20/15 22:20	04/21/15 01:00	34.7
May-15	05/12/15 01:40	05/12/15 02:00	0.42	0.06	0.06	18.10	28.10	NOT DETECTED						30	05/12/15 01:55	05/12/15 01:55	2.4
	05/16/15 16:05	05/16/15 17:05	1.08	0.16	0.16	16.70	42.80	5/17/15				Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15	31	05/16/15 16:55	05/16/15 17:00	1.7
	05/17/15 08:25	05/17/15 10:55	2.58	0.11	0.10	19.10	38.90	5/17/15				Wooden Block	Unknown flow or duration. 0.17 Rain on 5/16/15	32	05/17/15 10:40	05/17/15 10:50	1.4
	05/18/15 16:50	05/19/15 03:55	11.17	1.54	0.65	18.30	52.60	5/19/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15	33	05/18/15 17:15	05/19/15 04:00	42.6
	05/27/15 13:15	05/27/15 14:15	1.08	0.41	0.41	17.60	51.10	5/28/15				Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15	34	05/27/15 13:40	05/27/15 14:10	25.4
	05/31/15 17:40	05/31/15 23:10	5.58	0.10	0.42	17.30	42.20	6/1/15				Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15	35	05/31/15 18:15	05/31/15 23:05	5.9
	06/01/15 14:15	06/01/15 22:55	8.75	0.60	0.32	22.90	48.50	6/2/15; 6/3/15	8:46 AM	8:00 PM	6,018	Hydraulic	0.66 Rain on 6/1/15	36	06/01/15 16:05	06/02/15 13:25	22.5
	06/08/15 17:00	06/08/15 18:45	1.83	1.67	1.55	34.50	72.70	6/9/15				Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15	37	06/08/15 17:15	06/08/15 18:40	66.0
	06/12/15 14:40	06/12/15 23:05	8.50	0.08	0.06	20.00	28.40	6/13/15				Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15	38	06/12/15 22:55	06/12/15 23:00	4.5

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA				
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Jun-15	06/14/15 05:55	06/14/15 06:35	0.75	0.12	0.12	26.60	59.20	6/15/15				Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15	39	06/14/15 06:15	06/14/15 18:05	47.9
	06/15/15 20:55	06/15/15 21:55	1.08	0.10	0.10	22.90	32.00	NOT DETECTED						40	06/15/15 21:50	06/15/15 22:00	7.0
	06/17/15 22:35	06/18/15 02:40	4.17	0.18	0.13	26.50	53.80	6/18/15				Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15	41	06/18/15 02:05	06/18/15 02:35	3.2
	06/18/15 17:45	06/19/15 01:05	7.42	0.78	0.60	26.50	53.80	6/19/15				Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15		06/18/15 22:45	06/19/15 01:00	47.9
	06/20/15 17:20	06/21/15 02:10	8.92	2.14	0.81	43.10	74.30	6/21/15				Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15	42	06/20/15 18:20	06/21/15 02:05	43.9
	06/23/15 15:10	06/23/15 17:05	2.00	1.26	1.10	40.60	72.30	6/24/15				Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15	43	06/23/15 15:40	06/23/15 17:00	39.2
	06/27/15 04:35	06/27/15 16:20	11.83	1.16	0.45	47.20	70.90	6/28/15				Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15	44	06/27/15 12:25	06/28/15 02:45	30.7
	06/30/15 23:10	06/30/15 23:45	0.67	0.12	0.12	31.80	47.80	7/1/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15	45	06/30/15 23:30	06/30/15 23:40	10.9
Jul-15	07/03/15 23:30	07/04/15 11:15	11.83	0.28	0.15	28.40	50.00	NOT DETECTED						46	07/04/15 03:55	07/04/15 11:10	10.1
	07/06/15 15:55	07/06/15 17:10	1.33	0.28	0.28	25.20	50.20	7/7/15				Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15	47	07/06/15 16:40	07/06/15 17:15	30.5
	07/09/15 17:20	07/09/15 17:55	0.67	0.23	0.23	24.50	47.90	7/10/15				Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15	48	07/09/15 17:40	07/09/15 17:55	27.0
	07/14/15 01:15	07/14/15 06:35	5.42	1.07	0.57	29.40	54.10	NOT DETECTED						49	07/14/15 02:30	07/14/15 06:30	24.0
	07/15/15 01:00	07/15/15 03:35	2.67	0.04	0.42	23.50	29.00	NOT DETECTED						50	07/15/15 10:50	07/15/15 10:50	0.1
	07/21/15 18:20	07/21/15 18:45	0.50	0.08	0.08	20.00	28.60	NOT DETECTED						51	07/21/15 18:40	07/21/15 18:40	3.6
	07/21/15 18:20	07/21/15 18:45	0.50	0.08	0.08	20.00	28.60	NOT DETECTED						52	07/22/15 08:05	07/22/15 14:30	0.9
	07/26/15 20:30	07/27/15 00:15	3.83	0.47	0.42	22.90	54.60	NOT DETECTED						53	07/26/15 23:40	07/27/15 00:10	20.4
Aug-15	08/10/15 11:50	08/10/15 13:00	1.25	0.03	0.02	20.20	41.60	8/11/15				Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15	54	08/10/15 12:55	08/10/15 13:00	5.5
	08/11/15 01:05	08/11/15 12:55	11.92	0.67	0.38	20.50	44.60	8/12/15				Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15	55	08/11/15 01:35	08/11/15 13:00	22.5
	08/20/15 06:00	08/20/15 19:55	14.00	1.79	0.69	33.60	63.70	8/20/15; 8/21/15						56	08/20/15 06:25	08/21/15 09:55	63.2
	08/24/15 14:55	08/24/15 16:30	1.67	0.39	0.39	20.20	47.40	8/25/15						57	08/24/15 16:15	08/24/15 16:40	39.7
Sep-15	09/10/15 09:00	09/10/15 18:15	9.33	1.23	0.03	26.80	62.40	9/11/15				Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:25	09/12/15 17:30	7.17	0.72	0.02	24.70	53.70	9/13/15				Wooden Block	Unknown flow or duration.				
	09/29/15 09:45	09/30/15 01:15	15.58	1.88	0.05	32.90	64.00	9/30/15				Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:05	10/03/15 10:45	30.75	1.06	0.02	28.10	52.70	10/3/15	5:50 AM	11:00 AM	677	Hydraulic					
	10/03/15 18:35	10/03/15 23:25	4.92	0.07	0.00	30.50	50.90	10/4/15				Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/09/15 15:05	10/09/15 16:50	1.83	0.33	0.02	19.90	42.80	10/10/15				Wooden Block	Unknown flow or duration. 0.34 Rain on 10/9/15				
	10/27/15 23:45	10/29/15 00:25	24.75	1.95	0.03	44.90	64.90	10/28/15				Wooden Block	Unknown flow or duration.				
	10/29/15 09:10	10/29/15 09:30	0.42	0.02	0.00	24.80	39.40	10/29/15				Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 03:40	11/11/15 00:30	20.92	0.43	0.01	22.30	37.90	11/11/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.14	0.01	18.10	40.90	11/12/15				Wooden Block	Unknown flow or duration.				
	11/19/15 05:00	11/19/15 17:35	12.67	0.36	0.01	21.00	43.30	11/20/15				Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/2/15				Wooden Block	Unknown flow or duration.				
	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15				Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15				Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15				Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15				Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15				Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15				Wooden Block	Unknown flow or duration.				
CSO-063		Influent Pipe:	24 in		Weir Length	25 in		Tributary Area:	38.26 acres								
		Overflow Pipe:	24 in														
Jan-15	01/03/15 09:00	01/04/15 06:45	21.83	0.52	0.01	26.90	45.40	1/4/15			0	Wooden Block	Unknown flow or duration. 0.43 Rain on 1/3/15				
	01/04/15 17:55	01/04/15 19:30	1.67	0.14	0.01	25.40	46.20	1/5/15			0	Wooden Block	Unknown flow or duration. 0.24 Rain on 1/4/15				
Mar-15	03/04/15 05:10	03/05/15 18:00	36.92	0.63	0.01	31.50	48.00	3/5/15			0	Wooden Block	Unknown flow or duration.				
	03/07/15 16:45	03/07/15 16:45	0.08	0.00	0.00	21.30	28.40	3/9/15			0	Snow Melt	Unknown flow or duration.				
	03/13/15 20:50	03/14/15 14:35	17.83	0.73	0.01	46.80	56.80	3/14/15	6:54 AM	10:30 AM	668	Hydraulic					
	03/13/15 20:50	03/14/15 14:35	17.83	0.73	0.01	46.80	56.80	3/15/15			0	Wooden Block	Unknown flow or duration. 0.53 rain on 3/14/15				
	03/26/15 17:45	03/27/15 06:40	13.00	0.42	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/03/15 09:15	04/04/15 02:00	16.83	0.40	0.03	22.30	43.30	4/4/15			0	Wooden Block	Unknown flow or duration. 0.39 rain on 4/3/15				
	04/08/15 09:20	04/08/15 10:40	1.42	0.21	0.02	22.20	45.70	4/9/15			0	Wooden Block	Unknown flow or duration. 0.19 rain on 4/8/15				
	04/20/15 01:15	04/20/15 09:40	8.50	0.95	0.02	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:25	10.17	0.98	0.05	41.20	53.60	4/21/15			0	Wooden Block					

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
May-15	05/17/15 23:50	05/18/15 00:45	1.00	0.00	0.00	18.30	52.60	5/18/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 5/17/15				
	05/18/15 16:50	05/19/15 03:55	11.17	1.58	0.06	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 13:20	05/27/15 15:10	1.92	0.54	0.04	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
	05/31/15 17:40	06/01/15 03:15	9.67	0.15	0.01	17.30	42.20	6/1/15			0	Wooden Block	Unknown flow or duration. 0.16 Rain on 5/31/15				
Jun-15	06/02/15 07:55	06/02/15 19:10	11.33	0.89	0.03	34.90	59.40	6/2/15	8:40 AM	8:00 PM	3,633	Hydraulic	0.66 Rain on 6/1/15				
	06/02/15 07:55	06/02/15 19:10	11.33	0.89	0.03	34.90	59.40	6/3/15			0	Wooden Block	Unknown flow or duration. 0.96 Rain on 6/2/15				
	06/09/15 01:40	06/09/15 07:25	5.83	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/14/15 17:20	06/15/15 06:45	13.50	1.04	0.08	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				
	06/15/15 20:55	06/15/15 21:55	1.08	0.11	0.01	22.90	32.00	6/16/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 6/15/15				
	06/17/15 22:50	06/18/15 08:50	10.08	0.22	0.01	26.50	53.80	6/18/15			0	Wooden Block	Unknown flow or duration. 0.02 Rain on 6/17/15				
	06/18/15 17:50	06/19/15 02:30	8.75	0.84	0.05	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.13	0.07	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:10	2.08	1.26	0.09	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:10	06/28/15 03:30	1.42	0.24	0.02	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
	06/30/15 23:10	07/01/15 03:35	4.50	0.16	0.01	29.20	48.30	7/1/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 6/30/15				
Jul-15	07/06/15 05:45	07/06/15 06:05	0.42	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 15:55	07/06/15 18:55	3.08	0.36	0.03	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.27	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
	07/15/15 01:00	07/15/15 03:35	2.67	0.03	0.00	23.50	29.00	7/15/15			0	Wooden Block	Unknown flow or duration. 1.39 Rain on 7/14/15				
Aug-15	08/20/15 06:00	08/20/15 19:55	14.00	1.75	0.06	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:55	14.00	1.75	0.06	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 15:50	08/24/15 16:30	0.75	0.38	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
	08/30/15 15:15	08/30/15 15:40	0.50	0.02	0.00	17.10	41.80	8/31/15			0	Wooden Block	Unknown flow or duration. 0.14 Rain on 8/30/15				
Sep-15	09/10/15 09:00	09/10/15 18:15	9.33	1.27	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/29/15 11:45	09/30/15 01:15	13.58	1.87	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:05	10/03/15 10:45	30.75	1.06	0.02	28.10	52.70	10/3/15	5:45 AM	11:00 AM	845	Hydraulic					
	10/03/15 18:35	10/03/15 23:25	4.92	0.07	0.00	30.50	50.90	10/4/15			0	Wooden Block	Unknown flow or duration. 0.76 Rain on 10/3/15				
	10/29/15 09:10	10/29/15 09:30	0.42	0.02	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Nov-15	11/10/15 03:40	11/11/15 00:20	20.75	0.43	0.01	22.30	37.90	11/11/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 11/10/15				
	11/12/15 07:15	11/12/15 09:50	2.67	0.14	0.01	18.10	40.90	11/12/15			0	Wooden Block	Unknown flow or duration.				
	11/19/15 05:00	11/19/15 17:35	12.67	0.35	0.01	21.00	43.30	11/20/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 11/19/15				
Dec-15	12/01/15 22:45	12/02/15 17:30	18.83	0.51	0.01	30.70	46.00	12/3/15			0	Wooden Block	Unknown flow or duration. 0.46 Rain on 12/2/15				
	12/22/15 01:30	12/22/15 08:45	7.33	0.28	0.01	18.50	34.20	12/22/15			0	Wooden Block	Unknown flow or duration.				
	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/26/15 20:05	12/26/15 22:20	2.33	0.16	0.01	22.40	41.50	12/27/15			0	Wooden Block	Unknown flow or duration.				
	12/27/15 16:30	12/27/15 21:45	5.33	0.29	0.01	26.00	44.30	12/28/15			0	Wooden Block	Unknown flow or duration. 0.31 Rain on 12/27/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				
CSO-064		Influent Pipe:	24 in		Weir Length	25 in			Tributary Area:	10.12 acres							
		Overflow Pipe:	24 in														
Mar-15	03/26/15 17:45	03/27/15 06:40	13.00	0.43	0.03	22.80	29.00	3/27/15			0	Wooden Block	Unknown flow or duration. 0.44 rain on 3/26/15				
Apr-15	04/03/15 09:15	04/04/15 02:00	16.83	0.40	0.03	22.30	43.30	4/4/15			0	Wooden Block	Unknown flow or duration. 0.39 rain on 4/3/15				
	04/09/15 21:25	04/09/15 22:35	1.25	0.10	0.01	21.50	41.40	4/10/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 01:15	04/20/15 09:20	8.17	0.95	0.02	40.20	57.60	4/20/15			0	Wooden Block	Unknown flow or duration.				
	04/20/15 19:20	04/21/15 05:25	10.17	0.98	0.05	41.20	53.60	4/21/15			0	Wooden Block					
	04/22/15 01:20	04/22/15 20:15	19.00	0.07	0.00	34.90	47.40	4/23/15			0	Wooden Block	Unknown flow or duration. 0.06 Rain on 4/22/15				
May-15	05/18/15 16:50	05/19/15 03:55	11.17	1.59	0.06	18.30	52.60	5/19/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 5/18/15				
	05/27/15 13:20	05/27/15 15:10	1.92	0.55	0.04	17.60	51.10	5/28/15			0	Wooden Block	Unknown flow or duration. 0.54 Rain on 5/27/15				
Jun-15	06/02/15 07:55	06/02/15 19:10	11.33	0.89	0.03	34.90	59.40	6/2/15			0	Wooden Block	Unknown flow or duration. 0.66 Rain on 6/1/15				
	06/09/15 01:40	06/09/15 07:25	5.83	0.00	0.00	27.00	37.50	6/9/15			0	Wooden Block	Unknown flow or duration. 1.94 Rain on 6/8/15				
	06/12/15 14:40	06/12/15 23:10	8.58	0.09	0.01	20.00	28.40	6/13/15			0	Wooden Block	Unknown flow or duration. 0.19 Rain on 6/12/15				
	06/14/15 17:20	06/15/15 06:45	13.50	1.04	0.08	22.90	32.00	6/15/15			0	Wooden Block	Unknown flow or duration. 1.01 Rain on 6/14/15				

CAPITAL REGION WATER - COMBINED SEWER OVERFLOW REPORT

	RAIN EVENTS					PLANT FLOW		FIELD OBSERVATIONS						FLOW MONITORING DATA			
	Rain Start Time	Rain End Time	Rain Duruation (hr)	Rain Accum. (in)	Peak Intensity (in/hr)	ADF (MGD)	PDF (MGD)	Date Detected	Field-Recorded Start Time	Field-Recorded End Time	Field-Recorded Overflow Volume (gal)	Cause	Comment	Overflow Event	Overflow Start Time	Overflow End Time	Max. Depth Above Weir (in)
Jun-15	06/18/15 20:55	06/19/15 02:30	5.67	0.84	0.05	26.50	53.80	6/19/15			0	Wooden Block	Unknown flow or duration. 0.4 Rain on 6/18/15				
	06/20/15 17:20	06/21/15 05:00	11.75	2.13	0.07	43.10	74.30	6/21/15			0	Wooden Block	Unknown flow or duration. 2.04 Rain on 6/20/15				
	06/23/15 15:10	06/23/15 17:10	2.08	1.25	0.09	40.60	72.30	6/24/15			0	Wooden Block	Unknown flow or duration. 1.2 Rain on 6/23/15				
	06/28/15 02:10	06/28/15 03:30	1.42	0.24	0.02	39.00	54.80	6/28/15			0	Wooden Block	Unknown flow or duration. 1.15 Rain on 6/27/15				
Jul-15	07/06/15 05:45	07/06/15 06:05	0.42	0.01	0.00	25.20	50.20	7/6/15			0	Wooden Block	Unknown flow or duration. 0.39 Rain on 7/4/15				
	07/06/15 15:55	07/06/15 18:50	3.00	0.37	0.03	25.20	50.20	7/7/15			0	Wooden Block	Unknown flow or duration. 0.85 Rain on 7/6/15				
	07/09/15 17:20	07/09/15 21:20	4.08	0.27	0.02	24.50	47.90	7/10/15			0	Wooden Block	Unknown flow or duration. 0.28 Rain on 7/9/15				
	07/15/15 01:05	07/15/15 03:30	2.50	0.03	0.00	23.50	29.00	7/15/15			0	Wooden Block	Unknown flow or duration. 1.39 Rain on 7/14/15				
Aug-15	08/11/15 01:05	08/11/15 12:55	11.92	0.68	0.03	20.50	44.60	8/11/15			0	Wooden Block	Unknown flow or duration. 0.07 Rain on 8/10/15				
	08/11/15 01:05	08/11/15 12:55	11.92	0.68	0.03	20.50	44.60	8/12/15			0	Wooden Block	Unknown flow or duration. 0.68 Rain on 8/11/15				
	08/20/15 06:00	08/20/15 19:55	14.00	1.76	0.06	33.60	63.70	8/20/15			0	Wooden Block	Unknown flow or duration. 0.03 Rain on 8/18/15				
	08/20/15 06:00	08/20/15 19:55	14.00	1.76	0.06	33.60	63.70	8/21/15			0	Wooden Block	Unknown flow or duration. 1.69 Rain on 8/20/15				
	08/24/15 15:50	08/24/15 16:30	0.75	0.39	0.03	20.20	47.40	8/25/15			0	Wooden Block	Unknown flow or duration. 0.44 Rain on 8/24/15				
Sep-15	09/10/15 09:00	09/10/15 18:15	9.33	1.28	0.03	26.80	62.40	9/11/15			0	Wooden Block	Unknown flow or duration. 1.37 Rain on 9/10/15				
	09/12/15 10:25	09/12/15 17:30	7.17	0.71	0.02	24.70	53.70	9/13/15			0	Wooden Block	Unknown flow or duration.				
	09/29/15 11:45	09/30/15 01:15	13.58	1.87	0.05	32.90	64.00	9/30/15			0	Wooden Block	Unknown flow or duration.				
Oct-15	10/02/15 04:05	10/03/15 10:40	30.67	1.06	0.02	28.10	52.70	10/3/15			0	Wooden Block	Unknown flow or duration.				
	10/29/15 09:10	10/29/15 09:30	0.42	0.02	0.00	24.80	39.40	10/29/15			0	Wooden Block	Unknown flow or duration. 1.92 Rain on 10/28/15				
Dec-15	12/24/15 06:50	12/24/15 06:55	0.17	0.00	0.00	23.90	38.80	12/24/15			0	Wooden Block	Unknown flow or duration. 0.79 Rain on 12/23/15				
	12/28/15 23:20	12/29/15 07:40	8.42	0.81	0.02	40.70	56.50	12/29/15			0	Wooden Block	Unknown flow or duration.				

Notes:

1. Inter-event period of 12 hours used for calculating overflow events. Inter-event period of 6 hours used for calculating rain events.
2. Rain event corresponding to overflow event is the period from the start of rain to the end of the overflow (i.e. rainfall after the overflow has ended is not included).
3. Rainfall is based on gauge-adjusted radar rainfall.

APPENDIX K-4

PRECIPITATION REPORT

City of Harrisburg
Precipitation Report - 2015

Date	Precipitation Type	Inches	Rain Intensity	Snow Intensity	Snowmelt Intensity	Vicinity
1/3/2015		0.43				
1/4/2015		0.24				
1/6/2015		0.09				
1/12/2015		0.43				
1/20/2015		0.01				
1/21/2015		0.20				
1/23/2015		0.17				
1/24/2015		0.34				
1/25/2015		0.08				
1/26/2015		0.07				
1/27/2015		0.01				
1/29/2015		0.06				
2/1/2015		0.12				
2/2/2015		0.21				
2/9/2015		0.03				
2/14/2015		0.03				
2/16/2015		0.02				
2/17/2015		0.02				
2/21/2015		0.25				
3/1/2015		0.23				
3/3/2015		0.11				
3/4/2015		0.29				
3/5/2015		0.35				
3/10/2015		0.44				
3/11/2015		0.01				
3/13/2015		0.18				
3/14/2015		0.53				
3/20/2015		0.16				
3/25/2015		0.04				
3/26/2015		0.44				
3/27/2015		0.01				
3/31/2015		0.04				
4/3/2015		0.39				
4/4/2015		0.04				

Date	Precipitation Type	Inches	Rain Intensity	Snow Intensity	Snowmelt Intensity	Vicinity
4/7/2015		0.04				
4/8/2015		0.19				
4/9/2015		0.10				
4/10/2015		0.03				
4/14/2015		0.07				
4/17/2015		0.11				
4/20/2015		1.79				
4/21/2015		0.21				
4/22/2015		0.06				
4/30/2015		0.11				
5/6/2015		0.14				
5/12/2015		0.04				
5/16/2015		0.17				
5/17/2015		0.14				
5/18/2015		1.20				
5/19/2015		0.41				
5/21/2015		0.01				
5/27/2015		0.54				
5/31/2015		0.16				
6/1/2015		0.66				
6/2/2015		0.96				
6/3/2015		0.01				
6/6/2015		0.02				
6/8/2015		1.94				
6/12/2015		0.19				
6/14/2015		1.01				
6/15/2015		0.14				
6/17/2015		0.02				
6/18/2015		0.40				
6/19/2015		0.81				
6/20/2015		2.04				
6/21/2015		0.40				
6/23/2015		1.20				
6/25/2015		0.03				
6/27/2015		1.15				
6/28/2015		0.36				
7/1/2015		0.02				
7/4/2015		0.39				
7/6/2015		0.85				

Date	Precipitation Type	Inches	Rain Intensity	Snow Intensity	Snowmelt Intensity	Vicinity
7/8/2015		0.04				
7/9/2015		0.28				
7/14/2015		1.39				
7/15/2015		0.02				
7/21/2015		0.10				
7/26/2015		0.65				
7/27/2015		0.10				
7/30/2015		0.04				
8/10/2015		0.07				
8/11/2015		0.68				
8/12/2015		0.03				
8/18/2015		0.03				
8/20/2015		1.69				
8/24/2015		0.44				
8/30/2015		0.14				
9/10/2015		1.37				
9/12/2015		0.66				
9/22/2015		0.04				
9/29/2015		1.29				
9/30/2015		0.63				
10/1/2015		0.06				
10/2/2015		0.43				
10/3/2015		0.76				
10/9/2015		0.34				
10/13/2015		0.04				
10/18/2015		0.01				
10/25/2015		0.06				
10/28/2015		1.92				
10/29/2015		0.05				
11/10/2015		0.46				
11/11/2015		0.01				
11/12/2015		0.16				
11/17/2015		0.01				
11/19/2015		0.44				
11/29/2015		0.03				
11/30/2015		0.07				

Date	Precipitation Type	Inches	Rain Intensity	Snow Intensity	Snowmelt Intensity	Vicinity

Precipitation Key:

Precipitation:
- Drizzel - Fine drops less the 0.02 inches in diameter very close together.
- Rain - Drops greater than 0.02 inches in diameter widely separated.
- Shower - Characterized by the suddeness by which they start/stop and the intensity.
- Thunderstorm - Local storms accompanied by lightning and/or thunder.
- Snow - Snow crystals in the form of six pointed stars.
- Snowmelt - Melting snow.
- Ice Pellets - Transparent or translucent pellets of ice less than 0.02 inches in diameter.

Rain Intensity:
- Light - Up to 0.10 inches of rain per hour.
- Moderate - 0.11 to 0.30 inches of rain per hour.
- Heavy - More than 0.3 inches of rain per hour.

Snow Intensity:
- Light - Up to 1.0 inches of snow per day.
- Moderate - 1.1 to 3.0 inches of snow per day.
- Heavy - 4 inches of snow in 12 hrs., 6 inches of snow in 24 hrs.

Snowmelt Intensity:
- Light - Up to 1.0 inches of snowmelt per day.
- Moderate - 1.1 to 3.0 inches of snowmelt per day.
- Heavy - More than 3.0 inches of snowmelt per day.

Vicinity:
- Localized - Over a portion of the service area.
- Regional - Over the entire service area.

APPENDIX K-5

DRY WEATHER OVERFLOWS REPORT

City of Harrisburg
Advanced Wastewater Treatment Facility
Dry Weather CSO Report - 2015

Date	Flow, Gals	Duration, Hrs	Start Time	Stop Time	Rainfall, In	Cause	Comment
029							
8/24/2015	1,503	4.50	8:40 AM	1:10 PM	0.44	Line Blocked	Flushed line.
Summary for 'CSO Number' = 029 (1 detail record)							
Summary	*1,503*	*4.50*			*0.44*		
Average	*1,503*	*4.50*			*0.44*		
039							
11/9/2015	760	2.00	9:00 AM	11:06 AM	0	Box Blocked	Unblocked box.
Summary for 'CSO Number' = 039 (1 detail record)							
Summary	*760*	*2.00*			*0.00*		
Average	*760*	*2.00*			*0.00*		
052							
8/28/2015	66,000	3.50	10:50 AM	2:05 PM	0	Hydraulic	Flow monitoring program
Summary for 'CSO Number' = 052 (1 detail record)							
Summary	*66,000*	*3.50*			*0.00*		
Average	*66,000*	*3.50*			*0.00*		
057							
4/29/2015	1,083	0.75	11:30 AM	12:15 PM	0	Gate Blocked	Unblocked gate.
Summary for 'CSO Number' = 057 (1 detail record)							
Summary	*1,083*	*0.75*			*0.00*		
Average	*1,083*	*0.75*			*0.00*		
Grand Total	*69,346*	*10.75*			*0.44*		

Appendix L

Nine Minimum Control (NMC) Plan Summary Table for Capital Region Water's Combined Sewer System

Required Actions	Source of Requirement		Current Level of Implementation	Actions Necessary for Achieving Compliance		Supporting Documentation
	NMC Guidance Section	Partial Consent Decree Paragraph		Description	Deadline	
NMC-1: Proper Operation and Regular Maintenance Programs						
1.1: Regulatory Context						
1.2: Organization, Planning & Budget						
1.2.1: Organization and Responsible Staff	2.1	C(11)(a)(xi)(9)	▪ Developed organizational structure	▪ Expand/refine the existing org chart ▪ Fill 3 key staff positions	[1]Annually every Aug 10th Dec. 31, 2015	
1.2.2: Resources Allocated to O&M Activities	2.1	C(11)(a)(xi)(9)	▪ A Wastewater Division with 32 staff positions ▪ CRW 2015 budget defines O&M resources	▪ Assess human and equipment resources ▪ Develop O&M budget	Annually every Dec. 31st Annually every Dec. 31st	See OMM Section 4.12 See Appendix B
1.2.3: Remedial Work Prioritization	2.1	C(11)(a)(vii)	▪ Implemented priority remedial work system	▪ Review, refine, apply prioritization criteria	[1]Annually every Aug. 10th	
1.2.4: Equipment Purchase Prioritization	2.1	C(11)(a)(viii)	▪ Implemented priority equipment purchase system	▪ Review, refine, apply prioritization criteria	Annually every Dec. 31st	
1.2.5: O&M Program Review and Revision	2.1	C(11)(a), C(12)	▪ Prepared O&M review, revision protocol	▪ Review, revise O&M program	[1]Annually every Aug. 10th	
1.3: System Organization and Priorities						
1.3.1 Critical Facilities Definition	2.1	C(11)(a)(i)	▪ CRW interceptors, CSO regulators, and pump stations within the conveyance system are defined as critical.	▪ Critical collection system elements to be defined as H/H model is developed	[1]April 1, 2016	See OMM Section 3.1 & 3.3
1.3.2: Critical Equipment Definition	2.1	C(11)(a)(i)	▪ Current critical equipment list prepared	▪ Update critical equipment list	[1]Annually every Aug. 10th	See OMM Section 3.2 & 3.4
1.3.3: Sewershed / Catchment Delineation	---	C(11)(a)(ii)	▪ Preliminary sewershed delineation complete	▪ Complete catchment delineation	April 1, 2016	
1.3.4: System Characterization and Mapping	---	C(11)(a)(iii)	▪ GIS of conveyance system complete	▪ Complete GIS of Collection System	April 1, 2016	http://tha.maps.arcgis.com/home/index.html
1.4: O&M of CSO Regulator Structures						
1.4.1: Inspection Procedures / Schedules	2.1	C(11)(a)(x),(xi)(5)	▪ Each regulator inspected daily ▪ Prepared CAMP Study Plan	▪ Performing CAMP Study ▪ Implement CAMP Study Recommendations	[1]Dec. 1, 2016 To Be Determined	See OMM Section 4.1.2 to 4.1.6 See CAMP Study Plan
1.4.2: Remedial Repair Procedures / Schedules	2.1	---	▪ Corrective maintenance performed per inspections	▪ None: current approach complies with NMC requirements	Not Applicable	See OMM, Section 4.1.4
1.4.3: Maintenance Procedures / Schedules	2.1	---	▪ Preventive maintenance performed annually	▪ None: current approach complies with NMC requirements	Not Applicable	See OMM, Section 4.1.7
1.4.4: Documentation Procedures	2.1	C(11)(a)(xi)(4)	▪ Activities recorded in Interceptor Service Reports	▪ Enhanced tracking and reporting via Cityworks	Oct. 31, 2015	See OMM, Section 4.1.8
1.5: O&M of Outfalls / Backflow Prevention						
1.5.1: Inspection Procedures / Schedules	2.1	C(11)(a)(x)	▪ Current inspections of diversion wiers/CSO outfalls	▪ Conduct CD-required inspections of outfalls to assess structural condition / gate integrity ▪ Initiate gate inspections prior to predicted flood conditions	[1]Dec. 31, 2015 April 1, 2016	See CD Par (G)(31)(c) for inspection requirements See OMM Section 4.2.3 to 4.2.6
1.5.2: Remedial Repair Procedures / Schedules	2.1	G(31)(c)	▪ Work done as identified by existing inspections	▪ Perform remedial repairs as recommended by condition inspection.	To Be Determined by Dec. 31, 2015	See OMM Section 4.2.4
1.5.3: Maintenance Procedures / Schedules	2.1	---	▪ Preventive maintenance performed annually.	▪ Refine as determined by condition inspections	To Be Determined by Dec. 31, 2015	See OMM Section 4.2.7
1.5.4: Documentation Procedures	2.1	C(11)(a)(xi)(4)	▪ Activities recorded in interceptor service report	▪ Enhanced tracking and reporting via Cityworks	Oct. 31, 2015	See OMM Section 4.2.8
1.6: O&M of Interceptors						
1.6.1: Inspection Procedures / Schedules	2.1	C(11)(a)(iv)	▪ Comprehensive inventory/inspection completed in 2014	▪ Repeat inspections every 5 years	Dec. 31, 2019	See OMM, Section 4.4.3
1.6.2: Remedial Repair Procedures / Schedules	2.1	C(11)(a)(iv)	▪ 25,100 ft sewer rehabilitation identified in 2014	▪ Rehabilitate Paxton Creek Interceptor ▪ Rehabilitate Asylum Run/Front St Ph 1 Interceptor ▪ Rehabilitate Front Street Ph 2 Interceptor ▪ Rehabilitate Spring Creek Interceptor	[1]Dec. 31, 2017 [1]Dec. 31, 2018 [1]Dec. 31, 2020 [1]June 30, 2023	See OMM, Section 4.4.5
1.6.3: Maintenance Procedures / Schedules	2.1	C(11)(a)(xi)(2)	▪ 33,500 ft sewer cleaning identified in 2014	▪ Clean interceptors	Dec. 31, 2016	See OMM, Section 4.4.4
1.6.4: Documentation Procedures	2.1	C(11)(a)(xi)(4)	▪ Activities recorded in interceptor service reports	▪ Enhanced tracking and reporting via Cityworks	Oct. 31, 2015	See OMM, Section 4.4.6

[1] Coincides with an existing deliverable date in the Partial Consent Decree

Nine Minimum Control (NMC) Plan Summary Table for Capital Region Water's Combined Sewer System

Required Actions	Source of Requirement		Current Level of Implementation	Actions Necessary for Achieving Compliance		Supporting Documentation
	NMC Guidance Section	Partial Consent Decree Paragraph		Description	Deadline	
1.7: O&M of Pump Stations						
1.7.1: Inspection Procedures / Schedules	2.1	C(11)(a)(xi)(3)	▪ Inspected daily, seven days a week	▪ None: current approach complies with NMC requirements	Not Applicable	See OMM Section 4.3.2
1.7.2: Remedial Repair Procedures / Schedules	2.1	C(11)(a)(xi)(3)	▪ Remedial repairs done as needed and as identified by daily inspections	▪ Complete design of Front Street Pump Station ▪ Implement rehabilitation	Oct. 1, 2016 To Be Determined	
1.7.3: Maintenance Procedures / Schedules	2.1	C(11)(a)(xi)(3)	▪ Routine, scheduled preventive maintenance	▪ Develop O&M program for rehabilitated Front Street PS	To Be Determined	See OMM Section 4.3.4.11, 4.3.5.11, 4.3.8
1.7.4: Documentation Procedures	2.1	C(11)(a)(xi)(4)	▪ Activities recorded in Operations Log	▪ Enhanced tracking and reporting via Cityworks	Oct. 31, 2015	See OMM Section 4.3
1.8: O&M of Force Mains						
1.8.1: Inspection Procedures / Schedules	2.1	C(11)(a)(v)	▪ Periodic inspections by walking force main length	▪ Conduct internal inspection of all force mains	June 30, 2016	See OMM Section 4.5.3
1.8.2: Remedial Repair Procedures / Schedules	2.1	C(11)(a)(v)	▪ Have not been required	▪ Activities as identified in the inspection program	To Be Determined	
1.8.3: Maintenance Procedures / Schedules	2.1	---	▪ Exercise air release valves semi-annually	▪ Activities as identified in the inspection program	To Be Determined	See OMM Section 4.5.4
1.8.4: Documentation Procedures	2.1	C(11)(a)(xi)(4)	▪ CRW Work Order form	▪ Enhanced tracking and reporting via Cityworks	Oct. 31, 2015	See OMM Section 4.5.5
1.9: O&M of Collection System Sewers						
1.9.1: Inspection Procedures / Schedules	2.1	C(11)(a)(iv)	▪ Routine inspection of 46 "hot spots" and at each regulator chamber ▪ Limited reactive CCTV inspections	▪ Conduct rapid inspection of each manhole, sewer segment with pole camera ▪ Perform CCTV inspection of critical trunk sewers identified during rapid inspections	Dec. 31, 2015 To Be Determined via rapid inspections	See OMM Section 4.6.3
1.9.2: Remedial Repair Procedures / Schedules	2.1	C(11)(a)(iv)	▪ Limited reactive repairs as follow-up from customer complaints	▪ Schedule required remedial activities as identified in the rapid inspection program	Mar. 1, 2017	See OMM Sections 4.6.5, 4.6.6
1.9.3: Maintenance Procedures / Schedules	2.1	C(11)(a)(xi)(2)	▪ As required and identified from inspections and customer complaints	▪ Refine and improve existing maintenance procedures and schedule via Cityworks	To Be Determined via rapid inspection	See OMM Section 4.6.4
1.9.4: Documentation Procedures	2.1	C(11)(a)(xi)(4)	▪ Collection System Work Order	▪ Enhanced tracking and reporting via Cityworks	Oct. 31, 2015	See OMM Section 4.6.7
1.10: O&M of Inlets / Catch Basins						
1.10.1: Inspection Procedures / Schedules	2.1	C(11)(a)(xi)(1)	▪ Reactive inspections as follow-up from documented customer complaints	▪ Continued reactive inspections from enhanced customer complaint tracking system	Ongoing	See OMM Section 4.7.4
1.10.2: Remedial Repair Procedures / Schedules	2.1	C(11)(a)(xi)(1)	▪ Work done as needed as follow-up from completed inspections	▪ Continued work done as needed as follow-up from completed inspections	Ongoing	
1.10.3: Maintenance Procedures / Schedules	2.1	C(11)(a)(xi)(1)	▪ Inlet cleaning conducted as follow-up from documented customer complaints	▪ Current reactive maintenance program evolves to a scheduled preventive maintenance program	To Be Determined after remedial cleaning	See OMM Sections 4.7.5, 4.7.6
1.10.4: Documentation Procedures	2.1	C(11)(a)(xi)(4)	▪ Activities recorded on various inspection and rehabilitation activity forms	▪ Enhanced tracking and reporting via Cityworks	Oct. 31, 2015	See OMM Section 4.7.7
1.11: Source Investigations						
1.11.1: Food service grease traps	---	C(11)(a)(xi)(7)	▪ See NMC-3	▪ See NMC-3	See NMC-3	
1.11.2: Non-Domestic waste streams	---	C(11)(a)(xi)(8)	▪ See NMC-3	▪ See NMC-3	See NMC-3	
1.11.3: Floatables, Solids, Blockages	---	C(11)(a)(xi)(10)	▪ See NMC-6	▪ See NMC-6	See NMC-6	
1.11.4: Sinkholes	---	C(11)(a)(xi)(6)	▪ Reactive inspections as follow-up from customer complaints or public works reports ▪ Corrective measures implemented as follow-up from completed inspections and investigations	▪ Continued reactive inspections from enhanced customer complaint tracking system ▪ Complete remediation of sinkholes known at CD Date of Lodging	Ongoing Dec. 31, 2017	See Appendix C
1.12: Emergency Response Procedures						
1.12.1: Citizen Complaints / Service Requests	2.1	C(11)(a)(vi)	▪ Three methods of emergency response reporting available; existing protocols and procedures available	▪ Enhanced tracking and reporting via Cityworks	Oct. 31, 2015	See OMM Section 4.10
1.12.2 Emergency Maintenance	2.1	C(11)(a)(vi)	▪ Emergency response protocol is in place with contact numbers	▪ None: current approach complies with NMC requirements	Not Applicable	See OMM Section 4.8 & 4.9
1.13: Training Policies and Procedures	2.1	C(11)(a)(ix)	▪ Existing training procedures and classes	▪ Consider enhancements to existing training	[1]Annually every Aug. 10th	See OMM Section 4.11

[1] Coincides with an existing deliverable date in the Partial Consent Decree

Nine Minimum Control (NMC) Plan Summary Table for Capital Region Water's Combined Sewer System

Required Actions	Source of Requirement		Current Level of Implementation	Actions Necessary for Achieving Compliance		Supporting Documentation
	NMC Guidance Section	Partial Consent Decree Paragraph		Description	Deadline	
1.14: Periodic Review of O&M Plans	2.1	C(12)	▪ NMC Plan & OMM preparation	▪ Annual updates to NMC Plan and OMM	Annually	OMM
NMC-2: Maximum Use of the Collection System for Storage						
2.1: Regulatory Context						
2.2: Combined Sewer System Inspection	3.1	C(11)(b)(iii)	▪ See NMC 1.4.1, 1.5.1, 1.6.1, 1.7.1, 1.8.1, 1.9.1, 1.10.1	▪ See NMC 1.4.1, 1.5.1, 1.6.1, 1.7.1, 1.8.1, 1.9.1, 1.10.1	See NMC 1.4.1, 1.5.1, 1.6.1, 1.7.1, 1.8.1, 1.9.1, 1.10.1	See OMM Sections 4.1, 4.2, 4.3, 4.4, and 4.9
2.3: Reduce River Intrusion	---	C(11)(b)(i) C(11)(b)(iv)	▪ See NMC 1.4, 1.5	▪ See NMC 1.4, 1.5	See NMC 1.4, 1.5	See OMM Sections 4.1, 4.2
2.4: Adjustment of Regulator Settings	3.1	C(11)(b)(ii)	▪ Developing H&H Model to assess settings ▪ Confirmation inspections and enhanced documentation for existing regulator settings	▪ Complete model setup and calibration ▪ Characterize existing system performance ▪ Define initial cost-effective regulator adjustments	[1]April 1, 2016 [1]April 1, 2017 [1]April 1, 2018	
2.5: Installation of In-System Controls	3.1	---	▪ Developing H&H Model to assess in-system controls	▪ Complete model setup and calibration ▪ Characterize existing system performance ▪ Define cost-effective in-system controls, if any	[1]April 1, 2016 [1]April 1, 2017 [1]April 1, 2018	
2.6: Removal of Obstructions to Flow	3.1	C(11)(b)(iii)	▪ See NMC 1.6.3, 1.9.2, 1.10.2	▪ See NMC 1.6.3, 1.9.2, 1.10.2	See NMC 1.6.3, 1.9.2, 1.10.2	See OMM Sections 4.4.4, 4.6.5, 4.7.5
2.7: Effectiveness Evaluation	---	C(12)	▪ Not scheduled for implementation	▪ Review, revise NMC Plan	[1]Annually every Aug. 10th	
NMC-3: Review and Modification of Pretreatment Requirements						
3.1: Regulatory Context						
3.2: Inventory Non-Domestic Dischargers						
3.2.1: Existing Pre-Treatment Program	4.1	---	▪ Regulate existing list of 9 industrial dischargers	▪ Identify specific facilities with high-risk of wet weather discharge to add to pre-treatment program	[1]Aug. 10, 2017	
3.2.2: Other Non-Domestic Dischargers	4.1	---	▪ Performed categorical risk assessment of non-domestic land uses, activities of concern in City of Harrisburg	▪ Identify specific facilities, activities, and areas with moderate-risk of wet weather discharge for education, surveillance	[1]Aug. 10, 2017	See Appendix D
3.3: Assess Impact of Non-Domestic Discharges	4.1	---	▪ CRW enforces pretreatment requirements at 9 industrial dischargers	▪ Establish legal authority to inspect and regulate high-risk facilities, activities, and areas ▪ Develop, implement inspections/enforcement in moderate-risk areas	[1]Aug. 10, 2016 To Be Determined	
3.4: Evaluate Feasible Modifications	4.1	---	▪ Not scheduled for implementation	▪ Evaluate Feasible Pretreatment Program Modifications ▪ Evaluate Feasible Modifications for Other Non-Domestic Dischargers	[1]Aug. 10, 2017 [1]Aug. 10, 2017	
3.5: Effectiveness Evaluation	---	C(12)	▪ Not scheduled for implementation	▪ Review, revise NMC Plan	Annually every Aug. 10th	
NMC-4: Maximization of Flow to POTW						
4.1: Regulatory Context						
4.2: Utilize Full Capacity of Conveyance System						
4.2.1: Restore Full Capacity via O&M	5.1	C(11)(c)(i)(1)	▪ Systemwide data collection (see NMC Sections 1.4.1, 1.5.1, 1.6.1, 1.7.1, 1.8.1, 1.9.1, and 1.10.1)	▪ Systemwide remedial cleaning and repair (see NMC Sections 1.4.2, 1.5.2, 1.6.2, 1.7.2, 1.8.2, 1.9.2, 1.10.2)	See NMC-1	See OMM Section 4
4.2.2: Adjust Conveyance System Operation	---	C(11)(c)(i)(2)	▪ Developing H&H Model to assess system capacity	▪ Complete model setup and calibration ▪ Perform record analysis and capacity comparisons ▪ Characterize existing system performance ▪ Implement Front Street Pump Station operational enhancements ▪ Define initial cost-effective regulator adjustments	[1]April 1, 2016 Dec. 31, 2016 [1]April 1, 2017 Oct. 1, 2017 [1]April 1, 2018	
4.2.3: Reduce Infiltration / Inflow	---	C(11)(c)(i)(3)	▪ Conduct flow monitoring to characterize wet weather inflows from suburban communities	▪ ID I/I sources via rapid collection system inspections ▪ Prepare Capacity Assessment Plan	See NMC 1.9.1 [1]Feb. 10, 2016	See Par. (E)(30)(c) of Partial CD

[1] Coincides with an existing deliverable date in the Partial Consent Decree

Nine Minimum Control (NMC) Plan Summary Table for Capital Region Water's Combined Sewer System

Required Actions	Source of Requirement		Current Level of Implementation	Actions Necessary for Achieving Compliance		Supporting Documentation
	NMC Guidance Section	Partial Consent Decree Paragraph		Description	Deadline	
				▪ Prepare Capacity Assessment Report to quantify I/I reductions	[1]April 1, 2017	
4.3: Optimize Wet Weather Performance of AWTF						
4.3.1: Analyze Existing AWTF Performance	5.1	E(24)(h)	▪ Not scheduled for implementation	▪ Will perform as element of the LTCP	[1]April 1, 2018	
4.3.2: Assess Use of Unused Facilities	5.1	E(24)(h)	▪ Not scheduled for implementation	▪ Will perform as element of the LTCP	[1]April 1, 2018	
4.4: Effectiveness Evaluation	---	C(11)(c)(ii), C(12)	▪ Not scheduled for implementation	▪ Review, revise NMC Plan	Annually every Aug 10th	
NMC-5: Elimination of CSOs during Dry Weather						
5.1: Regulatory Context						
5.2: DWO Inspections / Assessment / Reporting	6.1	C(11)(d)(i-iii)	▪ See NMC 1.4.1, 1.4.4	▪ See NMC 1.4.1, 1.4.4	See NMC 1.4.1, 1.4.4	See OMM Section 4.1
5.3: DWO Corrective Actions						
5.3.1: Regulator / Gate Controls	6.1	C(11)(d)(iv)	▪ See NMC 1.4 and 1.5	▪ See NMC 1.4 and 1.5	See NMC 1.4, 1.5, 1.9, 2.4	See OMM Sections 4.1, 4.2, 4.6
5.3.2: Receiving Water Cleanup	6.1	C(11)(d)(v)	▪ See NMC 6.4	▪ See NMC 6.4	Not Applicable	See OMM Section 4.2
5-3: Effectiveness Evaluation	---	C(12)	▪ Not scheduled for implementation	▪ Review, revise NMC Plan	[1]Annually every Aug 10th	
NMC-6: Control of Solid and Floatable Materials						
6.1: Regulatory Context						
6.2: O&M of Combined Sewer System	---	C(11)(e)	▪ See NMC-1.4, 1.5	▪ See NMC-1.4, 1.5	See NMC 1.4, 1.5	See OMM Sections 4.1, 4.2
6.3: Evaluate/Define/Implement Corrective Actions						
6.3.1: Pollution Prevention	7.5	C(11)(e)	▪ See NMC-7	▪ See NMC-7		
6.3.2: Collection System Controls	7.1	C(11)(e)	▪ Maintain existing sewer hoods in inlets and catch basins (see NMC 1.10)	▪ Evaluate as part of the development of the LTCP	[1]April 1, 2018	See OMM Section 4.10
6.3.3: End-of-Pipe Controls	7.1	C(11)(e)	▪ None	▪ Evaluate as part of the development of the LTCP	[1]April 1, 2018	
6.4: Receiving Water Cleanup	7.3	C(11)(e)	▪ Removal of residual solid and floatable materials along shoreline	▪ None, current approach complies with NMC requirements	See NMC 5.2	See OMM Section 4.2
6.5: Effectiveness Evaluation	---	C(12)	▪ Not scheduled for implementation	▪ Review, revise NMC Plan	[1]Annually every Aug 10th	
NMC-7: Pollution Prevention Programs to Reduce CSO Contaminants						
7.1: Regulatory Context						
7.2: Street Cleaning	8.1.1	---	▪ Partially fund City of Harrisburg's street sweeping program	▪ Assess cost-effectiveness of street sweeping ▪ O&M Program for Municipal Operations	[1]Annually every Aug 10th End of MS4 Permit Year 1	Street/Pavement Management Fact Sheet (Appendix E)
7.3: Public Education Programs	8.1.2	---	▪ Established mechanisms for distributing educational materials ▪ Established 6 targeted themes with audiences	▪ Prepare Public Education / Outreach Program. ▪ Implement Public Education / Outreach Program ▪ Conduct public awareness surveys	End of MS4 Permit Year 1 To Be Determined [1]Annually every Aug 10th	All Fact Sheets (Appendix E) Appendix F
7.4: Solid Waste Collection / Recycling	8.1.3	---	▪ Provided and publicized by City of Harrisburg	▪ Distribute public education material ▪ Enact CRW Rules and Regulations	End of MS4 Permit Year 3 [1]Aug. 10, 2016	Solid Waste Handling / Storage Fact Sheet (Appendix E)
7.5: Product Ban/Substitution	8.1.4	---	▪ None	▪ Provide education about product substitutions where product controls ineffective	To Be Determined	All Fact Sheets (Appendix E)
7.6: Product Use Control	8.1.5	---	▪ None	▪ Distribute public education material	End of MS4 Permit Year 3	Material Handling / Storage Fact Sheet (Appendix E)
7.7: Illegal Dumping	8.1.6	---	▪ Regulated by City of Harrisburg Code ▪ Citizen Complaints/Service Requests (NMC 1.12.1)	▪ Distribute public education material ▪ Enact CRW Rules and Regulations ▪ Enhanced tracking and reporting via Cityworks	End of MS4 Permit Year 3 [1]Aug. 10, 2016 Oct. 31, 2015	Solid Waste Handling / Storage Fact Sheet (Appendix E)

[1] Coincides with an existing deliverable date in the Partial Consent Decree

Nine Minimum Control (NMC) Plan Summary Table for Capital Region Water's Combined Sewer System

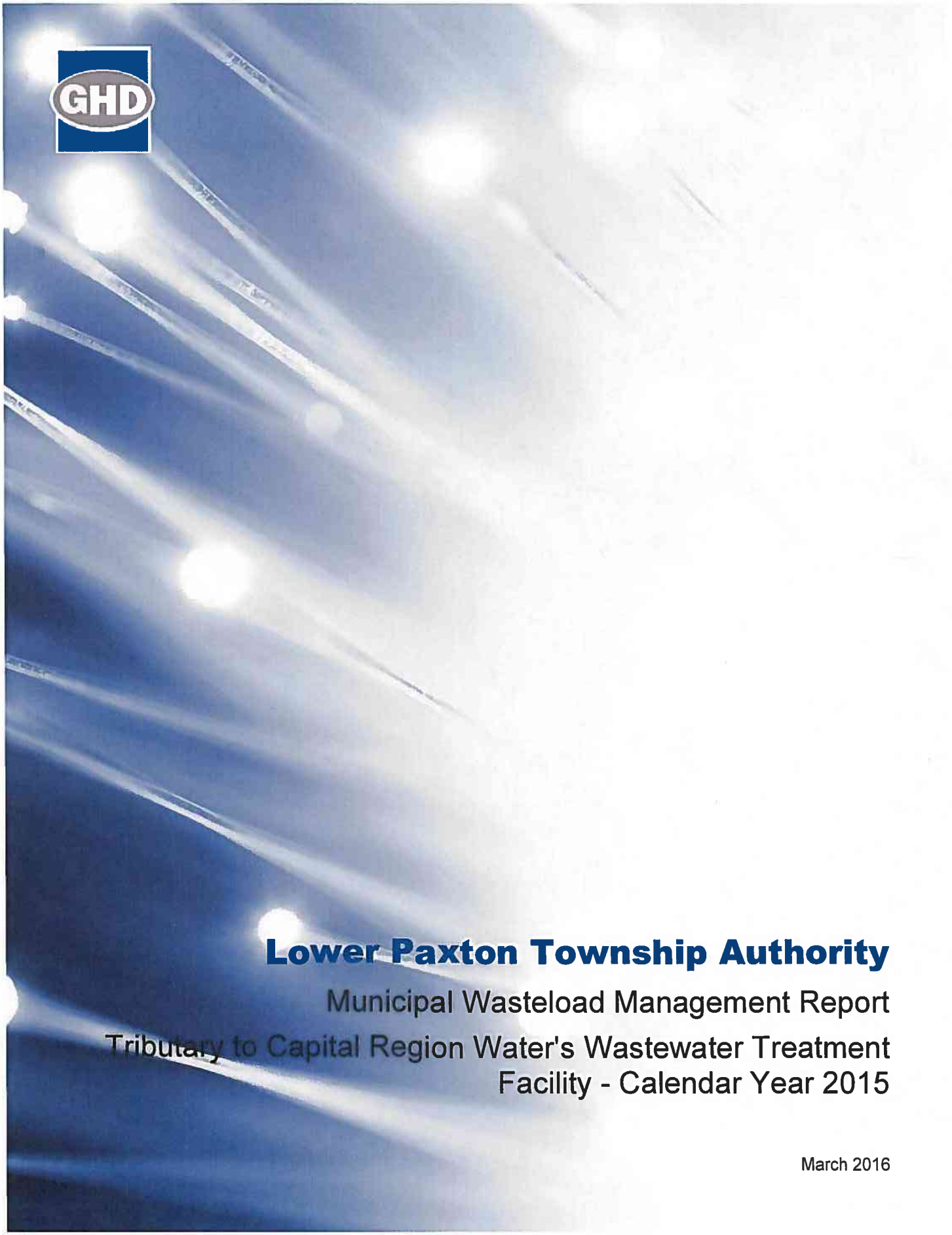
Required Actions	Source of Requirement		Current Level of Implementation	Actions Necessary for Achieving Compliance		Supporting Documentation
	NMC Guidance Section	Partial Consent Decree Paragraph		Description	Deadline	
7.8: Bulk Refuse Disposal	8.1.7	---	▪ Provided and publicized by City of Harrisburg	▪ Distribute public education material ▪ Enact CRW Rules and Regulations	End of MS4 Permit Year 3 [1]Aug. 10, 2016	Solid Waste Handling / Storage Fact Sheet (Appendix E)
7.9: Hazardous Waste Collection	8.1.8	---	▪ Provided and publicized by City of Harrisburg	▪ Distribute public education material ▪ Enact CRW Rules and Regulations	End of MS4 Permit Year 3 [1]Aug. 10, 2016	Material Handling / Storage Fact Sheet (Appendix E)
7.10: Water Conservation	8.1.9	---	▪ CRW provides education about water conservation	▪ None: current approach complies with NMC requirements	Not Applicable	
7.11: Non-Domestic Sources	8.1.10	---	▪ See NMC-3	▪ See NMC-3	See NMC-3	
7.12: Effectiveness Evaluation	---	C(12)	▪ Not scheduled for implementation	▪ Review, revise NMC Plan	[1]Annually every Aug 10th	
NMC-8: Public Notification						
8.1: Regulatory Context						
8.2: Warning Signs	9.1	C(11)(f)(i-ii)	▪ Inventoried existing signs/assessed optional sites	▪ Prepare CSO Signage Plan ▪ Implement CSO Signage Plan	[1]Aug. 10, 2016 To Be Determined, per Plan	
8.3: Public Notification	9.1	C(11)(f)(iii,vii)	▪ Established mechanisms for distributing educational materials	▪ Prepare and implement written public notification procedures	[1]Aug. 10, 2016	
8.4: Public Education	9.1	C(11)(f)(iv)	▪ See NMC 7.3	▪ See NMC 7.3	See NMC 7.3	
8.5: Public Involvement	9.1	C(11)(f)(vi)	▪ Multiple public involvement options provided	▪ None: current approach complies with NMC requirements	Not Applicable	
8.6: Effectiveness Evaluation	---	C(11)(f)(v)	▪ Not scheduled for implementation	▪ Enhanced tracking and reporting via Cityworks ▪ Review, revise NMC Plan	Oct. 31, 2015 [1]Annually every Aug 10th	
NMC-9: Monitoring to Characterize CSO Impacts / Control Efficacy						
9.1: Regulatory Context						
9.2: Characterize Combined Sewer System	10.1.1	C(11)(a)(i-iii)	▪ See NMC 1.3.4	▪ See NMC 1.3.4	NMC 1.3.4	See OMM Section 2
9.3: CSO Activation Monitoring						
9.3.1: Phase 1: Daily Visual Inspections	10.1.2	C(11)(g)(i)	▪ Daily visual regulator inspections (See NMC 1-4) ▪ 13 Interceptor flow meters ▪ 13 flow meters at regulators to calibrate model (ends 4th quarter 2015)	▪ Maintain Current Level of visual inspections ▪ Maintain 13 interceptor monitors ▪ Calibrate H&H model	Ongoing Ongoing [1]April 1, 2016	See OMM Section 4.1
9.3.2: Phase 2: Semi-Automated Detection	10.1.2	C(11)(g)(ii)	▪ Prepared CSO Activation Monitoring Pilot (CAMP) Study Plan by 5/9/15	▪ Complete CAMP Study ▪ Implement CAMP Study Recommendations	[1]Dec. 1, 2016 To Be Determined	See CAMP Study Plan
9.3.3: Phase 3: Post-Construction Monitoring	10.1.2	C(11)(g)(iii)	▪ Not applicable	▪ Develop draft post construction monitoring plan as part of the LTCP	[1]April 1, 2018	
9.4: Precipitation Monitoring	10.1.2	C(11)(g)(iv,vi)	▪ Existing network of gauges as per IFMMPP ▪ Existing Gauge Adjusted Radar Rainfall system	▪ Continuation of gauge network to support post construction monitoring program ▪ Continuation of GARR system to support post construction monitoring program	To Be Determined in Post Construction Monitoring Plan	
9.5: Document CSOs	10.1.2	C(11)(g)(v)	▪ See NMC 1.3.1	▪ See NMC 1.3.1		
9.6: Use H/H Model to Characterize CSOs	10.1.2	C(11)(g)(vi)	▪ Developing H&H model and obtaining CSO monitoring data for future calibration	▪ Use calibrated model to quantify and characterize CSOs in semi-annual reports.	[1]Semi-annually every Mar. 31st , Sep. 30th, starting Mar. 31, 2017	

[1] Coincides with an existing deliverable date in the Partial Consent Decree

Appendix M

APPENDIX M-1

CHAPTER 94 REPORT
FOR
LOWER PAXTON TOWNSHIP AUTHORITY



Lower Paxton Township Authority

Municipal Wasteload Management Report

Tributary to Capital Region Water's Wastewater Treatment Facility - Calendar Year 2015

March 2016

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Exhibit B – Projected EDUs Tributary to Capital Region Water's Harrisburg Wastewater Treatment Facility

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Appendix A – Paxton Creek Second Corrective Action Plan

Appendix B – "Spring Creek Basin Solution"

Map

2015 Chapter 94 Annual Report – Developments Map

1. Introduction

The Lower Paxton Township Authority (LPTA) owns and operates a wastewater collection and conveyance system that serves Lower Paxton Township, Dauphin County, Pennsylvania. Wastewater from Lower Paxton Township is conveyed either to Capital Region Water's Harrisburg Advanced Wastewater Treatment Facility (CRW WWTF) or to the Swatara Township Authority WWTF for treatment and discharge. This report deals specifically with those collection and conveyance facilities tributary to the CRW WWTF. The drainage basins in Lower Paxton that are tributary to the CRW WWTF are Asylum Run, Paxton Creek, and Spring Creek Basins. This report includes existing and projected hydraulic and organic loadings, plans to reduce overload conditions, a summary of sewer connections and extensions, a description of collection system monitoring, maintenance, repair and rehabilitation practices, a discussion of the condition of the collection system, and a description of the pumping stations.

2. Hydraulic Loadings

The annual average hydraulic loadings and EDUs for calendar years 2011 through 2015 and projected annual hydraulic loadings and EDUs for calendar years 2016 through 2020 are presented in **Exhibit A**. A wastewater flow of 367 GPD per EDU, based on the past five-year annual average GPD per EDU, is used to estimate the current average annual flow baseline for existing development.

The projected hydraulic loadings for calendar years 2016 through 2020 are based on the projected EDUs shown in **Exhibit B** and the current average annual flow baseline. **Table 1** and **Table 2** show the 5-year flow projections for new development in the Paxton Creek and Spring Creek Basins, respectively. No significant development is anticipated for the Asylum Run Basin in the next five years. Flow projections for new developments are based on 250 GPD per EDU.

Table 1 – Paxton Creek Basin 5-Year Flow Projections for New Development

Year	Projected EDUs (1)	Avg. Daily Flow from Projected New Development (GPD)(2)
2016	87	21,750
2017	88	22,000
2018	80	20,000
2019	78	19,500
2020	65	16,250

Notes:

(1) Subject to DEP, Susquehanna Township Authority, and CRW approval.

(2) Based on 250 GPD/EDU for new EDU's.

Table 2 – Spring Creek Basin 5-Year Flow Projections for New Development

Year	Projected EDUs [1]	Avg. Daily Flow from Projected New Development (GPD)[2]
2016	59	14,750
2017	17	4,250
2018	5	1,250
2019	4	1,000
2020	4	1,000

Notes:

(1) Subject to DEP, Susquehanna Township Authority, and CRW approval.

(2) Based on 250 GPD/EDU for new EDU's.

3. Organic Loadings

The annual average organic loadings for calendar years 2011 through 2015 and projected annual average organic loadings for calendar years 2016 through 2020 are presented on **Exhibit A**. The organic loadings are based on a BOD loading of approximately 0.4 lbs./Day/EDU, which is calculated using 2.34 persons per EDU (2010 census data) times the standard value of 0.17 lbs. BOD/day/person. The projected organic loadings shown in **Exhibit A** are based on the projected EDUs found in **Exhibit B** and shown in **Table 1** and **Table 2**.

4. Overload Reduction Plan

4.1 Asylum Run Basin

No overflow events were documented in the Lower Paxton portion of the Asylum Run Basin during 2015. No additional projects are scheduled for Asylum Run Basin.

4.2 Paxton Creek Basin

Lower Paxton has a hydraulic overload condition in the Paxton Creek Basin during significant and extreme wet weather caused by inflow/infiltration (I/I) and is required to eliminate the hydraulic overload by 2027, in accordance with the Second Amendment of the Second Consent Decree which was approved by all the parties on August 21, 2013, and approved by the Court on September 18, 2013. The Second Paxton Creek Corrective Action Plan (CAP) was developed and approved by DEP in 2007. The approved CAP outlines a long-term rehabilitation/replacement program and is incorporated as Exhibit J into the Second Amendment of the Second Consent Decree. The Second Paxton Creek CAP is contained in **Appendix A**.

Lower Paxton Township continued to implement the CAP during 2015. Information concerning the investigative and rehabilitative work completed in the Paxton Creek Basin is provided in Section 6 of this report. Since the removal of the Gale Drive Pumping Station in September 2014, no overflows have been experienced in the basin. With the substantial removal of I/I throughout the basin in recent years, four trunk line upgrades, and elimination of the pumping station, LPTA

believes that it has demonstrated the elimination of overflows for anything short of a flood-level wet weather event (WWE).

4.3 Spring Creek Basin

Section 9 of the Second Amendment of the Second Consent Decree outlines the efforts to eliminate overflows and reduce hydraulic overload, which include the replacement of Mini-Basin SC-1E and identified conveyance improvements. The excerpt of Section 9, "Spring Creek Basin Solution", from the Second Amendment of the Second Consent Decree is included in **Appendix B**.

There were no recorded overflows or basement backups in the Spring Creek Basin during 2015. As reported last year, the overflow box at manhole 418.01 was documented as taking in water from the nearby flooding stream and registering a false overflow. A flap gate was installed in the overflow box to address the issue. A meter was also installed just downstream of the overflow box in manhole 417.2. The meter was used to verify that the line did not experience any surcharging that would indicate a potential for overflowing. These results substantiate the theory that previous overflows registered in the area were a result of localized flooding of surface water entering the system and not extraneous I/I sources. LPTA staff plans to remove the overflow box in the near future.

With the substantial removal of I/I throughout the mini-basin replacement progression and the conveyance improvements, LPTA believes that it has completed the goals listed under the "Spring Creek Basin Solution". Paragraphs 9.c and 9.d specify that LPTA continue to monitor flows leaving the SC-1 Sub-Basin. **Table 3** displays the wet weather events (WWEs) that occurred during 2015 and the resulting peak flows leaving the sub-basin. Only one (1) WWE exceeded the allocated capacity of 4.5 mgd during 2015; however this event did not exceed the 6.5 mgd peak flow limit.

Paragraph 13.c from the Second Amendment to the Second Consent Decree specifies that LPTA implement a surcharge monitoring program to measure flow level in key manholes during WWEs. LPTA installed surcharge monitoring meters in MH 232 and MH 417.2 in October 2015. Data from the first half of the year is also reported for MH 417.2, collected as part of the mini-basin metering program. As seen in **Table 3**, the depth of flow at each site does not exceed full pipe capacity during any of the WWEs since implementing the monitoring locations in October 2015.

Table 3 – Spring Creek Monitoring Results for 2015 WWEs

Wet Weather Event	Control Basin PHF (mgd)	Rainfall	Rank	SC-1 Flow (mgd)	Depth of Flow (in) at critical control sections	
					MH 232 (8" Pipe)	MH 417.2 (10" Pipe)
3/14/2015[1]	0.66	0.70	Extreme	3.78	(2)	3.4
4/21/2015	1.07	3.04	Extreme	4.19	(2)	4.0
5/18/2015	0.35	2.36	Significant	2.55	(2)	2.9
5/27/2015	0.42	0.44	Significant	1.37	(2)	2.7
6/8/2015	0.92	1.76	Extreme	3.84	(2)	4.3
6/21/2015	1.06	3.09	Extreme	5.94	(2)	(2)
6/28/2015	0.90	1.40	Extreme	3.25	(2)	(2)
10/28/2015	0.78	2.22	Extreme	2.86	3.8	3.9
12/2/2015	0.38	1.42	Significant	(3)	3.7	3.7
12/23/2015	0.48	0.98	Significant	(3)	4.7	4.7
12/29/2015	0.70	0.96	Extreme	(3)	5.1	5.5

(1) Snow melt event
(2) Meter was not installed
(3) Meter failed, replaced by portable meter on 12/30/15

5. Collection System Construction, Connections and Extensions

There were four (4) new public sewer extensions constructed during 2015 in LPTA's sewer service area tributary to the CRW WWTF. There were also two (2) new public sewer extensions proposed in 2015. These extensions are summarized in **Table 4**. A sewer map is provided with this report.

Table 4 – Paxton Creek, Spring Creek, and Asylum Run Sewer Connections/Extensions

Development	EDUs	LF of Sanitary Sewer	Pipe Diameter (in)
Kings Pointe Addition	6	230	8
Stray Winds Farm Phase 1	61	5,000	8
Estates Autumn Oaks Phase 1B	35	2,100	8
Chelsey Falls Phase 2	18	870	8
Stray Winds Farm Phase 2 [Proposed]	46	5,400	8
Hotcake Restaurant [Proposed]	12	500	6 (lateral)

There were a total of 48 new EDUs connected to LPTA's collection system in the Paxton Creek and Spring Creek Basins in 2015. There were no new connections in the Asylum Run Basin during 2015.

Including these new EDUs, the quarterly average number of EDUs contributing to the Harrisburg WWTF for 2015 was 15,745 EDUs. The total EDUs are distributed as follows: Asylum Run, 1,303 EDUs; Paxton Creek, 8,071 EDUs; and Spring Creek, 6,371 EDUs.

6. Collection System Monitoring, Maintenance, Repair and Rehabilitation

The progress that occurred in 2015 within each basin tributary to the CRW WWTF is described below along with planned actions to comply with the Second Amendment of the Second Consent Decree. More detailed descriptions of collection system monitoring, maintenance, repair, and rehabilitation efforts as well as any sanitary sewer overflows are provided in the Annual Progress Reports which are submitted to DEP by June 30th of each year.

6.1 Asylum Run Basin

- No mini-basin flow monitoring was conducted for Asylum Run Basin in 2015.
- No additional projects are scheduled for Asylum Run Basin.

6.2 Paxton Creek Basin

- The mini-basin "total rehabilitation" program was continued in the Paxton Creek Basin. This involves metering for prioritization of the mini-basins and providing total rehabilitation starting with the highest priority mini-basins and proceeding until flow reduction goals are met or I/I removal is no longer cost-effective. After rehabilitation of a basin is complete, wet weather flows are compared with a control basin to provide an appropriate comparison of pre-rehabilitation and post-rehabilitation wet weather flows for similar rainfall and groundwater conditions.
- Currently, there are approximately 25 meters in operation in the Paxton Creek Basin to monitor flows of the sub-basins and mini-basins and monitor levels in key manholes during WWEs.
- Post-rehabilitation metering was successfully completed for PC-2C during 2015. Meter data indicates there is a significant reduction in the comparative peak flow down to 0.27 mgd (1,100 gpd/EDU). It is estimated that 98% of excess I/I was successfully removed.
- Post-rehabilitation metering was successfully completed for PC-1G and PC-1H during 2015. Meter data indicates there is a significant reduction in the comparative peak flow down to 0.65 mgd (1,800 gpd/EDU). It is estimated that 89% of excess I/I was successfully removed.
- The PC-5D, PC-5E, and BC-6B (North) Sanitary Sewer Replacement/Rehabilitation project was completed during 2015. Also, post-rehabilitation metering was successfully completed for PC-5D and PC-5E during 2015. Meter data indicates there is a significant reduction in the comparative peak flow down to 0.23 mgd (1,400 gpd/EDU) for PC-5D and 0.04 mgd (400 gpd/EDU) for PC-5E. It is estimated that 93% and 100% of excess I/I was successfully removed for PC-5D and PC-5E, respectively. Preliminary metering data indicates that, with the completion of PC-5D and PC-5E, the PC-5 Sub-Basin now has a comparative peak flow of 1,000 gpd/EDU. This marks the first completed sub-basin in Paxton Creek.

- The contractor completed final restoration items, and the PC-1GDA and PC-1GDB Sanitary Sewer Replacement/Rehabilitation project was completed in 2015. Post-rehabilitation metering was successfully completed for PC-1GDA and PC-1GDB during 2015 as well. Meter data indicates there is a significant reduction in the comparative peak flow down to 0.12 mgd (1,400 gpd/EDU) for PC-1GDA and 0.08 mgd (600 gpd/EDU) for PC-1GDB. It is estimated that 95% and 100% of excess I/I was successfully removed for PC-1GDA and PC-1GDB, respectively. A contract for the Gale Drive Pumping Station Demolition project was awarded in September 2015, and the project was completed in November 2015.
- Design, permitting, and easement-related activities for the PC-4C and PC-4E Sanitary Sewer Replacement/Rehabilitation project continued in 2015. A public meeting was held in October 2015, and the project was advertised for bids in December. Bids were received on February 26, 2016, and GHD send a Notice of Intent to Award to DOLI Construction Corporation. Construction is expected to start in May or June 2016. The substantial and final completion dates for this project are March 16, 2018, and May 1, 2018, respectively.
- Preliminary design activities for the PC-4A Sanitary Sewer Replacement/Rehabilitation project were initiated in 2015. Mainlines and manholes in the PVC sewers in the mini-basin were tested in 2015. The project is currently schedule to be advertised for bids in the fall of 2016.
- The PC-1I Sanitary Sewer Rehabilitation project is currently scheduled to be completed by June 2017. A contract was awarded to Mr. Rehab for cleaning, televising, air testing of mainline sewers, and vacuum testing of manholes in PC-1I, and the work was completed in 2015. Preliminary design and permitting activities were initiated; however, the schedule for bidding this project was delayed until work in this PVC mini-basin can be better defined.
- The PC-3C Sanitary Sewer Rehabilitation project is currently schedule to be completed by June 2017. A contract was awarded to Mr. Rehab for cleaning, televising, air testing of mainline sewers, and vacuum testing of manholes in PC-3C, and the work was completed in 2015. It was then determined that the completion of this project be deferred to 2019 as a result of the re-prioritization of remaining I/I work in the Paxton Creek Basin.
- Other than the on-going replacement/rehabilitation of mini-basins in accordance with the approved CAP, routine maintenance, and minor emergency repairs, the following maintenance was performed during 2015 in the Paxton Creek Basin:
    - Point repair of the Colonial Road Pumping Station force main.

6.3 Spring Creek Basin

- Metering of the sub-basins to monitor flows and metering of key manholes to monitor levels during WWEs were performed in 2015.
- Metering of SC-2 mini-basins was completed in 2015, as outlined in the CAP, in order to determine which mini-basin(s) may be contributing excessive wet weather flows.
- No additional projects are scheduled for the Spring Creek Basin.
- No maintenance projects were completed during 2015 in the Spring Creek Basin.

7. Condition of the Collection System

7.1 Asylum Run Basin

The AR-A mini-basin sewers were replaced or lined from 2010 to 2012. The remainder of the Asylum Run Basin sewer system is in generally satisfactory structural condition. No additional projects are scheduled for the Asylum Run Basin.

7.2 Paxton Creek Basin

While functioning adequately during normal flows, the Paxton Creek collection system is hydraulically overloaded during significant and extreme wet weather due to excess I/I and is currently under a CAP that was approved by DEP in July 2007.

7.3 Spring Creek Basin

The Spring Creek Basin sewer system is in a generally satisfactory condition.

8. Pumping Stations

LPTA owns and operates two (2) pumping stations within the drainage basins tributary to the Harrisburg WWTF. Data for each of the pumping stations are provided in **Table 5**. LPTA will be diverting the Parkchester Pumping Station, currently discharging in the Beaver Creek Basin, to the Paxton Creek Basin in 2016.

Table 5 – Pumping Station Data

Pump Station	Drawdown Capacity, MGD	Average Daily Flow, MGD	Max Daily Flow, MGD	Peak Hourly Flow, MGD	Projected 2-Year Max Daily Flow, MGD
Colonial Road	0.43	0.03[1]	0.12[1]	0.28[1]	0.12
Gateway Corporate Center	0.143	0.01[1]	0.04[1]	No Meter Data[2]	0.04
Parkchester (Paxton Towne Center)	0.187 (design capacity)	*0.02*[3]	*0.04*[3]	*No Meter Data*[3]	0.04[3]

Notes:

(1) Flow based on pumping station run-times.

(2) There is no peak hourly flow data available for the Gateway Corporate Center Pumping Station. No metering is proposed as the flows for 2015 were well below the design capacity.

(3) The pumping station is planned to be diverted to the Paxton Creek Basin in 2016. The Average Daily and Max Daily Flows for 2015 are reported in the Chapter 94 Report to Swatara Township Authority but are shown here for reference.

8.1 Colonial Road Pumping Station

The Colonial Road Pumping Station is located in Mini-Basin PC-5C and pumps flow to the Valley Road Interceptor. A portion of the pumping station's force main was replaced during 2015. Run times are recorded every 15 minutes and were used to estimate hourly and daily flows.

8.2 Gateway Corporate Center Pumping Station

The Gateway Corporate Center Pumping Station is a temporary pumping station. Although the station is located within the Beaver Creek Basin, its flows are pumped through the Paxton Creek Interceptor to the Harrisburg WWTF. The pumping station run times are recorded daily during each work week. These run times were used to estimate daily flows. Since LPTA has completed planning modules for two (2) flow swaps, which will divert a total of 84 EDUs to the Paxton Creek Basin in 2016, LPTA has proposed to Swatara Township Authority that the Gateway Corporate Center P.S. be removed. An Act 537 Special Study to eliminate the pumping station will be prepared and submitted to DEP in 2016. Once the station is eliminated, the tributary sanitary sewers will flow by gravity to the Swatara WWTF via the Beaver Creek Interceptor, Beaver Creek Pumping Station, Nyes Road Interceptor, and Joint Use Interceptor.

8.3 Parkchester Pumping Station

GHD and Township Staff prepared the design of a new, shorter force main at the Parkchester Pumping Station in response to odor complaints received in late 2014 from homeowners along Devonshire Road. The homes are connected to the sanitary sewers in the vicinity of the pumping station's force main discharge, and it appears the primary source of the odors is coming from the long detention times in the force main. The new design will have the force main discharge into the Paxton Creek Basin and be less than 400 feet in length.

GHD prepared an Act 537 Special Study using a planning module for the flow transfer of 72 EDUs from the Beaver Creek Basin to the Paxton Creek Basin. The planning module was submitted to DEP in January 2016, and planning approval was issued by DEP on February 19, 2016. DEP is currently reviewing a Part II WQM Permit application for the new force main and minor modifications to the existing pumping station. GHD and Township Staff incorporated the work into the PC-4C/4E Sanitary Sewer Replacement Project. Construction of the new force main is scheduled to be completed by mid-2016.

9. Industrial Waste Report

There are no known industrial discharges to LPTA's collection system tributary to Harrisburg's WWTF.

10. Municipal Official Acknowledgment and Approval

The Lower Paxton Township Authority is committed to providing adequate wastewater conveyance services to the community. The objectives of this report identify and address collection system needs now and in the future.

This report has been reviewed and is hereby approved for submission to the Pennsylvania Department of Environmental Protection (DEP) by:

William R. Weaver
Sewer Department Director

3-16-16
Date

Kevin B. Shannon, P.E.
GHD

3-16-16
Date

Exhibits

EXHIBIT A

LOWER PAXTON TOWNSHIP AUTHORITY

ACTUAL & PROJECTED ANNUAL HYDRAULIC AND ORGANIC LOADINGS TO CAPITAL REGION WATER'S HARRISBURG WASTEWATER TREATMENT FACILITY

Year	Total EDUs	GPD/EDU	Projected EDUs [1]	Hydraulic Loading MGD [2]	Organic Loading Lbs/Day[3]
2011	15,696	412	-	6.47	6,278
2012	15,862	348	-	5.52	6,345
2013	15,772	360	-	5.68	6,309
2014	15,939	379	-	6.04	6,376
2015	15,745	338 [4]	-	5.32	6,298
2016	15,891	366	146	5.81	6,356
2017	15,996	365	105	5.84	6,398
2018	16,081	364	85	5.86	6,432
2019	16,163	364	82	5.88	6,465
2020	16,232	363	69	5.90	6,493

NOTES

(1) Projected EDUs from Exhibit B.

(2) Hydraulic loading projections are based on 367 gpd/EDU (average for 2011-2015) for the 15,745 existing EDUs, as of the end of 2015, and 250 gpd/EDU for projected EDUs. Yearly gpd/EDU values presented in table reflect a weighted average.

(3) Organic Loading, Lbs/Day = Total EDUs × 0.4 Lbs/Day/EDU

(4) The average hydraulic loading for 2015 was estimated using monthly averages for the following gaps in meter data:

- Meter at MH 1 (Paxton Creek) out for construction during January-March (replacement project in PC-1GDA/PC-1GDB).
- Meter at MP SC-02 (Spring Creek) failed during January-March and June-September. Meter was repaired.
- The Flo-Dar meter at MH 3165 (Spring Creek) failed at the end of October. It was replaced with a portable meter in December.
- No meter data for SU-03 (Asylum Run) during January-April due to an error with the sensor.
- Invalid meter data for SU-04 (Asylum Run) during December due to a branch being stuck on the sensor.

EXHIBIT B

LOWER PAXTON TOWNSHIP AUTHORITY

PROJECTED EDUs TRIBUTARY TO
CAPITAL REGION WATER'S HARRISBURG WASTEWATER TREATMENT FACILITY
With Planning Module Approval

Development #	Development Name	Drainage Area	Planned EDUs	Occupy Pre-2014	Occupy 2015	EDU Balance	Projected Occupancy					EDU Balance after 2020
							EDU's 2016	EDU's 2017	EDU's 2018	EDU's 2019	EDU's 2020	
1	Amesbury	P	106	19	5	82	3	3	3	3	3	67
2	Chelsey Falls	P	39	8	2	29	2	2	2	2	2	19
3	Chateau Woods(Kings Point)	P	44	37	0	7	2	2	1	1	1	0
4	Commerce Park (7 Lots)	P	7	0	0	7	2	2	2	1	0	0
5	Wyndhurst/Victory Abbey/Kensington	P	156	133	2	21	6	7	4	4	0	0
6	Colonial Village	P	160	0	0	160	0	15	15	15	15	100
7	Estates of Forest Hills	P	156	153	1	2	1	1	0	0	0	0
8	Forest Hills PRD											
	(a) SFD	P	411	410	0	1	0	0	0	0	0	1
9	KBD&A (Lot C)	P	4	0	0	4	0	0	0	0	0	4
10	Locust Ridge	SC1	11	6	0	5	0	0	0	0	0	5
11	Meadowview Village	SC2	175	109	3	63	4	4	4	4	4	43
12	Paxton Towne Center	P	126	100	0	26	0	0	0	0	0	26
13	Quail Hollow	P	122	112	1	9	3	3	2	1	0	0
14	Rosewood	P	33	0	0	33	7	7	7	7	0	5
15	Sir Thomas Court	SC1	59	7	0	52	1	0	0	0	0	51
16	Spring Creek	SC2	16	15	0	1	0	0	0	0	0	1
17	Spring Valley Apartments II	SC1	30	0	0	30	0	0	0	0	0	30
18	Union Square Industrial Park											
19	(a) Pepsi	SC1	196	79	0	117	42	0	0	0	0	75
20	(b) 14 Lots	SC1	14	11	0	3	0	0	0	0	0	3
21	Village of Pheasant Ridge	P	92	92	0	0	0	0	0	0	0	0
22	Valley Stream Townhomes	P	235	0	0	235	0	20	20	20	20	155
23	The Villas at Forest Hills (Tuscan Villas)	P	33	22	1	10	1	1	1	1	1	5
24	The Townes at Forest Hills	P	40	40	0	0	0	0	0	0	0	0
25	The Townes at Forest Hills Lot 47	P	3	1	0	2	1	1	0	0	0	0
26	New Hope Brethren in Christ Church	P	2	2	0	0	0	0	0	0	0	0
27	Asper Woods(Estates /Autumn Oaks)	P	201	75	12	114	8	8	8	8	8	74
28	Deluxe Motel Suites	P	3	0	0	3	3	0	0	0	0	0
29	Stray Wind Farms	P	449	0	13	436	10	15	15	15	15	366
30	TownesCM (now Monticello Heights)	P	36	25	0	11	5	1	0	0	0	5
31	Allentown BLVD Hotel	P	33	0	0	33	33	0	0	0	0	0
32	CGOH	SC1A	22	22	0	0	0	0	0	0	0	0
33	Murphy Rentals (Kings Pointe)	P	6	0	6	0	0	0	0	0	0	0
34	Triple Crown Patton Road 5 Lot Plan	P	5	5	0	0	0	0	0	0	0	0
35	Longhorn Steakhouse	AR	16	16	0	0	0	0	0	0	0	0
36	Hillside Road (plan not recorded)	SC1	3	0	0	3	1	1	1	0	0	0
37	Townes at Galway	SC2	17	0	0	17	11	0	0	0	0	6
38	Hotcakes	SC1	12	0	0	12	0	12	0	0	0	0
	Miscellaneous	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA
	TOTAL		**3,073**	**1,499**	**48**	**1,528**	**148**	**105**	**85**	**82**	**69**	**1,041**

NOTES

AR	Asylum Run Drainage Basin
CR	Colonial Road Pump Station tributary to Paxton Creek Drainage Basin
GC	Gateway Corporate Center (Temporarily pumps to Paxton Creek Drainage Basin, eventually will flow to BC P.S. tributary to Swatara)
P	Paxton Creek Drainage Basin
SC1	Spring Creek Drainage Basin #1
SC1A	Spring Creek Drainage Basin #1A (Downstream of SC1 metering chamber but upstream of SC2 branch)
SC2	Spring Creek Drainege Basin #2

EXHIBIT C

LOWER PAXTON TOWNSHIP AUTHORITY

Total Hydraulic Loading Graph
Actual & Projected Annual Loadings

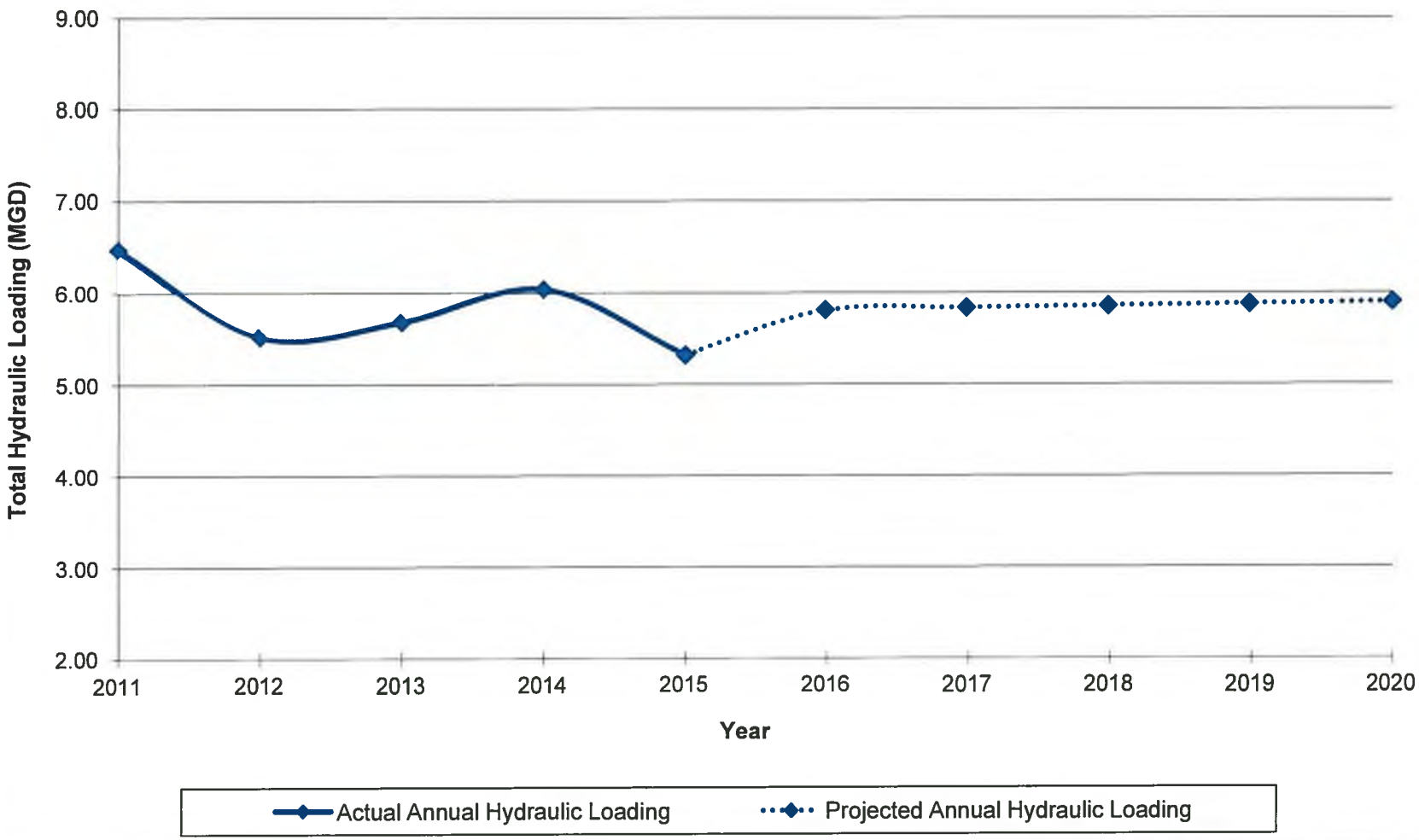
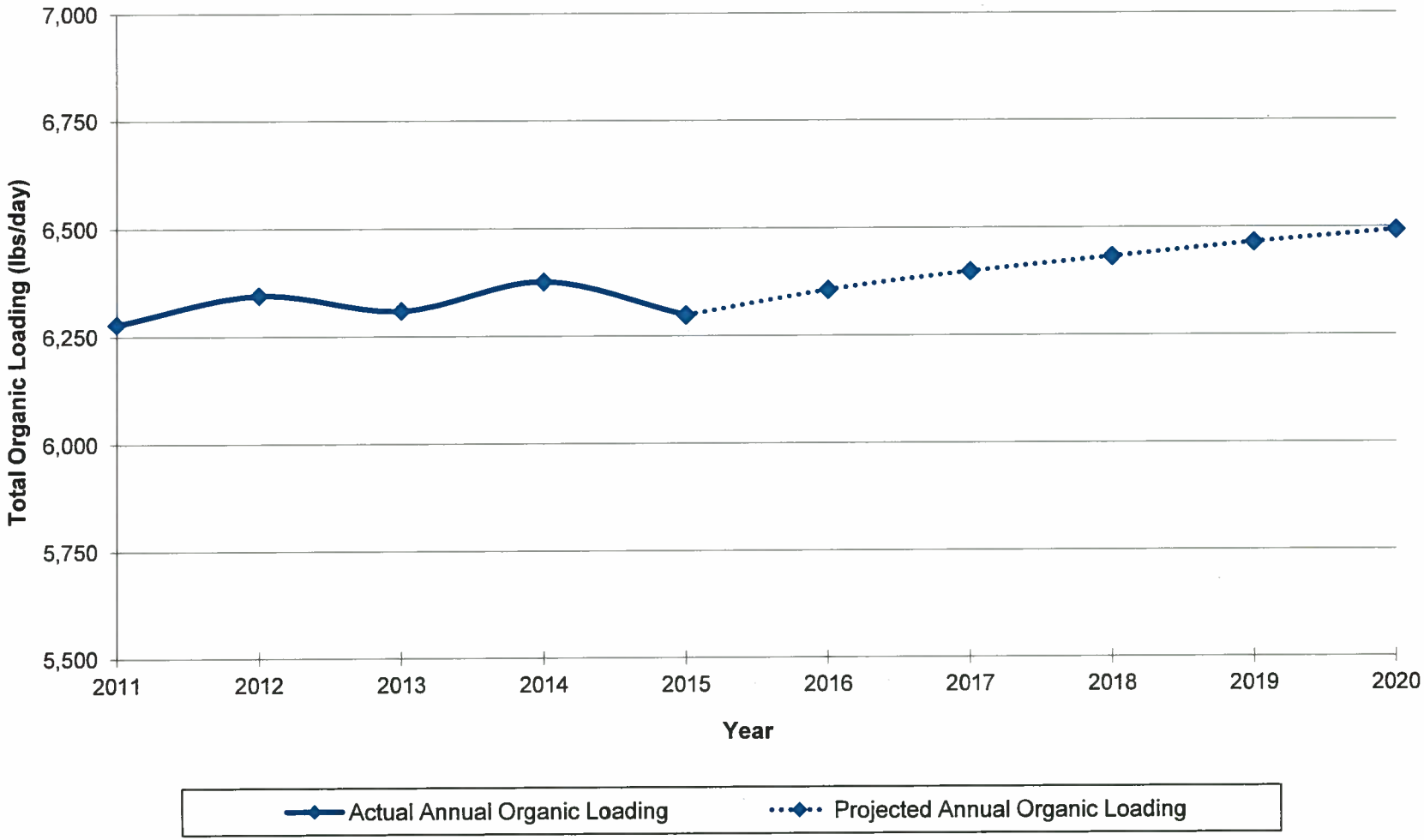


EXHIBIT D

LOWER PAXTON TOWNSHIP AUTHORITY

Total Organic Loading Graph
Actual & Projected Annual Loadings



Appendices

Appendix A – Paxton Creek Second Corrective Action Plan

Paxton Creek Drainage Basin
Hydraulic Overload Corrective Action Plan
July 2007

Introduction

There is currently a limitation on connections in the Paxton Creek drainage basin because of overflows and hydraulic overloading of the sewer system caused by infiltration/inflow (I/I) during wet weather. An aggressive rehabilitation and replacement program has been in progress in the basin since 1999, significant I/I reductions have been realized. An estimated 5.2 MGD of peak flow I/I has been removed from the Paxton Creek Basin and approximately 1.5 MGD removed from the Spring Creek Basin.

There are approximately 8,000 EDUs in the Paxton Creek Interceptor drainage area of Lower Paxton Township. Projected EDUs for the year 2022 and build-out are approximately 9,600 and 11,400, respectively. The initial Paxton Creek Drainage Basin Hydraulic Overload Corrective Action Plan (CAP) from March 2002 stated that September 1999 through the end of 2001, total rehabilitation of approximately 650 EDUs in 2.3 years was completed, about 300 EDUs per year. It was expected that mini-basin rehabilitation of approximately 300 EDUs per year could be accomplished from July 2002 through June 2007 in Phase 1 of the CAP.

The First Paxton Creek CAP has been completed. The Township completed the rehabilitation of six mini-basins in Paxton Creek and went beyond the scope of the Mini-Basin I/I Rehabilitation Program as defined in the Second Consent Decree in one basin, PC-5C, by totally replacing the collection system in that mini-basin and addressing underslab I/I issues.

Because of the age and condition of the vitrified clay pipe (VCP) in this mini-basin, total mini-basin replacement was conducted in three mini-basins (PC-5C, SC-1F, and SC-1I). Total replacement includes replacement of all main line sewers, service laterals, and manholes, followed by air testing and vacuum testing, respectively, to ensure proper installation. Total replacement also includes installation of observation tees, typically at the transition from the service lateral to the building sewer, and replacement of the building sewer if the building sewer fails an air test. This effort involves construction on private property and, therefore, requires each property owner to sign an agreement for work to be performed on their property.

This is best illustrated by the experience from PC-5C, which was a total replacement project. All mainline, manholes, and service laterals were replaced, and all building sewers were either successfully air tested or replaced up to the house. Despite this effort, which resulted in the elimination of an overflow at the Colonial Road Pumping Station, wet weather peak hourly flow in the basin is still as high as approximately 2,600 gpd/EDU (3,000 gpd/connection). Post rehabilitation wet weather investigations and observation of 143 of the 187 laterals in the mini-basin indicate 20 to 25 properties with sources of at least 2,000 gpd, for an estimated total of 160,000 gpd during severe wet weather events. If this entire flow were eliminated by re-plumbing of the homes or under-slab repairs, the wet weather peak hourly flow would be reduced to 2,100 gpd/EDU. Forty- four properties remain to be investigated. If the number and size of underslab sources in the remaining forty-four laterals are proportional to those identified in the 143 properties investigated to date, an additional 50,000 gpd of underslab flow may be identified, which if further eliminated would result in peak flows of 1,900 gpd/EDU or less. In addition, because the observations of these private sources were not made during extreme wet weather event (the

last extreme wet weather event was 4/2/05), it is expected that elimination of these private sources would result in a larger reduction than that assumed using the estimates generated from smaller wet weather events.

LPTA initiated a pilot program to investigate underslab issues and actions required to remove the I/I. This work involves wet weather investigations to identify properties with underslab sources, camera investigations during wet weather of those properties to identify the specific source, determination of the corrective action needed at each home, recommending a course of action, gaining a written agreement from the property owner, obtaining cost estimates, and having the work completed. At present, repair of piping under the basement slab and installation of a sump pump has been able to be completed on one house and observation during a wet weather event confirmed that the repair stopped the underslab I/I. Corrective action at a second house is being completed at this time.

Because of chronic wet conditions in Mini-Basin SC-1F, the SC-1F Mini-Basin Project was expanded to include appropriate upgrades to stormwater infrastructure and the installation of a clearwater system, providing each house with a lateral for their sump pump discharge. The clearwater system was then connected to the stormwater system. Initial post-rehabilitation monitoring shows a reduction of excess I/I by 80%. Additional flow monitoring during future wet weather events will be used to confirm these results.

Section CL. of the Second Consent Decree describes the resolution of the litigation in the Paxton Creek Basin to be the "Mini-Basin I/I Rehabilitation Program". This program did not take into consideration, however, the need for total replacement of sewer mains and manholes, and identifying and correcting underslab sources, necessary upgrades to the stormwater system nor the construction of clearwater systems. The analysis of the results of the Mini-Basin I/I Rehabilitation Program in the original Paxton Creek CAP indicates that total replacement of asbestos cement pipe (ACP), reduction/elimination of underslab I/I, and stormwater improvements and construction of clearwater systems in appropriate mini-basins will need to be elements of the second Paxton Creek CAP in order to sufficiently reduce I/I to meet the target of 10.57 MGD, as presented in Section I.E. of the 2007 Annual Progress Report.

General Description of Plan Elements

The elements of this Corrective Action Plan consist of two groups of mini-basins. Group 1 contains those mini-basins where significant rehabilitation has not yet occurred. Group 2 contains five mini-basins were significant rehabilitation and replacement has been completed during the first CAP and substantial reductions of excess I/I peak flow rates have occurred. The approach for Group 1 mini-basins is provided below:

- Continuation of the Mini-Basin I/I Rehabilitation Program with the addition of total replacement:
    - Replacement of essentially all ACP and VCP and associated manholes and service laterals in the Mini-Basin, as required.
    - Rehabilitation of non-ACP/VCP areas in the Mini-Basin as defined in Section CL. of the Second Consent Decree, as required.
    - Inspection/televising/air testing and repair or replacement of all building sewers that fail air testing.
- Elimination of underslab sources, as practical.

While additional monitoring is required to further prioritize future mini-basins, the prioritization for the initial five-year period and the proposed schedule for the next 15 years are provided in the attached Priority/Schedule Table1.

Group 2 contains mini-basins where rehabilitation/replacement projects have been completed within the previous CAP. This effort resulted in significant reductions of excess I/I in those mini-basins. The Township will first proceed to identify and eliminate sources of I/I, including underslab issues. If wet weather monitoring demonstrates that a mini-basin has peak wet weather flows less than or equal to 1,000 gpd/EDU, it will be deemed a completed mini-basin. If that peak flow can not be met, replacement of ACP/VCP and/or rehabilitation will continue until the mini-basin is deemed complete as defined below. The priority and schedule for Group 2 mini-basins is provided in Table 2.

A completed mini-basin project in Group 1 or Group 2 is defined to be:

1. Completion of a) replacement of the all ACP and VCP sewer mains and associated manholes and service laterals in the Mini-Basin; b) rehabilitation of non-ACP/VCP areas in the mini-basin as defined in Section CL. of the Second Consent Decree; and, c) inspection/televising/air testing and repair or replacement of all building sewers that fail air testing.

or

2. Demonstration that the mini-basin from the Prioritization Schedule meets or is below 1,000 gpd/EDU based on the Mini-Basin Characteristic Curve from wet weather monitoring for a storm event equivalent to a 4,500 gpd/EDU storm from the control basin, PC-1F.

This Plan will essentially involve addressing an estimated 233,000 LF of ACP/VCP sewer mains (44 miles) and associated service laterals and manholes, and approximately 228,000 LF of non-ACP/VCP sewer mains (43 miles) and the testing and potential repair/replacement of an estimated 250,000 LF or more of service laterals and building sewers (47 miles). Because of the significant additional efforts needed which were not contemplated in the Second Consent Decree, the timeline in the Second Consent Decree needs to be extended to include a 20-year implementation schedule of the Second CAP.

Given the success and the knowledge gained from the completion of the First Paxton Creek CAP, the continuation of the Mini-Basin I/I Rehabilitation Program augmented with a Replacement Program of ACP/VCP sewer mains will eliminate overflows and has the potential to reduce the hydraulic overload in the Paxton Creek Basin to accommodate future build-out projections and maintain a peak wet weather flow rate of less than or equal to the target of 10.57 MGD.

The five Group 1 and two Group 2 mini-basins in the initial five-year period (June 2007 through June 2012) listed in Tables 1 and 2, represent basins with significant excess I/I. Replacement/rehabilitation of those basins has the potential to remove 7.5 MGD of excess peak I/I flow. In the beginning of this 5-year period, the Township will also be completing the following three projects. These projects are identified in Table I-1 (page 4) of the Second Consent Decree 2007 Annual Progress Report as corrective actions for specific wet weather overflow locations considered necessary to convey the reduced flow.

1. Valley Road / Winfield Street Project: (Sub-Basin PC-5) Approximately 4,700 L.F. of gravity sewer will be replaced to eliminate a restriction.
2. Earl Drive Project: (Mini-Basin PC-6C and PC-4A/B) Approximately 5,600 L.F. of gravity sewer will be replaced to eliminate a restriction
3. Trunk A Interceptor Project: (Mini-Basin PC-6A) Approximately 2,000 L.F. of gravity sewer will be replaced to eliminate a restriction.

The level of effort for the seven mini-basins identified (not including the three projects listed above) represents addressing approximately 1,761 EDUs with their associated service laterals and building sewers (352 EDUs per year). This period includes addressing approximately 77,800 linear feet (LF) of ACP/VCP sewer mains and associated manholes and an estimated 27,250 LF of non-ACP/VCP sewer mains and associated manholes. If significant underslab issues are identified for the Group 1 mini-basin during wet weather flow monitoring after project completion, the location and correction of those issues will be undertaken, as practical. There is the potential that underslab issues will continue to be addressed beyond the year 2012 in the mini-basins completed during the first five years. The Township will begin to proceed to identify and eliminate sources of I/I, including underslab issues in the two Group 2 mini-basins.

The second five-year period (June 2012 through June 2017), includes the rehabilitation/replacement of an additional six mini-basins from Group 1 and two mini-basins from Group 2, as listed in Tables 1 and 2. As the projects are completed in the first period, the results of wet weather monitoring of the remaining basins will be used to reevaluate this Prioritization Schedule. The proposed prioritization, using current monitoring results, shows a potential to remove an additional 4.8 MGD of excess peak I/I flow. This level of effort represents addressing approximately 1,836 EDUs (service laterals and building sewers) (367 EDUs per year), approximately 82,000 LF of ACP/VCP and associated manholes, and an estimated 65,500 LF of non-ACP/VCP sewer mains and manholes. There is the potential that underslab issues will continue to be addressed beyond the year 2017 in the mini-basins completed during this second five-year period.

The third five year period (June 2017 through June 2022) includes the rehabilitation/replacement of an additional seven mini-basins from Group 1 and one mini-basin from Group 2, as listed in Tables 1 and 2.

The Prioritization Schedule lists the remaining basins to be addressed after 2022, as required. The prioritization of the remaining basins will be reevaluated as the projects in the first ten-year period are completed.

In year 2022, fifteen years from the initiation of the Second Paxton Creek CAP, the Township will evaluate the progress and success of the Second CAP and determine whether any storage facilities will be required to insure future capacity. If so, it is anticipated that such facilities will be completed within three years of DEP planning approval.

Table 1 - Group 1 Mini-Basins

Mini-Basin	Est. EDUs	Peak gpd/EDU[1]	Estimated Peak Excess I/I (mgd)	Est. ACP/VCP Mainline (feet)	Est. "Other" Mainline (feet)	Proposed Completion Date
Priority for 2007 - 2012						
Improvement projects in PC-5 (Valley Rd./Winfield St.), PC-6 (Earl Dr.) and 2,000 L.F. of Trunk A Interceptor						2008
PC-4B	506	6000	2.53	20,200	3,800	2012
PC-1A	292	4300	0.96	8,800	12,700	2012
PC-2D	162	5800	0.78	9,500	400	2012
PC-6C	206	6000	1.03	15,100	645	2012
PC-1C	260	4300	0.86	17,700	3,600	2012
Tentative Priority for 2012 - 2017						
PC-2C	243	3800	0.68	11,800	7,000	2017
PC-1I	245	3800	0.69	900	5,600	2017
PC-5D	139	3400	0.33	19,000	-	2017
PC-5E	109	3400	0.26	9,000	-	2017
PC-4C	495	2800	0.89	17,700	13,600	2017
PC-3C	171	3200	0.38	-	11,000	2017
Tentative Priority for 2017 - 2022						
PC-1G	263	2600	0.42	-	21,200	2022
PC-1GDA	107	4800	0.41	7,200	800	2022
PC-3E	457	2300	0.59	19,600	8,600	2022
PC-4E	329	2300	0.43	7,900	4,200	2022
PC-4A	128	1700	0.09	6,500	2,500	2022
PC-1GDB	135	1200	0.03	1,500	6,200	2022
PC-1H	98	1500	0.05	-	8,900	2022
Tentative Priority for 2022 - 2027						
PC-5B	335	1300	0.10	-	6,000	2027
PC-1GDC[2]	148	1000	0.00	4,000	5,800	2027
PC-4D/F[2]	411	1000	0.00	12,100	7,400	2027
PC-5A[2]	411	1000	0.00	2,700	11,000	2027
PC-2A	116	nmd	0.00	7,300	6,400	2027
PC-3A	98	nmd	0.00	5,100	8,900	2027
PC-1E	90	nmd	0.00	329	7,800	2027
PC-6B	98	nmd	0.00	2,800	6,000	2027
PC-6A	43	nmd	0.00	2,600	8,800	2027

Note: "nmd" = no meter data at this time

1 - Extrapolated from Mini-Basin Characteristic Curves for a storm event equivalent to a control basin (PC-1F) wet weather flow of 4,500 gpd/EDU.

2 - Current meter data indicates that the target peak flow rate has been met. May not require additional efforts.

Table 2

Group 2 Mini-Basins

Mini-Basin	Est. EDUs	Peak gpd/EDU[1]	Estimated Peak Excess I/I (mgd)	Est. ACP/VCP Mainline (feet)	Est. "Other" Mainline (feet)	Proposed Completion Date
Priority for 2007 - 2012						
PC-3B	116	7300	0.73	12,500	350	2012
PC-5C	219	3800	0.61	-	n/a	2012
Priority for 2012 - 2017						
PC-1B	214	4900	0.83	6,800	27,000	2017
PC-3D	220	4500	0.77	15,100	2,700	2017
Priority for 2017 - 2022						
PC-1D	77	4100	0.24	7,600	1,000	2022

1 - Extrapolated from Mini-Basin Characteristic Curves for a storm event equivalent to a control basin (PC-1F) wet weather flow of 4,500 gpd/EDU.

Permits and Connections

During the years that this Second Paxton Creek CAP is in effect, as long as Lower Paxton meets the Plan and Schedule outlined in the CAP, Lower Paxton will review Planning Modules for development in the Paxton Creek Basin and submit them to the Department for approval. Such modules will be submitted only with the agreement by the developers to hold both the Department and Lower Paxton Township harmless if connection permits are not available.

As long as the Department determines that Lower Paxton Township is in compliance with the terms and conditions of the Second Paxton Creek CAP, Lower Paxton will receive approval from the Department for 93 connections annually through the year 2022 with an increase of 10 connections per year for each completion of a mini-basin rehabilitation/replacement project, as defined above.

Appendix B – "Spring Creek Basin Solution"

Paxton Creek Basin CAP which is attached as Exhibit J.

8. **Final Compliance Date**

a. Lower Paxton shall eliminate the overflows in the Paxton Creek Basin by no later than June 30, 2022; and

b. Reduce the hydraulic overload in the Paxton Creek Basin by no later than June 30, 2027.

Spring Creek Basin Solution

9. **Spring Creek Interceptor**

a. Lower Paxton shall continue to monitor flows in the Spring Creek Basin to determine whether the overflows have been eliminated and the hydraulic overload has been reduced.

b. By December 31, 2013 Lower Paxton shall replace the sewer system in Mini-Basin SC-1E and replace the sewer between MH 417 and MH 417.3. Lower Paxton will then remove the Spring Creek interceptor restrictor located where the interceptor enters Susquehanna Township.

c. No later than 36 months from the date of confirmation that continuing hydraulic overloads indicated by a peak instantaneous flow of 6.5 MGD, or greater, from Lower Paxton's West Branch Spring Creek Interceptor still exist after completion of the projects identified in paragraph 9.b. , Lower Paxton shall eliminate the overflows and reduce the hydraulic overload in the West Branch Spring Creek Basin.

d. Lower Paxton will continue to monitor flows and perform I/I reduction projects to reduce the flows to the West Branch to no greater than Lower Paxton's

allocated capacity of 4.5 MGD. (Exhibit K). If after removal or bypass of the restrictor back-ups or overflows occur in the Swatara Spring Creek Interceptor, and either the instantaneous peak flow from Lower Paxton's West Branch exceeds 6.5 MGD or the combined Lower Paxton peak hourly flow from the East and West Branch is greater than 7.8 MGD, Lower Paxton will be responsible to resolve the problem. If back-ups or overflows occur in the Swatara Spring Creek Interceptor, and Lower Paxton's flows are above their 4.5 MGD allocated capacity and less then the 6.5 MGD and 7.8 MGD capacities noted above, a joint study shall be completed to determine where the excess flows are originating. The responsibility for correcting the problem will then be distributed among the contributing municipalities in proportion to the excess flows, above the municipality's respective allocated capacity.

10. Advertising for Proposals

When advertising for request for proposals and bids for the work required by this Second Amendment, Lower Paxton shall make reasonable efforts to advertise and specify the work to receive the greatest number of proposals and bids. Specifications shall be written in accordance with generally accepted industry practice

Reporting Requirements

11. Chapter 94 Annual Report

Lower Paxton shall submit its Chapter 94 Annual Report to STA and the Harrisburg City Authority in time to be submitted to the Department by March 31 of each year. The Annual Report contents are set forth in 25 Pa. Code § 94.12.

Map

EXHIBIT B - DEVELOPMENT #27
ESTATES OF AUTUMN OAKS-PHASE 1B
(CONSTRUCTED)

EXHIBIT B - DEVELOPMENT #33
KINGS POINTE ADDITION
(CONSTRUCTED)

GALE DRIVE
PUMP STATION
(DEMOLITION 2015)

EXHIBIT B - DEVELOPMENT #29
STRAY WINDS FARM
PHASE 1
(CONSTRUCTED)

EXHIBIT B - DEVELOPMENT #29
STRAY WINDS FARM
PHASE 2
(PROPOSED)

EXHIBIT B - DEVELOPMENT #2
CHELSEY FALLS
PHASE 2
CONSTRUCTED)

EXHIBIT B - DEVELOPMENT #31
MISSION BBQ RESTAURANT
(PROPOSED)

PARKCHESTER
PUMP STATION
(PROPOSED RE-ROUTE)

EXHIBIT B - DEVELOPMENT #38
HOTCAKE RESTAURANT
(PROPOSED)

EXHIBIT B - DEVELOPMENT #32
DISTRICT MAGISTRATE BUILDING
(UNDER CONSTRUCTION)

EXHIBIT C - DEVELOPMENT #2
AMBER FIELDS - PHASE 6
(CONSTRUCTED)

EXHIBIT C - DEVELOPMENT #28
SHADEBROOK
(CONSTRUCTED)

BEAVER CREEK
PUMP STATION
(MECHANICAL PUMP WORK - 2015)

LEGEND

- Development Contributing Flow to Harrisburg WWTP - Exhibit B
- Development Contributing Flow to Swatara WWTP - Exhibit C
- Beaver Creek Drainage Basin
- Asylum Run Drainage Basin
- Paxton Creek Drainage Basin
- Spring Creek Drainage Basin
- Pump Station
- Treatment Facility
- Manhole
- Gravity Sewer
- Force Main
- Township Boundary
- Hydrology
- DC_HydroPolys

Paper Size ARCH D

0 600 1,200 2,400 3,600

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

2015 CHAPTER 94 ANNUAL REPORT

LOWER PAXTON TOWNSHIP AUTHORITY
LOWER PAXTON TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

Job Number	8616494
Revision	A
Date	Mar 02, 2016

M:\Lower_Paxton\GHD\LPTA\Projects\Annual Maps\Chap_94\LP_Chap94_15.mxd

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APPENDIX M-2

CHAPTER 94 REPORT
FOR
BOROUGH OF PAXTANG

2015 MUNICIPAL WASTE LOAD MANAGEMENT ANNUAL CHAPTER 94 REPORT

FOR

THE BOROUGH OF PAXTANG
DAUPHIN COUNTY, PENNSYLVANIA

MARCH 2016

PERMITTEE: _____
Keldeen Stambaugh
Borough Manager

REVIEWED BY: _____
W. Max Shradley, Jr., PE
Paxtang Borough Engineer

RETTEW Associates, Inc.
5031 Richard Lane, Suite 111
Mechanicsburg, PA 17055
(717) 697-3551

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2.0	Hydraulic and Organic Loading Projections	1
3.0	Proposed Plan to Reduce Projected Overload Conditions	2
4.0	Industrial Waste Report	3
5.0	Extensions for the Last Year	3
6.0	Sewer System Monitoring, Maintenance, Repair and Rehabilitation	3
7.0	Condition of the Sewer System	4
8.0	Combined Sewer Overflow (CSO)	4

APPENDIX

Item		Page No.
A.	Exhibit A - Hydraulic & Organic Loading Data	A-1
B.	Exhibit B - Hydraulic and Organic Loading Data & Projections	A-2
C.	Exhibit C - Hydraulic Loading Graph	A-3
D.	Exhibit D - Organic Loading Graph	A-4

ATTACHMENTS

Code of Ordinances, Part 11, Chapter 1 – Sewer Connection, Sewer User Charge, and Sewer Use

Code of Ordinances, Part 11, Chapter 1 – Industrial/Commercial Waste Pre-Treatment

Ordinance No. 615 - Amending Industrial/Commercial Waste Pre-Treatment

Ordinance No. 626 - Amending Industrial/Commercial Waste Pre-Treatment

1.0 INTRODUCTION

The Pennsylvania Department of Environmental Protection (DEP), formerly the Department of Environmental Resources (DER), adopted regulations under Chapter 94 of the DEP Rules & Regulations entitled: "Municipal Wasteload Management," which requires annual reports on all wastewater facilities. These regulations became effective on November 25, 1977.

The intent of the annual report is to help the Borough of Paxtang insure that needed sewage conveyance and treatment capacities will be provided to meet anticipated growth demands. If the sewage conveyance system or treatment plant is found to be overloaded or is projected to become overloaded within five years, specific steps to alleviate or prevent this situation will be required.

The required annual report for the Harrisburg wastewater system must include information on all sewer systems tributary to the plant, including the Borough of Paxtang. This information includes hydraulic and organic loading projections, proposed plan to reduce overload conditions, industrial waste report, extensions for the last year, sewer system monitoring, maintenance, repair and rehabilitation, and condition of the sewer system. To the extent applicable, the required information for the Borough of Paxtang wastewater collection system is provided herein for inclusion in the Harrisburg Wastewater Facilities Annual Report, for the period January through December 2015.

2.0 HYDRAULIC AND ORGANIC LOADING PROJECTIONS

The hydraulic loading as presented on Exhibit A has been estimated due to the absence of flow metering facilities within the Borough sewer system. During the period from April 4, 1974, to June 27, 1974, portable flow metering devices were installed in key manholes in the Borough as a portion of the infiltration/inflow analysis conducted for the Harrisburg Sewerage Authority by Gannett, Fleming, Corddry and Carpenter, Inc. The records from the portable metering devices were used to compute the flow generated in the Borough of Paxtang and neighboring municipalities.

The estimated average daily wastewater flow from the Borough was determined to be 0.284 million gallons per day (mgd) in the 1974 study. Subsequent studies determined that this flow estimate was more realistically 0.200 mgd. The amount of infiltration/inflow, as presented by the Infiltration/Inflow Evaluation Survey Final Report is 0.056 mgd. From this hydraulic data and populations during the study, hydraulic loading factors were determined. As listed in the Appendix, the hydraulic loading factors are 60 gpcd and 40 gpcd for residential and commercial populations, respectively. These factors are assumed to be applicable to today's conditions and have been used in the calculation of the hydraulic loads present herein.

The 2015 Borough records indicated a population of 1,561 residents in the Borough. The annual average daily water returned to the sewers for 2015 has been calculated based on an estimated residential population of 1,561 persons at 60 gallons per capita daily (gpcd), and an annual commercial flow based on water meter readings of 5,546,000 gallons (15,195 gpd). The annual average daily water returned to the sewers in 2015 excluding infiltration/inflow, was approximately 0.1089 mgd. See Exhibit B for hydraulic loading.

For the purposes of this report, a 1% annual increase over 5 years has been assumed. This increase rate yields a 2020 population of 1,641. The hydraulic loading projections indicated on Exhibit B have been based on a projected ultimate population of 1,641 in the year 2020. Inasmuch as the land available for residential or other development within the Borough is extremely limited, it would appear that no major increase in population is anticipated unless land now occupied is converted to uses other than single residential units. The projected hydraulic load (excluding infiltration/inflow) was determined based on the assumption that there will be a 1.0% increase in population and commercial use per year. Therefore, the 2020 projected hydraulic load is estimated at 0.1144 mgd.

The organic loading for 2015 has been determined by multiplying the estimated residential population of 1,561 persons by a loading factor of 0.17 lbs. BOD_5/day/capita. The commercial flow of 15,195 gallons per day was multiplied by 2.125 lbs. BOD_5/1000 gal. to determine the commercial portion of the organic loading. The total organic loading for this period has been approximately 298 lbs. BOD_5/day, as indicated on Exhibit B. The projected organic load was determined based on the assumption that there will be a 1.0% increase in population and commercial use per year. Therefore, the 2020 estimated organic load is 313 lbs. BOD_5/day. The projected loadings will occur as graphically illustrated on Exhibit C and D.

3.0 PROPOSED PLAN TO REDUCE PROJECTED OVERLOAD CONDITIONS

Hydraulic overload conditions may occur in the Borough of Paxtang's sanitary sewer system due to excessive infiltration/inflow from the Paxtang system and all other systems tributary to this system, including Susquehanna Township, the Borough of Penbrook, and the City of Harrisburg. For this reason, in the 1970's an Infiltration/Inflow Evaluation Survey was conducted within the Borough of Paxtang and seven other neighboring municipalities as a portion of the Harrisburg Wastewater Treatment Plant upgrading. The rehabilitation work was subsequently approved and funded by EPA and undertaken and completed in June 1986.

An economic incentive for water conservation and waste flow reduction among commercial and industrial users is encouraged through the existing Borough Ordinance, Part 11, Chapter 1, which reflects increasing user charges for commercial and industrial establishments, schools, and other non-dwelling units, as the hydraulic and pollutant wasteload contribution increases. A copy of this ordinance is provided in the Attachment of this report. Other actions might include requiring residential and commercial customers to employ the use of water conservation devices or imposing strict controls over new connections.

Minor routine maintenance was performed to the Borough's sanitary sewer system during 2015.

4.0 INDUSTRIAL WASTE REPORT

At the present time, there is no industry discharging wastes into the sewer system in the Borough of Paxtang.

Provisions are made in the Rules & Regulations for the Sewer System of the Borough of Paxtang, Code of Ordinances, Part 11, Chapter 1, Article D which prohibits the discharge of oil, grease, or other material which is either offensive or detrimental to the operation and maintenance of the sewer system.

The Rules & Regulations presented in the Attachment also state that no trade or industrial waste of any kind shall be discharged into the sewer system unless and until proper agreements have been entered into by the owner and the Borough and appropriate rates established. This ordinance has been reviewed to bring it into compliance with current regulations, and was adopted by the Borough in 1998 and amended in 2008.

5.0 EXTENSIONS FOR THE LAST YEAR

There were no extensions to the sanitary sewer collection system in 2015. Future extensions to the sanitary sewer system will be minimal due to the unavailability of land with development potential within the borough.

6.0 SEWER SYSTEM MONITORING, MAINTENANCE, REPAIR AND REHABILITATION

Maintenance of the wastewater collection system in the Borough of Paxtang is carried out by the Borough Maintenance persons, whose activities include sewer system maintenance and highway maintenance. Maintenance work is performed on the sewer system as required; the Borough does have a routine preventive maintenance and rehabilitation program which includes regular internal inspection of the lines and repairs. The Borough also visually inspects their interceptors at least once a year.

In 2015, no major work was performed on the Borough's sanitary sewer system. In 2016, the Borough is considering performing cleaning and televising of the sewers in the western portion of the Borough to locate deficiencies that may exist. A plan to address noted deficiencies will be prepared based on the results of the inspection.

At the present time, the Borough has no sewer system flow monitoring program. Wastewater flows generated in the Borough are estimated based on population and commercial water records. Sewer rates charged to the Borough by the Harrisburg Sewerage Authority are based on the number of sewer connections.

7.0 CONDITION OF THE SEWER SYSTEM

The Borough of Paxtang sewer system presently consists of approximately 7.21 miles of gravity sewers, as follows:

Pipe Size (inches)	Total Length (feet)
8	22,843
10	4,641
12	400
24	3,850
30	2,135
42	4,221

The original system was constructed in the year 1933, with extensions made as required. The pipe materials used in the system are vitrified clay, terra cotta, cast iron, ductile iron, and PVC. Joint materials used are rubber gaskets, jute, mortar, and lead. There are approximately 160 manholes in the Borough's system, most of which are constructed of brick; 52 manholes are of pre-cast concrete construction. Also included in the conveyance system are five creek crossings. There are no pumping stations or overflows in this system.

8.0 COMBINED SEWER OVERFLOW (CSO)

Because the Borough of Paxtang's sanitary sewer and storm sewer systems are separate, distinct and unconnected systems, there were no occurrences of combined sewer overflow in 2015.

APPENDIX

EXHIBIT A

HYDRAULIC AND ORGANIC LOADING DATA

1. Residential population (Borough records – 2015) - 1,561

2. Total commercial flow (Borough records - 2015) – 5,546,000 gallons

3. Residential sewer connections (Borough records - 2015) - 666

4. Projected residential population – 1,641 assumed 1% annual increase (2020)

5. Hydraulic loading factors:
   a. Residential (single residential dwellings) - 60 gpcd
   b. Commercial (average) - 40 gpcd

6. Organic loading factors:
   a. Residential - 0.17 lbs. BOD_5/day/capita
   b. Commercial - 2.125 lbs. BOD_5/1000 gal. (Commercial loading based on average daily flow of 40 gpd/capita and 0.085 lbs. BOD_5/day/capita)

7. Adjusted infiltration/inflow (Infiltration/Inflow Evaluation Survey Final Report) - 0.056 mgd.

8. Estimated reduction of infiltration/inflow from work performed under EPA Grant in 1986 - 0.0156 mgd.

9. Anticipated reduction of infiltration/inflow from Borough's Annual Rehabilitation Project - 0.0005 mgd/yr. Annual program suspended in 2002.

EXHIBIT B
BOROUGH OF PAXTANG
2015 ANNUAL CHAPTER 94 REPORT

HYDRAULIC AND ORGANIC LOADING DATA & PROJECTIONS

YEAR	AVERAGE DAILY INFILTRATION & INFLOW (mgd) *	AVERAGE DAILY SEWAGE FLOW (mgd)	COMBINED SEWAGE & I/I FLOWS (mgd)	ORGANIC LOADINGS (lbs/day)
2010	0.0354	0.1099	0.1453	300
2011	0.0354	0.1096	0.1450	299
2012	0.0354	0.1099	0.1453	300
2013	0.0354	0.1082	0.1436	296
2014	0.0354	0.1085	0.1439	297
2015	0.0354	0.1089	0.1443	298
2016	0.0354	0.1099	0.1453	301
2017	0.0354	0.1110	0.1464	304
2018	0.0354	0.1122	0.1476	307
2019	0.0354	0.1133	0.1487	310
2020	0.0354	0.1144	0.1498	313

* Anticipated reduction of infiltration/inflow from the Borough's Annual Rehabilitation Project is 0.0005 mgd/yr.

NOTE: The Borough's annual televisual maintenance program, was suspended in 2002.

EXHIBIT C
BOROUGH OF PAXTANG
2015 ANNUAL REPORT
HYDRAULIC LOADING GRAPH

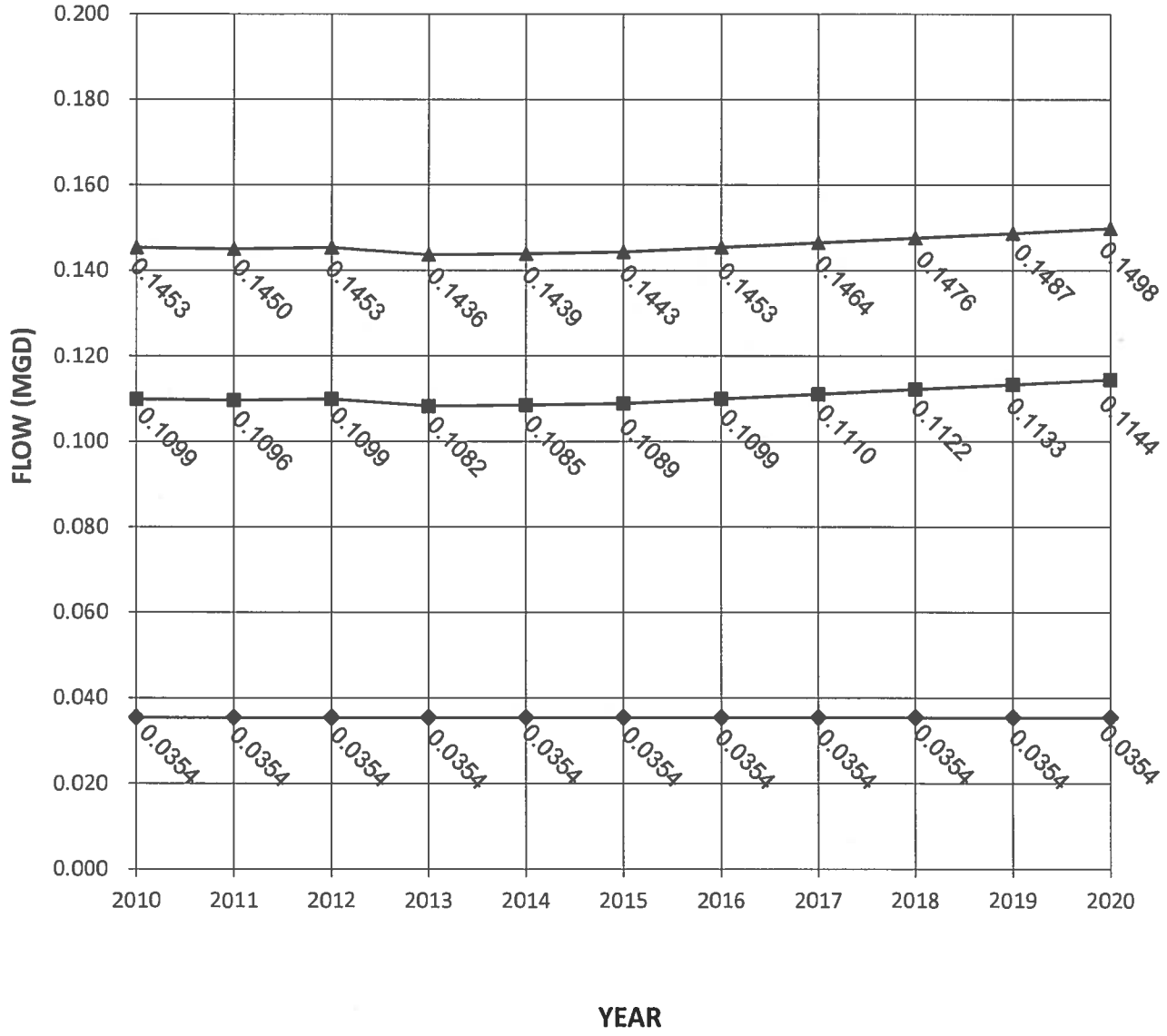
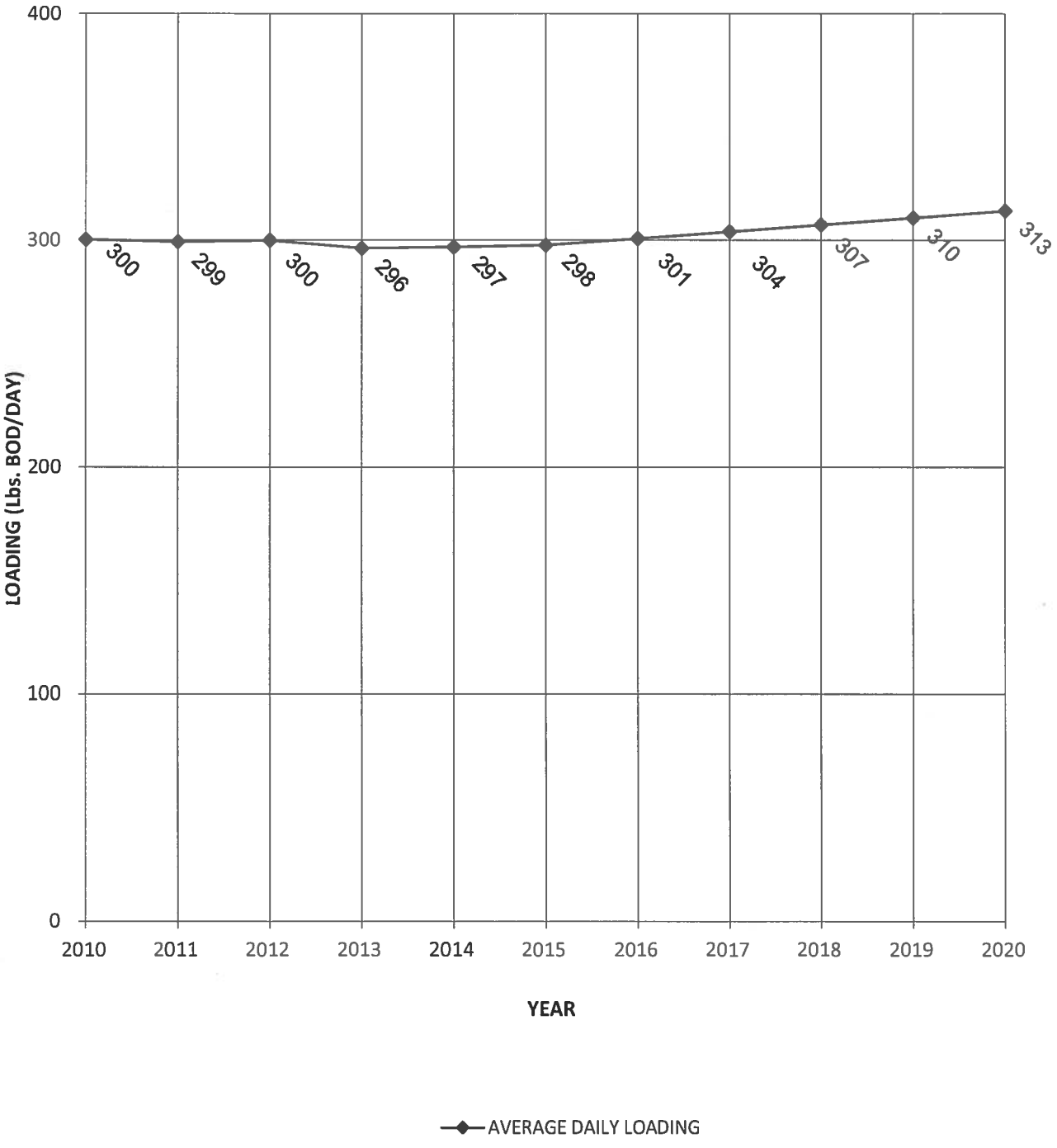


EXHIBIT D
BOROUGH OF PAXTANG
2015 ANNUAL REPORT
ORGANIC LOADING GRAPH



ATTACHMENTS

PART 11

Public Services and Improvements

Chapter 1. Sanitary Sewers
Chapter 2. Water Supply

CHAPTER 1

Sanitary Sewers

ARTICLE A

Sewer Connections

Section 11-1001. Definitions.
Section 11-1002. Sewer Connections Required.
Section 11-1003. All Sanitary Sewers and Industrial Waste to Empty Into.
Section 11-1004. Privy Vaults and Other Receptacles; Abandonment.
Section 11-1005. Receptacles Not To Be Connected With Sewers.
Section 11-1006. Notice to Make Connections.
Section 11-1007. Failure to Connect.
Section 11-1008. Responsibility of Owners of Improved Property.
Section 11-1009. Building Sewers and Connections.
Section 11-1010. Penalty for Violation.
Sections 11-1011 through 11-1050 reserved.

ARTICLE B

Sewer User Charge

Section 11-1051. Sewer User Charge Imposed.
Section 11-1052. Classification of Users.
Section 11-1053. Schedule of Charges.
Section 11-1054. User Charge a Lien Against Property Owned or Occupied by User.
Sections 11-1055 through 11-1080 reserved.

ARTICLE C

Sewer Uses

Section 11-1081. Unlawful to Discharge Certain Matter Into Sewer System.
Section 11-1082. Purpose of Provisions; Penalty for Violation.
Section 11-1083. Effect of Failure to Comply; Work by Borough at Expense of Violator.

ARTICLE A

Sewer Connections

Section 11-1001. **Definitions.**

Unless the context specifies and clearly indicates otherwise, the meaning of items and phrases pertaining to this article should be as follows:

1. **Apartment House:** a building occupied by two (2) or more dwelling units.

2. **Borough:** The Borough of Paxtang, Dauphin County, Pennsylvania, a municipal corporation of the Commonwealth, acting by and through its Borough Council or, in appropriate cases, acting by and through its authorized representatives.

3. **Building Sewer:** the extension from the sewage drainage system of any structure to the lateral of a sewer.

4. **Commercial Establishment:** any room, group of rooms, building or enclosure, except such room, group of rooms, building or enclosure constituting a home, which is connected, directly or indirectly, to the sewer system and used or intended for use in the operation of a business enterprise for the sale and distribution of any product, commodity, article or service or used or intended for use for any social, amusement, religious, educational, charitable or public purpose and containing plumbing facilities for kitchen, toilet or washing purposes.

5. **Commonwealth**: the Commonwealth of Pennsylvania.

6. **Department of Environmental Resources:** the Department of Environmental Resources (DER) of the Commonwealth of Pennsylvania, or its successor in authority.

7. **DER** Permit: the permit which is required by the Department of Environmental Resources of the Commonwealth of Pennsylvania for the construction of a new sanitary sewer line or the extension of an existing sanitary sewer system.

8. **Dwelling Unit**: a building under one (1) roof and occupied by one (1) family or one (1) business or industrial establishment; or

   (1) A combination of buildings in one (1) enclosure or group and occupied by one (1) family or one (1) business; or

   (2) One (1) side of a double building or house having a solid vertical partition wall; or

   (3) Each room or group of rooms in a building occupied or intended for occupancy as a separate business or as separate living quarters by a family or other group of persons living together or by a person living alone; or

(4) Each apartment, office or suite of offices in a building or house having several such apartments, offices or suites of offices and using in common one (1) or more hallways and one (1) or more means of entrance; or

(5) Any trailer or mobile home occupied by one (1) family or business.

9. **Engineer:** the person, firm or corporation named as such by the Borough of Paxtang.

10. **Improved Property:** any property located within this Borough upon which there is erected a structure intended for continuous or periodic habitation, occupancy or use by human beings or animals and from which structure Sanitary Sewage and/or Industrial Wastes shall be or may be discharged.

11. **Industrial Establishment:** any room, group of rooms, building or other enclosure used or intended for use in the operation of one (1) business enterprise for manufacturing, processing, cleaning, laundering or assembling any product, commodity or article, or from which process waste, as distinct from Sanitary Sewage, shall be discharged.

12. **Industrial Wastes**: any and all wastes discharged from any Industrial Establishment other than Sanitary Sewage.

13. **Land Development**: the improvement of one (1) or two (2) or more contiguous lots, tracts or parcels of land for any purpose involving (1) a group of two (2) or more buildings, or (2) the division or allocation of land or space between or among two (2) or more existing or prospective occupants by means or, for the former purpose of streets, common areas, leaseholds, condominiums, building groups, or other features, or (3) any other project requiring the approval of the Township or the Borough pursuant to any Act or Ordinance.

14. **Lateral**: that part of the Sewer System extending from a Sewer to the curb line, or if there shall be no curb line, to the property line or, if no such Lateral shall be provided, than "Lateral" shall mean that portion of or place in a Sewer which is provided for connection of any Building Sewer.

15. **Owner**: any person vested with ownership, legal or equitable, sole or partial, of any Improved Property.

16. **Person**: any individual, partnership, company, association, society, corporation or other group or entity.

17. **Plumbing Inspector**: the person or persons appointed by the Borough to enforce the terms of these Rules and Regulations.

18. **Sanitary Sewage**: normal water-carried household and toilet wastes from any Improved Property.

19. **Sewage System:** all facilities as of any particular time, for collecting, plumbing, transportation, treating or disposing or Sanitary Sewage and Industrial Wastes to be owned by the Borough or by others.

20. **Sewer:** any pipe or conduit constitutes a part of the Sewer System used or usable for sewage collection purposes.

19. **Storm Sewer or Drain:** a pipe or conduit which carries storm, surface water, drainage and certain industrial waste discharges, such as cooling and air conditioning waters.

20. **Street**: any street, road, lane, court, cul-de-sac, alley, public way, public square, or private sewer easement.

21. **Subdivision:** the division or a single lot, tract or parcel of land, or part thereof, into two (2) or more lots, tracts or parcels of land, including changes in street lines or lot lines for the purpose, whether immediate or future, of improvement and development.

22. **User**: any person discharging or causing to be discharged any liquid to the Sewage System.

23. **Water System**: the facilities owned by any person or persons and used for the supply of water to the public in and for the Borough.

(Ord. No. 533, 9/15/1992, Sec. 1)

Section 11-1002. **Sewer Connections Required.**

The owner of any improved property whose property lines are within 150 feet of any public sewer line shall be required to connect thereto in such manner as this Borough may require, within 90 days after notice to such owner from this Borough to make such connection, for the purpose of discharge of all sanitary sewage and industrial wastes from such improved property; subject, however, to such limitations and restrictions as shall be established herein or otherwise shall be established by this Borough from time to time. (Ord. No. 533, 9/15/1992, Sec. 2)

Section 11-1003. **All Sanitary Sewage and Industrial Waste to Empty into Sewer.**

All sanitary sewage and industrial wastes from any improved property, after connection of such improved property with a sewer shall be required under Section 11-1002, shall be conducted into a sewer; subject, however, to such limitations and restrictions as shall be established herein or otherwise shall be established by this Borough from time to time. (Ord. No. 533, 9/15/1992, Sec. 3)

Section 11-1004. **Privy Vaults and Other Receptacles; Abandonment.**

1. No privy vault, cesspool, sinkhole, septic tank or similar receptacle shall be used or shall be maintained at any time upon any improved property which has been connected to a sewer or which shall be required under Section 11-1002 to be connected to a sewer.

2. Every such privy vault, cesspool, sinkhole, septic tank or similar receptacle in existence shall be abandoned and, at the discretion of this Borough, shall be cleaned and shall be filled, at the expense of the owner of such improved property, under the direction and supervision of this Borough; and any such privy vault, cesspool, sinkhole, septic tank or similar receptacle not so abandoned and, if required by this Borough, not cleaned and filled, shall constitute a nuisance, and such nuisance may be abated, as provided by law, at the expense of the owner of such improved property.

(Ord. No. 533, 9/15/1992, Sec. 4)

Section 11-1005. **Receptacles Not To Be Connected With Sewers.**

No privy vault, cesspool, sinkhole, septic tank, or similar receptacle at any time shall be connected with a sewer. (Ord. No. 533, 9/15/1992, Sec. 5)

Section 11-1006. **Notice to Make Connections.**

The notice by this Borough to make a connection to a sewer, referred to in this article, shall consist of a copy of Ordinance No. 533 including its amendments and/or supplements at the time in effect, or a summary of each section thereof, and a written or printed document requiring the connection in accordance with the provisions of this article and specifying that such connection shall be made within 90 days from the date such notice is given. Such notice may be given at any time when a sewer is in place which can receive and can convey sanitary sewage and industrial wastes for treatment and disposal from the particular improved property. Such notice shall be served upon the owner in accordance with law. (Ord. No. 533, 9/15/1992, Sec. 5)

Section 11-1007. **Failure to Connect.**

If the owner of any improved property benefited, improved or accommodated by a sewer, after 90 days notice from this Borough requiring the connection of such improved property with a sewer, in accordance with Section 11-1002, shall fail to connect such improved property, as required, this Borough may make such connection and may collect from such owner the costs and expenses thereof by a municipal claim, an action in assumpsit or such other legal proceeding as may be permitted by law. (Ord. No. 533, 9/15/1992, Sec. 7)

Section 11-1008. **Responsibility of Owners of Improved Property.**

The owner of each property connected to the sewer system shall be responsible for all acts of tenants or other occupants of such improved property insofar as such acts shall be governed by provisions of this article. (Ord. No. 533, 9/15/1992, Sec. 8)

Section 11-1009. **Building Sewers and Connections.**

1. No person shall uncover, connect with, make any opening into or use, alter or disturb, in any manner, any sewer or the sewer system without first making application for and securing a permit, in writing, from the Borough.

2. Application for a permit shall be made by the owner of the improved property to be served or his duly authorized agent.

3. No person shall make, or cause to be made, a connection of any improved property with a sewer until such person shall have fulfilled each of the following conditions:

A. Such person shall have notified the Borough of the desire and intention to connect such improved property to a sewer.

B. Such person shall have made application for and obtained a permit from the Borough.

C. Such person shall have given the Borough at least 24 hours notice of the time when such connection will be made so that the Borough may supervise and inspect the work of connection and necessary testing.

D. Such person shall have paid to the Borough any fee charged and imposed by the Borough as established by Resolution and shall have secured a permit authorizing the connection and identifying the persons, firms or corporations who are to perform all work.

4. Each improved property shall be connected separately and independently with a sewer through a building sewer. Grouping of more than one (1) improved property on one (1) building sewer shall not be permitted, except under special circumstances and for good sanitary engineering reasons or other good cause shown, and then only after special permission of the Borough, in writing, shall have been secured and subject to such rules, regulations and conditions as may be prescribed by the Borough.

5. All costs and expenses of construction of a building sewer and all costs and expenses of connection of a building sewer to a sewer shall be borne by the owner of the improved property to be connected; and such owner shall indemnify and save harmless the Borough from all loss or damage that may be occasioned, directly or indirectly, as a result of construction of a building sewer or of connection of a building sewer to a sewer.

6. A building sewer shall be connected to a sewer at the place designated by the Borough and where the lateral is provided.

The invert of a building sewer at the point of a gravity connection shall be at the same or a higher elevation than the invert of the sewer, unless the connection is a pressure connection from a force main discharge, as approved by the Borough. The connection of a building sewer to the lateral shall be made secure and watertight.

7. Every building sewer of any improved property shall be maintained in a sanitary and safe operating condition by the owner of such improved property.

8. Persons, firms or corporations intending to excavate for construction, repair or reconstruction of building sewers must comply with all requirements of Pennsylvania Act 287 as amended. This requires notification to all utilities at least 72 hours (3 days) in advance of digging.

9. Every excavation for a building sewer shall be guarded adequately with barricades and lights to protect all persons from damage and injury. Streets, sidewalks and other public property disturbed in the course of installation of a building sewer shall be restored, at the cost and expense of the owner of the improved property being connected, in a manner satisfactory to the Borough.

10. If any person shall fail or refuse, upon receipt of a notice of the Borough, in writing, to remedy any unsatisfactory condition with respect to a building sewer, within 60 days of receipt of such notice, the Borough may refuse to permit such person to discharge sanitary sewage and industrial wastes into the sewer system until such unsatisfactory condition shall have been remedied to the satisfaction of the Borough.

11. Where an improved property, at the time connection to a sewer is required, shall be served by its own sewage disposal system or device, the existing house sewer line shall be broken on the structure side of such sewage disposal system or device and attachment shall be made, with proper fittings, to continue such house sewer line, as a building sewer.

12. No building sewer shall be covered until it has been inspected and approved by the Borough. If any part of a building sewer is covered before so being inspected and approved, it shall be uncovered for inspection at the cost and expense of the owner of the improved property to be connected to a sewer.

13. Only persons, firms or corporations who have demonstrated by past performance to the satisfaction of the Borough that they are qualified and capable of performing plumbing work in accordance with good plumbing practice may install building sewers which connect to the sewer mains. All such persons must register with the Borough giving name, key personnel, address and phone number. A list of approved firms shall be maintained by the Borough.

(Ord. No. 533, 9/15/1992, Sec. 9)

Section 11-1010. **Penalty for Violation.**

Any person who violates or fails to comply with any provision or requirement of this article or who constructs, alters or repairs a lateral or any other interval part of the sanitary sewage system in violation of an approved plan or directive of the Plumbing Inspector or of a permit or certificate issued under the provisions of this article shall be guilty of a violation of this article which violation shall constitute an offense, and, upon conviction, for every such violation, shall be sentenced to pay a fine of not less than $50 or more than $1000 and costs, and, in default of payment of fine and costs, to undergo imprisonment for not more than 30 days, provided: when not otherwise specified, each seven (7) days of continued violation shall constitute a separate offense. (Ord. No. 533, 9/15/1992, Sec. 10)

Sections 11-1011 through 11-1050 reserved.

ARTICLE B

Sewer User Charge

Section 11-1051. **Sewer User Charge Imposed.**

Each user of the sewer system of the Borough of Paxtang having a connection to the sewer system in the Borough shall pay annually, beginning with the year 1977, a charge for the use of the said system. (Ord. No. 330, 3/16/1959, Sec. 1, as amended by Ord. 448 12/7/1976, Sec. 1)

Note: The preamble to Ordinance No. 330 stated that by Agreement dated 1/19/1958, between the City of Harrisburg and the Borough of Paxtang, the Borough agreed to pay certain annual fees to the City for sewage treatment and disposal facilities constructed by the City; and the agreement provided that the Borough would, by proper ordinance or resolution, make provision for the imposition of sewer rentals, the levying of a tax or any other lawful method to provide for obtaining revenues to meet its obligations under that agreement. The preamble to Ordinance No. 448 was similar but referred to the supplemental agreement dated 9/15/1976).

Section 11-1052. **Classification of Users.**

For the purposes of this article, the users shall be classified as follows:

(a) **Class 1 Users: Dwelling Unit.** As used in this article, dwelling unit shall mean each place of abode of a on-family unit the Borough from which sewage is discharged into the sewer system of the Borough. Multiple family unit buildings shall e considered such number of dwelling units as there are family units residing therein. Rooming houses having more than two rented rooms shall be considered two-dwelling units.

(b) **Class 2 Users: Commercial, Industrial, School or Other Use.** As used in this article, the term Class 2 user shall include all users of the sewer system in the Borough of Paxtang having a situs in the Borough other than dwelling units. Their term shall include, but shall not be limited to, churches, restaurants, stores, schools, motion picture theaters, professional offices, fire houses, service stations, business offices, and other commercial establishments, including bars and taprooms and manufacturing and industrial establishments.

(c) If any Class 2 User is supplementary or in addition to Class 1 use in. the same building, a separate sewer use charge shall be made for each. If more than one Class 2 User occupies the same building, the space occupied by each shall be deemed a separate building, and each shall be charged, at lest the minimum charge. In the event that two or more Class 2 Users occupying a building receive water through the same meter, the charge shall be made to them jointly and each shall be responsible for the entire charge regardless of any agreement between them for the division thereof.

(d) If use or classification of any property shall change within any year, or if a new connection is made to the Borough. of Paxtang's sewer system during any year, the annual charge shall be pro-rated as of the date of such change or new connection. (Ord. No. 330, 3/16/1959, Sec. 2 as reenacted by Ord. No. 448, 12/7/1976, Sec. 2)

Section 11-1053. **Schedule of Charges.**

(a) Every property in the Borough of Paxtang discharging into the Paxtang Borough sewer system shall pay a minimum annual charge, regardless of any other terms of this Ordinance, One Hundred, Forty and 00/100 Dollars ($140.00) per year; provided that if the charge for the said property determined as hereinafter provided exceeds One Hundred, Forty and 00/100 Dollars ($140.00), the higher charge shall be imposed.

(b) Each Class 1 User shall pay an annual charge of One Hundred, Forty and 00/100 Dollars ($140.00) per dwelling unit.

(c) Each Class 2 User shall pay an annual charge based on the rate of Two and 21/100 Dollars ($2.21) per thousand gallons of water used as reflected by the water meter of the user as shown in the last available yearly period with a minimum annual rate, notwithstanding the amount of water used each Class Two user shall pay, as a minimum charge an annual charge of One Hundred, Forty and 00/100 Dollars ($140.00). In addition, each Class Two User shall be charged an additional surcharge for discharge of sewage containing a pollutant load of such strength and character as shall cause the same to be classified as "high strength" by application of generally-accepted engineering principals, or provisions of any grant agreement, or any state or federal law or regulation. The surcharge rates are as follows:

POLLUTANT	THRESHOLD	SURCHARGE
BOD	290PPM	CENTS PER THOUSAND GAL.
SS	380 PPM	CENTS PER THOUSAND GAL.
P	10 PPM	CENTS PER THOUSAND GAL.

NOTE: Strength of waste surcharges is expressed as cents per volume of water consumed for each Policy and Procedure Manual by which the pollutant exceeds the threshold.

If the amount of water used by any use cannot be accurately determined, the person designated by the Borough of Paxtang to collect this charge is authorized, empowered, and directed to estimate the amount of water so used and his estimate shall be conclusive for the purpose of determining the charge unless within sixty (60) days from the date of mailing of the bill for the sewer use charge he is furnished with satisfactory proof of the actual amount of water used.

The Tax Collector of the Borough of Paxtang is authorized and directed to collect the mutual sewer used charge as herein imposed in the same manner, under the same terms and at the same time as he is authorized by law to collect real estate taxes imposed by the Borough of Paxtang. (Ord. No. 600, 12/15/05)

Section 11-1054. **User Charge A Lien Against Property Owner or Occupied by User.**

The sewer charge imposed by this ordinance is hereby declared to be a lien on property of the user or the property occupied by the user and upon failure of any user or property owner to pay the same, the said charge shall be collected in the municipal taxes and claims. (Ord. 330, 3/16/1959, Sec. 4, as reenacted by Ord. No. 548, 12/19/1995)

Section 11-1055. Repealer.

Any ordinance, or part of ordinance conflicting with this Article be and the same is hereby repealed insofar as the same affects this Article. (Ord. No. 548, 12/19/1995, Sec. 5).

Sections 11-1056 through 11-1080 reserved.

ARTICLE C

Sewer Uses

Section 11-1081. **Unlawful to Discharge Certain Matter Into Sewer System.**

No person shall discharge, or permit to be discharged, into the sewer system of the Borough any sewage or industrial waste containing chemicals or other matter:

(a) having a temperature higher than 100 degrees Fahrenheit;

(b) containing more than 120 parts per million by weight of tar, oil or grease;

(c) containing any gasoline, benzine, naptha, fuel oil or other inflammable or explosive liquids, solids, or gases;

(d) containing any garbage which has not been ground up by household type or other suitable garbage grinders;

(e) containing any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure, cotton wool, plastics or other fibers, or any other solid or viscous substances capable of causing interference with proper operation of the sewer system;

(f) having a pH lower than 6.5 or higher than 9.0 or having any other corrosive property capable of causing damage or hazards to structures, equipment, or personnel of the sewer system;

(g) containing a toxic or poisonous substance in sufficient quantity to injure or interfere with any sewage treatment process, constitute hazards to humans, or create any hazard in sewer system operation. Toxic wastes shall include, but not by way of limitation, wastes containing cyanide, chromium and/or copper ions;

(h) containing noxious or malodorous gases or substances capable of creating a public nuisance.

(Ord. No. 346, 4/18/1960, Paragraph 1)

Section 11-1082. **Purpose of Provisions; Penalty for Violation.**

The provisions of this article are declared to be for the health, safety and welfare of the citizens of the Borough. Any person violating any of the terms, provisions or requirements of this article, or who shall refuse, neglect or fail to comply with any notice given to that person by a duly authorized representative of the Borough in conformity with or pursuant to the provisions of this article, or who shall obstruct or interfere with any person in the execution of this article, shall, upon conviction thereof before a District Justice, severally for each and every such violation, or noncompliance, respectively, be sentenced to pay a fine not exceeding $1000 and

costs of prosecution, and, in default of payment of fine and costs, shall undergo imprisonment for not more than 30 days. Provided: each 30-day period in which a violation or noncompliance continues shall be considered a separate offense and punishable as such. (Ord. No. 346, 4/18/1960, Paragraph 2, as amended by Ord. No. 535, 12/15/1992, Sec. 3)

Section 11-1083. **Effect of Failure to Comply; Work by Borough at Expense of Violator.**

Should any person refuse, neglect or fail to comply with any provision of this article, then the appropriate official of the Borough is empowered and directed to supply all labor and material required of that negligent or delinquent person, and the cost and expense thereof together with an additional amount of ten percent (10%) shall be certified to the Borough Solicitor, who shall enter the same as a lien against the property from which the unlawful discharge has emanated in the Court of Common Pleas of Dauphin County, and proceed to collect the same in like manner as other municipal claims are by law collectible; or an action in assumpsit may be brought to recover the same in the name of the Borough from that owner or owners. (Ord. No. 346, 4/18/1960, Paragraph 3)

BOROUGH OF PAXTANG
DAUPHIN COUNTY, PENNSYLVANIA

ORDINANCE NO. 557

AN ORDINANCE AMENDING THE CODE OF ORDINANCES OF THE BOROUGH OF PAXTANG, PART 11, PUBLIC SERVICES AND IMPROVEMENTS, CHAPTER 1 "SANITARY SEWERS", BY THE ADDITION THERETO OF ARTICLE D, "INDUSTRIAL/COMMERCIAL WASTE PRE-TREATMENT"

BE IT ORDAINED AND ENACTED and it is hereby ordained and enacted by the Borough Council of the Borough of Paxtang, Dauphin County, Pennsylvania, as follows:

SECTION 1: The Code of Ordinance of the Borough of Paxtang, Part 11, Public Services and Improvements, Chapter 1 "Sanitary Sewers" is hereby amended by the addition thereto of an Article D, "Industrial/Commercial Waste Pre-Treatment" to read as follows, to wit:

ARTICLE D

INDUSTRIAL/COMMERCIAL WASTE PRE-TREATMENT

Part I. PURPOSE

SECTION 11-1100 Purpose

The Borough of Paxtang is connected to and discharges sanitary sewage and industrial waste into the advance waste water treatment facility of the City of Harrisburg pursuant to the Second Supplemental Agreement dated September 15, 1976, among the City of Harrisburg, the Harrisburg Sewage Authority, and various suburban municipalities, including the Borough of Paxtang, as well as the supplements and amendments to such Agreement. It is incumbent upon the City of Harrisburg, and therefore upon the Borough of Paxtang, pursuant to the provisions of Second Supplemental Agreement of September 15, 1976, and its supplements, to comply with the Federal Water and Pollution Control Act, also known as the Clean Water Act of 1997, as amended, 33 U.S.C. §11251, et seq., in relation to pre-treatment of industrial waste collected and discharged into the advanced waste water treatment facility of the City of Harrisburg. The purpose of this Ordinance is to implement, as appropriate, provisions necessary to effectuate such compliance. Inasmuch as it is principally the City of Harrisburg which will be administering and enforcing the provisions of this ordinance, the references in the ordinance to the City of Harrisburg are intentional and proper.

Part II. WASTEWATER REGULATIONS

SECTION 11-1101 DEFINITIONS AND ABBREVIATIONS

These definitions, meaning of items and phrases shall apply throughout Article D of this Ordinance, unless the context specifies and clearly indicates otherwise.

(a) "ACCIDENTAL DISCHARGE" means a discharge not caused by the fault of any person, and one that could not have been prevented by any means suggested by common prudence, which would interfere with the operation of the Advanced Wastewater Treatment Facility (AWTF).

(b) "ADVANCED WASTEWATER TREATMENT FACILITY OF THE CITY OF HARRISBURG (AWTF)" means the publicly owned wastewater collection conveyance and treatment system (POTW) as defined by Section 212 of the Federal Water Pollution Control Act, also known as the Clean Water Act of 1977, as amended.

(c) "APPLICANT" means all persons holding title to facilities or improvements for which a permit for the connection to or discharge into the sewer system is required.

(d) "AUTHORIZED REPRESENTATIVE OF A SIGNIFICANT INDUSTRIAL USER" means either:

(A) a principal execute officer of at least the level of vice-president, if the user is a corporation; or

(B) a general partner or proprietor if the user is a partnership or proprietorship, respectively; or

(C) a duly authorized representative of the individual designated in subsection A or B above, if such representative is responsible for the overall operation of the facility or facilities from which the discharge originates.

(e) "BIOCHEMICAL OXYGEN DEMAND (BOD)" means the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure, five (5) days at twenty degrees Centigrade (20°) expressed in terms of weight and concentration (milligrams per liter).

(f) "BOD" means biochemical oxygen demand.

(g) "Borough" means Borough of Paxtang.

(h) "CFR" means Code of Federal Regulations.

(i) "CLEAN STREAMS LAW" means the Act of June 22, 1937, P.L. 1987, as amended and re-enacted by Act of October 10, 1980, P.L. 894, 35 P.S. §§691.1 to 691.702.

(j) "CLEAN WATER ACT" (a.k.a. Federal Water Pollution Control Act) means a federal statute enacted by Public Law 92-500, October 18, 1972; 33 USC 1251 et seq: as amended by Public Law 95-217, December 28, 1977; Public Law 97-117, December 29, 1981; Public Law 97-440, January 8, 1983; and Public Law 100-04, February 4, 1987.

(k) "COLLECTION SYSTEM" means the sanitary sewer collection system of the City in which wastewater is collected and discharged; or will be discharged, into the AWTF.

(l) "COLLECTION AND CONVEYANCE SYSTEM" means the sanitary sewer collection system of the City and conveyance system of The Harrisburg Authority in which wastewater is collected, conveyed and discharged, or will be discharged into the Advanced Wastewater Treatment Facility, AWTF.

(m) "COMMERCIAL ESTABLISHMENT" means any premises or improvements not a dwelling unit or industrial establishment.

(n) "COMPLIANCE MONITORING" means the act of checking specific conditions or requirements of the industrial user permit.

(o) "CONVENTIONAL POLLUTANTS" means pollutants which are usually found in domestic, commercial or industrial wastes, such as phosphorus, total suspended solids, biochemical oxygen demand, fecal coliform, adverse pH levels, and oil and grease.

(p) "COOLING WATER" means the water discharged from any use such as air conditioning, cooling or refrigeration, or to which the only pollutant added is heat.

(q) "DEPARTMENT" means the Department of Public Works of the City of Harrisburg.

(r) "DEP" - see Pa. DEP.

(s) "DIRECTOR" or "DIRECTOR DPW" means the Director of the Department of Public Works of the City of Harrisburg.

(t) "DISCHARGER" means any person who contributes, causes or permits the contribution of treated or untreated wastewater into the sewer system.

(u) "DOMESTIC WASTEWATER" means ordinary water-carried household wastes from sanitary conveniences from residential and non-residential establishments.

(v) "ENVIRONMENTAL PROTECTION AGENCY (EPA)" means an agency or administrative department of the United States, or any other agency or administrative department of the United States hereafter exercising all or any portion, as appropriate, of the powers or jurisdiction presently being exercised thereby.

(w) "EPA" means United States Environmental Protection Agency.

(x) "EQUIVALENT DWELLING UNIT (EDU)" means a measure of the volume of flow or expected flow of sanitary sewage or industrial waste from any property that is equal to the volume of flow discharged from one (1) dwelling unit as determined in accordance with sound engineering practice.

(y) "FEDERAL ACT" means the Federal Water Pollution Control Act, also known as the Clean Water Act of 1977, as amended, 33 U.S.C. §§1251 et seq.

(z) "FEDERAL CATEGORICAL PRETREATMENT STANDARDS" means national categorical pretreatment standards.

(aa) "GRAB SAMPLE" means a sample which is taken from a waste stream on a onetime basis with no regard to the flow in the waste stream and without consideration of time.

(bb) "HARRISBURG CONVEYANCE SYSTEM" means the interceptor sewers, pumping stations and force mains and all related structures which are a part of the wastewater facilities transporting and conveying wastewater from facilities of the City and any of suburban municipalities of the AWTF which are part of the wastewater facilities.

(cc) "HOLDING TANK WASTE" means any waste from holding tanks of vessels, chemical toilets, campers, trailers, septic tanks and vacuum-pump tank trucks.

(dd) "INDIRECT DISCHARGE" means the discharge of the introduction of non-domestic pollutants from any source regulated under Section 307(b), (c) or (d) of the Federal Act (33 U.S.C. §1317(b), (c) or (d), into the AWTF. For the purposes of this definition, holding tank wastes shall be considered indirect discharge.

(ee) "INDUSTRIAL ESTABLISHMENT" means any non-residential establishment discharging sewage and wastes other than normal waste carried domestic sewage and wastes and cooling water, directly or indirectly to the AWTF.

(ff) "INDUSTRIAL USER" means a source of indirect discharge which does not constitute a "discharge of pollutants" under regulations issued pursuant to Section 402 of the Federal Act. (33 U.S.C. 1342).

(gg) "INDUSTRIAL WASTES" means any solid, liquid or gaseous substance, water-borne wastes or form of energy rejected or escaping from any industrial, manufacturing, trade or business proceeds or from the development, recovering or processing of natural resources, as distinct from sanitary sewage.

(hh) "INTERFERENCE" means the inhibition or disruption of the AWTF treatment processes or operation which contributes to a violation of any requirement of The Harrisburg Authority's NPDES permit. The term includes pollution which prevents the use or disposal of sewage sludge by the AWTF in accordance with Section 405 of the Federal Act (33 U.S.C. §1345)

or any criteria, guidelines or regulations developed pursuant to the Solid Waste Disposal Act, the Clean Air Act, the Toxic Substance Control Act or more stringent state criteria applicable to the method of disposal or use employed by the AWTF.

(ii) "LEASE" means the agreement of lease between the City as lessee and The Harrisburg Authority as lessor, whereunder the wastewater facilities are leased to the City for operation and use, and any amendments and supplements to such lease.

(jj) "LOCAL LIMITS" means a locally established limit deemed to be a Pretreatment Standard for the purpose of Section 307(d) of the Clean Water Act. The limit is specific to the Advanced Wastewater Treatment Facility (AWTF) and is based on the potential for pass-through, interference, sludge contamination or capacity to cause damage or hazards to structures, equipment or personnel of the Advanced Wastewater Treatment Facility (AWTF) by the discharge of any pollutant by an industrial user.

(kk) "MILLIGRAM PER LITER (mg/l)" means concentration based on mass of pollutant per unit volume.

(ll) "NATIONAL CATEGORICAL PRETREATMENT STANDARDS" means any regulation containing pollutant discharge limits promulgated by the United States Environmental Protection Agency in accordance with Section 307(b) and (c) of the Federal Act, 33 U.S.C. §1317(6)(b) and (c), which applies to a specific category of industrial users.

(mm) "NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT" means a permit issued pursuant to Section 402 of the Federal Act, 33 U.S.C. §1342.

(nn) "NATIONAL PROHIBITED DISCHARGE STANDARD" means any regulation developed under authority of Section 307(b) of the Federal Act, 33 U.S.C. §1317(b) and 40 C.F.R. §403.5.

(oo) "NEW SOURCE" means any new building, structure, facility or installation from which there is or may be a discharge of pollutants which commences after the date of publication of a proposed pretreatment standard under Section 307(c) of the Clean Water Act.

(pp) "NON-RESIDENTIAL ESTABLISHMENT" means any building, structure, room, group of rooms, establishment or facility other than a residence which discharge sewage and wastes, including industrial wastes, directly or indirectly to the AWTF.

(qq) "OCCUPIED BUILDING" means any structure erected and intended for continuous or periodic habitation, occupancy or use by human beings or animals and from which structure sanitary sewage, industrial waste or both is or may be discharged.

(rr) "Pa. DEP" means the Department of Environmental Protection, an agency or administrative department of the Commonwealth, or any other agency or administrative department of the Commonwealth hereafter exercising all or any portion, as appropriate, of the powers or jurisdiction presently being exercised thereby.

(ss) "PARTS PER MILLION (ppm)" indicates a mass ratio meaning milligrams per million milligrams, and generally will be considered equivalent to milligrams per liter (mg/L).

(tt) "PASS-THROUGH" means a discharge which exits the AWTF into a waterway of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of The Harrisburg Authority's NPDES permit.

(uu) "pH" means the logarithm (base 10) of the reciprocal of the concentration of hydrogen ions expressed in grams per liter of solution.

(vv) "POLLUTANT" means any dredged solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical waste, wastes, biological materials, radioactive materials, heat, wrecked or discharged equipment, rock, sand and cellar dirt, and industrial, municipal and agricultural waste discharged into water.

(ww) "POLLUTION" means the man-made or man-induced alteration of the chemical, physical, biological or radiological integrity of water.

(xx) "PRETREATMENT or TREATMENT" means the reduction of the amount of pollutants, the elimination of pollutants or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into the AWTF. The reduction or alteration can be obtained by physical, chemical or biological process, or process changes by other means, except as prohibited by 40 C.F.R. §403.6(d), (dilution).

(yy) "PRETREATMENT REQUIREMENT" means any substantive or procedural requirement related to pretreatment other than a pretreatment standard imposed on an industrial user.

(zz) "PRETREATMENT STANDARD" means any national categorical pretreatment standard, local limit, or discharge prohibition regulation identified in Section 9-501.7(b) containing a list of pollutant discharge limitations.

(aaa) "PROCESS WASTEWATER" means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product or waste product. Sanitary, non-contact cooling and boiler blowdown wastewaters are excluded unless they become process make-up water.

(bbb) "PROHIBITED DISCHARGE STANDARD" means National Prohibited Discharge Standard.

(ccc) "PROPERTY ACCESSIBLE TO THE COLLECTION SYSTEM" means any improved property (any property within the Borough of Paxtang upon which there is erected a structure intended for continuous or periodic habitation, occupancy or use by human beings or

animals and from which structure sanitary sewage and/or industrial waste shall be or may be discharged) abutting on or adjoining any street or highway in which a sewer or drain is located which is part of the sewer system.

(ddd) "PUBLICLY OWNED TREATMENT WORKS (POTW)" means a treatment works as defined by Section 212 of the Clean Water Act, which is owned by a state or municipality (as defined by Section 502(4) of the Clean Water Act). This definition includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a treatment facility.

(eee) "RESIDENTIAL PROPERTY" means any room, group of rooms, house, house trailer, or other enclosure occupied or intended for occupancy as separate living quarters by a single family or by persons living alone, which property shall be billed and considered a separate entity.

(fff) "SANITARY SEWAGE" means the normal water-carried household and toilet wastes from residences, business buildings, institutions and commercial and industrial establishments.

(ggg) "SELF-MONITORING" means sampling and analysis performed by the industrial user to ensure compliance with permit provisions.

(hhh) "SERVICE AGREEMENT" means the second supplemental agreement dated September 15, 1976, among the City of Harrisburg, Harrisburg Sewerage Authority and the suburban municipalities, and any supplements and amendments to such agreement.

(iii) "SERVICE PERIOD", for sewer rental purposes, means the length of time for which sewer rentals are billed as may be determined by the Bureau of Water of the City to correspond with water service periods; except as otherwise provided in the Second Supplemental Agreement dated 9/15/76 among the City of Harrisburg and the suburban municipalities and any supplements and amendments to such Agreement.

(jjj) "SEWER SYSTEM" means all the facilities for the collection and conveyance of sewage and suitable industrial wastes into the AWTF and the treatment plant.

(kkk) "SIC" means Standard Industrial Classification.

(lll) "SIGNATORY" means a responsible corporate officer, general partner, proprietor, or duly authorized representative of that individual.

(mmm) "SIGNIFICANT INDUSTRIAL USER" means all categorical industrial users or any non-categorical industrial users that:

(A) have a discharge flow of twenty-five thousand (25,000) gallons or more per average work day of process wastewater; or

(B) have an average process flow which makes up five percent (5%) or more of the average dry weather hydraulic or organic capacity of the treatment plan (Ord. 43-1990 City of Harrisburg); or

(C) have a reasonable potential in the opinion of the Superintendent to adversely affect the treatment plan through inhibition, pass through of pollutants, sludge contamination or endangerment of AWTF workers, or to violate any pretreatment standard of requirement.

(nnn) "SIGNIFICANT NONCOMPLIANCE" means one (1) or more violations of:

(A) wastewater discharge limits, including chronic violations, technical review criteria violations, any discharge which alone or in combination causes interference or pass-through, or endangers the health or welfare of AWTF personnel, the public or environment, or results in the AWTF exercising its emergency authority to halt or prevent such a discharge;

(B) compliance schedule milestones;

(C) reporting requirements;

(D) accurately reporting noncompliance; or

(E) any other violation or group of violations the AWTF considers to be significant.

(ooo) "SLUG DISCHARGE" means any pollutant released in a discharge at a flow or concentration rate which will cause interference with the operation of the AWTF.

(ppp) "SPILL PREVENTION AND CONTROL PLAN" means a plan prepared by an industrial user to minimize the likelihood of a spill and to expedite control and cleanup activities should a spill occur.

(qqq) "STANDARD INDUSTRIAL CLASSIFICATION" means a classification pursuant to the Standard Industrial Classification Manual issued by the Executive Office of the President, Office of Management and Budget (1972).

(rrr) "STATE" means the Commonwealth of Pennsylvania.

(sss) "STEELTON CONVEYANCE SYSTEM" means the facilities owned or leased by the Borough of Steelton which transport and convey wastewater from facilities of any of the suburban municipalities, and not through the Harrisburg conveyance system, to the wastewater treatment facilities which are part of the wastewater facilities.

(ttt) "SUBURBAN MUNICIPALITIES" or "SUBURBAN MUNICIPAL AUTHORITIES" means the Borough of Penbrook, Borough of Paxtang, Borough of Steelton, Township of Swatara, Township of Lower Paxton, and the Township of Susquehanna and, as applicable, Swatara Township Authority, Lower Paxton Authority, Steelton Borough Authority, and Susquehanna Township Authority collectively or individually, as appropriate.

(uuu) "SUPERINTENDENT" means the person designated by the City to supervise the operation of the AWTF and who is charged with certain duties and responsibilities by this chapter or any other applicable legislation or one or more duly authorized representatives.

(vvv) "SUSPENDED SOLIDS" mean the total suspended matter that floats on the surface of or is suspended in water, waste-water or other liquids and which is removable by laboratory filtering.

(www) "TOXIC MATERIAL" or "POLLUTANT" means any pollutant or combination of pollutants listed as toxic in regulations promulgated by the EPA under Section 307(a) of the Federal Act or the Federal Laws.

(xxx) "TREATMENT" means pretreatment.

(yyy) "TREATMENT PLAN" means the plant for the treatment of sewage conveyed thereto by the collection system, and the equipment and facilities thereof; the AWTF.

(zzz) "UPSET" means an exceptional incident in which there is unintentional and temporary noncompliance with the pretreatment standards because of factors beyond the reasonable control of the industrial user. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance or careless or improper operation.

(aaaa) "USER" means any person who contributes, causes or permits the contribution of wastewater into the AWTF.

(bbbb) "VIOLATION" means the act of not meeting specific conditions or requirements (i.e., noncompliance).

(cccc) "WASTEWATER" means the liquid and water-carried industrial or domestic wastes from dwellings, commercial buildings, industrial facilities, and institutions, together with any pollutants which may be present, whether treated or untreated, which are contributed into or permitted to enter the sewer system.

(dddd) "WASTEWATER FACILITIES" means the wastewater conveyance, treatment, disposal and related facilities owned by The Harrisburg Authority and leased to the City of Harrisburg for operation and use, including existing facilities and all future additions and improvements thereto.

SECTION 11-1102 COMPLIANCE WITH ALL APPLICABLE LAWS AND RULES AND REGULATIONS

No connection or discharge shall be made to or into the sewer system except in compliance with all federal, state and local laws, ordinances, resolutions, rules and regulations now in force and effect as well as such federal, state and local laws, ordinances, resolutions, rules and regulations as

may, from time to time, be enacted, adopted, approved or promulgated by any federal, state or local authority, or may be otherwise provided by law.

SECTION 11-1103 POWER TO PROHIBIT CONNECTIONS AND CERTAIN DISCHARGES

(a) The City reserves the right to refuse permission to connect to the sewer system, to compel discontinuance of use of the sewer system or to compel pretreatment of wastewaters by any person in order to prevent discharges deemed harmful or deemed to have a deleterious effect upon the operation of, or any portion of, the sewer system.

(b) No wastewaters shall be discharged to the sewer system:

(A) having heat in such quantities that the discharge causes the temperature at the AWTF to exceed forty degrees Celsius (40° C) or one hundred four degrees Fahrenheit (104° F);

(B) containing fats, wax, grease or oils of petroleum origin, whether emulsified or not, in excess of one hundred (100) mg/L, or petroleum oil, nonbiodegradable cutting oil or petroleum products of mineral origin in amounts that will cause interference or pass-through at the AWTF;

(C) containing any gasoline, benzene, naphtha, fuel oil or other explosive liquids, solids or gases or any other pollutants which will create a fire or explosion hazard, including but not limited to wastestreams with a closed-cup flashpoint of less than one hundred forty degrees Fahrenheit (140° F) or sixty degrees Celsius (60° C) using the test methods specified in 40 CFR Part 261.21;

(D) containing any garbage that has not been ground by household type or other suitable garbage grinders;

(E) containing any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure or any other solids or viscous substances capable of causing obstructions or other interferences with proper operation of the sewer system;

(F) having a pH lower than six (6.0) or higher than ten (10.0) standard units, or having any other corrosive property capable of causing damage or hazards to structures, equipment or personnel of the sewer system;

(G) containing toxic or poisonous substances in sufficient quantity to injure or interfere with any wastewater treatment process, to constitute hazards to humans or animals or to create any hazard in waters which receive treated effluent from the sewer system treatment plant. Toxic wastes shall include, but not be limited to, wastes containing cyanide, chromium, cadmium, mercury, copper or nickel or any characteristic or listed hazardous waste;

(H) containing noxious or malodorous gases or substances capable of creating a public nuisance;

(I) containing solids of such character and quantity that special and unusual attention is required for their handling;

(J) containing any substance which may affect the AWTF's effluent and cause violation of the NPDES permit requirements;

(K) containing any substance which would cause the AWTF to be in noncompliance with sludge use, recycling or disposal criteria pursuant to guidelines or regulations developed under Section 405 of the Federal Act, the Clean Air Act or regulations criteria for sludge management and disposal as required by the DEP;

(L) containing color which is not removed in the treatment processes;

(M) containing any radioactive wastes or isotopes;

(N) containing any pollutant, including conventional pollutants, released at a flow rate and/or pollutant concentration which would cause interference with the AWTF;

(O) containing substances which may solidify or become viscous at temperatures between zero degrees Celsius (0° C) or thirty-two degrees Fahrenheit (32° F) and sixty degrees Celsius (60° C) or one hundred and forty degrees Fahrenheit (140° F);

(P) containing chemical constituents which alone or in combination result in the release of toxic gases, vapors or fumes in a quantity that may cause acute worker health and safety problems.

(c) When the Superintendent or Director determines that an industrial user is contributing any of the above substances in such amounts as to exceed stated limits or to interfere with the operation of the AWTF, he or she shall:

(A) advise the user and the Borough of Paxtang of the impact of such discharges on the operation of the AWTF; and

(B) develop effluent limitations for those discharges to correct the interference with the operations of the AWTF; and

(C) direct the user to comply with the effluent limitations as provided in Section 11-1170 et seq.

(D) utilize the enforcement provisions of Section 11-1184.

SECTION 11-1104 CUSTOMER'S PRETREATMENT AND SAMPLING FACILITIES

(a) Upon notification of customer and the Borough of Paxtang by the City, pretreatment facilities shall be installed, within ninety (90) days of the date of such notice, at the sole cost of the significant industrial user, to meet City requirements. In no event shall dilution be acceptable as a means of pretreatment to meet the requirements of this chapter. Any order to install pretreatment facilities may be appealed to the Director as provided in Section 11-1116.

(b) The City reserves the right to require nonresidential dischargers having large variations in rates of wastewater discharge to install suitable regulating devices for equalizing wastewater flows to the sewer system.

(c) When directed by the Department or by one of the suburban municipalities at the request of the Department, industrial users shall install, within ninety (90) days of the directive, at their sole cost and expense, and thereafter maintain a manhole and such other devices as may be approved by the Department to facilitate observation, measurement and sampling of wastewaters discharged into the sewer system. The duly authorized representatives of the Department shall, at all times, be permitted to:

(A) enter upon any and all properties of industrial users for the purpose of inspecting for compliance, observing, measuring and sampling wastewaters discharged into the sewer system;

(B) set up and use monitoring equipment;

(C) inspect and copy industrial waste discharge, monitoring and production records or any other records pertinent to compliance with this chapter; and

(D) have access to any meters used for establishing or determining water consumption, water excluded from the sewer system and wastewater discharged into the sewer system. If an individual user has security measures in force which physically limit entry to the premises of such user, the industrial user shall, within thirty (30) days of the effective date of this section, immediately provide the Department with whatever is necessary to allow authorized City representatives to enter the premises, without delay, for the purpose of performing their duties and responsibilities.

(d) The Department and any suburban municipality may require any industrial establishment to provide information needed to determine compliance with this chapter.

SECTION 11-1105 WASTEWATER DISCHARGE PERMITS

(a) Any industrial establishment desiring to discharge or currently discharging, directly or indirectly, wastes into the Sewer System, or planning to change operations so as to materially alter the characteristics and/or volumes of wastewaters discharged into the sewer system, shall notify the Department and any affected suburban municipality in writing at least thirty (30) days before making such connection or changing its operations and shall obtain a permit from the Department to do so. Applications for such permit shall be on the form supplied by the Superintendent and shall be accompanied by all information requested by the Department for the determination of waste volumes, characteristics and constituents. The cost for obtaining such information shall be borne by the applicant. Any significant industrial user shall make application for a new permit within thirty (30) days of the effective date of this Section.

(b) This application shall include, but shall not be limited to, the following information in units and terms appropriate for evaluation:

(A) name, address and location of applicant;

(B) SIC number(s) according to the Standard Industrial Classification Manual, Bureau of Budget, 1972, as amended;

(C) volume of wastewaters to be discharged;

(D) wastewater constituents and characteristics including, but not limited to, those set forth in Section 11-1103, as determined by a reliable analytical laboratory. Sampling and analysis shall be performed in accordance with the procedures established by the United States EPA pursuant to Section 304(g) of the Federal Act, 33 U.S.C. 1314(g), and the regulations promulgated thereunder, 40 CFR Part 136, as amended;

(E) time and duration of discharge;

(F) average and maximum wastewater flow rates, including daily, monthly and seasonal variations, if any;

(G) a schematic flow representation which shall include floor plans, mechanical and plumbing plans and details of all sewers, sewer connections and appurtenances, sizes, locations and elevations;

(H) number of employees and hours worked;

(I) description of activities, facilities and plan processes on the premises, including all materials which are or could be discharged;

(J) each product produced, listed by type, amount and rate of production;

(K) type and amount of raw materials processed, average and maximum per day;

(L) each substance considered toxic, hazardous, noxious or malodorous, including a description of the hazards associated with each substance;

(M) certification of accuracy by the applicant;

(N) any other information required by 40 CFR 403.12(b) or any other information as may be deemed necessary by the Department to evaluate that permit application.

(c) The Department shall evaluate the data furnished by the applicant and may require additional information. After evaluation and acceptance of the data furnished, the Superintendent shall issue a permit subject to terms and conditions provided therein, as set forth in subsection (d) hereof.

(d) Wastewater discharge permits shall be subject to all provisions of this chapter and all other applicable federal, state and local laws, rules, regulations, charges and fees. The conditions of such permits shall be uniformly enforced by the City in accordance with this chapter and applicable Federal, State and local laws, rules and regulations. Permits may contain, but shall not be limited to, the following conditions:

(A) the unit charge or schedule of special charges and fees or wastewater surcharges to be paid the City for the wastewater to be discharged into the sewer system pursuant to such permit;

(B) the average and maximum allowable wastewater constituent and characteristics;

(C) equalization, neutralization or other requirements to control high pH or highly variable pH discharge;

(D) limits on rate and time of discharge or requirements for flow regulations and equalization;

(E) requirements for installation, maintenance and/or operation of monitoring, inspection and sampling facilities;

(F) pretreatment requirements;

(G) requirements for submission of technical reports or discharge reports;

(H) signatory requirements for certification of technical reports or discharge reports;

(I) requirements for maintaining and retaining plant records relating to wastewater discharge for a minimum of three (3) years or longer as specified by the Department and affording the Department access thereto;

(J) compliance schedules;

(K) specifications for monitoring programs, including self-monitoring, sampling location, frequency and method of sampling, number, types and standards for tests and reporting schedules;

(L) requirements for notification of pretreatment standard exceedance and repeat sampling and testing;

(M) requirements for notification of slug or accidental discharge;

(N) requirements for a spill prevention and control plan;

(O) other conditions as deemed appropriate by the City to insure compliance with these regulations.

(e) Wastewater discharge permits shall be issued for a specified time period, not to exceed five (5) years, subject to compliance with all of the provisions of this chapter and the regulations promulgated thereunder. Any applicant who does not meet the standards of this chapter shall not be entitled to a five-year permit. All holders of a wastewater discharge permit must also comply with any National Categorical Pretreatment Standards within ninety (90) days of their promulgation or any revisions thereto.

(f) A wastewater discharge permit is not assignable or transferable to a new user, owner or new use.

SECTION 11-1106 SPECIFIC DISCHARGE LIMITATIONS

(a) No industrial user shall discharge, directly or indirectly, into the wastewater collection or conveyance system any wastewater containing in excess of the following pollutant in milligrams per liter:

Pollutant	Daily Maximum	Instantaneous Maximum
Arsenic (T)	2.81	5.62
Cadmium (T)	0.75	1.50
Chromium (T)	1.31	2.62
Copper (T)	2.99	5.98
Cyanide (T)	2.15	2.15

Lead (T)	0.55	1.10
Mercury (T)	0.04	0.08
Nickel (T)	1.00	2.00
Zinc (T)	2.20	4.40

(b) The limits may be changed by regulation of the Director or by the EPA, to whichever limitation is more stringent.

SECTION 11-1107 FEDERAL CATEGORICAL PRETREATMENT STANDARDS

Upon promulgation of Federal categorical pretreatment standards or any federal standard for a particular industry or subcategory, the standards referenced in 40 CFR Chapter I, Subchapter N, Parts 405-471, if more stringent than the limitations contained in this chapter for such discharges, shall immediately supersede the standards set forth in this chapter. The Superintendent shall notify all affected industrial users of the applicable reporting requirements under 40 CFR Section 403.12.

SECTION 11-1108 STATE STANDARDS

Any State requirements and limitations on discharge which have been or may be adopted which are more stringent than the federal limitations or those contained in this chapter shall supersede both federal and City standards. The Superintendent shall notify all affected users of any such change.

SECTION 11-1109 UPSET, SLUG OR ACCIDENTAL DISCHARGE; NOTICE REQUIREMENTS

(a) Each significant industrial user shall provide protection from an upset of pretreatment facilities, slug or accidental discharge of prohibited materials, and any other substances requested by this chapter. Facilities to prevent and plans to mitigate an upset, slug or accidental discharge shall be provided and maintained at such user's expense. Facilities to prevent accidental discharge of prohibited materials shall be provided and maintained at such user's expense. No significant industrial user which commences discharge into the sewer system shall be permitted to introduce pollutants into the sewer system until a spill, prevention and control plan has been approved by the Department. Approval of such plans and procedures shall not relieve such user of the responsibility to modify such user's facility as necessary to meet the requirements of this chapter.

(b) In the event of an upset, slug or accidental discharge, it shall be the responsibility of the significant industrial user to:

(A) make immediate notification to the AWTF of location of discharge date and time thereof type of waste including concentration and volume and corrective action taken; and

(B) within five (5) days following an upset, slug or accidental discharge, submit to the Superintendent a written report which shall specify:

(i) description of the upset, slug or accidental discharge, the cause thereof, and the impact on the industrial user's compliance status, including location of discharge, type, concentration and volume of waste;

(ii) duration of noncompliance, including exact date and times of noncompliance, and, if the noncompliance continues, the time by which compliance is reasonably expected to occur;

(iii) all steps taken or to be taken to reduce, eliminate and prevent recurrence of such an upset, slug or accidental discharge or other conditions of noncompliance.

(c) The notification required by this section shall not relieve the significant industrial user of any expense, loss, damage or other liability incurred to the AWTF, the City, any state or federal department or authority, or any damage to person, property or environment; nor will this notification relieve the significant industrial user of any fines, penalties or any other liability which may be imposed by Section 11-1170 et. seq. or any other applicable law.

SECTION 11-1110 COMPLIANCE REPORTS

(a) With ninety (90) days following the date for final compliance or, if a new source, the commencement of discharge, any user subject to the pretreatment provisions of this chapter shall submit to the Superintendent a report indicating the nature and concentration of pollutants and the average and maximum flows of the discharges which are limited by such pretreatment standards and requirements. The report shall state whether the applicable pretreatment standards and requirements are being met and, if not, what additional pretreatment facilities or additional operations and maintenance tasks are necessary to bring such user in compliance with the applicable pretreatment standards and requirements. This statement shall be signed by an authorized representative of the user and certified by a qualified individual.

(b) Any significant industrial user subject to the provisions of this chapter shall submit to the Superintendent, at least on a semi-annual basis, a report containing the information required by its permit. The reports required by this subsection shall be certified by an authorized signatory of the user and submitted within thirty (30) days following the end of the reporting period, unless the Superintendent authorizes, in writing, another submission date or schedule.

(c) If any sampling and testing required by subsections (a) and (b) hereof indicate a violation of a pretreatment standard, the industrial user shall notify the Department within twenty-four (24) hours of becoming aware of the violation, repeat sampling and testing within seventy-two (72) hours, or the first day representative of normal operation, and submit, in writing, the results of the repeat analysis within thirty (30) days.

(d) In addition to the requirements of subsections (a), (b) and (c) hereof, if the Director or Superintendent has reason to believe that a significant industrial user is not meeting the

pretreatment standards on a consistent basis, such user may be required to submit interim compliance reports on a regular or irregular schedule.

(e) Any reports required by this section shall be maintained and retained for a minimum of three (3) years or longer, as specified by the Department, and access by the Department afforded thereto.

SECTION 11-1111 PRIOR NOTICE OF DISCHARGE OF HAZARDOUS WASTE

No industrial user shall introduce any untreated process waste or process wastewater into the sewer system containing any hazardous waste constituent identified in 40 CFR Part 261 without prior written notification to the Superintendent. Any notification shall provide the identity of the waste, the hazardous waste constituent and number and an estimation of the mass and concentration of hazardous waste to be discharged and shall be accompanied by a statement certifying that a waste reduction program is in place. In no case shall the introduction of any hazardous process waste or non-process waste constituent be permitted as a substitute for the proper treatment and disposal of any such waste.

SECTION 11-1112 LIMITATIONS ON POINT OF DISCHARGE

(a) No user shall discharge any waste or wastewater directly into a manhole or other opening in the sewer system, other than an approved building sewer, unless such user has been issued a special permit to do so by the Superintendent. Such permit shall be of limited duration, and the permittee shall comply with all applicable provisions of this chapter.

(b) The discharge of any trucked or hauled pollutants is prohibited except at discharge points designated in a special permit approved by the Superintendent. Such permit shall be of limited duration, and the permittee shall comply with all applicable provisions of this section.

SECTION 11-1113 HOLDING TANK WASTES

No user shall discharge any holding tank or septic tank wastes unless such person has been issued a special permit to do so by the Superintendent and a special permit to do so by the Borough of Paxtang. Such permit shall not be assignable or transferable.

SECTION 11-1114 CHARGES AND FEES

(a) The Director shall adopt a schedule of charges and fees to cover and the City shall collect the costs of implementation of the pretreatment provisions of this Article D. These fees are in addition to and separate from all other fees charged by the City and Borough and will be assessed by the City on all permit holders. Such charges and fees may include, but are not limited to, the following:

(A) costs of monitoring, inspection and surveillance procedures;

(B) costs of reviewing permit applications;
(C) administrative costs of appeals;
(D) costs of reviewing accidental discharge reports;
(E) costs of reviewing pretreatment facility construction plans;
(F) costs of consistent removal by the AWTF of pollutants subject to pretreatment standards;

(G) any other costs incurred by the City and Borough in implementing the requirements of this Article D.

(b) The Borough may adopt a schedule of charges and fees to cover all costs associated with implementation of the provisions of this Article D. Those fees and charges shall be in addition to and separate from all other fees charged by the City and Borough and will be accrued on all permit holders, and may include, but not be limited to the costs set forth in 11-1114(a).

SECTION 11-1115 APPLICABILITY

The pretreatment provisions and all other requirements of this chapter shall apply to any person currently discharging into, directly or indirectly, or otherwise using, the sewer system, or any person who shall in the future discharge into directly or indirectly or otherwise use the sewer system.

SECTION 11-1116 PRESENT AND FUTURE RULES AND REGULATIONS

The Director is authorized to promulgate such rules and regulations as are necessary for the proper administration, implementation and enforcement of this part. This authority is in addition to that granted in any section of this part. Such rules and regulations shall have the same force and effect as the provisions of this section, and any violation thereof shall be deemed a violation of the applicable chapters for enforcement purposes in Section 11-1170 et. seq. The Director shall publish notice of the promulgation of any such rules and regulations and shall notify each of the suburban municipalities prior to adoption of the same, pursuant to Section 11-1150 et. seq.

SECTION 11-1117 FAILURE TO COMPLY

Should any user refuse, neglect or fail to comply with any provision of this chapter or any of the rules and regulations promulgated thereunder or any notice or directive given in conformity with or pursuant to the provisions of this chapter, the City may pursue any or all of the remedies set forth in Section 11-1170 et seq.

SECTION 11-1118. CONFIDENTIALITY OF PROPRIETARY INFORMATION

Any information submitted to the City pursuant to these ordinances or any rules and regulations promulgated thereunder may be claimed as confidential by the submitter. Any such claim shall be asserted at the time of submission by the stamping or placing of the words

"Confidential Business Information" on each page containing such information. If no claim is made at the time of submission, the City may make the information available to the public without further notice. If a claim is asserted, the information shall be treated in accordance with the procedures in 40 CFR Part 2 (Public Information); provided, however, that any information regarding effluent data shall be available to the public without restriction.

SECTION 11-1119 **COMPLIANCE MONITORING AND INSPECTION PERFORMED BY THE CITY**

Compliance monitoring and inspection will be performed by the City. This duty will be based on a schedule determined by the type of facility, type and concentration of pollutants in the discharge, and the past performances of compliance by the industrial user.

Sections 11-1120 through 11-1129 reserved.

PART III. SANITARY SEWER RENTALS

SECTION 11-1130 **SEWER RENTAL PAYMENT BY PROPERTY OWNER**

All persons owning property connected to, and from which sanitary sewage or industrial wastes are discharged into, the sewer system shall pay to the City rates and rental charges, for each service period, in accordance with the schedule or rates set forth in this part.

SECTION 11-1131 **CHARGES PAYABLE BY SUBURBAN MUNICIPALITIES PURSUANT TO SERVICE AGREEMENT**

(a) Residences and Nonresidential Establishments. Billings by the City to suburban municipalities for residential properties and nonresidential establishment customers of suburban municipalities shall be based on the sewer rental rates as set forth in Section 11-1133 for persons whose wastewater is ultimately discharged by the respective municipality into the Harrisburg Conveyance System or the Steelton Conveyance System. Billings by the suburban municipalities to their respective customers shall be based on either the volume rate or the flat rate as specified by the respective suburban municipalities.

(b) Non-residential Establishments and Industrial Establishments that Discharge Excess Strength Wastes to Wastewater System. See Section 11-1133 for relevant provisions.

SECTION 11-1132

CHARGES PAYABLE BY SIGNIFICANT INDUSTRIAL USERS WHICH DISCHARGE EXCESS STRENGTH WASTE INTO SEWER SYSTEM

(a) A significant industrial user discharging, directly or indirectly, into the sewer system wastewaters having an average five-day biochemical oxygen demand (BOD) greater than two hundred ninety (290) mg/L, or a suspended-solids content (SS) greater than three hundred eighty (380) mg/L, or total phosphorus (P) content greater than ten (10) mg/L shall pay to the Department a strength-of-waste surcharge in addition to applicable volume charges. Such surcharges shall be determined in accordance with rates set forth in Section 11-1133 and shall be billed by the Department to the significant industrial user. The strength of wastewaters to be used for establishing the amount of surcharges shall be determined at least once annually either:

(A) by suitable sampling and analysis of the wastewaters for three (3) consecutive days during a period of normal discharge; or

(B) from estimates made by the City; or

(C) from known relationships of products produced to strengths of wastewaters for those users for which such factors have been established.

(b) In establishing wastewater strengths for surcharge purposes by analysis, analyses shall be made in accordance with procedures outlined in the latest edition of "Standard Methods for the Examination of Water and Wastewater", published by the American Public Health Association, Inc. or any method approved by the EPA. Owners of industrial establishments discharging domestic and/or industrial wastewater to the sewer system shall furnish the Department upon request all information deemed essential for determination of applicable sewer rental surcharges for excess strength wastes. The cost of obtaining such information shall be borne by the owners of such industrial establishments.

SECTION 11-1133

RATES, RENTALS AND CHARGES

(a) Effective January 1, 1996, there are hereby established rates or charges for the use and service of the wastewater facilities of the City. The gross rate established is that set forth in subsection (c) hereof, which gross rate is the applicable sum total of "user charges" for operating and maintenance charges of the wastewater facilities as set forth in subsection (c)(1) hereof and that portion of charges applicable to rental and other obligations of City as imposed by the Lease entered into between the City and The Harrisburg Authority as set forth in subsections (c)(2), (c)(3) and (c)(4) hereof.

(b) The rates set forth under the column captioned "payable by suburban municipalities" are set forth on a "per customer" basis. These rates shall be charged by the City to the suburban municipalities under the service agreement dated September 15, 1976, as amended. The suburban municipalities shall pay the statements as issued by the City to the respective municipalities. The municipalities shall be responsible for billing their respective customers.

(c) Total Sewer Rental Rates Payable with Respect to the Wastewater Facilities (the total of Subsections (1), (2), (3) and (4) below):

				Payable by Suburban Municipalities per Customer	
		Harrisburg Customers	Harrisburg Conveyance System	Steelton Conveyance System	
Volume Rate					
Dollars per volume of water consumed	$17.211 per 1000 or cubic feet	$2.301 per 1000 gallons	$1.984 per 1000 gallons	$1.576 per 1000 gallons	
Flat Rate					
Dollars per residential property per year	$149.56		$128.96	$102.44	

Strength of Waste Surcharges
(see Note * Below)

Pollutant	Threshold				
BOD	290 mg/L	1.1 or .15 per 1000 cubic feet	.15 per 1000 gallons	.11 per 1000 gallons	per 1000 gallons
SS	380 mg/L	.83 or per 1000 cubic feet	.11 per 1000 gallons	.11 per 1000 gallons	.11 per 1000 gallons
P	10 mg/L	16.3 or per 1000 cubic feet	2.18 per 1000 gallons	2.21 per 1000 gallons	2.21 per 1000 gallons

NOTE: *Strength of waste surcharges are express as cents per volume of water consumed for each mg/L by which the pollutant exceeds the threshold.

(1) Sewer Rental Attributable to Operation, Maintenance and Administration Expenses.

				Payable by Suburban Municipalities per Customer	
		Harrisburg Customers	Harrisburg Conveyance System	Steelton Conveyance System	
Volume Rate					
Dollars per volume of water consumed	$11.213 per 1000 or cubic feet	$1.499 per 1000 gallons	$1.499 per 1000 gallons	$1.250 per 1000 gallons	
Flat Rate					
Dollars per residential property per year	$97.44		$97.44	$97.44	
Strength of Waste Surcharges (See Note * Below)					
Pollutant	Threshold				
BOD	290 mg/L	.88 or per 1000 cubic feet	.12 per 1000 gallons	.12 per 1000 gallons	.12 per 1000 gallons
SS	380 mg/L	.66 or per 1000 cubic feet	.09 per 1000 gallons	.09 per 1000 gallons	.09 per 1000 gallons
P	10 mg/L	12.32 or per 1000 cubic feet	1.64 per 1000 gallons	1.64 per 1000 gallons	1.64 per 1000 gallons

NOTE: *Strength of waste surcharges are expressed as cents per volume of water consumed for each mg/L by which the pollutant exceeds the threshold.

The Sewer rental rates presented above in this subsection (c)(1) are the user charges relative to the wastewater facilities as defined by regulations of the United States Environmental Protection Agency published in the Federal Register, February 11, 1974.

(2) Sewer Rental Attributable to 1984 and 1988 Series A Lease Rental and Related Revenue Requirements.

				Payable by Suburban Municipalities per Customer	
		Harrisburg Customers	Harrisburg Conveyance System	Steelton Conveyance System	
Volume Rate					
Dollars per volume of water consumed	$3.127 per 1000 or cubic feet	$0.418 per 1000 gallons	$0.482 per 1000 gallons	$0.323 per 1000 gallons	
Flat Rate					
Dollars per residential property per year	$27.17		$31.33	$21.00	
Strength of Waste Surcharges (See Note * Below)					
Pollutant	Threshold				
BOD	290 mg/L	.20 or per 1000 cubic feet	.02 per 1000 gallons	.02 per 1000 gallons	.02 per 1000 gallons

SS	380 mg/L	.15 or per 1000 cubic feet	.02 per 1000 gallons	.02 per 1000 gallons	.02 per 1000 gallons
P	10 mg/L	1.64 or per 1000 cubic feet	0.21 per 1000 gallons	0.24 per 1000 gallons	0.25 per 1000 gallons

NOTE: *Strength of waste surcharges are expressed as cents per volume of water consumed for each mg/L by which the pollutant exceeds the threshold.

(3) Sewer Rental Attributable to Series B Lease and Related Revenue Requirements.

			Payable by Suburban Municipalities per Customer	
		Harrisburg Customers	Harrisburg - Conveyance System	Steelton Conveyance System
Volume Rate				
Dollars per volume of water consumed	$1.803 per 1000 or cubic feet	$0.241 per 1000 gallons	N/A	N/A
Flat Rate				
Dollars per residential property per year	$15.66		N/A	N/A

(4) Sewer Rental Attributable to the 1996 PENNVEST Loan, Pension Fund Loan and Related Revenue Requirements.

			Payable by Suburban Municipalities per Customer	
		Harrisburg Customers	Harrisburg Conveyance System	Steelton Conveyance System
Volume Rate		Per 1000 cubic feet / Per 1000 gallons	Per 1000 gallons	Per 1000 gallons
Dollars per volume of water consumed	$1.070	$0.143	$0.003	$0.003
Flat Rate:				
Dollars per residential property per year	$9.30		$0.20	$0.20

SECTION 11-1134 RIGHT OF ENTRY

For the purpose of determining the amount of sewer rental payable under the provisions set forth in Sections 11-1130 through 11-1133, the City and Borough shall have access at all reasonable times without delay to all industrial users using the sewer system and any meters used for establishing or determining water consumption, water excluded from the sewer system and sewage or waste water discharged into the sewer system.

SECTION 11-1135 BILLS AND BILLING

Bills for the payment of strength of waste surcharges for sewer service and the commercial or industrial use of the sewer system pursuant to this section shall be rendered at the same time and intervals as charges for water consumed in and furnished to the same property and shall be due and payable upon presentation. All quarterly billings shall be made and distributed and shall cover service over the following months:

Months of Billing	Months of Service Covered by Billing
January, February or March	January, February or March
April, May or June	April, May or June
July, August or September	July, August and September
October, November or December	October, November and December

SECTION 11-1136 DELINQUENT RENTAL; PENALTY

If any bill for strength of waste surcharges, except for annual service periods, is not paid within sixty (60) days after the same becomes due and payable, it shall be delinquent, and a penalty shall be imposed as provided in Chapter 1-301.5 of the Recodified Ordinances of the City Harrisburg. Bills for annual service periods shall be subject to the same penalties, except that penalties shall not be added or begin to accrue until August 1 of such annual service period.

SECTION 11-1137 SHUTTING OFF SERVICE

Upon the failure of any person to pay in full any bill for strength of waste surcharge within sixty (60) days after the same becomes due and payable, the City shall have the right to terminate sewer service to the property of such person or to turn off the water supply to such property as provided in Section 11-1170 et. seq. Service may be restored upon payment of all delinquent bills against such property and expenses which may have been incurred in terminating such service, turning, off the water supply, or restoring the same, as provided in Section 11-1174.

SECTION 11-1138 COLLECTION OF UNPAID BILLS

The sewer rentals imposed by this chapter shall be collected as provided in Section 11-1170 et.seq.

SECTION 11-1139 EFFECTIVE DATES; RIGHT TO CHANGE CHARGES

This section is hereby declared to be urgent for the preservation of the peace, health and comfort of the residents of the City and the Borough and shall take effect and be in force, as hereinafter provided, immediately after final passage and publication as required by law. The City reserves the right, subject to its obligations under its lease with The Harrisburg Authority, and its obligations under the Second Supplemental Agreement dated September 15, 1976 among the City of Harrisburg and the suburban municipalities and any supplements and amendments to said Agreement, to make such changes from time to time as in its determination may be desirable or beneficial and to amend this chapter or to change the rates or charges in such manner and at such time as in its determination may be advisable.

Sections 11-1140 through 11-1149 reserved.

Part IV. SEWER CONNECTIONS

SECTION 11-1150 APPLICATION FOR CONNECTION

(a) No connection to the sewer system beyond the limits of the City shall be made except under the terms, provisions and conditions set forth in this section and those in Section 11-1101 et. seq., if applicable, and after issuance of a permit by the Director DPW, or authorized agent thereof, if required by Section 11-1105. Any industrial establishment desiring to connect to the sewer system

beyond the limits of the City shall make application to the Director, or authorized agent thereof, for a permit to connect upon a form provided by the Superintendent. To the form shall be attached a sketch or plan showing in detail: the location and size of lot; the improvements now of such lot or thereon proposed to be erected for which the permit is requested; the precise place where the tappage is proposed to be made to the sewer system; and the location, length and size of the sewerage line proposed therefore. The Superintendent shall notify the Borough and/or affected suburban municipality upon receipt of any such application.

(b) Any other connection to the sewer system beyond the City limits shall be according to the terms and conditions set forth in the Service Agreement of 1976 or any amendments thereto.

SECTION 11-1151 FILING FEE

All such applications by an industrial establishment shall be accompanied by a filing fee of seventy-five dollars ($75.00) to cover the costs and expenses of investigating same.

SECTION 11-1152 INVESTIGATION AND RECOMMENDATION

Upon the filing of the application and payment of the filing fee, the Director shall forthwith cause to be made an investigation to determine whether the requested tappage will or will not be prejudicial to the best interests of the AWTF in view of the additional burden imposed on the sewer system and after taking into consideration present and anticipated future needs.

SECTION 11-1153 ISSUANCE OF PERMIT; ACCEPTANCE OF TERMS

Upon the approval of any such application, the Director is authorized to issue permit granting to the applicant the right or privilege of tapping, in the conformity with the application, into a specified sanitary sewer. The permit shall be subject to Section 11-1102 et. seq., to which terms, provisions and conditions the applicant, for it and any successors in title to the improvements in question, by accepting the permit and acting thereon hereby agrees to all as though specifically set forth in written conditions of the permit between the City and the applicant. The permit shall not be assignable or transferable.

SECTION 11-1154 PERMITTED DISCHARGES ONLY

Unless otherwise allowed by a permit issued pursuant to Section 11-1105, any connection beyond the City limits shall be for the purpose of discharging sanitary sewerage only into the sewer system.

SECTION 11-1155 SURCHARGE FOR INDUSTRIAL ESTABLISHMENTS

Each industrial establishment governed by the pretreatment requirements of Section 11-1101 et. seq. located in a suburban municipality shall be assessed a surcharge directly by the City for the

pollutant loan for all sewage and wastes discharged into the sewer system which exceed the maximum threshold levels set forth therein, such surcharge to be determined by the City.

SECTION 11-1156 LEGAL REQUIREMENTS

(a) Any municipality contributing to the sewer system shall agree to adopt, enforce and keep in full force and effect during the term of any agreement or discharge into the sewer system an ordinance or ordinances, or resolution or resolutions, as appropriate, prohibiting the discharge into its sewage collection system which discharges into the City sewer system of any wastes prohibited to be discharged into the sewer systems under the ordinances, rules and regulations of the City as the same shall be, from time to time, adopted.

(b) Any municipality contributing to the sewer system shall agree to adopt such ordinances or resolutions necessary to impose any rates, charges, tariffs or requirements upon any of the customers by agreements or laws and regulations which relate to obligations assumed under such agreements.

(c) Any municipality contributing to the sewer system shall agree to cooperate with the City in any investigation regarding industrial waste discharges into the sewer system and shall grant to the City the right to review, at any time, the volume, pollutant load and character of sewage and wastes being discharged into the sewer system.

Sections 11-1157 through 11-1169 reserved.

Part V. ENFORCEMENT AND PENALTY

SECTION 11-1170 APPLICABILITY

Whoever violates any provision of Sections 11-1100 through 11-1119, 11-1130 through 11-1139 and 11-1150 through 11-1156, shall be subject to the penalty, enforcement and other provisions hereinafter set forth, including the right of the City and Borough to disconnect service.

SECTION 11-1171 TERMINATION OR SUSPENSION OF SERVICE OR PERMIT

Pursuant to the notice requirements of Section 11-1175, the City may suspend wastewater treatment and/or a discharge permit when such suspension is necessary, in the opinion of the City, in order to stop an actual or threatened discharge which: (a) presents or may present an imminent or substantial endangerment to the health or welfare of persons or to the environment; (b) causes or may cause interference with the operation of or damage to the AWTF; or (c) causes the City to violate any condition of its NPDES permit.

SECTION 11-1172 CESSATION OF HARMFUL ACTIVITY

After informal notice to halt or prevent a discharge which reasonably appears to present an imminent endangerment to the health or welfare of persons, the AWTF, the sewerage system or the

environment, the person responsible for the discharge shall immediately stop or eliminate the contribution. In the event of failure of the person to cease or cause to cease such contribution, the Superintendent shall notify the Director who shall authorize any actions as deemed necessary to halt or prevent such contribution, including immediate severance of the sewer connection, to prevent or minimize damage to the sewerage system and/or the AWTF, the environment or to any individuals.

SECTION 11-1173 **SUSPENSION OR REVOCATION OF PERMIT**

The existence of any one of the following conditions may cause the City to revoke the permit of the significant industrial user:

A) failure to factually report the wastewater constituents and characteristics of a discharge;

B) failure to report significant changes in operations or in wastewater constituents and characteristics;

C) refusal of access to the discharger's premises for the purpose of inspecting or monitoring or determining the amount of sewer rental payable;

D) failure to comply with any of the terms and conditions of a permit;

E) failure to comply with any of the provisions of Part 11, Article D;

F) failure to pay in full nay bill for sewer rental, sewer maintenance charge, tappage fee, or any other charge or fee imposed by ordinance or regulation within sixty (60) days after the same becomes due and payable.

SECTION 11-1174 **REINSTATEMENT OF PERMIT AND RESTORATION OF SERVICE**

The City shall reinstate a permit and/or restore service under the following conditions, as applicable.

A) demonstration to the satisfaction of the City that such significant industrial user is now utilizing good management practices to prevent or reduce the contribution of pollutants to the sewer system. Good management principals include, but are not limited to preventive operations and maintenance practices to reduce the quantity or improve the quality of effluent discharged and the control of plant spillage, leaks and drainage from storage areas; and

B) submission to the City of proof of elimination of any non-complying discharge; and

C) submission within fifteen (15) days of the occurrence; or

D) access to the premises in question for enforcement purposes is assured; or

E) submission of a detailed report describing the measures taken to ensure present and future compliance with the terms and conditions of a permit; or

F) evidence of compliance with federal, state and local laws, rules and regulations is submitted; or

G) payment in full of all delinquent bills, fees and charges and all charges incurred by the City in damages or as costs of enforcement is made.

SECTION 11-1175 NOTICE OF VIOLATION

Whenever the Superintendent finds that any person has violated or in violating any provisions of the chapters to which these enforcement provisions apply, any permit issued thereunder, or any applicable federal, state or local regulation, the Superintendent or a designee shall serve or cause to be served upon such person a written notice stating the nature of the violation and requiring the submission within thirty (30) days of the date of the notice a plan for the satisfactory correction of such violation. If the violation has occurred in the Borough or outside the City, the Superintendent shall mail a copy of such notice to the Borough.

SECTION 11-1176 RIGHT TO HEARING

Any person affected by a notice, directive or other decision of the Superintendent may request a hearing before the Director and present evidence of circumstances justifying reconsideration of the decision of the Superintendent. Such request must be in writing and served on the Director within ten (10) days of the date of the notification or decision. The Director shall hold a hearing and render a decision within fifteen (15) days of the request.

SECTION 11-1177 INJUNCTIVE RELIEF

Subject to the notice provisions of Section 11-1175, in circumstances where the nature of the violation constitutes a violation of the Clean Streams Law, the City may apply for a mandatory preliminary injunction or special injunction in the Court of Common Pleas of Dauphin County or the Commonwealth Court of Pennsylvania in accordance with the Pennsylvania Rules of Civil Procedure relating to actions in equity.

SECTION 11-1178 CIVIL LIABILITY

(a) Any person who permits or allows a discharge which causes an obstruction or damage to the AWTF shall be assessed a charge equal to the amount necessary to repair or replace the damaged facilities.

(b) Should any person refuse, neglect or fail to comply with pretreatment provisions and discharge limitations of Sections 11-1103, 11-1106 and 11-1107 with any of the rules and regulations promulgated thereunder, or with any directive or notice given pursuant to this chapter or to any other chapter in Article D to which these enforcement provisions apply, then the Director is hereby empowered to authorize and may authorize the supply of all labor and materials necessary to effect compliance. Such person shall be assessed a charge equal to the amount necessary to effect compliance.

(c) Should the City suffer the termination or suspension of its NPDES permit or be assessed penalties or fines for violations thereof, which violations were caused by the failure of a

discharger to comply with the provisions of Sections 11-1103, 11-1106 and 11-1107 or other sections in this part of any applicable rules and regulations, such discharger shall be assessed a charge equal to the amount expended by the City to cause its NPDES permit to be reinstated plus the amount of any penalties or fines imposed against it.

SECTION 11-1179 REMEDY BY CITY AND BOROUGH

(a) All charges assessed in accord with Section 11-1178, all sewer rental, tappage and sewer maintenance fees, fees or charges imposed for inspection, monitoring and laboratory analysis, or any other fees or charges authorized by any provision to which this Article D applies shall be a lien on the properties served from the date the charge therefor first becomes due and payable.

(b) All charges imposed pursuant to Section 11-1101 et.seq. and Section 11-1178, together with a ten percent (10%) penalty thereon, shall be certified by the Director to the City Solicitor who shall enter the same as a lien in the Court of Common Pleas of Dauphin County and proceed to collect the same in like manner as other municipal claims are by law collectible.

(c) Sewer rental, tappage and maintenance fees shall be a lien on the properties served from the date the charge therefore first becomes due and payable. If such charges are not paid, the City and Borough may file such liens and proceed to collect the same in like manner as other municipal claims are by law collectible.

(d) The Borough may recover any charges, fees and costs associated with the implementation of the provisions of Article D.

(e) In addition to the above method, the City and Borough may proceed to collect such assessments by action in assumpsit in the name of the City and Borough against the owner of the property charged and/or the person discharging into the sewer system.

(f) In addition to the above, the City and Borough may recover reasonable attorneys' fees, court costs, court reporter fees and all other expenses of litigation to enforce the claim or claims of the City and Borough.

SECTION 11-1180 PUBLIC NOTIFICATION

Pursuant to the public participation requirements of 40 CFR Part 25, the Department shall cause to have published at least annually in the largest daily newspaper of general circulation in the City a list of all industrial users who, during the previous twelve (12) month period, were in significant non-compliance with applicable pretreatment standards or other pretreatment requirements. For the purpose of this provision, a significant non-compliance violation is:

(A) one or more violations of wastewater discharge limits including chronic violations and technical review criteria violations;

(B) any discharge which alone or in combination cause interference or pass through or endangers the health or welfare of AWTF personnel, the public or the environment or results in the AWTF exercising its emergency authority to halt or prevent such a discharge;

(C) failure to meet a compliance schedule milestone;
(D) failure to provide required reports;
(E) failure to accurately report non-compliance; or
(F) any other violation or group of violations the AWTF considers to be significant.

SECTION 11-1181 PUBLIC NUISANCE

Any person who violates any of the terms, provisions or requirements of Sections 11-1100 through 11-1156, or any of the applicable rules and regulations regarding discharges, shall be deemed to be maintaining a nuisance, which nuisance the City or Borough is authorized and directed to abate in the manner provided by law.

SECTION 11-1182 SERVICE OF NOTICE

Whenever notice is necessary under this Part, such notice shall be properly served upon an owner if a copy thereof is delivered to the owner personally; or by leaving a notice at the usual place of abode with someone of suitable age and discretion who shall be informed of the contents thereof; or by certified or registered mail addressed to the owner at the last known address with return receipt showing it has been delivered. If the return receipt shows that it has not been delivered, then service may be made by posting a copy thereof in a conspicuous place in or about the structure affected by such notice. Such notice shall set forth a reasonable time for such compliance to be accomplished.

SECTION 11-1183 ISSUING AUTHORITIES

(a) The Superintendent of the AWTF, Pretreatment Coordinator, City Engineer, and Plumbing Inspector shall act in the capacity of police officers for the limited purpose of issuing non-traffic summary citations to owners of premises or persons who are found in violation of this part. Notice of issuance of a citation shall also be given to the Borough of Paxtang.

(b) The Director may, by written rule or regulation, designate further employees of the Department of Public Works who may issue such citations. Such rules and regulations shall be effective three (3) days following filing with the City Clerk.

SECTION 11-1184 PENALTY

(a) Civil Penalty. In addition to proceedings under this chapter or any other remedy available at law or equity for violation of pretreatment standards requirements, any person who fails to comply with any provision of Sections 11-1100 through 11-1156, or any applicable rules or regulations, or whoever fails to comply with a notice given pursuant to those sections and/or this part, may be assessed a civil penalty, whether or not the violation was willful or negligent, in accordance with Subsection 4(a)(1) of the Publicly Owned Treatment Works Penalty Law, Act of March 26, 1992; P.L. 23, 53 P.S. § 752.4(a)(1), of not more than twenty-five thousand ($25,000.00) per day of violation. Each twenty-four (24) hour period during which a violation continues shall be considered a separate and distinct offense under this provision and punishable as such.

(b) Criminal Penalty. Any person who knowingly or negligently violates any of the terms, provisions or requirements of Sections 11-1100 through 11-1156 or any of the applicable rules and regulations, or whoever refuses or neglects to comply with any notice given pursuant to these sections to such person, or whoever obstructs or interferes with any person in the enforcement of these chapters shall, upon conviction thereof, severally for each and every violation or non-compliance respectively be fined not more than one thousand ($1,000.00) or imprisoned for not more than ninety (90) days, or both. Each twenty-four (24) hour period during which a violation continues shall be considered a separate offense and punishable as such.

(c) Any person who knowingly or negligently makes a false, oral or written statement in any report, record, plan, application or other document filed with the City or who falsifies, tampers with or renders inaccurate any monitoring device or method required under this Part, shall be liable to prosecution under appropriate criminal statutes, including but not limited to: false swearing, 18 Pa. C.S.A. § 4903; unsworn falsification to authorities, 18 Pa. C.S.A. § 4904; tampering with or fabricating physical evidence, 18 Pa. C.S.A. § 4910; and tampering with public records or information, 18 Pa. C.S.A. § 4911.

Sections 11-1185 through 11-1199 reserved.

SECTION 2. Severability. If any sentence, clause, section, or part of this ordinance is for any reason found to be unconstitutional, illegal or invalid, such provisions, sentences, clauses, sections or parts of this ordinance. It is hereby declared as the intent of the Borough Council that this ordinance would have been adopted had such unconstitutional, illegal or invalid sentence, clause, section or part thereof not be included herein.

SECTION 3. Repealer. All ordinances or parts of ordinances which are inconsistent herewith are hereby repealed.

SECTION 4. Effective Date. This ordinance shall become effective immediately upon its adoption.

ADOPTED this 3rd day of November, 1998.

ATTEST:

Bonnie M. Snodgrass
Secretary

James R. Schmidt, President
Paxtang Borough Council

(Seal)

Approved this 3rd day of November, 1998.

By Peter W. Panza
Peter W. Panza, Mayor

75-417/103672-1

BOROUGH OF PAXTANG

DAUPHIN COUNTY, PENNSYLVANIA

ORDINANCE NO. 615

AN ORDINANCE AMENDING THE CODE OF ORDINANCES OF THE BOROUGH OF PAXTANG, PART 11, PUBLIC SERVICES AND IMPROVEMENTS, CHAPTER 1 "SANITARY SEWERS", BY THE AMENDMENT OF ARTICLE D, "INDUSTRIAL/COMMERCIAL WASTE PRE-TREATMENT"

WHEREAS, the Borough of Paxtang, by Ordinance No. 444 did enter into a Second Supplemental Agreement (the "Second Supplemental Agreement") with the City of Harrisburg and the Harrisburg Sewerage Authority; and

WHEREAS, the City of Harrisburg by Ordinance ("Bill") No. 34 of 2007 amended Title 9 Chapters 9-501 and 9-511 of the Codified Ordinances of the City of Harrisburg to comply with applicable State and Federal Laws and pre-treatment regulations of the United States Environmental Protection Agency ("US EPA"); and

WHEREAS, the Borough of Paxtang, under the Second Supplemental Agreement, Article VII, Section 7.01, is required to incorporate the amendments to Title 9, Chapters 9-501 and 9-511 of the Codified City Ordinances into the Municipal Wastewater Ordinances of the Borough of Paxtang.

NOW THEREFORE BE, IT ORDAINED AND ENACTED, AND IT IS HEREBY ORDAINED AND ENACTED, by the Borough Council of the Borough of Paxtang, Dauphin County, Pennsylvania, as follows:

SECTION 1. Chapter 1 – SANITARY SEWERS, Article D "Industrial/Commercial Waste Pre-Treatment" is amended as follows:

11-1101 DEFINITIONS AND ABBREVIATIONS

(d) "AUTHORIZED REPRESENTATIVE OF A SIGNIFICANT INDUSTRIAL USER" means either:

(A) a principal executive officer of at least the level of vice-president, if the user is a corporation; or

(B) a general partner or proprietor, if the user is a partnership or proprietorship, respectively, or

(C) a principal executive officer or ranking elected official, if the user is a municipality, State, Federal, or other public agency.

(D) a duly authorized representative of the individual designated in subsection A, B, or C above, if such representative is responsible for the overall operation of the facility or facilities from which the discharge originates.

(e) "BEST MANAGEMENT PRACTICES (BMPs)" means schedules of activities, prohibition of practices, maintenance procedures, other management practices including treatment requirements and operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage and shall be considered local limitations and pretreatment standards for the purpose of 307(d) of the Act.*

(ooo) "SIGNIFICANT NONCOMPLIANCE" means one (1) or more violations of:

(A) pretreatment standards or requirements including chronic violations, technical review criteria violations or any discharge which alone or in combination causes interference or pass-through, or endangers the health or welfare of AWTF personnel, the public or environment, or results in the AWTF exercising its emergency authority to halt or prevent such discharge;

(B) best management practices;

(C) compliance schedule milestones;

(D) reporting requirements;

(E) accurately reporting noncompliance; or

(F) any other violation or group of violations the AWTF considers to be significant.

Note: Renumber (e) BIOCHEMICAL OXYGEN DEMAND through (dddd) "WASTEWATER FACILIT IES."

11-1103 POWER TO PROHIBIT CONNECTIONS AND CERTAIN DISCHARGES

(b) No wastewaters shall be discharged to the sewer system:

(F) having a pH lower than five (5.0) or higher than ten (10.0) standard units, or having any other corrosive properties capable of causing damage or hazards to structures, equipment or personnel of the sewer system;

11-1105(b) WASTEWATER DISCHARGE PERMITS

(H) a schematic flow representation which shall include all pretreatment or treatment plans and details including appurtenances, sizes, locations, elevations.

(I) pretreatment, treatment and flow meter standard operating procedures manual.

Note: Renumber existing H through N.

11-1105(d) WASTEWATER DISCHARGE PERMITS

(N) requirements for a spill or slug discharge prevention and control plan in accordance with 40 CFR 403.8(f)(2)(vi)(A)(B)(C) and (D).

(O) requirements for best management practices;

(P) other conditions as deemed appropriate by the City to insure compliance with these regulations.

11-1180 PUBLIC NOTIFICATION

Pursuant to the public participation requirements of 40 CFR Part 25, the Department shall cause to have published at least annually in the largest daily newspaper of general circulation in the City a list of all industrial users who, during the previous twelve (12) month period, were in significant non-compliance with applicable pretreatment standards or other pretreatment requirements. For the purpose of this provision, a significant non-compliance violation is:

(A) one or more violations of a pretreatment standard or requirement, including chronic violations and technical review criteria violations;

(B) any discharge which alone or in combination causes interference or pass-through, or endangers the health or welfare of AWTF personnel, the public or the environment, or results in the AWTF exercising its emergency authority to halt or prevent such a discharge;

(C) failure to implement best management practices;

(D) failure to meet a compliance schedule milestone;

(E) failure to provide a required report;

(F) failure to accurately report noncompliance; or

(G) any other violation or group of violations the AWTF considers to be significant.

SECTION 2. SEVERABILITY. If any sentence, clause, section, or part of this ordinance is for any reason to be unconstitutional, illegal or invalid, such provisions, sentences, clauses, sections or parts of this ordinance. It is hereby declared as the intent of the Borough Council that this ordinance would have been adopted had such unconstitutional, illegal or invalid sentence, clause, section or part thereof not be included herein.

SECTION 3. REPEALER. All ordinances or parts of ordinances which are inconsistent herewith are hereby repealed.

SECTION 4. EFFECTIVE DATE. This Ordinance shall be effective immediately upon its adoption.

Duly enacted and ordained by the Council of the Borough of Paxtang on October 21st, 2008.

ATTEST: BOROUGH COUNCIL OF PAXTANG

_____ By: _____

Fay A. Clark, Secretary John R. Ninosky, President

APPROVED this 21st day of October, 2008

_____

Keldeen L. Z. Stambaugh, Mayor

BOROUGH OF PAXTANG

DAUPHIN COUNTY, PENNSYLVANIA

ORDINANCE NO. 626

AN ORDINANCE AMENDING THE CODE OF ORDINANCES OF THE BOROUGH OF PAXTANG, PART 11, PUBLIC SERVICES AND IMPROVEMENTS, CHAPTER 1 "SANITARY SEWERS", BY THE AMENDMENT OF ARTICLE D, "INDUSTRIAL/COMMERCIAL WASTE PRE-TREATMENT"

WHEREAS, the Borough of Paxtang, by Ordinance No. 444 did enter into a Second Supplemental Agreement (the "Second Supplemental Agreement") with the City of Harrisburg and the Harrisburg Sewerage Authority; and

WHEREAS, the City of Harrisburg by Ordinance ("Bill") No. 1 of 2010 amended Title 9 Chapters 9-501.1 and 9-501.10 of the Codified Ordinances of the City of Harrisburg to comply with applicable State and Federal Laws and pre-treatment regulations of the United States Environmental Protection Agency ("US EPA"); and

WHEREAS, the Borough of Paxtang, under the Second Supplemental Agreement, Article VII, Section 7.01, is required to incorporate the amendments to Title 9, Chapters 9-501.1 and 9-501.10 of the Codified City Ordinances into the Municipal Wastewater Ordinances of the Borough of Paxtang.

NOW THEREFORE BE, IT ORDAINED AND ENACTED, AND IT IS HEREBY ORDAINED AND ENACTED, by the Borough Council of the Borough of Paxtang, Dauphin County, Pennsylvania, as follows:

SECTION 1. Chapter 1 – SANITARY SEWERS, Article D "Industrial/Commercial Waste Pre-Treatment" is amended as follows:

11-1101 DEFINITIONS AND ABBREVIATIONS

(xx) "POLYCHLORINATED BIPHENYLS (PCBS) T : means the sum of Arochlors 1016, 1221, 1232, 1242, 1248, 1254, or 1260.

Note: Renumber (xx) PRETREATMENT or TREATMENT" through (eeee) "WASTEWATER FACILITIES." inclusive.

11-1106 SPECIFIC DISCHARGE LIMITATIONS

(a) No industrial user shall discharge, directly or indirectly, into the wastewater collection or conveyance system any wastewater containing in excess of the following pollutant in milligrams per liter:

Pollutant	Daily Maximum	Instantaneous Maximum
Arsenic (T)	2.81	5.62
Cadmium (T)	0.75	1.50
Chromium (T)	1.31	2.62
Copper (T)	2.99	5.98
Cyanide (T)	2.15	2.15
Lead (T)	0.55	1.10
Mercury (T)	0.04	0.08
Molybdenum (T)	6.78	13.56
Nickel (T)	1.00	2.00
PCBs (T)	1.28	2.56
Selenium (T)	2.14	4.28
Silver (T)	15.46	30.92

SECTION 2. SEVERABILITY. If any sentence, clause, section, or part of this ordinance is for any reason to be unconstitutional, illegal or invalid, such provisions, sentences, clauses, sections or parts of this ordinance. It is hereby declared as the intent of the Borough Council that this ordinance would have been adopted had such unconstitutional, illegal or invalid sentence, clause, section or part thereof not be included herein.

SECTION 3. REPEALER. All ordinances or parts of ordinances which are inconsistent herewith are hereby repealed.

SECTION 4. EFFECTIVE DATE. This Ordinance shall be effective immediately upon its adoption.

Duly enacted and ordained by the Council of the Borough of Paxtang on September 20th, 2011.

ATTEST: BOROUGH COUNCIL OF PAXTANG

_____
Fay A. Clark, Secretary

By: _____
John R. Ninosky, President

APPROVED this 21st day of October, 2008

_____
Keldeen L. Z. Stambaugh, Mayor

APPENDIX M-3

CHAPTER 94 REPORT
FOR
BOROUGH OF PENBROOK

2015 MUNICIPAL WASTE LOAD MANAGEMENT ANNUAL CHAPTER 94 REPORT

FOR

THE BOROUGH OF PENBROOK DAUPHIN COUNTY, PENNSYLVANIA

February 2016

PERMITTEE:
Borough of Penbrook
James M. Armbruster, Manager

REVIEWED BY:
W. Max Shradley, Jr., PE
Penbrook Borough Engineer

RETTEW Associates, Inc.
5031 Richard Lane, Suite 111
Mechanicsburg, PA 17055
(717) 697-3551

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ATTACHMENTS

Item

Chapter 210, Sewers, Borough of Penbrook Codification

Letter to DEP on Sewage Overflow Incident, 12-17-2015

1.0 INTRODUCTION

The Pennsylvania Department of Environmental Protection (DEP) adopted regulations under Chapter 94 of the DEP Rules & Regulations entitled: "Municipal Wasteload Management," which requires annual reports on all wastewater facilities. These regulations became effective on November 25, 1977.

The intent of the annual report is to help the Borough of Penbrook ensure that needed sewage conveyance and treatment capacities will be provided to meet anticipated growth demands. If the sewage conveyance system or treatment plant is found to be overloaded or is projected to become overloaded within five years, specific steps to alleviate or prevent this situation will be required.

The required annual report for the Harrisburg wastewater system must include information on all sewer systems tributary to the plant, including the Borough of Penbrook. This information includes hydraulic and organic loading projections, proposed plan to reduce overload conditions, industrial waste report, extensions for the last year, sewer system monitoring, maintenance, repair and rehabilitation, and condition of the sewer system. To the extent applicable, the required information for the Borough of Penbrook wastewater collection system is provided herein for inclusion in the Harrisburg Wastewater Facilities Annual Report, for the period January through December 2015.

2.0 HYDRAULIC AND ORGANIC LOADING PROJECTIONS

The hydraulic loading as presented on Exhibit B has been estimated due to the absence of flow metering facilities within the Borough sewer system. During the period from April 4, 1974, to June 27, 1974, portable flow metering devices were installed in key manholes in the Borough as a portion of the infiltration/inflow analysis conducted for the Harrisburg Sewerage Authority by Gannett, Fleming, Corddry and Carpenter, Inc. The records from the portable metering devices were used to compute the flow generated in the Borough of Penbrook and neighboring municipalities.

The estimated average daily wastewater flow from the Borough was determined to be 0.393 million gallons per day (mgd). The average daily water returned to the sanitary sewer system was estimated to be 0.217 mgd. By subtracting the annual average daily water returned to the sewers from the annual average daily flow, it was assumed that the remaining 0.176 mgd was entirely infiltration/inflow. However, based on the Infiltration/Inflow Evaluation Survey Final Report dated November, 1981, the total adjusted infiltration/inflow present in the Borough of Penbrook's wastewater collection system was determined to more accurately be 0.138 mgd.

The number of residential sewer connections for 2015 was 1,334. The number of commercial sewer connections for this period was 110. Calculations indicate that based on a current estimated population of 3,008 persons at 60 gallons per capita daily (gpcd), and an annual commercial flow based on water meter readings of 10,696,000 gallons (29,304 gpd), the present annual average daily water returned to the sewers is approximately 0.2098 mgd.

The hydraulic loading projections indicated on Exhibit B have been based on a current population of 3,008. Although the population has been remaining steady, for the purpose of this report, a 1% increase per year in population has been projected over the next 5 years. This equates to a 2020 residential population of 3,161. The projected hydraulic load (excluding infiltration/inflow) was determined based on the assumption that there will be a 1.0% increase in population and commercial use per year. This yields a projected 2020 flow of 0.2205 mgd. The hydraulic loading is presented in a graph on Exhibit C.

The organic loading on Exhibit B was determined by multiplying the residential population times a loading factor of 0.17 lbs. BOD_5/day/capita. The commercial flow of 29,304 gallons per day was multiplied by 3.00 lbs. BOD_5/1000 gal. to determine the commercial portion of the organic loading. At the present time, the organic loading is approximately 599 lbs. BOD_5/day, as indicated on Exhibit B. The projected organic loading was determined based on the assumption that there will be a 1.0% increase in population and commercial use per year. This yields a projected 2020 organic loading of 630 lbs. BOD_5/day. The organic loading is presented in a graph on Exhibit D.

A summary of the information used to formulate the above projections is included in the Appendix of this report.

3.0 PROPOSED PLAN TO REDUCE PROJECTED OVERLOAD CONDITIONS

In the early 1970"s hydraulic overload conditions may have occurred in the Borough of Penbrook's sanitary sewer, particularly along the Asylum Run Interceptor and the Penbrook Interceptor following extended periods of wet weather. An Infiltration/Inflow Evaluation Survey was conducted within the Borough of Penbrook and seven other municipalities in an effort to eliminate this apparent excessive infiltration/inflow problem.

On November 29, 1977, the Environmental Protection Agency (EPA) approved the cleaning and televisual inspection of approximately 14,412 lineal feet of sanitary collector and interceptor sewers in the Borough of Penbrook during Phase II of the evaluation survey. Internal televisual inspection under Phase II of the program began in October, 1979. The television portion of the project was completed in February 1980, in compliance with EPA grant program requirements. The inflow study

was initiated in May 1980 and completed in November 1980. It was found that from a total of 42,300 lineal feet of sewer line monitored with portable flow meters, there was an estimated 2.2 Million Gallons (MG) of inflow annually contributing to the wastewater collection system.

From a study conducted by LeVan, Inc., figures show it was not cost effective to warrant a physical survey and subsequent rehabilitation based on the cost of treatment of the inflow at the Harrisburg wastewater treatment facilities.

In November 1998 the Borough of Penbrook initiated a program to clean, internally televise and video tape all sanitary collection sewers within the borough, and to perform a visual internal inspection of each sanitary sewer manhole in the Borough's collection system. This work was completed in December 1998. A total of approximately 44,100 lineal feet of predominantly 8-inch vitrified clay sanitary sewer was cleaned and inspected by Video Pipe Services, Inc. of Newfield, New Jersey. In addition, more than 220 sanitary sewer manholes were inspected and photo documented. Borough and RETTEW personnel completed this work. Numerous defects and sources of infiltration and inflow were identified in the sewer lines and manholes and corrected between 1999 and 2003.

Large amounts of inflow/infiltration were observed in manholes D132, D142, D144A and F1266. It is believed that a significant I/I problem may exist outside the borough in the Rivington Terrace area adjacent to Reservoir Park in Susquehanna Township. The Susquehanna Township Authority was advised of the finding.

In 2002, the Borough began the replacement of over 5,000 linear feet of 12 and 15 inch interceptor line in the Paxtang Parkway. The work began at the point of connection with Paxtang Borough just north of Derry Street and proceeded north to a point beyond the existing 12" sewer line. Two (2) stream crossings were replaced and the line has been moved away from the stream and out of swales to the greatest extent possible to minimize infiltration / inflow. The project was completed in the Spring of 2003.

An economic incentive for water conservation and waste flow reduction among commercial and industrial users is encouraged through the existing sewer rates and charges which reflects increasing user charges for commercial and industrial establishments, schools, and other non-dwelling units, as the hydraulic and pollutant wasteload contribution increases. A copy of Chapter 210, Sewers, Borough of Penbrook Codification (Borough Ordinance) imposing an annual charge upon the users of the sewage system of the Borough of Penbrook is provided in the Attachment of this report. Other actions aimed at waste flow reduction might include requiring residential and commercial customers to employ the use of water conservation devices or imposing strict controls over new connections.

4.0 INDUSTRIAL WASTE REPORT

Pursuant to the General Industrial Waste Pretreatment Regulations for Existing and New Sources of Pollution by EPA and DEP's implementation of these regulations via the Municipal Wasteload Management Program, the following information is presented.

From the Standard Industrial Classification Code, only one industry (an auto car wash) is identified as discharging waste to the Borough of Penbrook sewer system. This industry is not a "major contributing industry" as defined by the National Pollutant Discharge Elimination System (NPDES).

The waste discharge from this industry is an intermittent flow estimated to be about 1,400 gpd. The water is generally turbid, with a high alkalinity and a BOD no greater than normal domestic waste; however, its dilution with other wastes in the system is such that its effect is not discernible at the treatment plant.

Provisions are made in the Borough Ordinance for the sewer systems which prohibits the discharge of harmful or objectionable wastes which are either offensive or detrimental to the operation and maintenance of the sewer system. The Borough Ordinance also specifically regulates the discharge of industrial wastes into the sewer system. Written approval must be obtained from the Borough Council prior to acceptance of wastes from any industrial establishment into the sanitary sewers. No formal agreements have been entered into with any industrial discharges. A copy of the Industrial/Commercial Waste Pre-Treatment Regulations are a part of the Borough Ordinance which is provided as an Attachment to this report.

To date, the Borough has experienced no problems resulting from industrial waste discharge.

5.0 RECENT SEWER EXTENSIONS

No extensions were made within the Borough of Penbrook during 2015. Future extensions to the sanitary sewer system will be minimal due to the unavailability of land with development potential within the Borough.

6.0 SEWER SYSTEMS MONITORING, MAINTENANCE, REPAIR AND REHABILITATION

Maintenance of the wastewater collection system in the Borough of Penbrook is carried out by the Borough Maintenance persons, whose activities include sewer system maintenance and highway maintenance. Repair work is performed on the sewer system as required.

On December 17, 2015 the Borough received a report of a sewage overflow in the Asylum Run section of their interceptor. The overflow was the result of a blockage by tree roots which were cleared and flow restored to the interceptor after several days of bypass pumping and repairs. See Attached letter to DEP reporting the incident and its resolution.

At the present time, the Borough has no sewer system flow-monitoring program. Wastewater flows generated by the Borough are estimated based on population and the number of sewer connections, as discussed previously. Sewer rates charged to the Borough by the Harrisburg Sewerage Authority are based on the number of sewer connections. Additionally, there are no significant industries within the borough, which require monitoring.

7.0 CONDITION OF THE SEWER SYSTEM

The Borough of Penbrook sewer system presently consists of approximately 11.33 miles of collector and interceptor sewers. Approximately 2.35 miles of Penbrook interceptor are in Susquehanna Township, and approximately 0.54 miles of Penbrook interceptor are situated in the Borough of Paxtang. The size and approximate total length of the Borough's sewers are as follows:

Pipe Size (inches)	Total Length (feet)
8	48,789
10	3,341
12	4,853
15	3,014

The original system was constructed in the year 1933, with extensions made as required. The pipe materials used in this system are vitrified clay, terra cotta, cast iron, and PVC. Joint materials used are rubber gaskets, jute, mortar, and lead. There are approximately 229 manholes in the Borough's system, most of which are brick or precast concrete construction. There are no pumping stations or overflows in this system.

8.0 COMBINED SEWER OVERFLOW (CSO)

Because the Borough of Penbrook's sanitary sewer and storm sewer systems are separate, distinct and unconnected systems, there were no occurrences of combined sewer overflow in 2015.

APPENDIX

EXHIBIT A

HYDRAULIC AND ORGANIC LOADING DATA

1. Residential population 2015 (Borough records) – 3,008

2. Total commercial flow (Borough records - 2015) -- 10,696,000 gallons

3. Residential sewer connections (Borough records) -- 1,334
   Commercial sewer connections (Borough records) -- 110

4. Projected residential population – 3,161 - Assumed 1% Annual Increase (2020)

5. Hydraulic loading factors:

   a. Residential (single residential dwellings) - 60 gpcd
   b. Commercial (average) - 40 gpcd

6. Organic loading factors:

   a. Residential - 0.17 lbs. BOD_5/day/capita
   b. Commercial - 3.00 lbs. BOD_5/1000 gal (Commercial loading based on average daily flow of 40 gpd/capita and 0.12 lbs. BOD_5/day/capita)

7. Adjusted infiltration/inflow (Infiltration/Inflow Evaluation Survey Final Report) - 0.138 mgd.

8. Estimated reduction of infiltration/inflow from work performed under EPA Grant in 1986 - 0.0200 mgd.

9. Anticipated reduction of infiltration/inflow from Borough's Annual Rehabilitation Project - 0.0005 mgd/yr. Suspended in 2004.

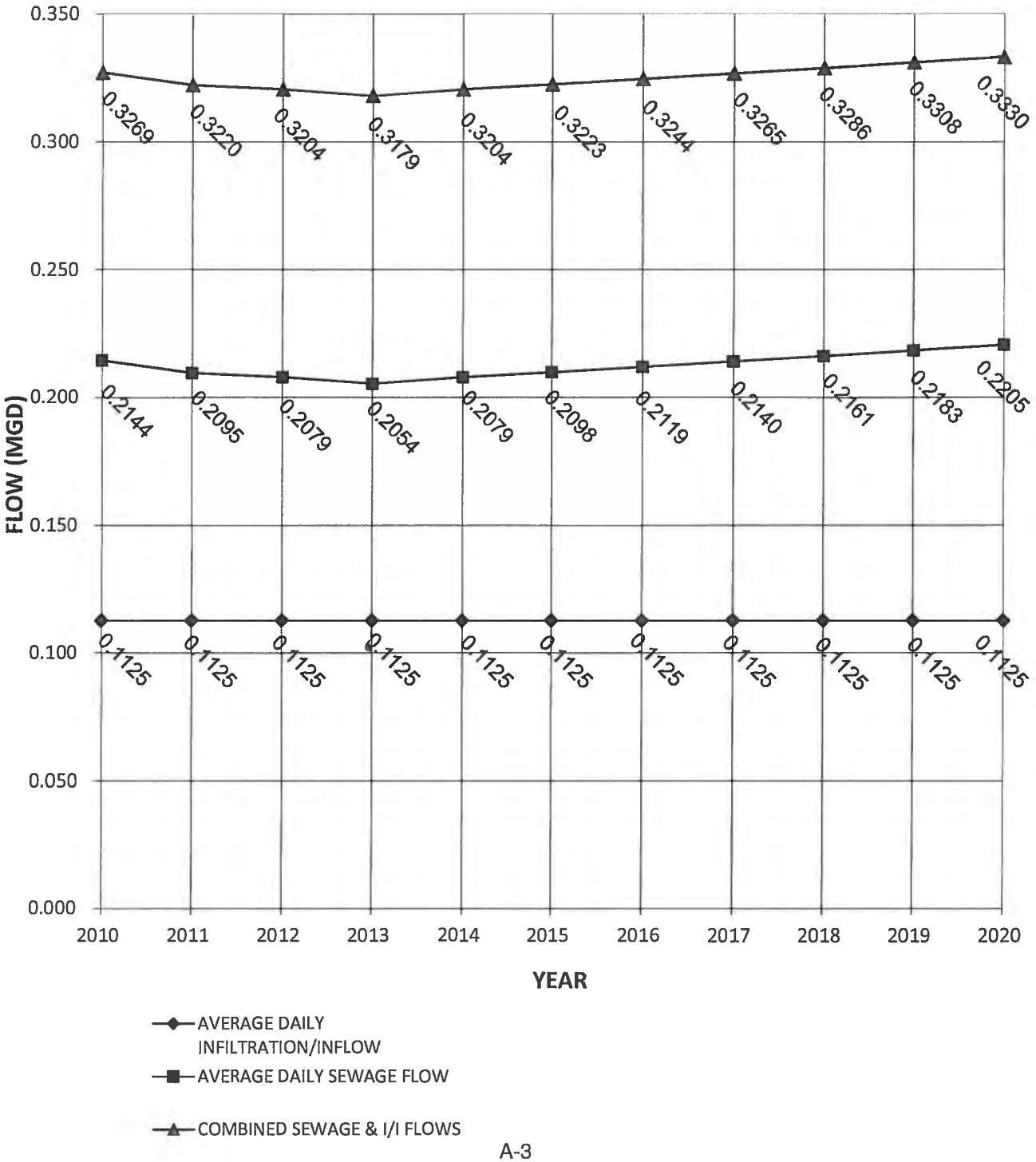
EXHIBIT B
BOROUGH OF PENBROOK
2015 ANNUAL CHAPTER 94 REPORT

HYDRAULIC AND ORGANIC LOADING DATA & PROJECTIONS

YEAR	AVERAGE DAILY INFILTRATION & INFLOW (mgd) *	AVERAGE DAILY SEWAGE FLOW (mgd)	COMBINED SEWAGE & I/I FLOWS (mgd)	ORGANIC LOADINGS (lbs/day)
2010	0.1125	0.2144	0.3269	613
2011	0.1125	0.2095	0.3220	598
2012	0.1125	0.2079	0.3204	594
2013	0.1125	0.2054	0.3179	586
2014	0.1125	0.2079	0.3204	594
2015	0.1125	0.2098	0.3223	599
2016	0.1125	0.2119	0.3244	605
2017	0.1125	0.2140	0.3265	611
2018	0.1125	0.2161	0.3286	617
2019	0.1125	0.2183	0.3308	624
2020	0.1125	0.2205	0.3330	630

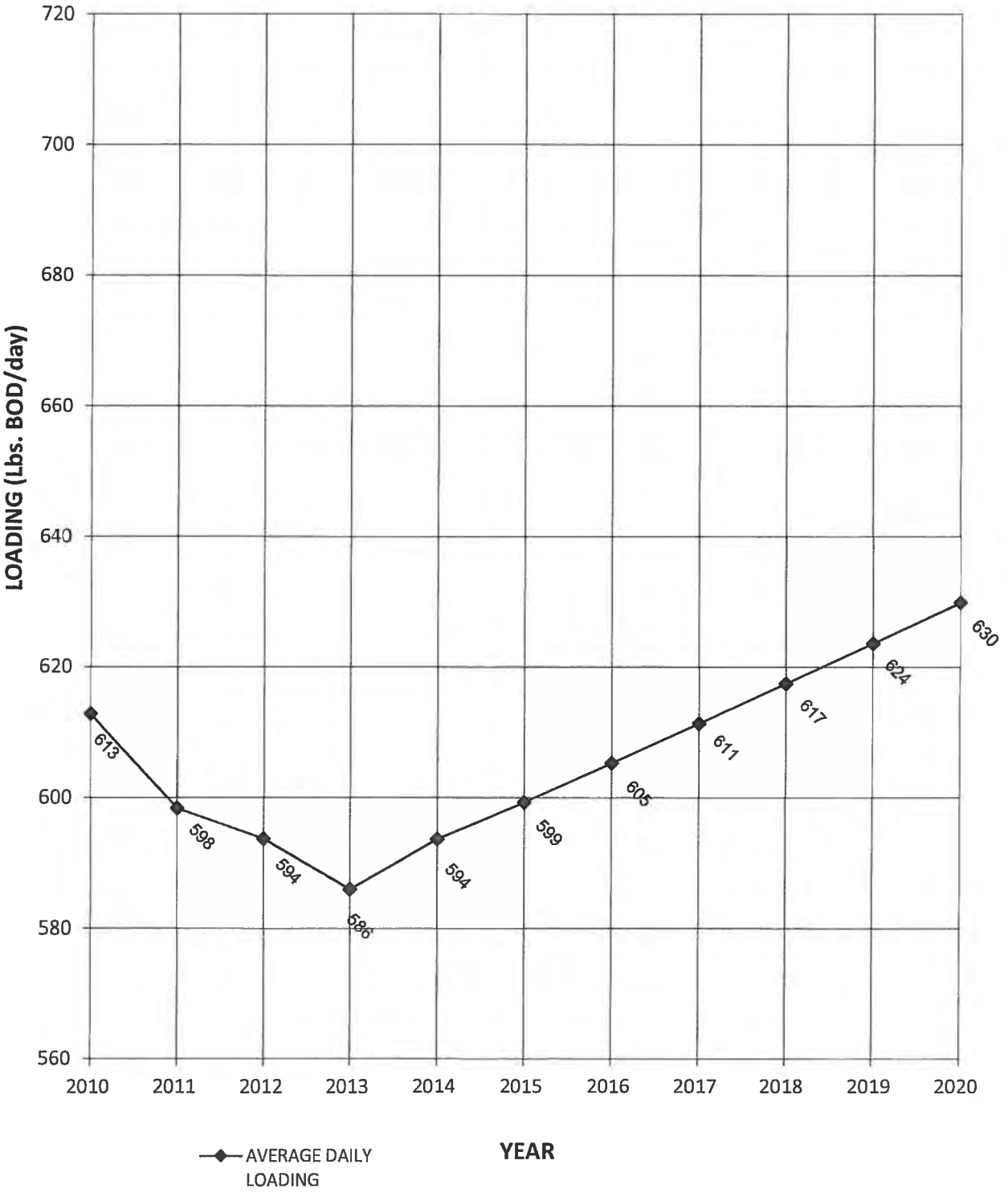
* Anticipated reduction of infiltration/inflow from the Borough's Annual Rehabilitation Project is 0.0005 mgd/yr. Suspended in 2004.

EXHIBIT C
BOROUGH OF PENBROOK
2015 ANNUAL REPORT
HYDRAULIC LOADING GRAPH



J:\Projects\01144\011442002\2016\CivMun\2015 Graphs.xls

EXHIBIT D
BOROUGH OF PENBROOK
2015 ANNUAL REPORT
ORGANIC LOADING GRAPH



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ATTACHMENTS

Chapter 210

SEWERS

[HISTORY: Adopted by the Borough Council of the Borough of Penbrook as indicated in part histories. Amendments noted where applicable.]

GENERAL REFERENCES

Building construction — See Ch. 104.
Plumbing standards — See Ch. 188.
Stormwater management — See Ch. 226.
Streets and sidewalks — See Ch. 230.
Zoning — See Ch. 266.

Part 1
Regulations

[Adopted 6-1-1981 by Ord. No. 81-5 as Ch. VIII, Art. 1, of the 1981 Code]

ARTICLE I
Regulations and Fees

§ 210-1.Rules, regulations and requirements.

All connections with the sanitary sewer system and plumbing, house and building drainage and water lines incident thereto shall be made in compliance with the following rules, regulations and requirements:

A. Tappage shall be made at Y branches as shown on the borough sewer plan.

B. No street shall be opened and no connection shall be made to the sewer system and no fixtures installed unless and until a written permit is granted for that purpose, signed and issued by the Borough Secretary, written application for such purpose to be made on form prescribed.

C. No permit shall be issued to any person, firm or corporation who has not successfully passed an examination held by the Board of Plumbing Examiners and holding a certificate to that effect, which said certificate shall be exhibited when application is made.

D. No connection shall be made to any borough sewer or lateral by any person until notice to do so has been given by the Plumbing Inspector, and no system of house plumbing shall be connected with any lateral until the whole system has been examined and approved by the Plumbing Inspector and he is satisfied that the same has been properly vented and trapped.

E. The use of the system and the connection thereto, including house and building drainage and all water lines, shall be in strict conformity with the laws of the state and

the Plumbing Code[1] hereto pertaining and the rules and regulation of the Department of Environmental Protection of the Commonwealth of Pennsylvania.

F. Each dwelling must have a separate sewer line, connecting from the building to the sanitary sewer system.

G. No roof drainage, surface water, waste from hydrants or groundwater from absorption drains shall be admitted or be permitted to drain into the sewer system; it being distinctly understood that the sanitary sewer system now constructed or to be constructed is for the conveyance and treatment of sanitary sewage or liquid wastes only.

H. It shall be unlawful for any person, firm or corporation, either owner or user, to cause to be drained or permit to flow into any part of the sewer system any corrosive, volatile, suffocating, inflammable or explosive liquid, gas, vapor, substance or material of any kind.

I. It shall be unlawful for any slaughterhouse, dairy, garage, automobile service station, dry-cleaning and dyeing establishment, machine shop, butcher shop or similar establishment from which oil, fibers, grease, silt or grit may be discharged to cause or permit to flow into the sewers any substance which may form a deposit tending to cause a stoppage or injure in any way the sewers or which would tend to interfere with the successful operation of the same. Any objectionable industrial wastes from establishments above noted or from any other establishments at present operating or to be operated in the future shall be discharged into the laterals or sewers only after having been properly regulated so as not to cause excessive flow and treated in the special treatment process, specifically approved in writing by the Borough Council, which will render the industrial waste or effluent nonobjectionable to either the sewer or a sewage treatment works or the successful operation thereof, and in case the industrial wastes from any establishment cannot be treated to produce effluent nonobjectionable to either the sewer or a sewage treatment works or the successful operation of the same, they shall be excluded from the sewer entirely. Regardless of any approval by the Borough Council of special industrial waste treatment works, upon failure of said special treatment works to produce a nonobjectionable effluent or upon its causing a stoppage in the sewer or injury to any part of the sewers or a sewage treatments works or tendency to interfere with the successful operation thereof, then the discharge therefrom shall be immediately discontinued or abandoned and said industrial wastes excluded from the sewers until such time as a successful special treatment process may be installed.

J. No garbage, scraps, vegetables, straw, shavings, ashes, rags or any other material capable of causing obstruction, nuisance or injury in the sewer system shall be discharged to or permitted to enter the sewer system unless said garbage, scraps or vegetables are properly ground in an approved-type garbage grinding device installed in a proper fashion as part of a household plumbing installation.

K. No steam or hot water from boilers, steam bars, coffee heaters or the discharge of

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1. **Editor's Note: See Ch. 188, Plumbing.**

overflow or hot waste matter from steam heating systems or salt water from ice cream factories or stores shall be discharged to or be permitted to enter the sewer system.

L. All hotels, restaurants, boardinghouses or other public eating places shall install adequate grease traps, of type and size approved by the Borough Engineer, in their system of plumbing or piping, and such grease traps shall be cleaned at sufficiently frequent intervals to prevent grease from entering the sewer system.

M. All sewage shall drain into the sanitary sewer and not into any storm sewers.

N. All connecting lines from building to sanitary sewer system must be properly trapped and vented to prevent danger of gas or back pressure.

O. The same formalities are required in case of repairs, alterations and additions as are required in making original connections.

P. No additional cesspools or septic tanks shall be constructed in the borough, except where property owners cannot connect with the sanitary sewer system, and then only upon approval of the Department of Environmental Protection.

Q. Property owners shall be required to connect with the sanitary sewer system by the Department of Environmental Protection when said Department finds that the existing cesspools or septic tanks have ceased to function properly and are a menace to public health. Reasonable notice in writing, under the circumstances, shall be given by the Department of Environmental Protection to connect with the sanitary sewer system, and if not complied to within the time specified by such notice, connections shall be made by the Department of Environmental Protection and the costs for such connections shall be collected from the property owner according to law by lien or otherwise.

R. In making connections, all trenches shall be entirely protected and safeguarded by barriers, lights and shoring when necessary, refilled within 24 hours after inspection, earth tamped and street put in the same condition as before opening was made and assuming all responsibility for loss, damage or injury to persons and property for the period of six months from date of permit, all subject to the approval of the Highway Department of the borough. If these conditions are not complied with, then in that event, no further permits shall be issued to the plumber in charge and the Highway Department shall make the necessary repairs to street to put the same in good condition as before opening was made and the costs of such repairs collected from the property owner according to law by lien or otherwise.

S. The fees to be charged for each permit issued shall be as follows:

(1) For opening trench in unimproved street: $5.

(2) For making connection to sanitary sewer system: $2,640.00[2].

(3) For opening trench in improved streets: a charge of $50 per square yard for oil bound macadam streets and $9 for water bound streets shall be charged; measurement to be made by the Supervisor and a bill sent to the plumber making

[2] **Fee changed by Ordinance 2006-2 enacted July 3, 2006**

such opening, which said bill shall be paid within 30 days and no further permit shall be issued to such plumber until all former bills are paid. The trench opened shall be filled in, tamped and maintained by the plumber making the opening to the satisfaction of the Highway Department, for a period of six months, after which time the top surface shall be replaced by the Highway Department at no further cost to the plumber.

(4) For installation of new fixtures or replacements: $0.50.

(5) Plumbers (All fees to be paid when application is made.):

(a) For resident plumbers: $5 first calendar year and $1 for each succeeding calendar year.

(b) For nonresident plumbers (master): $10 for each job.

(c) For nonresident journeyman plumbers: $5 for each job.

(6) For each and every inspection: $1.

(7) No fee whatever shall be charged for an emergency repair to water lines on account of leaks.

(8) Plumber's fees to be in addition to the other fees.

§ 210-2.Violations and penalties. [3]

Any person violating any of the provisions of this Part 1 shall, upon conviction thereof, be subject to the penalties provided in Chapter 1, General Provisions, Article II, Enforcement; Penalties.

§ 210-3.Extensions.

Extensions to the present system will be constructed upon petition to the Borough Council for such extensions, and the costs thereto will be assessed against the abutting owners in accordance with the law. However, after a proper agreement may have been entered into by an individual, firm or corporation and after approval of the plans and specifications and obtaining the necessary permits from the State Sanitary Water Board, such individual, firm or corporation may construct an extension wholly at their expense, under the supervision of the Borough Engineer, and upon the approval and acceptance by the Borough Engineer, such extension will become the property of the Borough of Penbrook. The construction of an extension will not waive the borough's rights to collect such connection fees as may be levied by this Part 1.

§ 210-4.Failure to comply; costs to be lien. [4]

Should any person or persons refuse, neglect or fail to comply with any of the terms,

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3.**Editor's Note: Amended at time of adoption of Code (see Ch. 1, General Provisions, Art. I).**

4.**Editor's Note: Amended at time of adoption of Code (see Ch. 1, General Provisions, Art. I).**

provisions or requirements of this Part 1 or with any notice given in conformity with or pursuant to the provisions hereof, then the Borough Council is hereby empowered and directed to engage all labor and furnish all materials necessary or required to comply with said notice, and the cost and expenses thereof, together with 10% added thereon as a penalty, shall be certified to the Borough Solicitor, who shall enter the same as a lien against the property in the Court of Common Pleas of Dauphin County and shall proceed to collect the same in like manner as other municipal claims are by law collectible; or an act of assumpsit may be brought to recover the same in the name of the Borough of Penbrook from said owner or owners; and in addition thereto, the owner or owners who shall fail, neglect or refuse to comply with or who shall violate the terms, requirements and conditions of this Part 1 or of any notice as aforesaid shall, upon conviction thereof, be subject to the penalties provided in Chapter 1, General Provisions, Article II, Enforcement; Penalties.

Part 2
Sewer User Charges

[Adopted 6-1-1981 by Ord. No. 81-5 as Ch. VIII, Art. 2, of the 1981 Code]

ARTICLE II
Fees and Charges

§ 210-5.User charge.

Each user of the sewer system of the Borough of Penbrook having a connection to the sewer system in the borough shall pay annually, beginning with the year 1959, a charge for the use of said system.

§ 210-6.Classification of users.

A. For the purpose of this Part 2, the users shall be classified as follows:

(1) Class 1 users: dwelling unit. As used in this Part 2, "dwelling unit" shall mean each place of abode of a one-family unit in the borough from which sewage is discharged into the sewer system of the Borough. Multiple-family unit buildings shall be considered such number of dwelling units as there are family units residing therein. Rooming houses having more than two rented rooms shall be considered two dwelling units.

(2) Class 2 users: commercial, industrial, school or other user. As used in this Part 2, the term "Class 2 user" shall include all users of the sewer system of the Borough of Penbrook having a situs in the Borough other than dwelling units. The term shall include but shall not be limited to churches, restaurants, stores, schools, motion-picture theaters, professional offices, firehouses, service stations, business offices and other commercial establishments, including bars and taprooms and manufacturing and industrial establishments.

B. If any Class 2 user is supplementary or in addition to Class 1 use in the same building, a separate sewer use charge shall be made for each. If more than one Class 2 user occupies the same building, the space occupied by each shall be deemed a separate building, and each shall be charged at least the minimum charge. In the event that two

or more Class 2 users occupy a building receive water through the same meter, the charge shall be made to them jointly and each shall be responsible for the entire charge regardless of any agreement between them for the division thereof.

C. If use of classification of any property shall change within any year or if a new connection is made to the Borough of Penbrook's system during any year, the annual charge shall be prorated as of the date of such change or new connection.

§ 210-7.Schedule of charges. [Amended 12-12-1982 by Ord. No. 83-1; 12-28-1987 by Ord. No. 87-5; 12-26-1994 by Ord. No. 94-5; 12-28-1995 by Ord. No. 95-11; 12-29-1997 by Ord. No. 97-5; 12-6-2004 by Ord. No. 2004-5 by Ord. No. 2006-4 by Ord. 2007-11, by Ord. 2009-5, by Ord. 2010-6, by Ord. 2011-6, by Ord. 2012-5]

A. Every Class I user in the Borough of Penbrook discharging into the Borough of Penbrook sewer system shall pay a minimum annual charge of $390 per year, and every Class 2 user in the Borough of Penbrook sewer system shall pay a minimum annual charge of $395; provided, however, that if the charge for the said property determined as hereinafter provided exceeds $395, the higher charge shall be imposed.

B. Each Class 1 user shall pay an annual charge of $390 per dwelling unit.

C. Each Class 2 user shall pay an annual charge based on the rate of $6.75 per 1,000 gallons of water used, as reflected by the water meter of the user as shown in the last available yearly period with a minimum annual rate; provided, however, that the annual charge shall be $15.85 per employee for commercial and industrial users and $7.80 per pupil for school users and $17.00 annually for each employee and instructor if such charges are higher than the charges based on annual usage. If the amount of water used by a user cannot accurately be determined, the Borough Engineer of the Borough of Penbrook is authorized, empowered and directed to estimate the amount of water so used, and his estimate shall be conclusive for the purpose of determining the charge unless within 60 days from the date of mailing the bill for the sewer use charge he/she is furnished with satisfactory proof of the actual amount of water used.

§ 210-8.Charges. [Amended 12-11-1985 by Ord. No. 85-10]

A. Sewer charge.

(1) Bills for the sewer charge shall be due and payable within 60 days from the date thereof. All users of the sewer system shall be entitled to a discount of 2% of the amount of their sewer charge if they make payment of the full amount thereof within 60 days of the date of the bill. All users who make payment of their sewer charges thereafter shall pay as follows:

(a) The full, face amount of the sewer charge if paid within the third and fourth month from the date of the bill.

(b) The full amount of the sewer charge plus a penalty of 5% if paid within the fifth and sixth month from the date of the bill.

(c) The full amount of the sewer charge plus a penalty of 10% if paid after six

months from the date of the bill.

(2) The Tax Collector of the Borough of Penbrook is authorized and directed to collect the annual sewer charge in the same manner, under the same terms and at the same time that he or she is authorized by law or borough ordinance or resolution to collect real estate taxes imposed by the Borough of Penbrook.

B. The sewer charge imposed by this Part 2 is hereby declared to be a lien on property of the user or the property occupied by the user, and upon failure of any user or property owner to pay the same, said charge shall be collected in the manner provided by law for the enforcement of payment of municipal taxes and claims.

§ 210-9.Duties of users.

It shall be the duty of every user, upon failure to receive an annual statement, to so notify the Borough Secretary, in writing, of such fact, and upon failure of such user to give such notice, shall be liable to double the amount of the charges plus interest so provided herein.

§ 210-10.Billing.

All statements for charges hereunder commencing with the year 1960 and hereafter shall be sent to users on or about March 1 of each year.

§ 210-11.Unlawful actions.

No person shall discharge or permit to be discharged into the sewer collection system of the Borough of Penbrook any sewerage or industrial waste containing chemicals or other matter:

A. Having a temperature higher than 100° F.

B. Containing more than 120 parts per million by weight of tar, oil or grease.

C. Containing any gasoline, benzene, naphtha, fuel oil or other inflammable or explosive liquids, solids or gases.

D. Containing any garbage which has not been ground up by household-type or other suitable garbage grinders.

E. Containing any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure, cotton, wool, plastics or other fibers or any other solid or viscous substances capable of causing interference with proper operation of the sewer system.

F. Having a pH lower than 6.5 or higher than 9.0 or having any other corrosive property capable of causing damage or hazards to structures, equipment or personnel of the sewer system.

G. Containing a toxic or poisonous substance in sufficient quantity to injure or interfere with any sewage treatment process, constitute hazards to humans or create any hazard in sewer system operation. Toxic wastes shall include, but not by way of limitation, wastes containing cyanide, chromium and/or copper ions.

H. Containing noxious or malodorous gases or substances capable of creating a public nuisance.

§ 210-12.Purpose; violations and penalties. [5]

The provisions of this Part 2 are declared to be for the health, safety and welfare of the citizens of the borough. Any person violating any of the terms, provisions, or requirements of this Part 2, or of the rules and regulations or who shall refuse, neglect or fail to comply with any notice given to such person by a duly authorized representative of the borough in conformity with or pursuant to the provisions of this Part 2 shall, upon conviction thereof, be subject to the penalties provided in Chapter 1, General Provisions, Article II, Enforcement; Penalties. Each thirty-day period during which a violation continues shall be considered a separate offense and punishable as such.

§ 210-13.Failure to comply; costs to be lien.

Should any person refuse, neglect or fail to comply with the provisions of this Part 2 or of any rules and regulations herein provided for or any notice given in conformity with or pursuant to the provisions hereof, then the appropriate official of the borough hereby is empowered and directed to supply all labor and material required of said negligent or delinquent owner, and the cost and expense thereof, together with ten-percent penalty thereon, shall be certified to the Borough Solicitor, who shall enter the same as a lien against the property in the Court of Common Pleas of Dauphin County and proceed to collect the same in like manner as other municipal claims are by law collectible; or an action of assumpsit may be brought to recover the same in the name of the borough from said owner or owners.

Part 3
Agreement with City of Harrisburg

[Adopted 6-1-1981 by Ord. No. 81-5 as Ch. VIII, Art. 3, of the 1981 Code]

ARTICLE III
Supplemental Agreement

§ 210-14.Supplemental agreement.

This municipality shall enter into a second supplemental agreement (the "second supplemental agreement") with the City and City Authority and, as applicable, certain other municipalities and municipality authorities described therein, amending, modifying and/or supplementing the existing agreement, substantially in the form referred to in § 210-15, under terms and provisions of which second supplemental agreement this municipality shall covenant and agree to make certain payments to the City from certain specified funds of this municipality, under terms and provisions of which agreement the City will covenant and agree to provide certain sewage transportation, as applicable, treatment and disposal services to this municipality relating to certain portions of this municipality; and under terms and provisions of which second supplemental agreement this municipality and the City will agree

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5.Editor's Note: Amended at time of adoption of Code (see Ch. 1, General Provisions, Art. I).

with respect to certain related matters.

§ 210-15.Filing of agreement.

The second supplemental agreement shall be substantially in the form presented to this meeting, which form is approved; and a copy of this second supplemental agreement, in the form so presented to this meeting and so approved, shall be filed with the Secretary of this municipality and shall be made available for inspection at reasonable times by interested persons requesting such inspection.

§ 210-16.Authorization to deliver.

The Mayor and President of Council and the Secretary of the municipality, as applicable, are authorized and directed to execute, to attest and to deliver the second supplemental agreement, in behalf of this municipality, substantially in the form approved in § 210-15.

§ 210-17.Authorization to carry out.

Proper officers of this municipality are authorized and directed to execute all documents and to do all other acts as may be necessary and proper to carry out this Part 3 and the undertakings of this municipality under the second supplemental agreement.

§ 210-18.Declaration of purpose.

It is declared that enactment of this Part 3 is necessary for the protection, benefit and preservation of the health, safety and welfare of inhabitants of this municipality.

Part 4
Industrial/Commercial Waste Pretreatment

[Adopted 12-7-1998 by Ord. No. 98-2]

ARTICLE IV
Purpose

§ 210-19.Purpose.

The collection system of the Borough of Penbrook is connected to and discharges sanitary sewage and industrial waste into the advanced wastewater treatment facility of the City of Harrisburg pursuant to the second supplemental agreement dated September 15, 1976, among the City of Harrisburg, Harrisburg Sewerage Authority and various suburban municipalities, including the Borough of Penbrook, as well as supplements and amendments to such agreement. The City of Harrisburg and the Borough of Penbrook are required to comply with the Federal Water and Pollution Control Act, also known as the "Clean Water Act of 1977," as amended, 33 U.S.C. § 11251, et seq., in relation to pretreatment of industrial waste collected and discharged into the advanced wastewater treatment facility of the City of Harrisburg. The purpose of this Part 4 is to implement, as appropriate, provisions necessary to effectuate such compliance for sanitary sewage and industrial waste emanating from the collection system of the Borough of Penbrook. This Part 4 provides that the City of Harrisburg will be principally administering and enforcing the provisions of this Ordinance

and references to the City of Harrisburg in this Ordinance are intentional.

ARTICLE V
Wastewater Regulations

§ 210-20.Definitions and abbreviations.[6]

These definitions, meaning of items and phrases shall apply throughout this Part 4, unless the context specifies and clearly indicates otherwise.

ACCIDENTAL DISCHARGE — A discharge not caused by the fault of any person, and one that could not have been prevented by any means suggested by common prudence, which would interfere with the operation of the advanced wastewater treatment facility (AWTF).

ADVANCED WASTEWATER TREATMENT FACILITY OF THE CITY OF HARRISBURG (AWTF) — The publicly owned wastewater collection conveyance and treatment system (POTW)as defined by Section 212 of the Federal Water Pollution Control Act, also known as the "Clean Water Act of 1977," as amended.

APPLICANT — All persons holding title to facilities or improvements for which a permit for the connection to or discharge into the sewer system is required.

AUTHORIZED REPRESENTATIVE OF A SIGNIFICANT INDUSTRIAL USER — Either:

A. A principal executive officer of at least the level of vice president if the user is a corporation; or

B. A general partner or proprietor if the user is a partnership or proprietorship, respectively; or

C. A principal executive Officer or ranking elected official, if the user is the municipality, state, federal, or other public agency.

D.~~C~~. A duly authorized representative of the individual designated in Subsection A ~~or B~~, B or C above if such representative is responsible for the operation of the facility or facilities from which the discharge originates.

BEST MANAGEMENT PRACTICES (BMP's) - means schedules of activities, prohibition of practices, maintenance procedures, other management practices including treatment requirements and operating procedures, and practices to control the plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage and shall be considered local limits and pretreatment standards for the purpose of 307(d) of the act.

BIOLOGICAL OXYGEN DEMAND (BOD) — The quantity utilized by the biochemical oxidation of organic matter under standard laboratory procedures, five days at 20° C. expressed in terms of weight and concentration (milligrams per liter).

BOD — Biochemical oxygen demand.

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[6] Editor's Note: Amended by Ordinance 2008-4 dated November 3, 2008

BOROUGH — The Borough of Penbrook.

CFR — The Code of Federal Regulations.

CLEAN STREAMS LAW — The Act of June 22, 1937, P.L. 1987, as enacted and reenacted by Act of October 10, 1980, P.L. 894, 35 P.S. §§ 691.1 to 691.702.2.

CLEAN WATER ACT (aka Federal Water Pollution Control Act) — A federal statute enacted by Public Law 92-500, October 18, 1972; 33 U.S.C. § 1251 et seq, as amended by Public Law 95-217, December 28, 1977; Public Law 97-117, December 29, 1981; Public Law 97-440, January 8, 1983; and Public Law 100-04, February 4, 1987.

COLLECTION SYSTEM — The sanitary sewer collection system of the city and the Borough in which wastewater is collected and discharged, or will be discharged, into the AWTF.

COLLECTION CONVEYANCE SYSTEM — The sanitary sewer collection system of the city and the Borough and the conveyance system of the Harrisburg Authority and the Borough in which wastewater is collected, conveyed and discharged, or will be discharged, into the advanced wastewater treatment facility (AWTF).

COMMERCIAL ESTABLISHMENT — Any premises or improvements not a dwelling unit or industrial establishment.

COMPLIANCE MONITORING — The act of checking specific conditions or requirements of the industrial user permit.

CONVENTIONAL POLLUTANTS — Pollutants which are usually found in domestic, commercial or industrial wastes, such as phosphorus, total suspended solids, biochemical oxygen demand, fecal coliform, adverse pH levels and oil and grease.

COOLING WATER — The water discharged from any use, such as air conditioning, cooling or refrigeration, or to which the only pollutant added is heat.

DEPARTMENT — The Department of Public Works of the City of Harrisburg.

DEP — See PA. DEP.

DIRECTOR or DIRECTOR DPW — The Director of the Department of Public Works of the City of Harrisburg.

DISCHARGER — Any person who contributes, causes or permits the contribution of treated or untreated wastewater into the sewer system.

DOMESTIC WASTEWATER — Ordinary water-carried household wastes from sanitary conveniences from residential and nonresidential establishments.

ENVIRONMENTAL PROTECTION AGENCY (EPA) — An agency or administrative department of the United States, or any other agency or administrative department of the United States hereafter exercising all or any portion, as appropriate, of the powers or jurisdiction presently being exercised thereby.

EPA — United States Environmental Protection Agency.

EQUIVALENT DWELLING UNIT (EDLU) — A measure of the volume of flow or expected flow of sanitary sewage or industrial waste from any property that is equal to the volume of flow discharged from one dwelling unit as determined in accordance with sound engineering practice.

FEDERAL ACT — The Federal Water Pollution Control Act, also known as the "Clean Water Act of 1977," as amended, 33 U.S.C. §§ 1251 et seq.

FEDERAL CATEGORICAL PRETREATMENT STANDARDS — National categorical pretreatment standards.

GRAB SAMPLE — A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time.

HARRISBURG CONVEYANCE SYSTEM — The interceptor sewers, pumping stations and force mains and all related structures which are a part of the wastewater facilities transporting and conveying wastewater from facilities of the city and any of suburban municipalities of the AWTF which are part of the wastewater facilities.

HOLDING TANK WASTE — Any waste from holding tanks of vessels, chemical toilets, campers, trailers, septic tanks and vacuum-pump tank trucks.

INDIRECT DISCHARGE — The discharge or the introduction of nondomestic pollutants from any source regulated under Section 307(b), (c) or (d) of the Federal Act [33 U.S.C. 1317(b), (c) or (d)], into the AWTF. For the purposes of this definition, holding tank wastes shall be considered indirect discharge.

INDUSTRIAL ESTABLISHMENT — Any nonresidential establishment discharging sewage and wastes other than normal waste-carried domestic sewage and wastes and cooling water, directly or indirectly to the AWTF.

INDUSTRIAL USER — A source of indirect discharge which does not constitute a "discharge of pollutants" under regulations issued pursuant to Section 402 of the Federal Act (33 U.S.C. § 1342).

INDUSTRIAL WASTES — Any solid, liquid or gaseous substance, waterborne wastes or form of energy rejected or escaping from any industrial, manufacturing, trade or business proceeds or from the development, recovering or processing of natural resources, as distinct from sanitary sewage.

INTERFERENCE — The inhibition or disruption of the AWTF treatment processes or operation which contributes to a violation of any requirement of the Harrisburg Authority's NPDES permit. The term includes pollution which prevents the use or disposal of sewage sludge by the AWTF in accordance with Section 405 of the Federal Act (33 U.S.C. § 1345) criteria, guidelines or regulations developed pursuant to the Solid Waste Disposal Act, the Clean Air Act, the Toxic Substance Control Act or more stringent state criteria applicable to the method of disposal or use employed by the AWTF.

LEASE — The agreement of lease between the city as lessee and the Harrisburg Authority as lessor, whereunder the wastewater facilities are leased to the city for operation and use, and any amendments and supplements to such lease.

LOCAL LIMITS — A locally established limit deemed to be a pretreatment standard for the purpose of Section 307(d) of the Clean Water Act. The limit is specific to the advanced wastewater treatment facility (AWTF) and is based on the potential for pass-through, interference, sludge contamination or capacity to cause damage or hazards to structures, equipment or personnel of the advanced wastewater treatment facility (AWTF) by the discharge of any pollutant by an industrial user.

MILLIGRAM PER LITER (mg/l) — Concentration based on mass of pollutant per unit volume.

NATIONAL CATEGORICAL PRETREATMENT STANDARDS — Any regulation containing pollutant discharge limits promulgated by the United States Environmental Protection Agency in accordance with Section 307(b) and (c) of the Federal Act, 33 U.S.C. § 1317(6)(b) and (c), which applies to a specific category of industrial users.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT — A permit issued pursuant to Section 402 of the Federal Act, 33 U.S.C. § 1342.

NATIONAL PROHIBITED DISCHARGE STANDARD — Any regulation developed under authority of Section 307(b) of the Federal Act, 33 U.S.C. § I 317(b) and 40 CFR § 403.5.

NEW SOURCE — Any new building, structure, facility or installation from which there is or may be a discharge of pollutants which commences after the date of publication of a proposed pretreatment standard under Section 307(c) of the Clean Water Act.

NONRESIDENTIAL ESTABLISHMENT — Any building, structure, room, group of rooms, establishment or facility, other than a residence, which discharges sewage and wastes, including industrial wastes, directly or indirectly to the AWTF.

OCCUPIED BUILDING — Any structure erected and intended for continuous or periodic habitation, occupancy or use by human beings or animals and from which structure sanitary sewage, industrial waste or both is or may be discharged.

PA DEP — The Department of Environmental Protection, an agency or administrative department of the commonwealth, or any other agency or administrative department of the commonwealth hereafter exercising all or any portion, as appropriate, of the powers or jurisdiction presently being exercised thereby.

PARTS PER MILLION (ppm) — Indicates a mass ratio meaning milligrams per million milligrams, and generally will be considered equivalent to milligrams per liter (mg/L).

PASS-THROUGH — A discharge which exits the AWTF into a waterway of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of the Harrisburg Authority's NPDES permit.

PH — The logarithm (base 10) of the reciprocal of the concentration of hydrogen ions expressed in grams per liter of solution.

POLLUTANT — Any dredged solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical waste, wastes, biological materials, radioactive materials, heat, wrecked or discharged equipment, rock, sand and cellar dirt and industrial, municipal and

agricultural waste discharged into water.

POLLUTION — The man-made or man-induced alteration of the chemical, physical, biological or radiological integrity of water.

PRETREATMENT or TREATMENT — The reduction of the amount of pollutants, the elimination of pollutants or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into the AWTF. The reduction or alteration can be obtained by physical, chemical or biological process, or process changes by other means, except as prohibited by 40 CFR § 403.6(d), (dilution).

PRETREATMENT REQUIREMENT — Any substantive or procedural requirement related to pretreatment other than a pretreatment standard imposed on an industrial user.

PRETREATMENT STANDARD — Any national categorical pretreatment standard, local limit, or discharge prohibition regulation identified in Section 9-501.7(b) containing a list of pollutant discharge limitations.

PROCESS WASTEWATER — Any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product or waste product. Sanitary, noncontact cooling and boiler blowdown wastewaters are excluded unless they become process make-up water.

PROHIBITED DISCHARGE STANDARD — National Prohibited Discharge Standard.

PROPERTY ACCESSIBLE TO THE COLLECTION SYSTEM — Any improved property (any property within the Borough of Paxtang upon which there is erected a structure intended for continuous or periodic habitation, occupancy or use by human beings or animals and from which structure sanitary sewage and/or industrial waste shall be or may be discharged) abutting on or adjoining any street or highway in which a sewer or drain is located which is part of the sewer system.

PUBLICLY OWNED TREATMENT WORKS (POTW) — A treatment works as defined by Section 212 of the Clean Water Act, which is owned by a state or municipality (as defined by Section 502(4) of the Clean Water Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a treatment facility.

RESIDENTIAL PROPERTY — Any room, group of rooms, house, house trailer or other enclosure occupied or intended for occupancy as separate living quarters by a single family or by persons living alone, which property shall be billed and considered a separate entity.

SANITARY SEWAGE — The normal water-carried household and toilet wastes from residences, business buildings, institutions and commercial and industrial establishments.

SELF-MONITORING — Sampling and analysis performed by the industrial user to ensure compliance with permit provisions.

SERVICE AGREEMENT — The second supplemental agreement dated September 15,

1976, among the City of Harrisburg, Harrisburg Sewerage Authority and the suburban municipalities and any supplements and amendments to such agreement.

SERVICE PERIOD — For sewer rental purposes, means the length of time for which sewer rentals are billed as may be determined by the Bureau of Water of the city to correspond with water service periods; except as otherwise provided in the second supplemental agreement dated September 15, 1976 among the City of Harrisburg and the suburban municipalities and any supplements and amendments to such agreement.

SEWER SYSTEM — All the facilities for the collection and conveyance of sewage and suitable industrial wastes into the AWTF and the treatment plant.

SIC — Standard Industrial Classification.

SIGNATORY — A responsible corporate officer, general partner, proprietor or duly authorized representative of that individual.

SIGNIFICANT INDUSTRIAL USER — All categorical industrial users or any noncategorical industrial users that:

A. Have a discharge flow of 25,000 gallons or more per average work day of process wastewater; or

B. Have an average process flow which makes up 5% or more of the average dry weather hydraulic or organic capacity of the treatment plan (Ord. 43-1990, City of Harrisburg); or

C. Have a reasonable potential in the opinion of the Superintendent to adversely affect the treatment plan through inhibition, pass through of pollutants, sludge contamination or endangerment of AWTF workers or to violate any pretreatment standard of requirement.

SIGNIFICANT NONCOMPLIANCE — One or more violations of:

A. Wastewater discharge limits, including chronic violations, technical review criteria violations, any discharge which alone or in combination causes interference or pass-through or endangers the health or welfare of AWTF personnel, the public or environment or results in the AWTF exercising its emergency authority to halt or prevent such a discharge;

B. Compliance schedule milestones;

C. Reporting requirements;

D. Accurately reporting noncompliance; or

E. Any other violation or group of violations the AWTF considers to be significant.

SLUG DISCHARGE — Any pollutant released in a discharge at a flow or concentration rate which will cause interference with the operation of the AWTF.

SPILL PREVENTION AND CONTROL PLAN — A plan prepared by an industrial user to minimize the likelihood of a spill and to expedite control and cleanup activities should a spill

occur.

STANDARD INDUSTRIAL CLASSIFICATION — A classification pursuant to the Standard Industrial Classification Manual issued by the Executive Office of the President, Office of Management and Budget (1972).

STATE — The Commonwealth of Pennsylvania.

STEELTON CONVEYANCE SYSTEM — The facilities owned or leased by the Borough of Steelton which transport and convey wastewater from facilities of any of the suburban municipalities, and not through the Harrisburg conveyance system, to the wastewater treatment facilities which are part of the wastewater facilities.

SUBURBAN MUNICIPALITIES or SUBURBAN MUNICIPAL AUTHORITIES — The Borough of Penbrook, Borough of Paxtang, Borough of Steelton, Township of Swatara, Township of Lower Paxton, and the Township of Susquehanna and, as applicable, Swatara Township Authority, Lower Paxton Authority, Steelton Borough Authority and Susquehanna Township Authority, collectively or individually, as appropriate.

SUPERINTENDENT — The person designated by the city to supervise the operation of the AWTF and who is charged with certain duties and responsibilities by this article or any other applicable legislation or one or more duly authorized representatives.

SUSPENDED SOLIDS — The total suspended matter that floats on the surface of or is suspended in water, wastewater or other liquids and which is removable by laboratory filtering.

TOXIC MATERIAL or POLLUTANT — Any pollutant or combination of pollutants listed as toxic in regulations promulgated by the EPA under Section 307(a) of the Federal Act or the Federal Laws.

TREATMENT — Pretreatment.

TREATMENT PLANT — The plant for the treatment of sewage conveyed thereto by the collection system, and the equipment and facilities thereof; the AWTF.

UPSET — An exceptional incident in which there is unintentional and temporary noncompliance with the pretreatment standards because of factors beyond the reasonable control of the industrial user. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance or careless or improper operation.

USER — Any person who contributes, causes or permits the contribution of wastewater into the AWTF.

VIOLATION — The act of not meeting specific conditions or requirements (i.e., noncompliance).

WASTEWATER — The liquid and water-carried industrial or domestic wastes from dwellings, commercial buildings, industrial facilities and institutions, together with any pollutants which may be present, whether treated or untreated, which are contributed into or permitted to enter the sewer system.

WASTEWATER FACILITIES — The wastewater conveyance, treatment, disposal and related facilities owned by the Harrisburg Authority and leased to the City of Harrisburg for operation and use, including existing facilities and all future additions and improvements thereto.

§ 210-21.Compliance with all applicable laws and rules and regulations.

No connection or discharge shall be made to or into the sewer system except in compliance with all federal, state and local laws, ordinances, resolutions, rules and regulations now in force and effect as well as such federal, state and local laws, ordinances, resolutions, rules and regulations as may, from time to time, be enacted, adopted, approved or promulgated by any federal, state or local authority, or may be otherwise provided by law.

§ 210-22.Power to prohibit connections and certain discharges.

A. The City and the Borough shall have the right to refuse permission to connect to the sewer system, to compel discontinuance of use of the sewer system or to compel pretreatment of wastewaters by any person in order to prevent discharges deemed harmful or deemed to have a deleterious effect upon the operation of, or any portion of, the sewer system.

B. No wastewaters shall be discharged to the sewer system:

(1) Having heat in such quantities that the discharge causes the temperature at the AWTF to exceed 40° C. or 104° F.;

(2) Containing fats, wax, grease or oils of petroleum origin, whether emulsified or not, in excess of 100 mg/L, or petroleum oil, nonbiodegradable cutting oil or petroleum products of mineral origin in amounts that will cause interference or pass-through at the AWTF.

(3) Containing any gasoline, benzene; naphtha, fuel oil or other explosive liquids, solids or gases or any other pollutants which will create a fire or explosion hazard, including but not limited to wastestreams with a closed-cup flashpoint of less than 140° F. or 60° C. using the test methods specified in 40 CFR Part 261.21.

(4) Containing any garbage that has not been ground by household-type or other suitable garbage grinders.

(5) Containing any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure or any other solids or viscous substances capable of causing obstructions or other interferences with proper operation of the sewer system.

(6) Having a pH lower than 6.0 or higher than 10.0 standard units, or having any other corrosive property capable of causing damage or hazards to structures, equipment or personnel of the sewer system.

(7) Containing toxic or poisonous substances in sufficient quantity to injure or interfere with any wastewater treatment process, to constitute hazards to humans or animals or to create any hazard in waters which receive treated effluent from

the sewer system treatment plant. Toxic wastes shall include, but not be limited to, wastes containing cyanide, chromium, cadmium, mercury, copper or nickel or any characteristic or listed hazardous waste;

(8) Containing noxious or malodorous gases or substances capable of creating a public nuisance.

(9) Containing solids of such character and quantity that special and unusual attention is required for their handling;

(10) Containing any substance which may affect the AWTF's effluent and cause violation of the NPDES permit requirements.

(11) Containing any substance which would cause the AWTF to be in noncompliance with sludge use, recycling or disposal criteria pursuant to guidelines or regulations developed under Section 405 of the Federal Act, the Clean Air Act or regulations criteria for sludge management and disposal as required by the DEP.

(12) Containing color which is not removed in the treatment processes.

(13) Containing any radioactive wastes or isotopes.

(14) Containing any pollutant, including conventional pollutants, released at a flow rate and/or pollutant concentration which would cause interference with the AWTF.

(15) Containing substances which may solidify or become viscous at temperatures between 0° C. or 32° F. and 60° C. or 140° F.;

(16) Containing chemical constituents which, alone or in combination, result in the release of toxic gases, vapors or fumes in a quantity that may cause acute worker health and safety problems.

C. When the Superintendent or Director determines that an industrial user is contributing any of the above substances in such amounts as to exceed stated limits or to interfere with the operation of the AWTF, he or she shall:

(1) Advise the user and the Borough of Paxtang of the impact of such discharges on the operation of the AWTF.

(2) Develop effluent limitations for those discharges to correct the interference with the operations of the AWTF.

(3) Direct the user to comply with the effluent limitations as provided in § 210-55 et seq.

(4) Utilize the enforcement provisions of § 210-69.

§ 210-23.Customer's pretreatment sampling facilities.

A. Upon notification to the customer and the Borough by the City, pretreatment facilities shall be installed, within 90 days of the date of such notice, at the sole cost of the significant industrial user, to meet City requirements. In no event shall dilution be

acceptable as a means of pretreatment to meet the requirements of this article. Any order to install pretreatment facilities may be appealed to the director as provided in § 210-35.

B. The City reserves the right to require nonresidential dischargers having large variations in rates of wastewater discharge to install suitable regulating devices for equalizing wastewater flows to the sewer system.

C. When directed by the Department or by one of the suburban municipalities at the request of the Department, industrial users shall install, within 90 days of the directive, at their sole cost and expense, and thereafter maintain a manhole and such other devices as may be approved by the Department to facilitate observation, measurement and sampling of wastewaters discharged into the sewer system. The duly authorized representatives of the Department shall, at all times, be permitted to:

(1) Enter upon any and all properties of industrial users for the purpose of inspecting for compliance, observing, measuring and sampling wastewaters discharged into the sewer system.

(2) Set up and use monitoring equipment.

(3) Inspect and copy industrial waste discharge, monitoring and production records or any other records pertinent to compliance with this article.

(4) Have access to any meters used for establishing or determining water consumption, water excluded from the sewer system and wastewater discharged into the sewer system. If an individual user has security measures in force which physically limit entry to the premises of such user, the industrial user shall, within 30 days of the effective date of this section, immediately provide the Department with whatever is necessary to allow authorized city representatives to enter the premises, without delay, for the purpose of performing their duties and responsibilities.

D. The Department and the Borough may require any industrial establishment to provide information needed to determine compliance with this article.

§ 210-24.Wastewater discharge permits.

A. Any industrial establishment in the Borough desiring to discharge or currently discharging, directly or indirectly, wastes into the sewer system or planning to change operations so as to materially alter the characteristics and/or volumes of wastewaters discharged into the sewer system, shall notify the Department, the Borough and any other affected suburban municipality in writing at least 30 days before making such connection or changing its operations and shall obtain a permit from the Department to do so. Applications for such permit shall be on the form supplied by the superintendent and shall be accompanied by all information requested by the Department for the determination of waste volumes, characteristics and constituents. The cost for obtaining such information shall be borne by the applicant. Any significant industrial user shall make application for a new permit within 30 days of the effective date of this section.

B. This application shall include, but shall not be limited to, the following information in units and terms appropriate for evaluation:

(1) Name, address and location of applicant.

(2) SIC number(s) according to the Standard Industrial Classification Manual, Bureau of Budget, 1972, as amended.

(3) Volume of wastewaters to be discharged.

(4) Wastewater constituents and characteristics, including, but not limited to, those set forth in § 210-22, as determined by reliable analytical procedures established by the United States EPA pursuant to Section 304(g) of the Federal Act, 33 U.S.C. § 1314(g), and the regulations promulgated thereunder, 40 CFR Part 136, as amended.

(5) Time and duration of discharge.

(6) Average and maximum wastewater flow rates, including daily, monthly and seasonal variations, if any.

(7) A schematic flow representation which shall include floor plans, mechanical and plumbing plans and details of all sewers, sewer connections and appurtenances, sizes, locations and elevations.

(8) Number of employees and hours worked.

(9) Description of activities, facilities and plan processes on the premises, including all materials which are or could be discharged.

(10) Each product produced, listed by type, amount and rate of production.

(11) Type and amount of raw materials processed, average and maximum per day.

(12) Each substance considered toxic, hazardous, noxious or malodorous, including a description of the hazards associated with each substance.

(13) Certification of accuracy by the applicant.

(14) Any other information required by 40 CFR 403.12(b) or any other information as may be deemed necessary by the Department to evaluate that permit application.

C. The Department shall evaluate the data furnished by the applicant and may require additional information. After evaluation and acceptance of the data furnished and consultation with the Borough, the Superintendent shall issue a permit, subject to terms and conditions provided therein, as set forth in Subsection D hereof.

D. Wastewater discharge permits shall be subject to all provisions of this article and all other applicable federal, state and local laws, rules, regulations, charges and fees. The conditions of such permits shall be uniformly enforced by the city in accordance with this article and applicable federal, state and local laws, rules and regulations. Permits may contain, but shall not be limited to, the following conditions:

(1) The unit charge or schedule of special charges and fees or wastewater surcharges

to be paid the city for the wastewater to be discharged into the sewer system pursuant to such permit.

(2) The average and maximum allowable wastewater constituent and characteristics.

(3) Equalization, neutralization or other requirements to control high pH or highly variable pH discharge.

(4) Limits on rate and time of discharge or requirements for flow regulations and equalization.

(5) Requirements for installation, maintenance and/or operation of monitoring, inspection and sampling facilities.

(6) Pretreatment requirements.

(7) Requirements for submission of technical reports or discharge reports.

(8) Signatory requirements for certification of technical reports or discharge reports.

(9) Requirements for maintaining and retaining plant records relating to wastewater discharge for a minimum of three years or longer as specified by the Department and affording the Department access thereto.

(10) Compliance schedules.

(11) Specifications for monitoring programs, including self-monitoring, sampling location, frequency and method of sampling, number, types and standards for tests and reporting schedules.

(12) Requirements for notification of pretreatment standard exceedance and repeat sampling and testing.

(13) Requirements for notification of slug or accidental discharge.

(14) Requirements for a spill prevention and control plan.

(15) Other conditions as deemed appropriate by the City to insure compliance with these regulations.

E. Wastewater discharge permits shall be issued for a specified time period, not to exceed five years, subject to compliance with all of the provisions of this article and the regulations promulgated thereunder. Any applicant who does not meet the standards of this article shall not be entitled to a five-year permit. All holders of a wastewater discharge permit must also comply with any national categorical pretreatment standards within 90 days of their promulgation or any revisions thereto.

F. A wastewater discharge permit is not assignable or transferable to a new user, owner or new use.

§ 210-25.Specific discharge limitations.

A. No industrial user shall discharge, directly or indirectly, into the wastewater collection or conveyance system any wastewater containing in excess of the following pollutant in

milligrams per liter:

Pollutant	Daily Maximum	Instantaneous Maximum
Arsenic (T)	2.81	5.62
Cadmium (T)	0.75	1.50
Chromium (T)	1.31	2.62
Copper (T)	2.99	5.98
Cyanide (T)	2.15	2.15
Lead (T)	0.55	1.10
Mercury (T)	0.04	0.08
Nickel (T)	1.00	2.00
Zinc (T)	2.20	4.40

B. The limits may be changed by regulation of the Director or by the EPA to whichever limitation is more stringent.

§ 210-26.Federal categorical pretreatment standards.

Upon promulgation of federal categorical pretreatment standards or any federal standard for a particular industry or subcategory, the standards referenced in 40 CFR Article I, Subarticle N, Parts 405-471, if more stringent than the limitations contained in this article for such discharges, shall immediately supersede the standards set forth in this article. The Superintendent shall notify all affected industrial users of the applicable reporting requirements under 40 CFR § 403.12.

§ 210-27.State standards.

Any state requirements and limitations on discharge which have been or may be adopted which are more stringent than the federal limitations or those contained in this article shall supersede both federal and city standards. The Superintendent shall notify all affected users of any such change.

§ 210-28.Upset, slug or accidental discharge; notice requirements.

A. Each significant industrial user shall provide protection from an upset of pretreatment facilities, slug or accidental discharge of prohibited materials and any other substances requested by this article. Facilities to prevent and plans to mitigate an upset, slug or accidental discharge shall be provided and maintained at such user's expense. Facilities to prevent accidental discharge of prohibited materials shall be provided and maintained at such user's expense. No significant industrial user which commences discharge into the sewer system shall be permitted to introduce pollutants into the sewer system until a spill, prevention and control plan has been approved by the Department. Approval of such plans and procedures shall not relieve such user of the responsibility to modify such user's facility as necessary to meet the requirements of this article.

B. In the event of an upset, slug or accidental discharge, it shall be the responsibility of the

significant industrial user to:

(1) Make immediate notification to the AWTF of location of discharge, date and time thereof, type of waste, including concentration and volume and corrective action taken;

(2) Within five days following an upset, slug or accidental discharge, submit to the Superintendent a written report which shall specify:

(a) Description of the upset, slug or accidental discharge, the cause thereof and the impact on the industrial user's compliance status, including location of discharge, type, concentration and volume of waste.

(b) Duration of noncompliance, including exact date and times of noncompliance, and, if the noncompliance continues, the time by which compliance is reasonably expected to occur.

(c) All steps taken or to be taken to reduce, eliminate and prevent recurrence of such an upset, slug or accidental discharge or other conditions of noncompliance.

C. The notification required by this section shall not relieve the significant industrial user of any expense, loss, damage or other liability incurred to the AWTF, the City, the Borough, any state or federal department or authority or any damage to person, property or environment; nor will this notification relieve the significant industrial user of any fines, penalties or any other liability which may be imposed by § 210-55 et seq. or any other applicable law.

§ 210-29.Compliance; reports.

A. With 90 days following the date for final compliance or, if a new source, the commencement of discharge, any user subject to the pretreatment provisions of this article shall submit to the Superintendent a report indicating the nature and concentration of pollutants and the average and maximum flows of the discharges which are limited by such pretreatment standards and requirements. The report shall state whether the applicable pretreatment standards and requirements are being met and, if not, what additional pretreatment facilities or additional operations and maintenance tasks are necessary to bring such user into compliance with the applicable pretreatment standards and requirements. This statement shall be signed by an authorized representative of the user and certified by a qualified individual.

B. Any significant industrial user subject to the provisions of this article shall submit to the Superintendent, at least on a semiannual basis, a report containing the information required by its permit. The reports required by this subsection shall be certified by an authorized signatory of the user and submitted within 30 days following the end of the reporting period, unless the Superintendent authorizes, in writing, another submission date or schedule.

C. If any sampling and testing required by Subsections A and B hereof indicate a violation of a pretreatment standard, the industrial user shall notify the Department within 24

hours of becoming aware of the violation, repeat sampling and testing within 72 hours, or the first day representative of normal operation, and submit, in writing, the results of the repeat analysis within 30 days.

D. In addition to the requirements of Subsections A, B and E hereof, if the Director or Superintendent has reason to believe that a significant industrial user is not meeting the pretreatment standards on a consistent basis, such user may be required to submit interim compliance reports on a regular or irregular schedule.

E. Any reports required by this section shall be maintained and retained for a minimum of three years or longer, as specified by the Department, and access by the Department afforded thereto.

§ 210-30.Prior notice of discharge of hazardous waste.

No industrial user shall introduce any untreated process waste or process wastewater into the sewer system containing any hazardous waste constituent identified in 40 CFR Part 261 without prior written notification to the Superintendent. Any notification shall provide the identity of the waste, the hazardous waste constituent and number and an estimation of the mass and concentration of hazardous waste to be discharged and shall be accompanied by a statement certifying that a waste reduction program is in place. In no case shall the introduction of any hazardous process waste or nonprocess waste constituent be permitted as a substitute for the proper treatment and disposal of any such waste.

§ 210-31.Limitations on point of discharge.

A. No user shall discharge any waste or wastewater directly into a manhole or other opening in the sewer system, other than an approved building sewer, unless such user has been issued a special permit to do so by the Superintendent. Such permit shall be of limited duration, and the permittee shall comply with all applicable provisions of this article.

B. The discharge of any trucked or hauled pollutants is prohibited except at discharge points designated in a special permit approved by the Superintendent. Such permit shall be of limited duration, and the permittee shall comply with all applicable provisions of this section.

§ 210-32.Holding tank wastes.

No user shall discharge any holding tank or septic tank wastes unless such person has been issued a special permit to do so by the Superintendent and a special permit to do so by the Borough. Such permit shall not be assignable or transferable.

§ 210-33.Charges and fees.

A. The Director shall adopt a schedule of charges and fees to cover and the city shall collect the costs of implementation of the pretreatment provisions of Part 4. These fees are in addition to and separate from all other fees charged by the City and Borough and will be assessed by the City on all permit holders. Such charges and fees may include,

but are not limited to, the following:

(1) Costs of monitoring, inspection and surveillance procedures.

(2) Costs of reviewing permit applications.

(3) Administrative costs of appeals.

(4) Costs of reviewing accidental discharge reports.

(5) Costs of reviewing pretreatment facility construction plans.

(6) Costs of consistent removal by the AWTF of pollutants subject to pretreatment standards.

(7) Any other costs incurred by the City and Borough in implementing the requirements of this article.

B. The Borough may adopt a schedule of charges and fees to cover all costs associated with implementation of the provisions of this article. Those fees and charges shall be in addition to and separate from all other fees charged by the City and Borough and will be accrued on all permit holders, and may include, but not be limited to the costs set forth in § 210-33A.

§ 210-34.Applicability.

The pretreatment provisions and all other requirements of this article shall apply to any person currently discharging into, directly or indirectly, or otherwise using the sewer system or any person who shall in the future discharge into, directly or indirectly, or otherwise use the sewer system.

§ 210-35.Present and future rules and regulations.

The Director is authorized to promulgate such rules and regulations as are necessary for the proper administration and enforcement of this article. This authority is in addition to that granted in any section of this article. Such rules and regulations shall have the same force and effect as the provisions of this section, and any violation thereof shall be deemed a violation of the applicable articles for enforcement purposes in § 210-55 et seq. The Director shall publish notice of the promulgation of any such rules and regulations and shall notify each of the suburban municipalities prior to adoption of the same, pursuant to § 210-48 et seq.

§ 210-36.Failure to comply.

Should any user refuse, neglect or fail to comply with any provision of this article or any of the rules and regulations promulgated thereunder or any notice or directive given in conformity with or pursuant to the provisions of this article, the City or Borough may pursue any or all of the remedies set forth in § 210-55 et seq.

§ 210-37.Confidentiality of proprietary information.

Any information submitted to the city or Borough pursuant to this Part 4 or any rules and

regulations promulgated thereunder may be claimed as confidential by the submitter. Any such claim shall be asserted at the time of submission by the stamping or placing of the words "Confidential Business Information" on each page containing such information. If no claim is made at the time of submission, the city or Borough may make the information available to the public without further notice. If a claim is asserted, the information shall be treated in accordance with the procedures in 40 CFR Part 2 (Public Information); provided, however, that any information regarding effluent data shall be available to the public without restriction.

§ 210-38.Compliance monitoring and inspection performed by the city.

Compliance monitoring and inspection will be performed by the city. This duty will be based on a schedule determined by the type of facility, type and concentration of pollutants in the discharge and the past performances of compliance by the industrial user.

ARTICLE VI
Sanitary Sewer Rentals

§ 210-39.Sewer rental payment by property owner.

All persons owning property connected to, and from which sanitary sewage or industrial wastes are discharged into, the sewer system shall pay to the City rates and rental charges for each service period in accordance with the schedule or rates set forth in this article.

§ 210-40.Charges payable by suburban municipalities pursuant to service agreement.

A. Residences and nonresidential establishments. Billings by the City to the Borough for residential properties and nonresidential establishment customers of the Borough shall be based on the sewer rental rates as set forth in § 210-42 for persons whose wastewater is ultimately discharged by the respective municipality into the Harrisburg conveyance system or the Steelton conveyance system. Billings by the Borough to its respective customers shall be based on either the volume rate or the flat rate as specified by resolution or ordinance of the Borough.

B. Nonresidential establishments and industrial establishments that discharge excess strength wastes to wastewater system. See § 210-41 for relevant provisions.

§ 210-41.Charges payable by significant industrial users which discharge excess strength waste into sewer system.

A. A significant industrial user discharging, directly or indirectly, into the sewer system wastewaters having an average five-day biochemical oxygen demand (BOD) greater than 290 mg/L or a suspended solids content (SS) greater than 380 mg/L, or total phosphorus (P) content greater than 10 mg/L shall pay to the Department a strength-of-waste surcharge in addition to applicable volume charges. Such surcharges shall be determined in accordance with rates set forth in § 210-42 and shall be billed by the Department to the significant industrial user. The strength of wastewaters to be used for establishing the amount of surcharges shall be determined at least once annually either:

(1) By suitable sampling and analysis of the wastewaters for three consecutive days during a period of normal discharge; or

(2) From estimates made by the City; or

(3) From known relationships of products produced to strengths of wastewaters for those users for which such factors have been established.

B. In establishing wastewater strengths for surcharge purposes by analysis, analyses shall be made in accordance with procedures outlined in the latest edition of Standard Methods for the Examination of Water and Wastewater, published by the American Public Health Association, Inc. or any method approved by the EPA. Owners of industrial establishments discharging domestic and/or industrial wastewater to the sewer system shall furnish the Department, upon request, all information deemed essential for determination of applicable sewer rental surcharges for excess strength wastes. The cost of obtaining such information shall be borne by the owners of such industrial establishments.

§ 210-42.Rates, rentals and charges.

A. Effective January 1, 1996, the city established rates or charges for the use and service of the wastewater facilities of the City. The gross rate established is that set forth in Subsection C hereof, which gross rate is the applicable sum total of "user charges" for operating and maintenance charges of the wastewater facilities as set forth in Subsection C(1) hereof and that portion of charges applicable to rental and other obligations of city as imposed by the lease entered into between the City and The Harrisburg Authority as set forth in Subsections C(2), (3) and (4) hereof.

B. The rates set forth under the column captioned "payable by suburban municipalities" are set forth on a "per customer" basis. These rates are charged by the City, Borough and other municipalities under the service agreement dated September 15, 1976, as amended. The Borough shall be responsible for billing its respective customers.

C. Total sewer rental rates payable with respect to the wastewater facilities (the total of Subsections C(1), (2), (3) and (4) below):

(1) Sewer rental attributable to operation, maintenance and administration expenses.[7]

(2) Sewer rental attributable to 1984 and 1988 Series A lease rental and related revenue requirements.[8]

(3) Sewer rental attributable to Series B lease and related revenue requirements.[9]

(4) Sewer rental attributable to the 1996 PENNVEST loan, pension fund loan and

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7.**Editor's Note: The schedule of rates set forth in this subsection are on file in the borough offices.**

8.**Editor's Note: The schedule of rates set forth in this subsection are on file in the borough offices.**

9.**Editor's Note: The schedule of rates set forth in this subsection are on file in the borough offices.**

related revenue requirements. [10]

§ 210-43.City and Borough right of entry.

For the purpose of determining the amount of sewer rental payable under the provisions set forth in §§ 210-39 through 210-42, the City and Borough shall have access at all reasonable times without delay to all industrial users using the sewer system and any meters used for establishing or determining water consumption, water excluded from the sewer system and sewage or wastewater discharged into the sewer system.

§ 210-44.Bills and billing.

Bills for the payment of strength of waste surcharges for sewer service and the commercial or industrial use of the sewer system pursuant to this section shall be rendered at the same time and intervals as commercial or industrial charges for water consumed in and furnished to the same property and shall be due and payable upon presentation. All quarterly billings shall be made and distributed and shall cover service over the following months:

Months of Billing	**Months of Service Covered by Billing**
January, February or March	January, February or March
April, May or June	April, May or June
July, August or September	July, August and September
October, November or December	October, November and December

§ 210-45.Delinquent rental; penalty.

If any bill for strength of waste surcharges, except for annual service periods, is not paid within 60 days after the same becomes due and payable, it shall be delinquent, and a penalty shall be imposed as provided in Article 1-301.5 of the Recodified Ordinances of the City of Harrisburg. Bills for annual service periods shall be subject to the same penalties, except that penalties shall not be added or begin to accrue until August 1 of such annual service period.

§ 210-46.Shutting off service.

Upon the failure of any person to pay in full any bill for strength of waste surcharge within 60 days after the same becomes due and payable, the City and/or Borough shall have the right to terminate sewer service to the property of such person or to turn off the water supply to such property as provided in § 210-55 et seq. Service may be restored upon payment of all delinquent bills against such property and expenses which may have been incurred in terminating such service, turning off the water supply or restoring the same, as provided in Section 210-59.

§ 210-47.Collection of unpaid bills.

The sewer rentals imposed by this article shall be collected as provided in § 210-55 et seq.

10.**Editor's Note: The schedule of rates set forth in this subsection are on file in the borough offices.**

ARTICLE VII
Sewer Connections

§ 210-48.Application for connection.

A. No connection to the sewer system beyond the limits of the City shall be made except under the terms, provisions and conditions set forth in this section and those in § 210-20 et seq., if applicable, and after issuance of a permit by the Director of DPW or authorized agent thereof if required by § 210-24. Any industrial establishment desiring to connect to the sewer system beyond the limits of the city shall make application to the Director or authorized agent thereof for a permit to connect upon a form provided by the Superintendent. To the form shall be attached a sketch or plan showing in detail: the location and size of lot; the improvements now of such lot or thereon proposed to be erected for which the permit is requested; the precise place where the tappage is proposed to be made to the sewer system; and the location, length and size of the sewerage line proposed therefor. The Superintendent shall notify the Borough and/or affected suburban municipality upon receipt of any such application.

B. Any other connection to the sewer system beyond the City limits shall be according to the terms and conditions set forth in the service agreement of 1976 or any amendments thereto.

§ 210-49.Filing fee.

All such applications by an industrial establishment shall be accompanied by a filing fee of $75 to cover the costs and expenses of investigating same.

§ 210-50.Investigation and recommendation.

Upon the filing of the application and payment of the filing fee, the Director shall forthwith cause to be made an investigation to determine whether the requested tappage will or will not be prejudicial to the best interests of the AWTF in view of the additional burden imposed on the sewer system and after taking into consideration present and anticipated future needs.

§ 210-51.Issuance of permit; acceptance of terms.

Upon the approval of any such application, the Director is authorized to issue a permit granting to the applicant the right or privilege of tapping in conformity with the application into a specified sanitary sewer. The permit shall be subject to the terms of this Part 4, to which terms, provisions and conditions the applicant, for it and any successors in title to the improvements in question, by accepting the permit and acting thereon hereby agrees to all as though specifically set forth in written contract between the City and the applicant. The permit shall not be assignable or transferable.

§ 210-52.Permitted discharges only.

Unless otherwise allowed by a permit issued pursuant to § 210-24, any connection beyond the City limits shall be for the purpose of discharging sanitary sewerage only into the sewer system.

§ 210-53.Surcharge for industrial establishments.

Each industrial establishment governed by the pretreatment requirements of § 210-20, et seq. located in a suburban municipality shall be assessed a surcharge directly by the City for the pollutant load for all sewage and wastes discharged into the sewer system which exceed the maximum threshold levels set forth therein, such surcharge to be determined by the City.

§ 210-54.Legal requirements.

A. Any municipality contributing to the sewer system shall agree to adopt, enforce and keep in full force and effect during the term of any agreement or discharge into the sewer system an ordinance or ordinances or resolution or resolutions, as appropriate, prohibiting the discharge into its sewage collection system which discharges into the City and Borough sewer systems of any wastes prohibited to be discharged into the sewer systems under the ordinances, rules and regulations of the City and the Borough as the same shall be, from time to time, reasonably adopted.

B. Any municipality contributing to the sewer system shall agree to adopt such ordinances or resolutions necessary to impose any rates, charges, tariffs or requirements upon any of the customers by agreements or laws and regulations which relate to obligations assumed under such agreements.

C. Any municipality contributing to the sewer system shall agree to cooperate with the City in any investigation regarding industrial waste discharges into the sewer system and shall grant to the City the right to review, at any time, the volume, pollutant load and character of sewage and wastes being discharged into the sewer system.

ARTICLE VIII
Enforcement and Penalty

§ 210-55.Applicability.

Whoever violates any provision of §§ 210-19 through 210-54 shall be subject to the penalty, enforcement and other provisions hereinafter set forth, including the right of the City and Borough to disconnect service.

§ 210-56.Termination of service or permit suspension of permit.

Pursuant to the notice requirements of § 210-60, the City may suspend wastewater treatment and/or a discharge permit when such suspension is necessary, in the opinion of the City, in order to stop an actual or threatened discharge which: presents or may present an imminent or substantial endangerment to the health or welfare of persons or to the environment; causes or may cause interference with the operation of or damage to the AWTF; or causes the City to violate any condition of its NPDES permit.

§ 210-57.Cessation of harmful activity.

After informal notice to halt or prevent a discharge which reasonably appears to present an imminent endangerment to the health or welfare of persons, the AWTF, the sewerage system or the environment, the person responsible for the discharge shall immediately stop or

eliminate the contribution. In the event of failure of the person to cease or cause to cease such contribution, the Superintendent shall notify the Director, who shall authorize any actions as deemed necessary to halt or prevent such contribution, including immediate severance of the sewer connection, to prevent or minimize damage to the sewerage system and/or the AWTF, the environment or to any individuals.

§ 210-58.Suspension or revocation of permit.

The existence of any one of the following conditions may cause the City to revoke the permit of the significant industrial user:

A. Failure to factually report the wastewater constituents and characteristics of a discharge.

B. Failure to report significant changes in operations or in wastewater constituents and characteristics.

C. Refusal of access to the discharger's premises for the purpose of inspecting or monitoring or determining the amount of sewer rental payable.

D. Failure to comply with any of the terms and conditions of a permit.

E. Failure to comply with any of the provisions of Part 4.

F. Failure to pay in full any bill for sewer rental, sewer maintenance charge, tappage fee or any other charge or fee imposed by ordinance or regulation within 60 days after the same becomes due and payable.

§ 210-59.Reinstatement of permit and restoration of service.

The City shall reinstate a permit and/or restore service under the following conditions, as applicable:

A. Demonstration to the satisfaction of the City that such significant industrial user is now utilizing good management practices to prevent or reduce the contribution of pollutants to the sewer system. Good management principals include, but are not limited to, preventive operations and maintenance practices to reduce the quantity or improve the quality of effluent discharged and the control of plant spillage, leaks and drainage from storage areas.

B. Submission to the City of proof of elimination of any noncomplying discharge.

C. Submission within 15 days of the occurrence.

D. Access to the premises in question for enforcement purposes is assured.

E. Submission of a detailed report describing the measures taken to ensure present and future compliance with the terms and conditions of a permit.

F. Evidence of compliance with federal, state and local laws, rules and regulations is submitted.

G. Payment in full of all delinquent bills, fees and charges and all charges incurred by the

city in damages or as costs of enforcement is made.

§ 210-60.Notice of violation.

Whenever the Superintendent finds that any person has violated or is violating any provisions of the sections to which these enforcement provisions apply, any permit issued thereunder or any applicable federal, state or local regulation, the Superintendent or a designee shall serve or cause to be served upon such person a written notice stating the nature of the violation and requiring the submission within 30 days of the date of the notice a plan for the satisfactory correction of such violation. If the violation has occurred in the Borough or outside the City, the Superintendent shall mail a copy of such notice to the Borough.

§ 210-61.Right to hearing.

Any person affected by a notice, directive or other decision of the Superintendent may request a hearing before the Director and present evidence of circumstances justifying reconsideration of the decision of the Superintendent. Such request must be in writing and served on the Director within 10 days of the date of the notification or decision. The Director shall hold a hearing and render a decision within 15 days of the request.

§ 210-62.Injunctive relief.

Subject to the notice provisions of § 210-60, in circumstances where the nature of the violation constitutes a violation of the Clean Streams Law, the City and/or Borough may apply for a mandatory preliminary injunction or special injunction in the Court of Common Pleas of Dauphin County or the Commonwealth Court of Pennsylvania in accordance with the Pennsylvania Rules of Civil Procedure relating to actions in equity.

§ 210-63.Civil liability.

A. Any person who permits or allows a discharge which causes an obstruction or damage to the AWTF shall be assessed a charge equal to the amount necessary to repair or replace the damaged facilities.

B. Should any person refuse, neglect or fail to comply with pretreatment provisions and discharge limitations of §§ 210-22, 210-25 and 210-26, with any of the rules and regulations promulgated thereunder, or with any directive or notice given pursuant to this article or to any other article in Part 4 to which these enforcement provisions apply, then the Director is hereby empowered to authorize and may authorize the supply of all labor and materials necessary to effect compliance. Such person shall be assessed a charge equal to the amount necessary to effect compliance.

C. Should the City suffer the termination or suspension of its NPDES permit or be assessed penalties or fines for violations thereof, which violations were caused by the failure of a discharger to comply with the provisions of §§ 210-22, 210-25 and 210-26 or other sections in this Part 4 of any applicable rules and regulations, such discharger shall be assessed a charge equal to the amount expended by the city to cause its NPDES permit to be reinstated, plus the amount of any penalties or fines imposed against it.

§ 210-64.Remedy by city and Borough.

A. All charges assessed in accord with § 210-63, all sewer rental, tappage and sewer maintenance fees, fees or charges imposed for inspection, monitoring and laboratory analysis or any other fees or charges authorized by any provision to which this Part 4 applies shall be a lien on the properties served from the date the charge therefor first becomes due and payable.

B. All charges imposed pursuant to § 210-20 et seq. and § 210-63, together with a ten-percent penalty thereon, shall be certified by the Director to the City Solicitor, who shall enter the same as a lien in the Court of Common Pleas of Dauphin County and proceed to collect the same in like manner as other municipal claims are by law collectible.

C. Sewer rental, tappage and maintenance fees shall be a lien on the properties served from the date the charge therefor first becomes due and payable. If such charges are not paid, the City and Borough may file such liens and proceed to collect the same in like manner as other municipal claims are by law collectible.

D. The Borough may recover any charges, fees and costs associated with the implementation of the provisions of Part 4.

E. In addition to the above method, the city and/or Borough may proceed to collect such assessments by action in assumnpsit in the name of the city and/or Borough against the owner of the property charged and/or the person discharging into the sewer system.

F. In addition to the above, the City and Borough may recover reasonable attorneys' fees, court costs, court reporter fees and all other expenses of litigation to enforce the claim or claims of the City and Borough.

§ 210-65.Public notification.

Pursuant to the public participation requirements of 40 CFR Part 25, the Department shall cause to have published at least annually in the largest daily newspaper of general circulation in the City a list of all industrial users who, during the previous twelve-month period, were in significant noncompliance with applicable pretreatment standards or other pretreatment requirements. For the purpose of this provision, a significant noncompliance violation is:

A. One or more violations of wastewater discharge limits including chronic violations and technical review criteria violations.

B. Any discharge which, alone or in combination, causes interference or pass-through or endangers the health or welfare of AWTF personnel, the public or the environment or results in the AWTF exercising its emergency authority to halt or prevent such a discharge.

C. Failure to meet a compliance schedule milestone.

D. Failure to provide required reports.

E. Failure to accurately report noncompliance.

F. Any other violation or group of violations the AWTF considers to be significant.

§ 210-66.Public nuisance.

Any person who violates any of the terms, provisions or requirements of §§ 210-20 through 210-54 or any of the applicable rules and regulations regarding discharges shall be deemed to be maintaining a nuisance, which nuisance the City or Borough is authorized and directed to abate in the manner provided by law.

§ 210-67.Service of notice.

Whenever notice is necessary under this article, such notice shall be properly served upon an owner if a copy thereof is delivered to the owner personally; or by leaving a notice at the usual place of abode with someone of suitable age and discretion who shall be informed of the contents thereof; or by certified or registered mail addressed to the owner at the last known address with return receipt showing it has been delivered. If the return receipt shows that it has not been delivered, then service may be made by posting a copy thereof in a conspicuous place in or about the structure affected by such notice. Such notice shall set forth a reasonable time for such compliance to be accomplished.

§ 210-68.Issuing authorities.

A. The Superintendent of the AWTF, Pretreatment Coordinator, City Engineer and Plumbing Inspector shall act in the capacity of police officers for the limited purpose of issuing nontraffic summary citations to owners of premises or persons who are found in violation of this Part 4. Notice of issuance of a citation shall also be given to the Borough.

B. The Director may, by written rule or regulation, designate further employees of the Department of Public Works who may issue such citations. Such rules and regulations shall be effective three days following filing with the City Clerk.

§ 210-69.Violations and penalties.

A. Civil penalty. In addition to proceedings under this Part 4 or any other remedy available at law or equity for violation of pretreatment standards requirements, any person who fails to comply with any provision of §§ 210-19 through 210-54 or any applicable rules or regulations, or whoever fails to comply with a notice given pursuant to those sections and/or this Part 4, may be assessed a civil penalty, whether or not the violation was willful or negligent, in accordance with Subsection 4(a)(1) of the Publicly Owned Treatment Works Penalty Law, Act of March 26, 1992, P.L. 23, 35 P.S. § 752.4(a)(1), of not more than $25,000 per day of violation. Each twenty-four-hour period during which a violation continues shall be considered a separate and distinct offense under this provision and punishable as such.

B. Criminal penalty. Any person who knowingly or negligently violates any of the terms, provisions or requirements of §§ 210-19 through 210-54 or any of the applicable rules and regulations or whoever refuses or neglects to comply with any notice given pursuant to these sections to such person or whoever obstructs or interferes with any

person in the enforcement of these sections shall, upon conviction thereof, severally for each and every violation or noncompliance respectively, be fined not more than $1,000 or imprisoned for not more than 90 days, or both. Each twenty-four-hour period during which a violation continues shall be considered a separate offense and punishable as such.

C. Any person who knowingly or negligently makes a false, oral or written statement in any report, record, plan, application or other document filed with the City or Borough or who falsifies, tampers with or renders inaccurate any monitoring device or method required under this Part 4, shall be liable to prosecution under appropriate criminal statutes, including but not limited to: false swearing, 18 Pa. C.S.A. § 4903; unsworn falsification to authorities, 18 Pa. C.S.A. § 4904; tampering or fabricating physical evidence, 18 Pa. § 4910; and tampering with public records or information, 18 Pa. C.S.A. § 4911.

Borough of Penbrook

150 South 28th Street Penbrook, Pennsylvania 17103 - 1996
Telephone 717.232.3733 FAX 717.233.8589

December 17, 2015

Ms. Heather Dock
Water Quality Specialist
Clean Water Program
PA Department Of Environmental Protection
South Central Regional Office
909 Elmerton Ave.
Harrisburg, PA 17110-8200

re: Sanitary Sewer Overflow on November 16, 2015

Dear Ms. Dock;

We are in receipt of your letter of December 10, 2015 regarding the sanitary sewer overflow near the State Hospital Grounds on 16 November 2015. The Borough of Penbrook recognizes that this was a serious event and attempted to treat the problem with expediency upon your notification to us.

The borough has a large underground pipe extending from the Susquehanna Township line below Clayton Avenue up through Edgemont, proceeding across Locust Lane about 1000 feet and then heading southwest through the state Hospital grounds and into the Harrisburg Interceptor. As you know most of this area is very heavily wooded making access extremely difficult. In the past the Borough has made efforts to ensure that the line is clear and running properly. However the large number of trees make the accumulation of root balls in the line a near certainty. The borough will be happy to provide you with a copy of our sewer map for the area in a subsequent mailing to you.

Attached is a narrative of the work undertaken by the borough and the several contractors used to correct the problem. Our first attempt was to call a sewer service company to come and remove the obstruction. This was not successful. Our next action was to commence bypassing the obstruction by pumping the surcharge from one manhole to another. This took place over the following 3 days. Lastly, the borough had the pipe opened and the obstruction removed. All of this is detailed in the attached narrative.

Please accept our sincere thanks for your assistance in resolving this problem. Your prompt notification to us allowed us to move quickly and minimize any damage to the area caused by the outflow. We are continuing to monitor the area and will do so on a regular basis from this point forward.

If you have any further questions regarding our actions after reviewing the narrative, please don't hesitate to give me a call at the above number. Our regular business hours are 8:30 AM to 4:30 PM Monday through Friday.

Sincerely,

James M. Armbruster
Borough Manager

Narrative
Asylum Run Accident

The Borough of Penbrook received notification of the problem at Asylum Run on the morning of November 17, 2015 after reviewing both email and voice mail from an employee of the Department. Borough employees were immediately dispatched to the area to assess the damage. After receiving a report of their assessment, the Department was contacted to discuss the problem and obtain guidance on what action needed to be taken immediately to begin to alleviate the problem. At the suggestion of Ms. Heather Dock, the Borough found a specialty sewer servicing company which was called to the area to see if they could free the obstruction. The remoteness of the discharge site from the only available road where the truck could be situated meant that several hundred feet of hose had to be deployed before the manhole could be reached.

The source of the discharge was approximately 600 ft. from the only accessible road. Kline Services was used to attempt to remove the obstruction with a 4 man crew when the line became lodged in the pipe. After several hours attempting to free the cutter and the line, the decision was made to cut the line leaving about 50 ft. inside the pipe and discontinue further action at the site.

Mr. Max Shradley from Rettew Associates, who was on-site, recommended that a pump be brought in to bypass the obstruction and move the discharge from one manhole to another several hundred feet away. Two pumps were set up to insure continuous flow around the discharge. The pumps were in continuous use for the next 72 hours. Borough employees were on site during this time to ensure constant operation of the pump and provide diesel fuel every 4 hours.

During the 72 hours that the pumps were running, E.K. Services was called in to first build a roadway which would support construction equipment in this very heavily wooded area and then, once the area was readied, began to excavate the area where the obstruction was thought to be located. After first opening the pipe only to find that it was not the location of the obstruction, a second location was opened. This location was found to contain both large amounts of tree roots and also rags which had apparently been illegally introduced into the system.

Borough employees and Council members were on site during much of this time in addition to our engineers and contractors. The area of the obstruction is very heavily wooded, with no adequate access road and these two conditions were the primary cause of delays in removing the obstruction. The Borough stopped the flow of discharge as soon as it was able by using bypass pumps for 72 hours during which an access road to the blockage had to be built before heavy equipment could be brought into the area.

During work at the site one Borough employee received a tick bite and had to report to an urgent care facility for treatment.

Once proper flow was restored and the heavy equipment from E.K. Services had been removed from the site, Borough employees continued to spread lime around the discharge area to begin to alleviate the damage caused by the outflow. The Borough continues to monitor the site and will continue to repair the area where possible.

While the Borough greatly regrets the damage caused by the discharge in this area, the heavily wood nature of the area makes routine maintenance of this area extremely difficult. Much of the sanitary sewer system of the Borough was installed during the 1930's as a WPA project. The condition of the land, together with the existence of the Harrisburg State Hospital have long since changed from open, accessible ground to heavily forested area.

The Borough will continue to monitor this portion of its facilities as rigorously as possible with the intent to prevent any future incident of this type. Penbrook regrets any damage this incident has caused the land and stream in this area and is working with its engineers and employees to find ways of insuring that this never happens again. The assistance provided by the Department in alerting the Borough and providing direction and guidance is greatly appreciated.

APPENDIX M-4

CHAPTER 94 REPORT
FOR
BOROUGH OF STEELTON

HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services

369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
www.hrg-inc.com

MARCH 2016

CHAPTER 94
WASTELOAD MANAGEMENT REPORT
FOR
CALENDAR YEAR 2015

BOROUGH OF STEELTON
DAUPHIN COUNTY, PENNSYLVANIA

HRG Project No. 001337.0482

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2015

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**Borough of Steelton**	Permit No.:	**PA**
Mailing Address:	**123 Front Street**	Effective Date:	
City, State, Zip:	**Steelton, Pennsylvania, 17113**	Expiration Date:	
Contact Person:	**Mr. Doug Brown**	Renewal Due Date:	
Title:	**Borough Manager**	Municipality:	**Steelton**
Phone:	**717-939-9842 x 5030**	County:	**Dauphin**
Email:	**dbrown@steeltonpa.com**	Consultant Name:	**Herbert, Rowland, & Grubic, Inc.**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:
   ☒ Line graph for flows attached (**Attachment A**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☐ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:
   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

Hydraulic loading projections for the Borough for the years 2016 through 2020 were estimated based upon data from the previous five (5) years (2011-2015), and the expected number of new connections and disconnections to the system over the next five (5) years. A flow of 250 gpd/EDU was used to evaluate the projected loadings. The projected future connections/developments include: Adams Street Townhomes Redevelopment, projected to add ten (10) EDUs to the Trewick Street Pump Station in 2016; two (2) assumed disconnections in 2016; and two (2) connections per year were assumed for years that connections or developments are not currently proposed.

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

- ☐ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)
- ☐ List summarizing each extension or project attached (**Attachment**)
- ☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

There were no sewer extensions constructed, approved, or exempted during the calendar year 2015. There are no sewer extensions planned in 2016.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

See Attachment B

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations

☒ The collection system does contain pump stations (Number – **3**)

☒ Discussion of condition of each pump station attached (**Attachment C**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

- ☐ This report demonstrates an existing hydraulic overload condition.
- ☐ This report demonstrates a projected hydraulic overload condition.
- ☐ This report demonstrates an existing organic overload condition.
- ☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

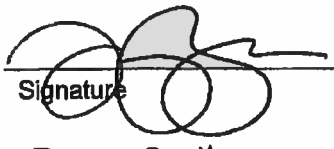
☒ Annual CSO Report attached (**Attachment D**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☐ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the 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 knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Mr. Doug Brown, Borough Manager	
Name of Responsible Official	Signature
717-939-9842 x 5030	3-8-2016
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. 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 knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unswom falsification).

Justin J. Mendinsky, P.E.	Justin J. Mendinsky
Name of Preparer	Signature
717-564-1121	2/29/2016
Telephone No.	Date

ATTACHMENT A

HYDRAULIC LOADING GRAPH AND DATA

Table 1
BOROUGH OF STEELTON
HYDRAULIC LOADING DATA & PROJECTIONS

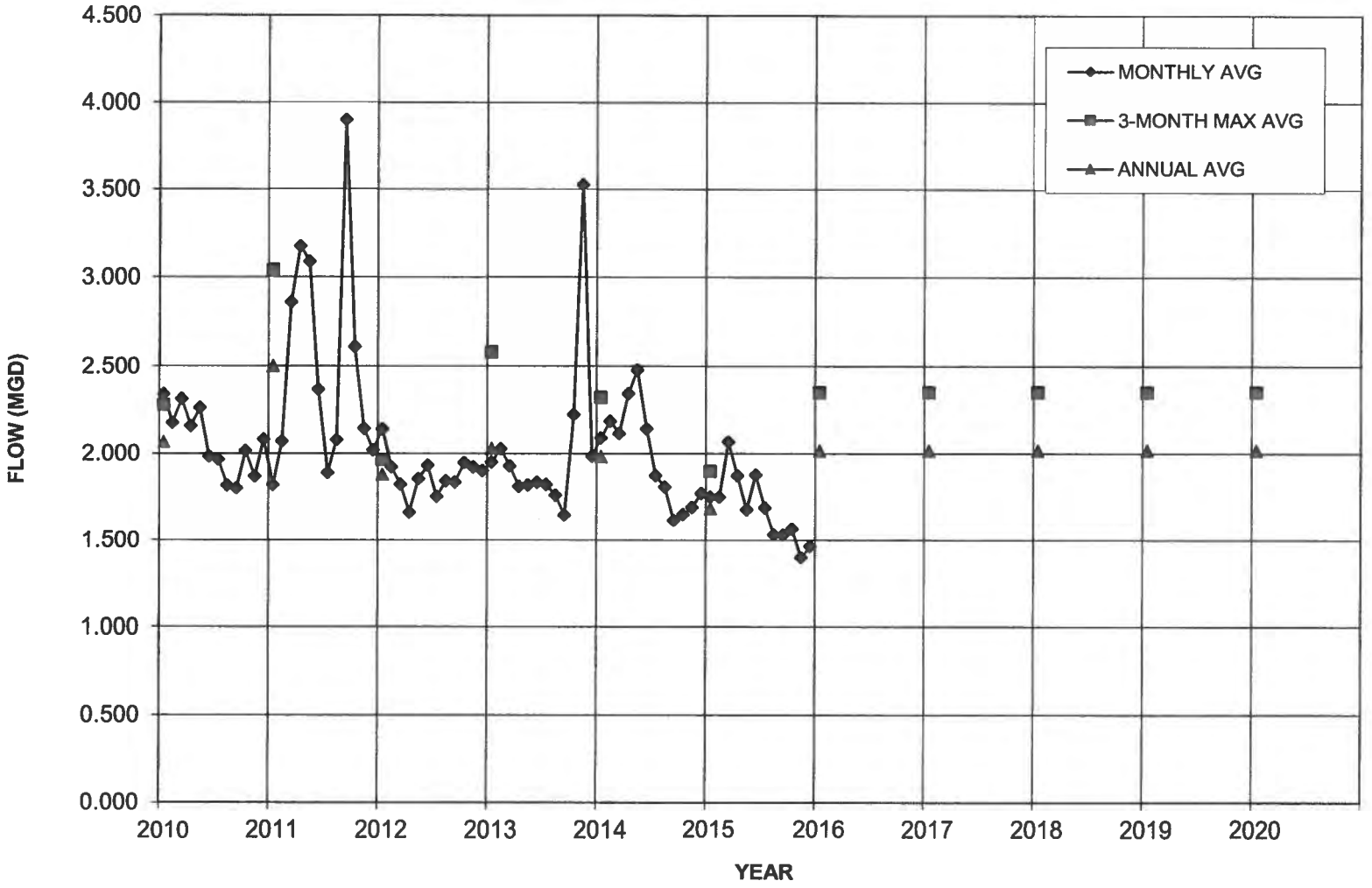
Average Daily Flows (MGD)						
MONTH	2011	2012	2013	2014	2015	5 Year Avg
January	1.818	**2.141**	1.951	2.090	1.750	1.950
February	2.070	**1.923**	2.026	2.185	**1.750**	1.991
March	**2.856**	**1.821**	1.928	2.116	**2.068**	2.158
April	**3.171**	1.661	1.811	**2.343**	**1.872**	2.172
May	**3.084**	1.853	1.819	**2.478**	1.676	2.182
June	2.367	1.932	1.834	**2.142**	1.877	2.030
July	1.888	1.751	1.821	1.872	1.688	1.804
August	2.079	1.842	1.759	1.808	1.531	1.804
September	3.895	1.835	1.644	1.614	1.530	2.104
October	2.609	1.948	**2.224**	1.647	1.565	1.999
November	2.144	1.922	**3.526**	1.689	1.399	2.136
December	2.019	1.902	**1.984**	1.770	1.464	1.828
Annual Avg	2.500	1.878	2.027	1.980	1.681	2.013
Max 3 Month Avg	3.037	1.962	2.578	2.321	1.897	2.359
Ratio	1.21	1.04	1.27	1.17	1.13	1.17
Inches of Precipitation	73.23	46.81	45.42	43.67	41.37	N/A

Notes: 1. **BOLD** months used in the calculation of 3-month max average.
2. Rainfall data collected at Harrisburg International Airport.

5 YEAR FLOW PROJECTIONS (FLOWS EXPRESSED IN MGD)						
Year	Prev. 5-Year Avg. Daily Flow	Projected EDUs	Projected Flow Increase* (GPD)	Projected Avg. Daily Flow	Projected 3-Month Max Peak Factor	Projected 3-Month Max
2016	2.013	8	2,000	2.015	1.17	2.350
2017	2.015	2	500	2.016	1.17	2.351
2018	2.016	2	500	2.016	1.17	2.352
2019	2.016	2	500	2.017	1.17	2.352
2020	2.017	2	500	2.017	1.17	2.353

Notes: *Flow per EDU is based on a value of 250 GPD.

FIGURE 1
BOROUGH OF STEELTON
HYDRAULIC LOADING GRAPH



ATTACHMENT B

SEWER SYSTEM MONITORING, MAINTENANCE, REPAIR, AND REHABILITATION

SEWER SYSTEM MONITORING, MAINTENANCE, REPAIR, AND REHABILITATION

The Steelton Department of Public Works (DPW) is responsible for maintenance of the sewage collection and conveyance facilities. Routine maintenance duties include flushing sewer lines and cleaning manholes and diversion chambers with the Borough's power flushing equipment. Repairs are made to manholes and diversion chambers as necessary.

Emergency maintenance and repair of the collection system is also the responsibility of the DPW. Blockages are removed by the use of the power flushing equipment or by rodding. Minor pipeline breaks are repaired by DPW personnel, while local contractors are readily available to perform large or unusual repairs.

The Borough continues to use its CCTV inspection system for evaluating the condition of the sewer system during routine inspection and to help identify areas in need of repair. Most recently, CCTV investigative work has been completed on Pine Street and North Harrisburg Street, and areas of the existing sanitary sewer system in need of repair were identified.

Sanitary sewer improvements on Pine Street were completed in December 2015, consisting of repairs to the sanitary sewer main and the installation of two (2) 4 foot diameter sanitary sewer manholes. A total of 45 L.F. of 8-inch PVC sanitary sewer pipe and 123 L.F. of 10-inch PVC sanitary sewer pipe was used to replace the existing main in identified locations. These projects are being completed in concert with PennDOT roadway reconstruction work, and 15 existing manhole frames and covers will be replaced on Pine Street following paving in the summer of 2016.

Sanitary sewer improvements for North Harrisburg Street will begin in the spring of 2016 and will include sanitary sewer main repairs, the installation of four (4) new 4 foot diameter sanitary sewer manholes, and the replacement of five (5) existing manhole frames and covers following PennDOT paving. Additionally, a section of 8-inch sewer main on Front Street was CIPP lined from Sanitary Sewer Manhole 433 to Sanitary Sewer Manhole 313 in 2015.

The Borough is planning to clean and perform a CCTV inspection of 32,718 L.F. of 8-inch to 24-inch sanitary sewer mains from Gibson Street to Felton Street and between North River Alley and the Susquehanna River. Bids for this project will be received in March 2016 with the work scheduled to begin in April 2016.

The installation of new hydraulically driven sewage grinders at the Hoffer Street, Trewick Street, and Felton Street pump stations was completed in September 2015 utilizing funds provided by the CDBG Disaster Recovery Program. Additionally, the existing interior-mounted wet well ventilators were removed at both Trewick and Hoffer Street pump stations, and new exterior mounted wet well ventilators were added and sized to provide air change requirements of NFPA 820. At Felton Street pumping station, the existing exterior mounted wet well ventilator was removed and replaced with a new exterior mounted wet well ventilator. New mechanical duct work and HVAC equipment control modifications were also installed in each of the three pump stations. All HVAC improvements at the pump stations were completed in September 2015.

The Borough continues its use of a GIS base map of the sanitary sewer, storm sewer, and water system enabling the Borough to keep accurate records of the sanitary sewer system and implement an effective routine inspection program. The GIS base map was updated in 2012 to capture the East End Sewer Separation Project.

The Borough has developed a Nine Minimum Control Plan (NMC) for the Combined Sewer Overflows located in the Borough. The plan was approved by the Pennsylvania Department of Environmental Protection (DEP) on September 14, 2006. The Borough continues to implement the nine (9) minimum controls.

The Borough completed a Long Term Control Plan (LTCP) for the combined sewer system in May 2008 and DEP approved the LTCP on September 3, 2008. The recommendations identified in the LTCP include:

1. Elimination of SSO facilities at the Hoffer Street Diversion Chamber and Conestoga Street Diversion Chamber as well as the Hoffer and Trewick Street Pumping Stations. ***These improvements were completed in December 2008 by Borough staff.***

2. Implementation of Alternative 4B: Sewer Separation – "T" Street Only. This alternative will ensure compliance with the EPA and DEP CSO Policy. ***The Borough commenced construction in July 2010 of the new storm sewer facilities adjacent to the existing combined sewers in "T" Street Drainage Basin as well as rehabilitation of the existing combined sewers and manholes for use as a sanitary sewer system. This includes installation of approximately 9,180 linear feet of SLCPP and RCP storm sewer pipe, 2,215 linear feet of PVC gravity sanitary sewer main, rehabilitation of approximately 7,460 linear feet of sanitary sewer pipe by using cured-in-place (CIPP) lining technology and installation of all other appurtenances associated with the separation of the combined sewer system. Construction was completed in August 2011.***

3. The Borough will proceed with the design and construction of new storm sewer facilities, sanitary sewer and manhole rehabilitations, as deemed necessary, for the "R" and Felton Street Drainage Basins to allow for complete sewer separation in the future. ***The necessary provisions have been made during the construction of the "T" Street Sewer Separation project to allow for future connections of these drainage basins.***

4. The Borough will revise its Nine Minimum Controls Plan for consistency with the information obtained during completion of the LTCP. ***This is an ongoing Borough task.***

5. An additional course of brick will be placed at the "R" Street Diversion Chamber Overflow weir. Due to the steep slope of pipe entering the diversion chamber, it appeared that splashing over the top of the overflow weir may occur during conditions when this chamber would typically not overflow. Adding a course of brick will maximize the capture potential at this chamber. ***These improvements were completed in December 2008 by Borough staff.***

6. The Borough will continue to monitor the capacity of the Hoffer and Trewick Street Pump Station and upgrade the pump stations as necessary in the future. ***This is an ongoing Borough task. See previous section detailing improvements completed at these stations in 2015.***

ATTACHMENT C

CONDITION OF EXISTING PUMP STATIONS

CONDITION OF THE PUMP STATIONS

Operating personnel continued their program of routine preventive maintenance during calendar year 2015. The program includes daily inspections of the pumping facilities and lubrication of the equipment as recommended by the manufacturer. Approximately twice per month, any grease accumulations are removed from the wet wells by the Borough staff. This procedure reduces the potential for problems to develop in the stations.

During 2015, construction improvements to the pumping facilities included: the installation of three (3) new hydraulically driven sewage grinders at the Hoffer Street, Trewick Street, and Felton Street pumping stations; the removal, installation, relocation, and modification of various HVAC components at each pumping station; and the installation of new hoist equipment at each pumping station. See Attachment B for additional information relative to these improvements.

During 1994, alterations to the Borough of Steelton Wastewater Pumping Stations were undertaken. The project involved replacing substantially all internal components at the three (3) pumping stations. The project did not increase the pumping capacity but ensured continuing dependability of operation.

During 2006, alterations to the Borough of Steelton's Trewick Pumping Station were undertaken. The project involved replacing existing DC coupled magnetic drives with new variable frequency drives. The project was completed in March 2007 and did not increase the pumping capacity; however, it provides additional dependability of operation.

Drawdown testing was conducted at the Felton Street and Hoffer Street Pump Stations in March 2007 as part of the LTCP. The testing provides the Borough with the actual pumping capacity at each station. This information will be useful for operation and maintenance monitoring, as well as completion of DEP Planning Modules and the LTCP. Table 2 below identifies the results of the drawdown testing for the Felton Street and Hoffer Street Pumping Stations.

TABLE 2 BOROUGH OF STEELTON PUMPING STATION DRAWDOWN TESTING RESULTS	
Pumping Station	**Capacity**
Felton Street	
Pump 1	329 gpm
Pump 2	360 gpm
Pumps 1 & 2	614 gpm
Current Felton Street Capacity	**329 gpm**
Hoffer Street[1]	
Pump 1	826 gpm
Pump 2	827 gpm
Pump 3	812 gpm
Pumps 1 & 2	1,218 gpm
Pumps 2 & 3	1,149 gpm
Pumps 1 & 3	1,328 gpm
Pumps 1, 2 & 3	1,830 gpm
Current Hoffer Street Capacity	**1,149 gpm**

Table 3 below summarizes the number of pumps, type, and station capacity for each of the three (3) Borough pumping stations.

TABLE 3 BOROUGH OF STEELTON CAPACITY OF PUMPING STATIONS			
Pumping Station	**Number of Pumps**	**Type**	**Station Capacity**
Felton Street	2	Constant Speed	329 gpm
Hoffer Street[1]	3	Constant Speed	1,149 gpm
Trewick Street[2]	3	Variable Speed	1,750 gpm

The Borough monitors and records the pump run times at each of the two (2) pump stations.

[1] Receives flow from Felton Street pumping station.
[2] Receives flow from Hoffer Street pumping station.

ATTACHMENT D

CSO REPORT

ANNUAL CSO STATUS REPORT

Summary of the Frequency, Duration and Volume of the CSO Discharges
Refer to Pages 1-8 of the attached Combined Sewer Overflow Report for the Borough's Combined Sewer Overflows.

Operational Status of Overflow Points
The Borough began 2015 with two overflow points: R Street Diversion Chamber and Felton Street Diversion Chamber.

There was no change in the operational status of the R Street and Felton Street Combined Sewer Overflows in 2015.

Water Quality Impacts
Refer to Attachment E for information on potential water quality impacts to sensitive areas and water quality issues. This information was taken from the Borough's April 2008 Act 537 Plan Update/Combined Sewer Overflow Long Term Control Plan.

Actions taken to Implement NMC Plan and LTCP
The Borough continues to implement the NMC Plan. Specifically, the Borough routinely monitors, inspects and maintains the CSOs. The Borough also employs street sweeping, catch basin cleaning and flushing of problem areas within the system as a means of controlling solids and floatables from being discharged in the CSO. The Borough also maintains public notification of the CSO system through the semi-annual CSO information letter as part of the sewer billing.

Refer to Attachment B of the Chapter 94 Report for information on the Borough's implementation of the LTCP.

Inspections and Maintenance of CSO system
Refer to the attached Combined Sewer Overflow Report for a complete analysis of the Borough's Combined Sewer Overflows.

BOROUGH of STEELTON, SEWAGE DEPT., CSO(s) 2015 YEAR REPORT Received 1/21/16

Sheet1

DATE/CREW	R.G.	OVERFLOW	LOCATION/SITUATION	TIME IN	TIME OUT
			JANUARY-2015		
01/01/15			Holiday/off		
01/02/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:26:00 AM	08:33:00 AM
01/03/15 RW	0.5"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	22:58:00	11:08:00 PM
01/05/15 RW/TC2/RM	0.17"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:45:00 AM	07:54:00 AM
01/06/15			COULD NOT CHECK-snow storm		
01/07/15 RW/TC2	2.0"snow	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:22:00 AM	08:32:00 AM
01/08/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	09:30:00 AM	09:40:00 AM
01/09/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:08:00 AM	08:16:00 AM
01/12/15 RM	0.1"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:57:00 AM	08:05:00 AM
01/13/15 RM/TC2	0.4"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	12:49:00 PM	12:57:00 PM
01/14/15 RW/RM/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:29:00 AM	08:40:00 AM
01/15/15 RW/RM	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	12:45:00 PM	12:53:00 PM
01/16/15 RW/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	10:30:00 AM	10:38:00 AM
01/19/15			Holiday/off		
01/20/15 RW/RM	0.0"?fell over	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:52:00 AM	09:02:00 AM
01/21/15 RM/TC2	trace	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:17:00 AM	08:28:00 AM
01/22/15 RW/TC2	2.0"snow	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:55:00 AM	08:09:00 AM
01/23/15 RW/RM	0.0"	none	Felton st. cso-no overflow,put enzymes in chambers,'R' st. cso- no overflow	08:43:00 AM	08:42:00 AM
01/26/15 RW/TC2	4.0"snow	none	Felton st. cso-no overflow,'R' st. cso- no overflow	08:14:00 AM	08:23:00 AM
01/27/15 RW/TC2	1.5"snow	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:29:00 AM	08:40:00 AM
01/28/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:26:00 AM	08:35:00 AM
01/29/15 RW/RM/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso- no overflow	07:30:00 AM	07:40:00 AM
01/30/15 RW/RM	0.5"snow	none	Felton st. cso- no overflow,'R' st. cso-no overflow	08:31:00 AM	08:40:00 AM
			FEBRUARY-2015		
02/02/15 RW/RM	1.5"snow	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:20:00 AM	08:30:00 AM
02/03/15 RW/RM	0.20"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	10:15:00 AM	10:24:00 AM
02/04/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso- no overflow	07:52:00 AM	08:02:00 AM
02/05/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:00:00 AM	08:09:00 AM
02/06/15 RW/JW	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	09:21:00 AM	09:31:00 AM
02/09/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:00:00 AM	08:08:00 AM
02/10/15 RM/TC2	trace	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:48:00 AM	08:56:00 AM
02/11/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso- no overflow	07:57:00 AM	08:08:00 AM
02/12/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:54:00 AM	08:05:00 AM
02/13/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:42:00 AM	08:51:00 AM
02/16/15			Holiday/off		
02/17/15 RW	1.5"snow	none	Felton st. cso-no overflow,'R' st. cso-no overflow	10:04:00 AM	10:14:00 AM
02/18/15 RM/TC2	NONE	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:46:00 AM	08:53:00 AM

02/19/15 RW/RM/TC2	0.3"snow	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:54:00 AM	08:03:00 AM
02/20/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:42:00 AM	07:52:00 AM
02/23/15 TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso- no overflow	10:13:00 AM	10:20:00 AM
02/24/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:45:00 AM	08:57:00 AM
02/25/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:51:00 AM	08:02:00 AM
02/26/15 RW/RM	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	08:50:00 AM	09:02:00 AM
02/27/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	12:41:00 PM	12:52:00 PM
**********			MARCH-2015	**********	
03/02/15 RW/RM	1.5"snow/sleet	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:53:00 AM	08:04:00 AM
03/03/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,put enzyme packets in chamber,'R' st. cso- no overflow	08:06:00 AM	08:16:00 AM
03/04/15 RW/RM	0.1"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	08:20:00 AM	08:30:00 AM
03/05/15			COULD NOT CHECK-snow storm		
03/06/15 RW/RM	6.0"snow	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:57:00 AM	09:11:00 AM
03/09/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:35:00 AM	08:44:00 AM
03/10/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:16:00 AM	08:26:00 AM
03/11/15 RW/TC2	0.3"	none	Felton st. cso-no overflow,'R' st. cso- no overflow	08:00:00 AM	08:13:00 AM
03/12/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:43:00 AM	07:52:00 AM
03/13/15 RW/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	07:47:00 AM	07:56:00 AM
03/14/15 RW	0.4"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	12:28:00 PM	12:37:00 PM
03/16/15 TC2/JW	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:03:00 AM	08:13:00 AM
03/17/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:48:00 AM	07:57:00 AM
03/18/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:50:00 AM	08:02:00 AM
03/19/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	09:18:00 AM	09:27:00 AM
03/20/15 RW/TC2	trace/snow	none	Felton st. cso-no overflow,'R' st. cso-no overflow	09:37:00 AM	09:46:00 AM
03/23/15 RW/TC2	1.5"s/tr.-r	none	Felton st. cso-no overflow,'R' st. cso-no overflow	09:35:00 AM	09:44:00 AM
03/24/15 RM/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:01:00 AM	08:07:00 AM
03/25/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:29:00 AM	08:40:00 AM
03/26/15 RW/RM	trace	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:43:00 AM	07:54:00 AM
03/27/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:20:00 AM	08:24:00 AM
03/30/15 RM/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:58:00 AM	08:06:00 AM
03/31/15 RM/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:01:00 AM	08:09:00 AM
**********			APRIL-2015	**********	
04/01/15 RW/RM	trace	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:30:00 AM	08:40:00 AM
04/02/15 RW/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	08:08:00 AM	08:18:00 AM
04/03/15 ##########			Holiday/off	##########	
04/06/15 RM/TC2	trace	none	Felton st. cso- no overflow,'R' st. cso-no overflow	07:58:00 AM	08:06:00 AM
04/07/15 RM/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	08:14:00 AM	08:22:00 AM
04/08/15 RM/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	07:33:00 AM	07:39:00 AM

04/09/15 RM/TC2	trace	none	Felton st. cso- no overflow,'R' st. cso-no overflow	07:42:00 AM	07:49:00 AM
04/10/15 RM	trace	none	Felton st. cso- no overflow,'R' st. cso-no overflow	08:06:00 AM	08:15:00 AM
04/13/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:40:00 AM	07:52:00 AM
04/14/15 RW/RM	0.1"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:40:00 AM	08:50:00 AM
04/15/15 RM/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:50:00 AM	07:58:00 AM
04/16/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	09:45:00 AM	09:57:00 AM
04/17/15 RW/TC2	trace	none	Felton st. cso- no overflow,flushed both chambers,'R' st. cso-no overflow,flushed both chambers.	08:00:00 AM	08:21:00 AM
04/20/15 RW/RM	0.6"	both	Felton st. cso- overflow,'R' st. cso- overflow	07:47:00 AM	08:00:00 AM
04/21/15 RW/TC2	0.5"	both	Felton st. cso- overflow,'R' st. cso- overflow	08:00:00 AM	08:14:00 AM
04/22/15 RM/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:36:00 AM	07:44:00 AM
04/23/15 RW/TC2	trace	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:42:00 AM	08:55:00 AM
04/24/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:02:00 AM	08:13:00 AM
04/27/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:55:00 AM	08:09:00 AM
04/28/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso- no overflow	07:44:00 AM	07:57:00 AM
04/29/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:25:00 AM	08:36:00 AM
04/30/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:35:00 AM	07:48:00 AM
**********			MAY-2015	**********	
05/01/15 RW/TC2	0.3"	y-1,n-1	Felton st. cso- overflow,'R' st. cso-no overflow	07:55:00 AM	08:08:00 AM
05/04/15 RW/RM	0.0"	y-1,n-1	Felton st. cso- overflow,due to hydrant flushing,'R' st. cso-no overflow	07:40:00 AM	07:52:00 AM
05/05/15 RW/TC2	0.0"	both	Felton st. cso- overflow,'R' st. cso- overflow,both due to hydrant flushing.	12:45:00 PM	12:57:00 PM
05/06/15 RW/RM	0.1"	both	Felton st. cso- overflow,'R' st. cso- overflow,both due to hydrant flushing.	08:25:00 AM	08:40:00 AM
05/07/15 RW/TC2	trace	none	Felton st. cso- no overflow,'R' st. cso- no overflow	07:45:00 AM	07:57:00 AM
05/08/15 RW/RM	0.0"	none	Felton st. cso- no overflow,'R' st. cso- no overflow	07:50:00 AM	08:01:00 AM
05/11/15 RW/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	07:49:00 AM	08:01:00 AM
05/12/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	12:40:00 PM	12:51:00 PM
05/13/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso- no overflow	08:55:00 AM	09:07:00 AM
05/14/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:47:00 AM	07:57:00 AM
05/15/15 RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:51:00 AM	07:57:00 AM
05/16/15 RM	0.2"	Yes 2	Felton st. cso- overflow,'R' st. cso- overflow	05:44:00 PM	05:56:00 PM
05/18/15 RM	trace	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:13:00 AM	08:20:00 AM
05/19/15 RM	0.1"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:41:00 AM	07:49:00 AM
05/20/15 RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:51:00 AM	07:58:00 AM
05/21/15	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	10:49:00 AM	10:57:00 AM
05/25/15			Holiday/off		
05/26/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:01:00 AM	08:13:00 AM
05/27/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:45:00 AM	07:55:00 AM

05/28/15 RW	0.5"	both	Felton st. cso- overflow,'R' st. cso- overflow	08:30:00 AM	08:41:00 AM
05/29/15 RW/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	08:07:00 AM	08:18:00 AM
**********			JUNE-2015	**********	
05/31/15 RW	0.21"	both	Felton st. cso- overflow,'R' st. cso- overflow	07:31:00 PM	07:43:00 PM
06/01/15 RW/TC2	0.05"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	08:15:00 AM	08:26:00 AM
06/02/15 RW/TC2	0.2"	n-1,y-1	Felton st. cso-no overflow,'R' st. cso- overflow	07:48:00 AM	07:59:00 AM
06/03/15 RW/RM	0.4"	both	Felton st. cso-no overflow,'R' st. cso-no overflow	12:54:00 PM	01:07:00 PM
06/04/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:54:00 AM	08:17:00 AM
06/05/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso- no overflow	08:00:00 AM	08:11:00 AM
06/08/15 RW/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	07:48:00 AM	07:58:00 AM
06/09/15 RW/RM	0.5"	both	Felton st. cso- overflow,'R' st. cso- overflow	08:05:00 AM	08:15:00 AM
06/10/15 RW	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	10:10:00 AM	10:20:00 AM
06/11/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	12:55:00 PM	01:07:00 PM
06/12/15 RW/RM	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	09:15:00 AM	09:26:00 AM
06/14/16 RW	0.7"	both	Felton st. cso- overflow,'R' st. cso- overflow	07:21:00 PM	07:31:00 PM
06/15/15 RW/TC2	0.1"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:50:00 AM	09:00:00 AM
06/16/15 RW/TC2	0.1"	none	Felton st. cso-no overflow,'R' st. cso- no overflow	08:31:00 AM	08:40:00 AM
06/17/15 RM/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso- no overflow	12:43:00 PM	12:51:00 PM
06/18/15 RW/TC2	0.15"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:59:00 AM	08:10:00 AM
06/19/15 RW/TC2	0.4"	both	Felton st. cso- overflow,'R' st. cso- overflow	08:08:00 AM	08:22:00 AM
06/20/15 RW	0.1"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:52:00 PM	08:01:00 PM
06/20/15 RW	0.7"	both	Felton st. cso- overflow,'R' st. cso- overflow	11:22:00 PM	11:33:00 PM
06/22/15 RW/TC2	0.2"	both	Felton st. cso- overflow,'R' st. cso- overflow	07:39:00 AM	07:53:00 AM
06/23/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:50:00 AM	08:00:00 AM
06/24/15 RW/TC2	0.6"	both	Felton st. cso- overflow,'R' st. cso- overflow	08:35:00 AM	08:46:00 AM
06/25/15 RW/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	08:35:00 AM	08:51:00 AM
06/26/15 RW	0.0"	none	Felton st. cso-no overflow,'R' st. cso- no overflow	10:32:00 AM	10:42:00 AM
06/27/15 RW	0.5"	both	Felton st. cso- overflow,'R' st. cso- overflow	05:47:00 PM	05:58:00 PM
06/28/15 RW	0.3"	both	Felton st. cso- overflow,'R' st. cso- overflow	11:32:00 AM	11:43:00 AM
06/29/15 TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:40:00 AM	08:46:00 AM
06/30/15 TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:57:00 AM	08:04:00 AM
**********			JULY-2015	**********	
07/01/15 TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:57:00 AM	08:04:00 AM
07/02/15 TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:57:00 AM	08:03:00 AM
07/04/15 RW	0.25"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	01:35:00 PM	01:45:00 PM
07/06/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:15:00 AM	08:27:00 AM
07/07/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	12:48:00 PM	12:57:00 PM
07/08/15 RW/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	07:47:00 AM	07:56:00 AM

07/09/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:23:00 AM	08:32:00 AM
07/10/15 RW/TC2	0.2"	both	Felton st. cso- overflow,'R' st. cso- overflow	08:43:00 AM	08:54:00 AM
07/13/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso- no overflow	08:50:00 AM	09:02:00 AM
### RW	0.6"	both	Felton st. cso- overflow,'R' st. cso- overflow(7/14/15)	08:49:00 AM	09:00:00 AM
07/15/15 RW	trace	none	Felton st. cso-no overflow,'R' st. cso-no overflow	12:47:00 PM	12:56:00 PM
07/16/15 RW	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:52:00 AM	08:03:00 AM
07/17/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:43:00 AM	07:53:00 AM
07/20/15 RW/TC2	trace	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:39:00 AM	07:48:00 AM
07/21/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso- no overflow	12:55:00 PM	01:08:00 PM
07/22/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	01:05:00 PM	01:17:00 PM
07/23/15 RW/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	09:00:00 AM	09:09:00 AM
07/24/15 TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	09:11:00 AM	09:16:00 AM
07/27/15 RW/TC2	0.2"	both	Felton st. cso- overflow,'R' st. cso- overflow	08:59:00 AM	09:05:00 AM
07/28/15 RW/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	10:54:00 AM	11:04:00 AM
07/29/15 RW/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	09:10:00 AM	09:20:00 AM
07/30/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:50:00 AM	09:00:00 AM
07/31/15 RW/TC2	0.1"	both	Felton st. cso- overflow,'R' st. cso- overflow,flushed both chambers in each one.	09:20:00 AM	09:40:00 AM
**********			AUGUST-2015	**********	
08/03/15 RW	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	09:40:00 AM	09:51:00 AM
08/04/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:22:00 AM	08:31:00 AM
08/05/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso- no overflow	08:29:00 AM	08:38:00 AM
08/06/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	09:49:00 AM	09:58:00 AM
08/07/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:55:00 AM	09:10:00 AM
08/10/15 RW/TC2	0.5"	both	Felton st. cso- overflow,'R' st. cso- overflow	12:50:00 PM	01:01:00 PM
08/11/15 RW/TC2	0.3"	both	Felton st. cso- overflow,'R' st. cso- overflow	07:58:00 AM	08:09:00 AM
08/12/15 RW/TC2	0.3"	both	Felton st. cso- overflow,'R' st. cso- overflow	10:50:00 AM	11:00:00 AM
08/13/15 RW/TC2	trace	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:39:00 AM	07:50:00 AM
08/14/15 TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	09:13:00 AM	09:20:00 AM
08/17/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	09:13:00 AM	09:22:00 AM
08/18/15 RW/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	12:43:00 PM	12:52:00 PM
08/19/15 RW/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	08:30:00 AM	08:39:00 AM
08/20/15 RW/TC2	trace	none	Felton st. cso-no overflow,'R' st. cso- no overflow	08:11:00 AM	08:21:00 AM
08/21/15 RW	0.6"	both	Felton st. cso- overflow,'R' st. cso- overflow	07:48:00 AM	07:57:00 AM
08/24/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:25:00 AM	08:35:00 AM
08/25/15 RW	0.5"	both	Felton st. cso- overflow,'R' st. cso- overflow	07:38:00 AM	07:46:00 AM
08/26/15 RW	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	10:32:00 AM	10:43:00 AM
08/27/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	12:56:00 PM	01:05:00 PM
08/28/15 RW/TC2	0.0"	none	Felton st. cso- no overflow,'R' st. cso-no overflow	08:10:00 AM	08:19:00 AM

08/31/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	10:52:00 AM 11:02:00 AM
			SEPTEMBER-2015	
09/01/15 RW/JW	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	11:08:00 AM 11:17:00 AM
09/02/15 TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	10:52:00 AM 10:58:00 AM
09/03/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	10:08:00 AM 10:18:00 AM
09/04/15 RW/TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:25:00 AM 08:34:00 AM
09/07/15			Holiday/off	
09/08/15 TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	07:56:00 AM 08:02:00 AM
09/09/15 TC2	0.0"	none	Felton st. cso-no overflow,'R' st. cso-no overflow	08:05:00 AM 08:12:00 AM
09/10/15 TC	0.0	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:50:00 AM 08:00:00 AM
09/11/15 TC2	1.5"	both	Felton st cso- overflow, 'R' st cso- overflow	08:32:00 AM 08:38:00 AM
09/14/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:47:00 AM 07:58:00 AM
09/15/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	11:05:00 AM 11:15:00 AM
09/16/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	12:38:00 PM 12:48:00 PM
09/17/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	01:15:00 PM 01:24:00 PM
09/18/15 RW/BK	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow,flushed out both chambers in both CSOs	08:00:00 AM 08:20:00 AM
09/21/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:50:00 AM 08:02:00 AM
09/22/15 RW/TC2	0.05"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:45:00 AM 07:55:00 AM
09/23/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:45:00 AM 07:55:00 AM
09/24/15 RW/	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:42:00 AM 07:51:00 AM
09/25/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:36:00 AM 08:46:00 AM
09/28/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:50:00 AM 08:00:00 AM
09/29/15 RW	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	11:25:00 AM 11:34:00 AM
09/30/15 RW/TC2	0.9"	both	Felton st cso- overflow, 'R' st cso- overflow	07:50:00 AM 08:01:00 AM
			OCTOBER-2015	
10/01/15 RW	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:39:00 AM 07:48:00 AM
10/02/15 RW	0.1"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:50:00 AM 08:59:00 AM
10/03/15 RW	0.5"fri/sat	both	Felton st cso- overflow, 'R' st cso- overflow	12:40:00 PM 12:49:00 PM
10/05/15 RW/TC2	0.1"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:26:00 AM 08:35:00 AM
10/06/15 RW	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	11:12:00 AM 11:21:00 AM
10/07/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	10:05:00 AM 10:15:00 AM
10/08/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	01:25:00 PM 01:35:00 PM
10/09/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:24:00 AM 08:33:00 AM
10/12/15 RW	0.20"	Both-fri.rain	Felton st cso- overflow, 'R' st cso- overflow	11:00:00 AM 11:10:00 AM
10/13/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	12:42:00 PM 12:51:00 PM
10/14/15 RW	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:45:00 AM 07:55:00 AM
10/15/15 RW	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:05:00 AM 08:15:00 AM
10/16/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	09:24:00 AM 09:33:00 AM

10/19/15 TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:51:00 AM	07:57:00 AM
10/20/15 TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:45:00 AM	07:51:00 AM
10/21/15 RW	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:26:00 AM	08:35:00 AM
10/22/15 RW	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	12:46:00 PM	12:55:00 PM
10/23/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:30:00 AM	08:40:00 AM
10/26/15 RW/TC2	trace	none	Felton st cso-no overflow, 'R' st cso-no overflow	10:44:00 AM	10:53:00 AM
10/27/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:16:00 AM	08:25:00 AM
10/28/15 RW/TC2	0.1"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:25:00 AM	08:37:00 AM
10/29/15 RW/TC2	1.2"	both	Felton st cso- overflow, 'R' st cso- overflow	10:10:00 AM	10:20:00 AM
10/30/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:17:00 AM	08:27:00 AM
**********			OCTOBER-2015	**********	
11/02/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:35:00 AM	07:46:00 AM
11/03/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:48:00 AM	07:57:00 AM
11/04/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	12:42:00 PM	12:51:00 PM
11/05/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	12:40:00 PM	12:49:00 PM
11/06/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:02:00 AM	08:11:00 AM
11/09/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	11:13:00 AM	11:23:00 AM
11/10/15 RW/TC2	0.1"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:38:00 AM	07:47:00 AM
11/11/15			Holiday/off		
11/12/15 RW	0.3"	none	Felton st cso-no overflow, 'R' st cso-no overflow	10:38:00 AM	10:47:00 AM
11/13/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	12:45:00 PM	12:55:00 PM
11/16/15 TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	01:15:00 PM	01:22:00 PM
11/17/15 RW	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	12:43:00 PM	12:52:00 PM
11/18/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	10:27:00 AM	10:37:00 AM
11/19/15 RW/TC2	0.1"	none	Felton st cso-no overflow, 'R' st cso-no overflow	09:25:00 AM	09:37:00 AM
11/20/15 RW/TC2	0.1"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:54:00 AM	08:03:00 AM
11/23/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:57:00 AM	08:08:00 AM
11/24/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:49:00 AM	07:58:00 AM
11/25/15 RW	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:58:00 AM	08:08:00 AM
11/26-27/15			Holiday/off		
11/30/15 RW/	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:41:00 AM	07:50:00 AM
**********			DECEMBER-2015	**********	
12/01/15 RW/TC2	0.2'	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:58:00 AM	08:07:00 AM
12/02/15 RW/TC2	0.2"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:43:00 AM	07:54:00 AM
12/04/15 RW/JW	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	09:22:00 AM	09:31:00 AM
12/07/15 RW	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	09:47:00 AM	09:56:00 AM
12/08/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	10:00:00 AM	10:12:00 AM
12/09/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:15:00 AM	08:27:00 AM

12/10/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	09:32:00 AM	09:43:00 AM
12/11/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:52:00 AM	08:02:00 AM
12/14/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	12:40:00 PM	12:50:00 PM
12/15/15 RW/TC2	0.2"	y-1,n-1	Felton st cso-no overflow, 'R' st cso- overflow	07:58:00 AM	08:08:00 AM
12/16/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:43:00 AM	08:52:00 AM
12/17/15 RW/TC2	trace	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:33:00 AM	08:42:00 AM
12/18/15 RW/TC2	0.1"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:13:00 AM	08:22:00 AM
12/21/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow	09:13:00 AM	09:22:00 AM
12/22/15 RW/TC2	0.15"	none	Felton st cso-no overflow, 'R' st cso-no overflow	08:06:00 AM	08:17:00 AM
12/23/15 RW/TC2	trace	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:40:00 AM	07:49:00 AM
12/24-25/15			Holiday/off		
12/24/15 RW	0.50"	both	Felton st cso- overflow, 'R' st cso- overflow	08:00:00 AM	08:10:00 AM
12/27/15 RW	0.25"	none	Felton st cso-no overflow, 'R' st cso-no overflow	10:00:00 PM	10:11:00 PM
12/28/15 RW/TC2	trace	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:40:00 AM	07:51:00 AM
12/27/15 RW	0.20"	none	Felton st cso-no overflow, 'R' st cso-no overflow	10:41:00 AM	10:52:00 AM
12/29/15 RW/TC2	0.50"	both	Felton st cso- overflow, 'R' st cso- overflow	07:49:00 AM	08:00:00 AM
12/30/15 RW/TC2	trace	none	Felton st cso-no overflow, 'R' st cso-no overflow	07:51:00 AM	08:02:00 AM
12/31/15 RW/TC2	0.0"	none	Felton st cso-no overflow, 'R' st cso-no overflow,also flushed all 4 chambers.	07:35:00 AM	07:49:00 AM

ATTACHMENT E

APRIL 2008 ACT 537 PLAN UPDATE/COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN

3.1 IDENTIFICATION OF SENSITIVE AREAS

The EPA Combined Sewer Overflow Control Policy of April 19, 1994, calls special attention to sensitive areas. Municipalities are required to give the highest priority to controlling overflows to receiving waters considered sensitive. According to the Policy, sensitive areas include:

1. Outstanding National Resource Waters
2. National Marine Sanctuaries
3. Waters with Threatened or Endangered Species or their Designated Critical Habitat
4. Primary Contact Recreation Waters, such as Bathing Beaches
5. Public Drinking Water Intakes or their Designated Protection Areas
6. Shellfish Beds

Direct access to the Susquehanna River within the Borough is limited. The majority of the property along the shoreline is owned by commercial entities or the Borough.

While there are no areas within the Borough which fit the six sensitive area criteria listed above, the Borough owns a boat launch facility along the Susquehanna River at the extreme southeastern end of the Borough near the Highspire Borough boundary line (Just East of the Pennsylvania Turnpike). This facility is approximately 1,000 feet downstream of the southeastern most CSO Outfall (CSO Outfall No.1). Please refer to the Complete Sewer System Mapping in Appendix H.

Use of the boat launch requires registration with the Borough, thus enabling the Borough to prohibit access if necessary.

- Fish and Wildlife Habitat
- Water Quality Maintenance
- Pollution Filter
- Oxygen Production
- Nutrient Recycling
- Chemical and Nutrient Absorption
- Aquatic Productivity
- Flood Control
- Recreational Land Preservation
- Educational Opportunities
- Microclimate Regulation
- World Climate Regulation
- Sediment Removal
- Energy Source (Peat)
- Open Space Preservation

The National Wetlands Inventory (NWI) mapping, as compiled by the U.S. Fish and Wildlife Service, is useful as a background source of information regarding wetland locations. The maps are prepared through the use of color infrared aerial photographs, and the quality of the maps varies dependant upon the time of year that the photos were taken and other factors. Field investigation, conducted by a trained scientist or engineer, is necessary to determine the actual presence or absence of wetland areas.

There were no wetlands found in the project area as determined by a NWI Wetlands Inventory search. A Wetlands Map for the Borough of Steelton is included in Appendix E.

3.4 Historic Resources

The Pennsylvania Historic and Museum Commission (PHMC) must be consulted to identify the potential impact of the alternatives evaluated by the Act 537 Plan. A cultural resource notice request was sent to the Bureau of Historic Preservation for a list of known historical sites and identification of potential impacts on known archaeological and historic sites within the Borough of Steelton by implementation of the proposed project alternatives. Copies of the PHMC correspondence are included with this Environmental Report.

3.5 Sensitive Biological Resources

The Pennsylvania Natural Diversity Inventory (PNDI) must be evaluated for adverse effects resulting from the implementation of the proposed Project. Requests to the Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry, Pennsylvania Fish and Boat Commission, U.S. Fish and Wildlife Service, and Pennsylvania Game Commission were submitted for the area of the proposed project alternatives. Copies of the appropriate correspondence are included with this Environmental Report.

3.6 Water Quality Issues

Implementation of the proposed Project will not require new public wastewater treatment facilities or stream discharges as wastewater from these areas will be conveyed to the existing Harrisburg AWTF. No permanent, deleterious water quality issues are anticipated to occur as a result of the proposed projects. During construction activities, sedimentation to surface waters will be controlled by accepted E&S control methods outlined in an approved E&S Control Plan. Once completed, the elimination of the SSO facilities and sewer separation in the "T" Street Drainage Basin will result in improved water quality in the Susquehanna River and surrounding area.

Water supplies, both public and private, will not be negatively impacted by the recommended alternatives of this Plan. In fact, water supplies may be positively impacted through elimination of SSO facilities and increased CSO captures.

3.7 Coastal Resources

The proposed project is not located within a coastal zone management area. Therefore, no impacts to coastal resources are expected.

3.8 Socio-Economic Issues

The selected alternatives are considered necessary to maintain community viability, protection of public health, and secondarily to protect property investments.

The storm sewer routing associated with Alternative 4B: Sewer Separation "T" Street Only is based entirely upon the accessibility and topography of the land with no consideration given to race or income. The proposed projects will have no impact on minorities or disadvantaged populations.

3.9 Air Quality

With the exception of the minimal dust and exhaust during the construction activities, the proposed Project will not create any significant impacts on air quality. Dust generated during construction activities will be controlled by best management practices and engineering controls outlined in the construction contract. Dust and exhaust generated during construction activities is usually limited to between normal working hours (8 a.m. to 5 p.m.).

3.10 Transportation

There will be no permanent impact on transportation. There will be minimal disruption of traffic patterns during construction of the selected alternatives. All traffic control and construction methods required by the Pennsylvania Department of Transportation and the Borough of Steelton will be followed during construction within these roads.

3.11 Noise Abatement and Control

Noise will only be an issue during construction activities. Noise will be controlled by best management practices and engineering controls outlined in the construction contract. Construction noise is of a fixed duration and ceases at the completion of the construction phase of the project. Noise from construction vehicles differs from normal vehicular traffic noise in that it is usually limited to normal working hours (8 a.m. to 5 p.m.), whereas traffic noise is usually continuous.

3.12 Wild and Scenic Rivers

There are no rivers in the Borough of Steelton considered Scenic by the PA Scenic Rivers Act.

3.13 Miscellaneous Environmental Considerations

There are no other environmental issues, such as biosolids generation, treatment, and disposal; impacts on or from local landfills; impacts on or from Superfund/HSCA sites; and generation of hazardous, explosive, flammable, toxic, radioactive materials which pertain to the proposed Project. Appropriate state and federal permits will be obtained prior to the construction of the proposed projects.

APPENDIX M-5

CHAPTER 94 REPORT
FOR
SUSQUEHANNA TOWNSHIP AUTHORITY

Susquehanna Township Authority

Municipal Wasteload Management Report
Tributary to Harrisburg's Wastewater Treatment Facility
Calendar Year 2015

March 2016

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Figure 1 – Annual Hydraulic Loading

Figure 2 – Annual Organic Loading

Appendices

Appendix A –2015 Wastewater Flow Summary Analysis

Appendix B – Hydraulic and Organic Loading Table

Appendix C – Projected EDUs

Appendix D – Approved November 2013 Second Corrective Action Plans

Map

Susquehanna Township Authority Sanitary Sewer System Map

1. Introduction

Susquehanna Township Authority (STA) owns and operates a wastewater collection and conveyance system that serves Susquehanna Township, Dauphin County, Pennsylvania. STA conveys its wastewater to Capital Region Water's Advanced Wastewater Treatment Facility (AWTF). There are four drainage basins in Susquehanna Township that are tributary to the AWTF, which are: Paxton Creek Basin, Spring Creek Basin (including the Latshmere area), Asylum Run Basin, and Front Street Basin. This report includes the following:

- Existing and projected hydraulic and organic loadings.
- Plans to reduce current hydraulic overloaded or projected hydraulic overloaded facilities.
- A summary of sewer extensions including a sewer system map.
- A description of collection system monitoring, maintenance, repair and rehabilitation practices.
- A discussion of the condition of the collection system.
- A discussion of the condition of the pumping stations.

2. Hydraulic Loadings

Hydraulic loadings for calendar year 2015 are indicated in Appendix A. As shown in Appendix A, the 2015 average metered daily flow was 3.37 mgd or 247 gpd/EDU.

Appendix B indicates the previous hydraulic loadings for calendar years 2011 through 2015 and the projected loadings for calendar years 2016 through 2020. The projected hydraulic loadings are based on the projected EDUs shown in Appendix C and an average flow per EDU calculated from the previous five year average for existing development.

Table 1 is a summary of Appendix C that indicates the *estimated* 5-year projections for new development and associated new wastewater flows within Susquehanna Township, both by basin and as a total to the City of Harrisburg.

Table 1 - Five Year Projection of Flows from New Development by Basin

	Paxton Creek		Asylum Run		Spring Creek		Front Street		Spring Creek - Latshmere		Total	
Year	EDUs	GPD	EDUs	GPD	EDUs	GPD	EDUs	GPD	EDUs	GPD	EDUs	GPD
2016	264	66,000	0	-	0	-	0	-	0	-	264	66,000
2017	292	73,000	0	-	0	-	0	-	0	-	292	73,000
2018	158	39,500	0	-	0	-	0	-	0	-	158	39,500
2019	151	37,750	0	-	0	-	0	-	0	-	151	37,750
2020	149	37,250	0	-	0	-	0	-	0	-	149	37,250

Notes: (1) Flow projections assume 250 gpd/EDU for new development

3. Organic Loadings

Estimated organic loadings for calendar years 2011 through 2015 and projected organic loadings for calendar years 2016 through 2020 are presented in Appendix B. The organic loadings are based on a BOD loading of 0.37 lbs/day/EDU, which is calculated using 2.2 persons per occupied EDU (based on the 2010 census) times the typical estimate of 0.17 lbs BOD/day/person. The projected organic loadings shown in Appendix B are based on the projected EDUs found in Appendix C.

4. Overload Reduction Program

4.1 Paxton Creek Drainage Basin

Sewer connections in the Paxton Creek Basin in Susquehanna Township are currently restricted due to sanitary sewer overflows within Susquehanna Township. Per the 1969 agreement between STA and LPTA, STA allocated flow of the interceptor is 4.49 mgd and LPTA allocated flow of the interceptor is 7.79 mgd. There is an estimated 4.72 mgd additional carrying capacity of the interceptor under surcharge conditions but without overflows. The Authorities agreed to divide the additional surcharge capacity based on the 1969 agreement cost sharing percentage of flow; 41% STA and 59% LPTA. Therefore, the allocated total wet weather flow for each Authority is 6.43 mgd for STA and 10.57 mgd for LPTA. STA has been performing rehabilitation/replacement projects since 1999 to reduce this total peak hourly flow. The rehabilitation/replacement projects continue in the Township.

The approved Second Corrective Action Plan (CAP) for Paxton Creek Basin is contained in Appendix D. STA is proceeding with the Second CAP. Annual progress reports are submitted to DEP no later than September 30th of each year until the termination of the CAPs.

4.2 Spring Creek Drainage Basin including Latshmere Drainage Basin

The Authority does not experience overflows on the interceptor within Susquehanna Township. The Spring Creek Basin is not under a Corrective Action Plan. The Authority has performed three rehabilitation projects in the Spring Creek Basin (Mini-Basins 26A, 26B west, and 34A) to lower STA's peak flow and to remove excess I/I per the inter-municipal agreement with Lower Paxton Township Authority and Swatara Township Authority. Currently, the Authority is monitoring its flow.

4.3 Asylum Run Drainage Basin

Sewer connections in the Asylum Run Basin tributary to Manhole 137 in Susquehanna Township are currently restricted due to sanitary sewer overflows within Susquehanna Township. Per the agreement between STA and LPTA, STA allocated flow of the interceptor is 2.66 mgd and LPTA allocated flow of the interceptor is 1.47 mgd. STA has been performing sewer replacement projects since 1999 to reduce this total peak hourly flow. The replacement projects continue in the Township.

The approved Second Corrective Action Plan (CAP) for Asylum Run Basin is contained in Appendix D. STA is proceeding with the Second CAP. Annual progress reports are submitted to DEP no later than September 30th of each year until the termination of the CAPs.

4.4 Front Street Drainage Basin

The Front Street drainage basin is not considered to be hydraulically overloaded and it is not projected to be over loaded in the next five years. Sewers are repaired or replaced in this basin when the Authority Maintenance staff determines a problem. In 2016, however, approximately 2,000 feet of sanitary sewer main will be replaced as part of a storm sewer upgrade project that Susquehanna Township will be performing.

5. Collection System Construction, Connections, and Extensions

There were two sewer extensions completed in calendar year 2015 as shown on the system map provided with this report. These extensions were Apple Creek Farms Phase 4 and the 2323 Linglestown Road project.

In calendar year 2015, there were approximately 10,900 residential EDUs connected to the sewer system. The total EDUs tributary to Capital Region Water's system at the end of 2015 was approximately 13,600. The total 2015 EDUs by basin are listed in Appendix A.

As shown in the table below the Authority's sewer system consists of pipe sizes ranging from 8 inches to 42 inches.

Table 2 - Totals of Sanitary Sewer Owned by STA

Pipe Size (inches)	Approximate Total Footage
8	569,680
10	25,130
12	24,700
15	12,790
16	3,600
18	14,000
20	200
21	2,400
24	15,600
30	10,330
36	1,450
42	17,300
Feet	697,180
Miles	132

In 2013, DEP approved Susquehanna Township's revised Act 537 plan. One of the requirements of the approved plan is to extend the public sanitary sewer system to the southern area of the Township. The extension will serve approximately 115 existing homes and businesses and approximately 15 open parcels. In the fall of 2014, the Authority performed aerial photogrammetry of the southern area of the Township to augment future topography surveying. In addition, in

February 2015, the Authority began performing home surveys in the southern area of the Township to begin collecting information for the design of the sewer extension. The home surveys continue.

6. Collection System Monitoring, Maintenance, Repair and Rehabilitation

Collection system monitoring, maintenance, repair and rehabilitation performed within the basins during 2015 are presented below. More detailed descriptions of the mini-basins investigated and rehabilitated will be provided in the Annual Progress Report submitted to the DEP in accordance with STA's Second Corrective Action Plans.

There are no combined sewers in STA's collection system.

6.1 Paxton Creek Drainage Basin

- The mini-basin "total rehabilitation" program was continued in the Paxton Creek Basin. [Essentially, this involves metering for prioritization of the mini-basins and providing total rehabilitation starting with the worst basin and proceeding until flow reduction goals are met or I/I removal is no longer cost-effective. After rehabilitation of a basin is complete, wet weather flows are compared with a control basin to provide an appropriate comparison of pre- and post-rehabilitation wet weather flows for similar rainfall and groundwater conditions.]
- During the 2014 - 2015 metering season there were 10 meters in operation in the Paxton Creek Basin to monitor flows of the interceptors. The meters locations were located as follows:
  - Paxton Creek Trunk Interceptor – MH 1-10 Industrial Road (main trunk of the interceptor)
  - Paxton Creek North Interceptor – MH 2-5 Shutt Mill Road
  - Paxton Creek North Interceptor – MH 2-10A off of Pebblebrook Road ROW
  - Paxton Creek North Interceptor – MH 2-25 Old Reichert Ln ROW
  - Paxton Creek North Interceptor – MH 2-34
  - Paxton Creek Basin – MH 7-22 Woodridge Interceptor ROW
  - Paxton Creek East Interceptor – MH 1-46 alongside Paxton Church Road
  - Paxton Creek East Interceptor – MH 1-62
  - Paxton Creek North Interceptor – MH 9-22 Linglestown Rd (Control Basin)
  - Paxton Creek Basin – MH 2-79 (overflow box)

In addition, Lower Paxton Township Authority installs and maintains flow meters in Manholes 620 (SU-01) and 99.05 (SU-02), which measures the flow entering into Susquehanna Township from Lower Paxton Township. Also, Capital Region Water (CRW) owns and maintains a flow meter in Manhole 1-13, which measures the flow entering CRW's sewer system from Susquehanna and Lower Paxton Townships. As shown above, Susquehanna Township Authority owns and maintains a meter at Manhole 1-10 to confirm the flow leaving Susquehanna Township and entering the Harrisburg's system.

- Other than the on-going replacement/rehabilitation of mini-basins in accordance with approved Second CAP, routine maintenance, and minor emergency repairs, there was no major maintenance performed during 2015 in the Paxton Creek Basin.

- The sanitary sewer replacement project in Mini-Basin 29A was completed.
- The design for the sanitary sewer replacement projects of Mini-basins 29C, 32C, and 29D was completed. The project was awarded to a contractor in March 2015. Construction began in August 2015 and continues.
- The design to up-size a section of the Paxton Creek Interceptor is underway. The interceptor from Manhole 2-9 to Manhole 2-29 will be replaced with larger size pipe to accommodate the increase flows from future development. It is expected that the project will be advertised in 2016, pending obtaining additional temporary easements from property owners.

6.2 Spring Creek Drainage Basin

- Currently, there is 1 meter in operation in the Spring Creek Basin to monitor flow from the control basin located in Manhole 1202. Also, Swatara Township Authority owns and maintains a flow meter in Metering Chamber 5, which measures the flow entering Swatara's sewer system from Susquehanna and Lower Paxton Townships.
- Other than routine maintenance there was no major maintenance performed during 2015 in the Spring Creek Basin.
- As mentioned in Section 5.0 above, the Authority has begun topography surveying and collecting information for the design of the sewer extension to the southern portion of the Township that does not have public sanitary sewer.

6.3 Asylum Run Drainage Basin

- The mini-basin "total rehabilitation" program continued in the Asylum Run Basin. [Essentially, this involves metering for prioritization of the mini-basins and providing total rehabilitation starting with the worst basin and proceeding until flow reduction goals are met or I/I removal is no longer cost-effective. After rehabilitation of a basin is complete, wet weather flows are compared with a control basin to provide an appropriate comparison of pre- and post-rehabilitation wet weather flows for similar rainfall and groundwater conditions.]
- During the 2014 - 2015 metering season there were 14 meters in operation in the Asylum Run Basin to monitor flows of the interceptors and specific mini-basins. The meters were located as follows:
  - Mini-Basin 22A – MH 659A
  - Mini-Basin 22H – MH 532
  - Pines Interceptor – MH 258 Andrew Avenue Right-of-Way
  - Pines Interceptor – MH 274
  - Asylum Run Interceptor – MH 136 Andrea Avenue Right-of-Way
  - Asylum Run Interceptor – MH 544 off of 36th Street
  - Asylum Run Interceptor – MH 127A Andrew Avenue Right-of-Way
  - Asylum Run Interceptor – MH 247
  - Asylum Run Interceptor – SUO3 Flow from Lower Paxton Township
  - Asylum Run Interceptor – SUO4 Flow from Lower Paxton Township
  - Asylum Run Interceptor – SUO5 Flow from Penbrook
  - Asylum Run Interceptor – SUO6 Near the former State Hospital property
  - Asylum Run Interceptor – MH 257 (overflow box)

- Asylum Run Interceptor – MH 139A (overflow box)

- Other than the on-going replacement/rehabilitation of mini-basins in accordance with approved CAP and routine maintenance there was no major maintenance performed during 2015 in the Asylum Run Basin.
- The sanitary sewer replacement projects in Mini-Basins 22G and 22H began in December 2014 and were completed in the spring of 2015.

6.4 Front Street Drainage Basin

- After Tropical Storm Ivan, the Authority performed an investigation of the sewers in the Front Street Basin due to backups in basements. The conclusion of the investigation showed that the sewers in the Front Street Basin have, like the other basins in the Township, excess infiltration and inflow. But, the amount of excess I/I is not to the extent as the other basins and this drainage basin does not have overflows nor is it hydraulic overloaded like the Paxton Creek and Asylum Run Basins. Surcharging and basement backups in the Front Street Basin occur only when the Susquehanna River exceeds flood stage. Based on the investigation and observations, surcharging and, possibly basement backups, would occur even if the sewers (sewer main, service lateral, and building sewer up to the exterior building) were replaced. This conclusion is supported by, among other details in the investigation report, that the CRW's sewers surcharge during the same events, which contribute to the surcharging of the Authority's sewers, and that the building sewers under basement slabs are allowing groundwater to enter the sewer system and basements.
- Currently, there is 1 meter in operation in the Front Street Basin to monitor flow (MH 9). The meter is operated and maintained by CRW.

6.5 Other Areas

- Due to multiple failures of the Fox Run Pump Station and the Appletree Pump Station force mains the Authority replaced approximately 2,100 lineal feet of the Fox Run force main and approximately 1,000 feet of the Appletree Pump Station force main in 2015.

The Susquehanna Township Authority conducts an on-going preventative and corrective maintenance program on the sanitary sewer system including sewer system flushing, sewer system televising and performing sewer repairs and replacement. The Authority also awarded contracts in 2004, 2007, 2009, 2011 and 2013 for root control treatment. The contracts were for applying chemical root control agent in sewers that are prone to blockage due to excessive root penetration. Prior to performing the chemical treatment STA receives approval from CRW. The Authority also notifies CRW prior to commencing the treatment. No root control treatment was performed in 2015.

7. Condition of Collection System

7.1 Paxton Creek Drainage Basin

Except for leakage causing excess I/I during extreme wet weather events, much of which is from private laterals, the public system is in generally satisfactory structural condition. Because most of the sewers in this basin are made of PVC pipe, a combination of rehabilitation and sewer placement is being performed in this basin. As described in Section 6.1, a portion of the Paxton Creek Interceptor will be replaced to accommodate future development.

7.2 Asylum Run Drainage Basin

While functioning adequately during normal flows, the system up-gradient of manhole 137 is overloaded during extreme wet weather due to excess I/I from private sources. Because much of the system is clay pipe, there are problems with root intrusion and some pipe structural failures. Sewer replacement is being performed in this basin.

7.3 Spring Creek Drainage Basin

Except for leakage causing excess I/I during extreme wet weather events, much of which is from private laterals, the public system is in generally satisfactory structural condition. The Authority has replaced majority of its sewers, however, in the Latshmere Drainage Basin due to root problems. No known overflows have occurred within this drainage basin.

7.4 Front Street Basin

Except for leakage from private laterals that causes excess I/I during extreme wet weather events such as the river overflowing the river banks that results in flooding of this area, the public system is in generally satisfactory structural condition. Overflows have occurred within this drainage basin when the river is above flood stage. Refer to Section 6.4 of this report for further explanation.

8. Pumping Stations

The Susquehanna Township Authority wastewater collection and conveyance system includes seven (7) pumping stations. A master schedule for routine maintenance of pumping station is kept in the maintenance supervisor's office at the Authority garage. In addition, all preformed maintenance and repairs are kept in a log at each pumping station.

Presented in this section are descriptions of the major characteristics of each station, such as equipment and capacities as well as existing operating data. *There are no flow monitors at any of these stations to determine yearly average flow.* Drawdowns test for the North Front Street, Blue Ridge, Fox Run and Appletree Road Pumping Stations were performed in 2013. It is expected that drawdown tests will be performed in 2016.

The pump stations operated satisfactorily during the calendar year 2015. Five of the seven pump stations (P.S.) were built/upgraded in the 1990s. These stations are the Fort Hunter P.S. (1989), Blue Ridge P.S. (1991), the Front Street P.S. (1993), Fox Run P.S. (1995), and the Appletree P.S. (1997). The Wayne Street P.S. and Pine Crest P.S. were entirely replaced in 2007 and 2009, respectively. The expected life of pump station equipment in a sanitary sewer environment is approximately 20 years, which these five stations have reached. According to the Maintenance Superintendent several of the pump stations control panel parts and submersible pumps are either obsolete or becoming obsolete and; therefore, it is time to replace some of the control panels and submersible pumps. Over the next several years the Susquehanna Township Authority will be replacing the pump stations control panels in these stations.

8.1 Pumping Station No. 1 (North Front Street Pumping Station)

This pumping station is located in the Front Street Drainage Basin and also receives wastewater from the Fort Hunter Pumping Station. A new North Front Street pumping station was constructed in 1993. This is a submersible station with electrical equipment located above the 100-year flood plain. This project was part of the 1991 Bond Issue.

The pumping station is in generally good condition and has a capacity of 0.36 mgd. It is not considered to be hydraulically overloaded nor is it expected to be in the near future. No new future developments are known that are tributary to this pump station. The Authority performs the annual cleaning of all their pump stations' wet wells for preventive maintenance and to reduce possible odor problems. Results from the 2013 drawdown test are shown in the following table.

Table 3 - North Street Pump Station Drawdown Test Results

Pump	Design Flow (gpm)	Measured Flow (gpm) (2013 Drawdown Test Results)
No. 1		146
No. 2		144.5
No. 1 and No. 2	250	155

8.1.1 Pumping Station Equipment:

Wastewater Pumps

Two (2)

Manufacturer: Clow/Yeoman

Motors (2)

Type: Series 9000

Design Point: 250 GPM @ 53 feet T.D.H.

HP 15, RPM 1750, Volts 230, Cycle 60, Phase 3

8.2 Pumping Station No. 2 (Pine Crest Pumping Station)

This pumping station is located in the Front Street Drainage Basin on North Second Street just south of Pine Crest Drive. The original station was constructed in 1968. This station was replaced in 2009 and is now above the 100-year flood plain of the Susquehanna River. Electricity is the primary power source with a diesel-powered generator providing stand-by power in the event of a power failure.

The pump station is not hydraulically overloaded. Because of the small service area overloading is not likely to occur in the future. The maximum pump flow rate is estimated to be less than 15 gpm, while the design capacity of the station is 140 gpm (0.20 mgd). The station serves approximately 13 homes. No additional connections are expected to be added to this pump station and; therefore, the projected 2-year maximum flow is not likely to change from the current maximum pumping rate. Due to the low flow volume, a drawdown test cannot be performed satisfactory without inducing additional flow. The pump station is operating satisfactory.

8.2.1 Pumping Station Equipment:

Wastewater Pumps

Two (2) Manufacturer: Gorman-Rupp

Style: Submersible Pumps JSV3C60

Design Point: 140 gpm at 25 feet T.D.H.

Impeller Size: 6.89"

Motors

HP 2.7 RPM 1750

Volts 230, Cycles 60, Phase 3

Generator with Diesel Engine

One (1) Manufacturer: Caterpillar

Model D30-8

Specification No. 33125B

30 KW 37.5 KVA, Volts 120/240, Cycles 60, Phase 3

Diesel Fuel Capacity: 62 Gallons

Automatic Control: Equipment Manufacturer: GE Zenith Controls, Inc.

Generator Controller: Olympian EMCP 3.2

8.3 Pumping Station No. 3 (Blue Ridge Road Pumping Station)

This pumping station is located in the Paxton Creek Drainage Basin and pumps to the Fox Run Pumping Station. The Authority completely renovated the Blue Ridge Pumping Station in 1991. Improvements included: (1) a new above ground building to house emergency power and electrical equipment as well as the diesel fuel storage tank; and (2) replacement of pumps with Gorman Rupp suction lift pumps (capacity 0.57 mgd). The Authority performs the annual cleaning of all their pump stations' wet wells for preventive maintenance and to reduce possible odor problems.

On May 5, 1998, an overflow was experienced at the pumping station because of severe rainfall. The overflow is being addressed in the Paxton Creek CAP. Although no overflows have been observed at the pump station since May 5, 1998, the Authority's maintenance staff believes that overflows may have occurred during Tropical Storms Ivan and Jeanne (September 18, and 28, 2004, respectively).

Currently, approximately 130 EDUs are tributary to the pump stations. Results from the 2013 drawdown test are shown in the following table. No drawdown could be performed with the two pumps running simultaneously due to one of the check-valves not operating correctly when both pumps were operating. Although there have been no reported recent overflows at this pumping station the drawdown test concluded that there is an apparent problem with the pumps. Since 2013, the Maintenance Staff has assessed and repaired the pumps impellers and the check valve.

Table 4 - Blue Ridge Pump Station Drawdown Test Results

Pump	Design Flow (gpm)	Measured Flow (gpm) (2013 Drawdown Test Results)
No. 1		87.2
No. 2		203.5
No. 1 and No. 2	395	

8.3.1 Pumping Station Equipment:

Wastewater Pumps

Manufacturer: Gorman Rupp

Type: Suction Lift Pumps

Model T4A3-B

Design point: 395 gpm @ 97 feet T.D.H.

Serial Nos.: 961499N (Pump No. 1), 961500N (Pump No. 2)

Impeller Diameter: 9 ½"; Serial No. F90396791

Diesel Engine:

Volts: 277/480, Phase 3, Manufacturer: Cummins

Automatic Control: Equipment Manufacturer: Onan Transfer Switch

Model OTIII, 3 Pole, 225 Amp

Pump Controller: Manufacturer: Gorman-Rupp, Type: Air Bubbler

8.4 Pumping Station No. 4 (Fox Run Pumping Station)

This pumping station is located in the Paxton Creek Drainage Basin and also receives wastewater from the Blue Ridge Pumping station. Fox Run Pumping station was originally built in 1974 and is located near Linglestown Road and Countryside Drive. The station is sized to serve a maximum future population of about 6,000 with a peak flow rate of 1.91 mgd. The station was completely renovated in 1995 with replacement of pumps and motors and the addition of emergency power facilities. The primary power source is electricity with a backup generator. Wastewater from the station is discharged to Manhole 62A of the Paxton Creek drainage system via a 3,800-foot force main. The Authority performs the annual cleaning of all their pump stations' wet wells for preventive maintenance and to reduce possible odor problems. In 2015, approximately 2,100 feet of the force main was replaced due to several breaks in the main. The pumps are currently operating satisfactory.

During extreme wet weather events, overflows are observed along the Fox Run Interceptor leading to the pump station. An overflow box was installed to measure the overflows. The overflows are being addressed in the Paxton Creek Second CAP.

The maximum current pumping rate is 1,395 gpm (all three pumps operating) which occurs during extreme wet weather events. The Authority will be performing sewer rehabilitation projects in accordance with the CAP for those mini-basins tributary to the pump station. Until the mini-basin projects are completed, the projected 2-year maximum flow rate will be the maximum rate the 3 pumps can operate, which is currently 1,395 gpm. Results from the 2013 drawdown test are shown in the following table.

Table 5 - Fox Run Pump Station Drawdown Test Results

Pump	Design Flow (gpm)	Measured Flow (gpm) (2013 Drawdown Test Results)
No. 1		878
No. 2		1,051
No. 3		1,001
No. 1 and No. 2	1,200	1,114
No. 1 and No. 3	1,200	1,227
No. 2 and No. 3	1,200	1,160
No. 1, No. 2 and No. 3		1,395

8.4.1 Pumping Station Equipment:

Sewage Grinder

Manufacturer: Muffin Monster, Disposal Waste Systems, Inc., Model: 30,000

Motor

Manufacturer: Yeoman\Chicago Corp.

Type: Series 9235 S. O. No. 901526

100 HP, 1,800 RPM, 460 Voltage, 3 Phase, 60 Cycles

Wastewater Pumps

Manufacturer: Yeoman\Chicago Corp.

No. of Pumps: 3

Model 6315, Type: Dry-pit Submersible S. O. No. 9801526

Design Point: 1,200 gpm at 178' T.D.H.

Generator

Manufacturer: Cummins Power Systems

Model 175DGFB, Wattage 175 kW, Voltage 277/480

Cycles 60, HP 100, RPM 2,400, Fuel Capacity 300 gallon

Transfer Switch: Manufacturer: Onan, Model OT 400, Current Rating: 400 Amps, Voltage: 480

Pump Controller: Manufacturer EG Controls, Type: EG Triplex Controller

8.5 Pumping Station No. 5 (Appletree Road Pumping Station)

The Appletree Road Pumping station is in the Paxton Creek Drainage Basin and is located just east of Appletree and Garalyn Roads. In 1997, the station was completely replaced. Gorman-Rupp suction lift pumps are now used.

This station is designed for a capacity of 151,000 gpd. Presently, the station serves 56 EDU's (estimated population 130). Only 3 lots in this development tributary to the pump station remain undeveloped. The sewers tributary to the pump station (Mini-Basin 29A) were replaced in 2013. It is estimated that the maximum pump rate after the sewers are replaced will be approximately

56,000 gpd. The projected 2-year maximum flow is not expected to increase than the current maximum rate since this area is mostly developed.

Electricity is the primary energy source with a diesel generator to provide stand-by power in the event the primary power source fails. The Authority performs the annual cleaning of all their pump stations' wet wells for preventive maintenance and to reduce possible odor problems.

In November 1995, many leaks were identified in the sewer main tributary to the station. Subsequently, repairs to approximately 700 linear feet of sewer main were performed in 1996. In July 2006, a segment of the force main sheared requiring a six foot section of the force main to be replaced. In 2015, the Authority replaced the entire force main (approximately 1,000 feet) due to repeated force main breaks. Currently the station is operating satisfactory. Results from the drawdown test are shown in the following table.

Table 6 - Appletree Road Pump Station Drawdown Test Results

Pump	Design Flow (gpm)	Measured Flow (gpm) (2013 Drawdown Test Results)
No. 1		54.4
No. 2		48.1
No. 1 and No. 2	105	55.1

8.5.1 Pumping Station Equipment:

Wastewater Pumps

Manufacturer: Gorman Rupp

Type: Suction Lift Pumps, Model T3A3-B

Design point: 105 gpm @ 45' T.D.H.

Serial Nos.: 961499N (Pump No. 1), 961500N (Pump No. 2)

Impeller Diameter: 8 3/4ö

Motors

Manufacturer: Gorman Rupp

Frame Size: 184T, 5HP; 1,425 RPM; 230 Volts; 60 Cycles; Single Phase

Generator

Manufacturer: Caterpillar Olympian, Model CD035

Diesel Engine: 120/240 Volts, Single Phase, Manufacturer: Olympian

Pump Controller Manufacturer: Gorman-Rupp, Type: Air Bubbler

8.6 Pumping Station No. 6 (Wayne Street Station)

The Wayne Street Ejector Station was replaced in 2007. The station now has emergency equipment including an onsite diesel generator and telephone alarm system to alert the Authority maintenance personnel of problems occurring at the station.

The pump station is not considered to be hydraulically overloaded nor is it expected to be in the near future. The station is a submersible grinder pump station with a design a capacity of 0.18 mgd. Approximately 35 residential homes are currently tributary to the station. It is estimated that the current peak flow to the station is approximately 40,000 gpd. There are approximately 10 open parcels tributary to the station that could be developed with single-family homes. However, there is no new development planned in the near future that is tributary to the pump station. Therefore, the project 2-year maximum flow rate is not expected to increase from the current maximum flow rate. The station does not overflow even during significant wet weather events. Pump station is currently operating satisfactory.

8.6.1 Pumping Station Equipment:

Wastewater Pumps

Manufacturer: FE Myers

Type: Suction Lift Pumps, Model 4V50M4-23

Design point: 126 gpm @ 36' T.D.H.

Impeller Diameter: 8 ¾ ö

Motors

Manufacturer: FE Myers

Frame Size: 184T; 5HP; 1,750 RPM; 230 Volts; 60 Cycles; Three Phase

Generator

Manufacturer: Caterpillar

Diesel Engine: 120/240 Volts; Single Phase; Manufacturer: Caterpillar

8.7 Pumping Station No. 7 (Fort Hunter Pumping Station)

The Fort Hunter Grinder Pumping Station is located in the Front Street Drainage Basin and is tributary to the Front Street Pumping Station. The Fort Hunter pumping station was placed into operation in 1989 to serve Fort Hunter Park facilities. In 2010, the Authority's sewer was extended approximately 400 feet to allow 4 buildings (9 EDUs) to connect to the public sewer. The wastewater from these 9 EDUs flows to the Fort Hunter Pump Station. The station may also accommodate additional nearby residences in the future.

The pump station is not considered to be hydraulically overloaded nor is it expected to be in the near future. The station is a submersible grinder pump station. The station does not have an emergency generator because of the very low flows experienced at the station, but the Authority has mobile trash pump, air compressor and hoses available if electrical power is interrupted. In addition, the Township has mobile diesel generators. Emergency alarms are provided. In 2004, the Authority replaced the two pumps with 2 horsepower pumps. This station is designed for a capacity of 28,800 gpd. Due to the low flow volume a drawdown test cannot be performed satisfactory without inducing additional flow. Because the Park is not used all of the time, it is estimated that the current peak flow to the station is less than 10,000 gpd. No new development or extension is anticipated for the next two years and; therefore the project 2-year maximum flow rate is not expected to increase from the current peak flow rate. Pump station is currently operating satisfactory.

8.7.1 Pumping Station Equipment:

Pumps

Two (2) Manufacturer: Hydromatic

Model: HPG200

2 H.P; 3450 RPM; 230 Volts; 1 Phase

Impeller Size: 5.5-inch; Design Point: 20 GPM at 32-feet TDH

9. Industrial Waste Report

Other than TJ's and Triangle car wash facilities, there is no known industrial wastewater discharges located in Susquehanna Township. The 2015 estimated average water consumption for TJ's was 277,000 gallons per quarter or 9 EDUs. Triangle Car Wash used an estimated average of 274,300 gallons per quarter or 6 EDUs. However, the water meter at Triangle Car Wash was not operating correctly for 5 months and; therefore, the estimated water usage is lower than previous years. The EDU count was based on 350 gallons per day per EDU.

The Township and Authority have adopted the CRW's pre-treatment ordinance in the event an industrial discharge is expected. The CRW modifies the pre-treatment ordinance as needed and provides the updates to the Authority. In 2002, the Authority, in conjunction with the Township, revised its grease trap regulations for all establishments involving food preparation.

10. Municipal Official Acknowledgement and Approval

The Susquehanna Township Authority is committed to providing adequate wastewater conveyance services to the community. The objectives of this report identify and address collection system needs now and in the future.

This report has been reviewed and is hereby approved for submission to the Pennsylvania Department of Environmental Protection (DEP) by:

Patricia Smith, Manager

Patricia Smith, Manager
Susquehanna Township Authority
1900 Linglestown Road
Harrisburg, PA 17110
Phone Number: 717-545-0116

Date: 3-16-16

Kevin M. Fox

Kevin M. Fox, PE
GHD
1240 North Mountain Road
Harrisburg, PA 17112
Phone Number: 717-541-0622

Date: 3-16-2016

Appendices

Figure 1
Susquehanna Township Authority
Annual Hydraulic Loading (MGD)

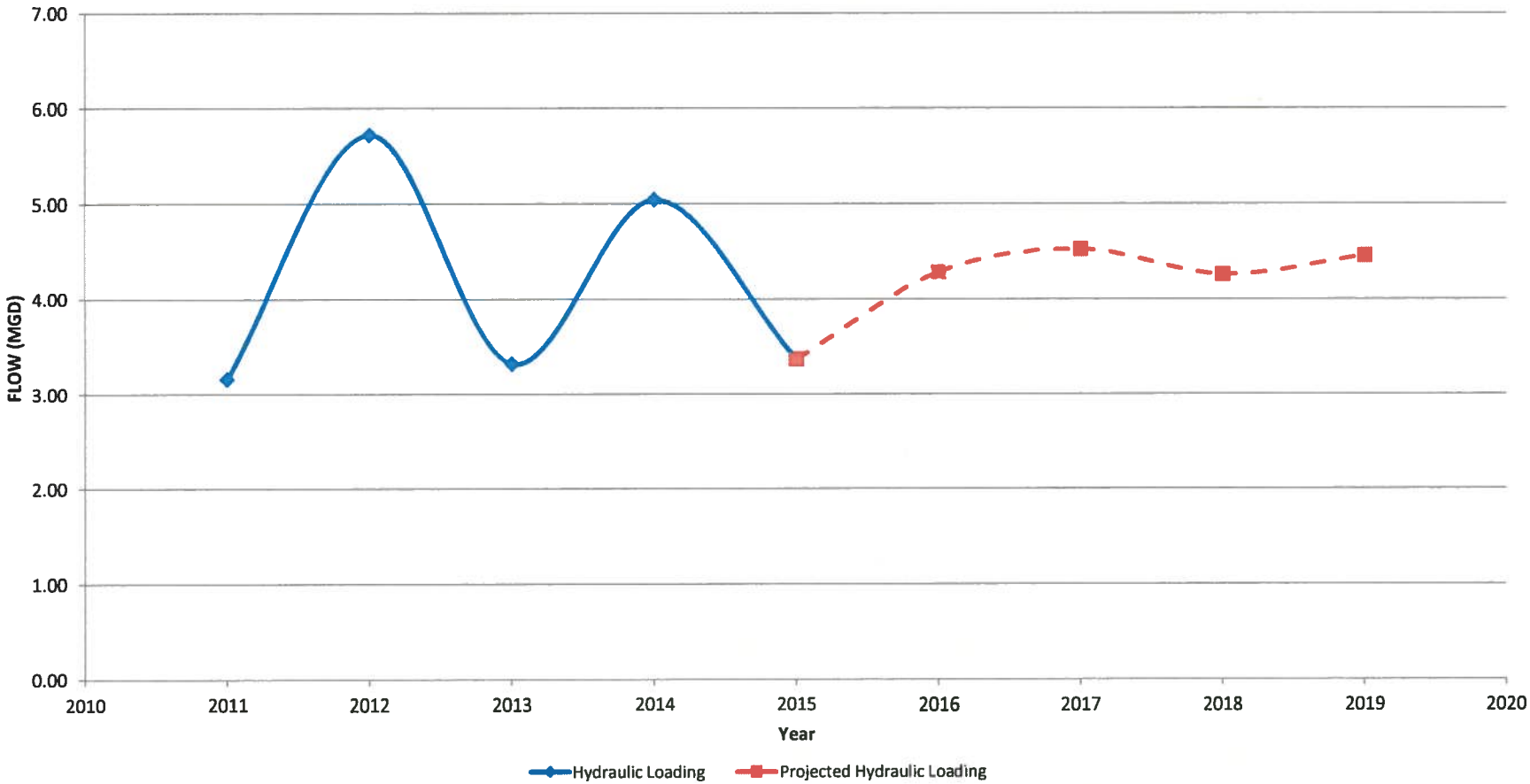
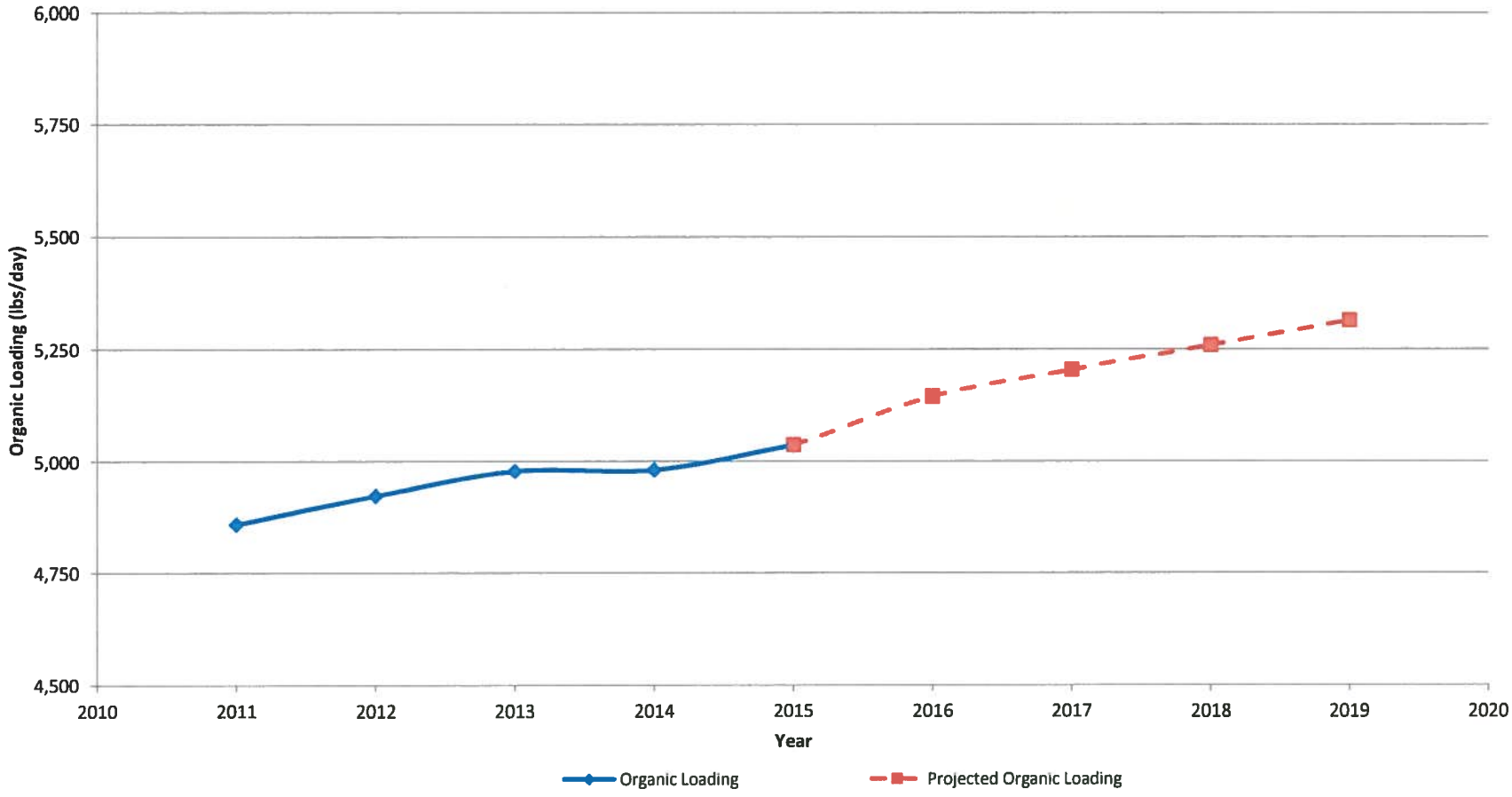


Figure 2
Susquehanna Township Authority
Annual Organic Loading (lbs/day)



APPENDIX A
Susquehanna Township Authority

2015 Wastewater Flow Summary Analysis

Drainage Area [1]	Residential Units	Commercial EDU's [2]	Total EDU's	Estimated Daily Water Consumption (mgd) [3]	Annual Average Daily Flow [4] (mgd)		Annual Average Daily Flow [4] (gpd/EDU)	Annual Average Infiltration/Inflow [5] (mgd)	Annual Average Infiltration/Inflow [5] (gpd/EDU)	Max. Month Average Daily Flow (mgd)	Max. Month Average Daily Flow (gpd/EDU)
Front Street	1,060	300	1,360	0.24	0.38	[6]	283	0.14	103	0.64	471
Paxton Creek	5,774	1,360	7,134	1.28	0.89	[7]	125	Note 5	Note 5	2.19	307
Asylum Run	2,460	471	2,930	0.53	1.26	[8]	428	0.73	248	2.30	785
Spring Creek	806	420	1,226	0.22	0.48	[9]	390	0.26	210	0.67	547
Subtotal	10,099	2,551	12,649	2.28	3.01		238	0.73	58	5.80	459
UM Edgemont	273	10	283	0.05	0.12	[10]	428	0.07	248	0.22	785
UM Latshmere Manor	511	60	571	0.10	0.22	[10]	390	0.12	210	0.31	547
UM Crooked Hill Road [11]	0	109	109	0.01	0.01		98	0.00	0	0.01	98
TOTAL	**10,883**	**2,730**	**13,613**	**2.45**	**3.37**		**247**	**0.92**	**67**	**6.34**	**466**

(1) There are four major interceptors serving Susquehanna Township (Front St., Paxton Creek, Asylum Run and Spring Creek) which are metered. These serve essentially all of the sewered areas of the Township except three small areas that are unmetered (UM) and are designated UM Edgemont, UM Latshmere Manor and UM Crooked Hill Road. The UM Edgemont Area discharges into Penbrook's Asylum Run Interceptor between MH's D1840 and D1090. The UM Latshmere Manor Area discharges to the Penbrook section of the Paxtang Interceptor between MH's D930 and D923. UM Crooked Hill Road discharges directly to CRW's sewers on Elmerton Avenue. The Authority considers this area, however, a part of Asylum Run since they connect just a little downstream. Annual average and maximum month flows for the unmetered areas in Edgemont and Latshmere Manor are estimated on an EDU basis using data from the Asylum Run and Spring Creek interceptors, respectively.

(2) Based on commercial water consumption data and estimated water consumption of 180 gpd/EDU.

(3) Estimated daily water consumption is based on total EDU's x 180 gpd/EDU.

(4) Flow rate is based on metering data as discussed in the below notes. Metering is typically performed from November through April or May with no metering performed in the summer months except that flow meters are kept in the overflow boxes year round.

(5) Estimated by subtracting the estimated water consumption from the annual average daily flow. For the year 2015, the calculation does not provide a realistic value for the Paxton Creek Basin.

(6) The wastewater entering Capital Region Water's (CRW) sewer system is measured by a flow meter that is owned and maintained by CRW.

(7) Susquehanna Township's flow entering the Paxton Creek Interceptor is calculated by subtracting Lower Paxton Township's recorded flows from the total flow entering CRW's sewer system. The flow meter recording the flow entering the City is owned and maintained by CRW. The two meters that records the flow leaving Lower Paxton Township are owned and maintained by Lower Paxton Township Authority.

(8) Susquehanna Township's Asylum Run flows are calculated by subtracting from the flow entering the City of Harrisburg by the flows entering Susquehanna Township from Lower Paxton Township.

(9) Susquehanna Township's Spring Creek flows are calculated by subtracting from the flow entering Swatara as recorded by Swatara Township by the flows entering Susquehanna Township from Lower Paxton Township. The flow meter that records the flow leaving Lower Paxton Township is owned and maintained by Lower Paxton Township Authority.

(10) UM Edgemont is calculated by multiplying the total EDUs in the UM Edgemont by the annual average daily flow per EDU of the Asylum Run Basin. Similarly, UM Latshmere Manor is calculated by multiplying the total EDUs in the UM Latshmere Manor by the annual average daily flow per EDU of the Spring Creek Basin.

(11) UM Crooked Hill Road includes the Harrisburg Post Office plus other small users.

APPENDIX B
SUSQUEHANNA TOWNSHIP AUTHORITY
HYDRAULIC AND ORGANIC LOADINGS
TO CAPITAL REGION WATER'S
WASTEWATER TREATMENT FACILITY

Year	Total EDUs	GPD/EDU	Projected EDUs	Hydraulic Loading MGD (1)	Organic Loading Lbs/Day (2)
2011	13,133	241	-	3.16	4,859
2012	13,306	430	-	5.72	4,923
2013	13,455	247	-	3.32	4,978
2014	13,462	374	-	5.04	4,981
2015	13,613	247	-	3.37	5,037
2016	13,905	308	292	4.28	5,145
2017	14,063	321	158	4.52	5,203
2018	14,214	299	151	4.26	5,259
2019	14,363	310	149	4.45	5,314

NOTES:

(1) Hydraulic Loading, MGD = (Total EDUs × GPD/EDU) ÷ 10^6

(2) Organic Loading:

Organic Loading, Lbs/Day = Total EDUs × 0.37 Lbs/Day/EDU

0.37 Lbs/Day/EDU = .17 Lbs/day/person x 2.2 persons per occupied EDU (based on 2010 census)

APPENDIX C
SUSQUEHANNA TOWNSHIP AUTHORITY
PROJECTED EDUs TRIBUTARY TO
CAPITAL REGION WATER
WASTEWATER TREATMENT FACILITY
With Planning Module Approval

	Development Name	Drainage Area	Proposed EDUs	Occupy Pre-1999	Occupy 2000 thru 2011	Occupy 2012	Occupy 2013	Occupy 2014	EDU's 2015	EDU Balance	Projected Occupancy (Refer to Note 1) EDU's 2016	EDU's 2017	EDU's 2018	EDU's 2019	EDU's 2020	EDUs That Remain
	Bethel AME Church	AR	6	0	0	0	0	0	0	6	0	0	0	0	0	6
Note 2	Fish & Boat Commission	AR	11	0	11	0	0	0	0	0	0	0	0	0	0	0
Note 2	Woodvale	AR	12	0	12	0	0	0	0	0	0	0	0	0	0	0
Note 2	PennDOT Materials Testing Laboratory	AR	5	0	5	0	0	0	0	0	0	0	0	0	0	0
Note 2	Sara Lindemuth Elementary School	AR	9	0	9	0	0	0	0	0	0	0	0	0	0	0
Note 2	3807 Ridgeway Road	AR	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Note 2	2630 Locust Lane	AR	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Note 2	CVS Pharmacy and Retail Store	AR	3	0	3	0	0	0	0	0	0	0	0	0	0	0
Note 2	114 Shell Street	AR	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Note 2	310 Hickory Hill Terrace	AR	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Note 2	1731 Carter Drive	AR	1	0	0	0	0	1	0	0	0	0	0	0	0	0
Note 2	1733 Carter Drive	AR	1	0	0	0	0	1	0	0	0	0	0	0	0	0
Note 2	3004 Locust Lane	AR	1	0	0	0	0	0	1	0	0	0	0	0	0	0
Note 2	3890 Woodvale Road	AR	1	0	0	0	0	0	1	0	0	0	0	0	0	0
	Totals for Asylum Run Interceptor		*54*	*0*	*44*	*0*	*0*	*2*	*2*	*6*	*0*	*0*	*0*	*0*	*0*	*6*
Note 2	Roberts Valley Road	F	12	0	12	0	0	0	0	0	0	0	0	0	0	0
Note 2	Riverchase Office	F	14	0	14	0	0	0	0	0	0	0	0	0	0	0
Note 2	River View Office Center	F	2	0	2	0	0	0	0	0	0	0	0	0	0	0
Note 2	Church Without Walls	F	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Note 2	4345 North 2nd Street	F	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Note 2	5258 Front Street	F	1	0	0	0	0	1	0	0	0	0	0	0	0	0
Note 2	River Drive Service Center	F	1	0	0	0	0	1	0	0	0	0	0	0	0	0
	Totals for Front Street Interceptor		*32*	*0*	*30*	*0*	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	North Branch Paxton Creek															
	Beaufort Terrace	P	9	0	5	0	0	0	0	4	0	0	2	2	0	0
Note 2	Crown Point Phase 4	P		0	19	0	0	0	0	0	0	0	0	0	0	0
Note 2	Deer Path Woods - Misc	P		0	8	0	0	0	0	0	0	0	0	0	0	0
Note 2	DPW Ph. 4 Sec. 1 (Northwoods Crossing)	P		0	53	0	0	0	0	0	0	0	0	0	0	0
Note 2	Deer Path Woods Phase 4 Section 2	P		0	7	0	0	0	0	0	0	0	0	0	0	0
	Deer Path Woods Phase 4 Section 2C	P	10	0	3	0	2	0	0	5	0	0	0	0	0	5
	Deer Path Woods Phase 4 Section 4	P	128	0	65	0	0	0	0	63	2	2	5	10	10	34
	Deer Path Woods Phase 4 Section 5	P	58	0	26	0	0	0	0	32	2	4	5	10	11	0
	Deer Path Woods Phase 4 Section 2D	P	14	0	10	0	0	1	0	3	1	2	0	0	0	0
	Fieldstone Farms	P	51	0	20	0	2	0	0	29	0	0	0	0	0	29
Note 2	Hilltop Townhomes	P		0	0	0	0	0	0	0	0	0	0	0	0	0
	Hillside Condominiums	P	24	0	21	0	0	0	0	3	0	1	1	0	0	1
	Houses at Oakhurst	P	104	0	36	0	0	0	0	68	0	0	0	0	0	68
	Laurel Point Phase 1	P		0	0	0	0	0	0	0	0	0	0	0	0	0
	Laurel Point Phase 2 and 4	P	66	0	0	0	3	0	0	63	0	0	5	5	5	48
	Londonderry School	P	14	0	0	0	0	0	0	14	0	0	0	0	0	14
	Magnolia Terrace	P	96	0	83	0	0	0	0	13	0	2	2	2	2	5

APPENDIX C
SUSQUEHANNA TOWNSHIP AUTHORITY
PROJECTED EDUs TRIBUTARY TO
CAPITAL REGION WATER
WASTEWATER TREATMENT FACILITY
With Planning Module Approval

											Projected Occupancy (Refer to Note 1)					
	Development Name	Drainage Area	Proposed EDUs	Occupy Pre-1999	Occupy 2000 thru 2011	Occupy 2012	Occupy 2013	Occupy 2014	EDU's 2015	EDU Balance	EDU's 2016	EDU's 2017	EDU's 2018	EDU's 2019	EDU's 2020	EDUs That Remain
	Margaret's Grove at Deer Path Woods	P	155	0	30	12	0	0	5	108	2	5	5	5	5	86
	Estates of Margaret's Grove	P	131	0	11	0	1	0	1	118	25	25	25	25	18	0
	Mountaindale Phase 6	P	35	0	0	0	0	0	0	35	0	10	10	10	5	0
	Mountaindale Phase 5	P	21	0	2	0	0	0	0	19	2	2	2	2	2	9
	Pheasant Hill Estates	P	104	0	48	0	0	0	0	56	0	0	0	0	0	56
Note 2	Saybrook Meadows	P	53	47	6	0	0	0	0	0	0	0	0	0	0	0
	Saratoga Meadows	P	7	0	2	0	0	0	0	5	0	0	0	0	0	5
	Sturbridge	P	57	8	14	0	0	0	0	35	0	0	0	0	0	35
Note 2	Sturbridge, Phase II	P	4	0	4	0	0	0	0	0	0	0	0	0	0	0
Note 2	Susquehanna Retirement Residence	P	12	0	12	0	0	0	0	0	0	0	0	0	0	0
	Blue Mtn Commons (Vartan Lumber Supply)	P	76	0	41	0	0	0	0	35	0	0	0	0	0	35
	Waverly Woods Phase 1	P	98	60	23	0	0	0	0	15	2	2	5	0	0	6
	Waverly Woods Phase 2	P	153	0	99	0	0	0	0	54	2	2	5	5	5	35
	Waverly Woods Phase 3 through 7	P	373	0	282	0	0	0	0	91	2	2	5	5	5	72
	Word of Grace	P	1	0	0	0	0	0	0	1	0	0	0	0	0	1
	Jehovah's Witness	P	1	0	0	0	0	0	0	1	0	0	0	0	0	1
Note 2	Holly Hills	P	20	0	20	0	0	0	0	0	0	0	0	0	0	0
Note 2	UCC Homes (Kindred Place)	P	90	0	90	0	0	0	0	0	0	0	0	0	0	0
	Woodridge Estates	P		0	5	0	0	0	0	0	0	0	0	0	0	0
Note 2	4696 Fargreen Road, Lot 1	P	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Note 2	Ionni Properties	P	5	0	5	0	0	0	0	0	0	0	0	0	0	0
	Seymour Barget Subdivision	P	1	0	0	0	0	0	0	1	0	0	0	0	0	1
	Beaufort Terrace	P	58	0	0	0	0	0	0	58	0	0	0	0	0	58
	Apple Creek Farms	P	72	0	6	13	5	4	13	31	8	8	8	7	0	0
Note 2	Rite Aid	P	1	0	1	0	0	0	0	0	0	0	0	0	0	0
	4025 N. Progress Ave (Group Home)	P	16	0	6	0	0	0	0	10	0	0	0	0	0	10
	Susquehanna Summit (Maplewood)	P	360	0	89	5	11	18	7	230	20	20	20	20	20	130
	Highpointe Apartment Complex	P	128	0	122	0	0	0	0	6	6	0	0	0	0	0
	Salvation Army Expansion	P	15	0	0	0	0	0	0	15	0	0	0	0	0	15
	2901 Linglestown Road	P	5	0	0	0	0	0	0	5	0	5	0	0	0	0
	Crooked Hill Development	P	73	0	16	10	25	4	0	18	5	5	5	3	0	0
Note 2	Latsha Development	P	13	0	6	3	3	1	0	0	0	0	0	0	0	0
Note 2	4500 Fargreen Road	P	1	0	1	0	0	0	0	0	0	0	0	0	0	0
	Blue Mtn. Apartments	P	272	0	0	0	0	0	0	272	150	122	0	0	0	0
	Laurel Hill	P	56	0	0	0	0	0	0	56	0	20	20	10	6	0
	2323 Linglestown Road	P	28	0	0	0	0	0	2	26	3	23	0	0	0	0
Note 2	2820 Shutt Mill Road	P	1	0	0	0	0	0	1	0	0	0	0	0	0	0
	Davita Dialysis Center	P	9	0	0	0	0	0	5	4	4	0	0	0	0	0
	Sunflower Fields	P	37	0	0	0	0	0	13	24	24	0	0	0	0	0
	East Branch Paxton Creek															
	Commerce Park	P	50	0	29	0	0	0	0	21	0	0	0	0	0	21
	Susquehanna Marketplace	P	171	17	89	0	0	0	0	65	0	0	0	0	0	65
Note 2	Daybreak	P		0	1	0	0	0	0	0	0	0	0	0	0	0
	Kohn Park	P	71	0	8	0	0	0	0	63	4	10	10	10	15	14

APPENDIX C
SUSQUEHANNA TOWNSHIP AUTHORITY
PROJECTED EDUs TRIBUTARY TO
CAPITAL REGION WATER
WASTEWATER TREATMENT FACILITY
With Planning Module Approval

	Development Name	Drainage Area	Proposed EDUs	Occupy Pre-1999	Occupy 2000 thru 2011	Occupy 2012	Occupy 2013	Occupy 2014	EDU's 2015	EDU Balance	Projected Occupancy (Refer to Note 1) EDU's 2016	EDU's 2017	EDU's 2018	EDU's 2019	EDU's 2020	EDUs That Remain
Note 2	Apple Creek Farms	P	72	0	68	0	1	3	0	0	0	0	0	0	0	0
Note 2	Kramer's Property	P	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Note 2	Wheatland Homes (Doehne Road)	P	1	0	1	0	0	0	0	0	0	0	0	0	0	0
	Stray Winds Farm	P	74	0	0	0	0	0	0	74	0	0	0	20	40	14
	Dr. Majid Development	P	6	0	0	0	0	0	0	6	0	6	0	0	0	0
Note 2	A.P. Williams' Headquarters	P	6	0	3	0	3	0	0	0	0	0	0	0	0	0
	2015 Kohn Road	P	82	0	0	0	0	0	0	82	0	0	0	0	0	82
Note 2	St. Margaret Mary Church	P	9	0	9	0	0	0	0	0	0	0	0	0	0	0
	Capital Center Office Park	P	82	0	17	3	0	0	0	62	0	5	14	0	0	43
	Paxton Church Road Office Center	P	5	0	0	0	0	0	0	5	0	5	0	0	0	0
	Harmony Knoll	P	8	0	0	0	0	0	0	8	0	4	4	0	0	0
Note 2	PSECU	P	43	0	43	0	0	0	0	0	0	0	0	0	0	0
Note 2	PEMA	P	15	0	0	0	0	0	15	0	0	0	0	0	0	0
Note 2	Paxton Creek Apartments	P	160	0	0	0	0	40	120	0	0	0	0	0	0	0
	Totals for Paxton Creek Interceptor		*3,973*	*132*	*1,567*	*46*	*56*	*71*	*182*	*2,012*	*264*	*292*	*158*	*151*	*149*	*998*
Note 2	Latshmere Hills	L-SC	22	0	22	0	0	0	0	0	0	0	0	0	0	0
	Totals for Latshmere		*22*	*0*	*22*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Note 2	Ecumenical	SC	37	0	37	0	0	0	0	0	0	0	0	0	0	0
Note 2	3890 Union Deposit Road	SC	5	0	5	0	0	0	0	0	0	0	0	0	0	0
Note 2	402 Davis Street	SC	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Note 2	Texas Roadhouse	SC	31	0	31	0	0	0	0	0	0	0	0	0	0	0
Note 2	Ionni Schoolhouse Properties	SC	4	0	4	0	0	0	0	0	0	0	0	0	0	0
	Totals for Spring Creek Interceptor		*78*	*0*	*78*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	TOTAL		**4,159**	**132**	**1,741**	**46**	**56**	**75**	**184**	**2,018**	**264**	**292**	**158**	**151**	**149**	**1,004**

114 Not Including Bulk Connections

NOTES:

AR	Asylum Run Drainage Basin
P	Paxton Creek Drainage Basin
SC	Spring Creek Drainage Basin
F	Front Street
L-SC	Latshmere (Spring Creek) - Also referred to B1 by Susq.

Notes: (1) The projected occupancy is only an estimate based on previous years connections. It should not be used an indicator to the housing market.
(2) These developments will be removed from future reports since these developments were constructed and all EDUs are connected to the sewer system.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CLEAN WATER PROGRAM

RECEIVED
GHD Inc.
DEC 05 2013

December 3, 2013

APPENDIX D

Susquehanna Township Authority
c/o Patricia Smith, Manager
1900 Linglestown Rd
Harrisburg PA 17110-3301

Re: Sewage
Chapter 94 Municipal Wasteload Management Program
Susquehanna Township, Dauphin County

Dear Ms. Smith:

We hereby approve the Second Corrective Action Plan (CAP) submitted by GHD on November 27, 2013. The CAP addresses both the Paxton Creek Basin and the Asylum Run Basin areas of your system. Your CAP commits to the replacement and rehabilitation of mini-basins in accordance with a prioritization schedule. Annual progress reports (two copies) should be submitted to the Department of Environmental Protection (Department) by September 30th of each year.

You should take all necessary actions to prevent unpermitted discharges, basement flooding, and the associated public health hazards. At all times, including while the CAP is in effect, the Authority remains responsible for all violations of The Clean Streams Law and is liable for the civil penalties provided for such violations. Overflows and basement flooding are illegal discharges. Enforcement action may be warranted if the approved schedule is not followed, or if conditions indicate that such action is necessary to protect the environment or public health.

We hereby approve the connection restriction plan submitted as part of the 2013 annual report, which allocates sixty six (66) connections in the Paxton Creek Basin and six (6) connections for the Asylum Run Basin for calendar year 2014. These totals do not include any bulk allocations for special projects. Additional connections may be requested by the Authority based on demonstrated peak flow reductions. The Department will review such requests and may, at its discretion, grant all or a portion of the connections being requested.

The Authority is responsible for administering the connection restriction plan, approved as part of this CAP, in accordance with the requirements of Chapter 94 of the rules and regulations. Remember that additional flows are not permitted to areas with unresolved basement flooding. Also, the Authority's ability to allocate the herein-approved annual connections is contingent on adhering to the schedule in the approved CAP.

Connections shall not be awarded in excess of any annual allotment nor awarded in anticipation of an upcoming year. You should inform developers of the 25 Pa. Code Chapter 94 connection restrictions in the effected basins.

If you have any questions concerning the CAP, please contact Aaron Baar at 717.705.4791 or by e-mail at abaar@pa.gov.

Sincerely,

/Maria D Bebenek

Maria D. Bebenek, P.E.
Program Manager

cc: GHD
Susquehanna Township Commissioners

November 26, 2013

Ms. Maria D. Bebenek, P.E.
Clean Water Program Manager
PA Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Susquehanna Township Authority; Dauphin County
Paxton Creek and Asylum Run Drainage Basins
Revised Second Corrective Action Plans

Dear Ms. Bebenek:

For your review and approval please find enclosed 3 copies of the revised Second Correct Action Plans dated November 2013 for Susquehanna Township Authority. The CAPs were revised as requested by the Department to include performing metering in the overflows boxes continuously and on a year round basis and, preparing hydraulic models by a specific date of the Paxton Creek and Asylum Run Interceptors located within Susquehanna Township. The CAPs were also changed since the initial submittal in April 2013 to include items such as sewer connections in each basin that were discussed at the May 29, 2013 and September 4, 2013 meetings with the Department.

If you have any questions concerning the revised Second CAPs, please call the Authority Manager, Patricia Smith, at 545-0116 or me.

Regards,
GHD

Kevin M. Fox

Kevin M. Fox, PE
Project Manager

Enclosure

c: Patricia Smith, Susquehanna Township Authority Manager (via email)

GHD
1240 North Mountain Road Harrisburg PA 17112 USA
T 1 717 541 0822 F 1 717 541 8004 E harrisburg@ghd.com W www.ghd.com

Susquehanna Township Authority
Dauphin County, PA

Second Corrective Action Plans for Paxton Creek and Asylum Run Basins

November 2013

As presented to the
PA Department of Environmental Protection
909 Elmerton Avenue
Harrisburg, PA 17110

Prepared By:
GHD
1240 North Mountain Road
Harrisburg, PA 17112

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Paxton Creek Drainage Basin
Table 1 – Group 1 Mini-Basins: Replacement/Rehabilitation Priority Schedule
Table 2 – Group 2 Mini-Basins: Post Rehabilitation Priority Schedule

Asylum Run Drainage Basin
Table 3 – Group 1 Mini-Basins: Replacement/Rehabilitation Priority Schedule
Table 4 – Group 2 Mini-Basins: Post Rehabilitation Priority Schedule

Paxton Creek Drainage Basin
Hydraulic Overload Corrective Action Plan

Introduction

There is currently a limitation on connections in the Paxton Creek drainage basin because of a projected overload for all areas tributary to Manhole 1-35 located on the main trunk of the interceptor and a hydraulic overload tributary to Manhole 1-66R located on the east branch of the interceptor. These overloads are caused by infiltration/inflow (I/I) during wet weather. A rehabilitation and replacement program has been in progress in the basin since 1999. An estimated 1.63 mgd of peak flow I/I has been removed from the Paxton Creek Drainage Basin.

The pipe material in this drainage area is mostly asbestos cement (ACP), vitrified clay (VCP), cast iron, and plastic. Because of the condition of the pipes in this drainage basin, either rehabilitation or total mini-basin replacement was conducted in three mini-basins as of 2012 (PC-30G, PC-32H, and PC-29D). Total replacement includes replacement of all main line sewers, service laterals, manholes and, if needed, the building sewers followed by air testing of the pipes and vacuum testing of the manholes to ensure proper installation. Total replacement also includes installation of observation tees, typically at the transition from the service lateral to the building sewer, and replacement of the building sewer if the building sewer fails an air test. This effort involves construction on private property and, therefore, requires each property owner to sign an agreement for work to be performed on their property. System rehabilitation consists of repairing the sewer mains, manholes, service laterals, and building sewers with technics of lining of sewer mains and manholes, and open excavating of the laterals and building sewers to either replace or repair the pipe followed by air and vacuum testing.

All of the replacement projects are successful in removing excess I/I to a degree. This is best illustrated by the experience from Mini-Basins PC-32H and PC-29D, which were rehabilitation projects. The sewers in Mini-Basin PC-32H were rehabilitated by performed sectional lining in the mains, internal repairs of sanitary sewer manholes, and external repairs to service laterals, building sewer, and mainline sewers. Prior to the rehabilitation activities, the excess I/I was approximately 6,200 gpd per EDU. The post-rehabilitation metering results show an I/I of approximately 1,200 gpd per EDU, a 81% decrease in I/I.

Mini-Basin PC-29D rehabilitation was similar to PC-32H in that sectional lining of the mains, internal repairs of sanitary sewer manholes, and external repairs to service laterals, building sewer, and mainline sewers were performed. In addition, several illegal sump pumps were disconnected from the sewer system. However, although the excess I/I decreased, the excess I/I remains high at approximately 11,400 gpd per EDU.

General Description of Plan Elements

The elements of the Second Corrective Action Plan consist of two groups of mini-basins. Group 1 contains those mini-basins where rehabilitation has not yet occurred. Group 2 contains mini-basins where rehabilitation and replacement has been completed during the First CAP and substantial reductions of excess I/I peak flow rates have occurred but, excess I/I in the mini-basin remains high. The approach for Group 1 mini-basins is provided below:

- Continuation of the Mini-Basin I/I Rehabilitation Program with the addition of total replacement:
    - Replacement of essentially all ACP and VCP and associated manholes and service laterals in the Mini-Basin, as required.
    - Rehabilitation of non-ACP/VCP areas in the Mini-Basin, as required.

- Televising/air testing and repair or replacement of all building sewers that fail air testing.

Group 2 contains mini-basins where rehabilitation/replacement projects have been completed within the previous CAP. This effort resulted in reductions of excess I/I in those mini-basins, but excess I/I remains high. The Authority will investigate the mini-basins during wet weather event(s) to determine where the I/I source(s) are occurring. This includes opening up manholes and cleanouts located at the curbs, and televising sewer mains and laterals during wet weather events. If underslab I/I sources are located, the Authority will further investigate the possibilities to remove the I/I source on a case-by-case basis. The priority and schedule for Group 2 mini-basins is provided in Table 2.

A completed mini-basin project in Group 1 or Group 2 is defined to be:

1. Completion of a) replacement of the all ACP and VCP sewer mains and associated manholes and service laterals in the mini-basins; b) rehabilitation of non-ACP/VCP areas in the mini-basin; and, c) televising/air testing and repair or replacement of all building sewers that fail air testing.

or

2. Demonstration that the mini-basin from the Prioritization Schedule meets or is below 1,000 gpd/EDU based on the Mini-Basin Characteristic Curve from the control basin, PC-30G_N.

This Plan will essentially involve replacing an estimated 104,700 LF of ACP/VCP sewer mains and associated service laterals and manholes, and the testing and potential repair/replacement of an estimated 25,800 LF of building sewers.

The 10 mini-basins in Group 1 and the one mini-basin in Group 2 listed in Tables 1 and 2, represent basins with significant excess I/I. Replacement/rehabilitation of those basins has the potential to remove more than 8.84 mgd of excess peak I/I flow.

Per the May 29, 2013 meeting discussions, the attached tables provided to the Department on April 4, 2013, were revised as requested by the Department to include the estimated construction completion dates as well as estimated post-rehabilitation flow metering dates. As discussed at the meeting, the estimated construction completion dates and the post-rehabilitation flow metering dates are dependent on factors beyond the Authority's control, such as weather that could delay the construction completion of a mini-basin, and the number of wet weather events that occur during post-metering of a mini-basin. Therefore, matters not in the Authority's control could require the schedules to be modified. The Authority will notify the Department of any need for modification of the schedules.

Flow Monitoring and Reporting Period

Interceptor Flow Monitoring Locations

Lower Paxton connects to Susquehanna Township Authority's Paxton Creek Interceptor at two locations. These locations are at Manhole 620 (also known as SUO1) situated off of Doehne Road, and at Manhole 21-24 (also known as SU02) situated off of Valley Road. The flow meters in these manholes are owned and maintained by Lower Paxton Township Authority. Flow out of Susquehanna Township in the Paxton Creek Interceptor is monitored by the City of Harrisburg at Manhole M13. The flow meter in this manhole is owned and maintained by The Harrisburg Authority. Susquehanna Township Authority owns and maintains a flow meter in Manhole 1-10 to also measure the flow leaving the Township. Although the readings from the two meters do not match exactly due to the inherent errors in metering equipment, the readings are reasonably close when the meters are operating correctly. Thereby confirming the readings or as a backup in case the other meter is not operating.

Overflow Box Locations

Overflows that occur within the Paxton Creek Basin in Susquehanna Township are not only the result of excess flows within Susquehanna Township, but also those from Lower Paxton Township. In addition, surcharging into Susquehanna Township's portion of the Paxton Creek Interceptor by the City of Harrisburg at flows sometimes well below the interceptor's permitted capacity further exacerbates the overflow problem.

The purpose of metering the overflows is to quantify the total wet weather flow. Metering the overflows at specific manholes will aid in determining the amount of I/I that needs to be removed or stored. The amount of excess I/I to be removed, or stored, is that required to reduce the hydraulic overload. Meaning that the wet weather flows in the collection and conveyance system are reduced to the point where the system will properly function and provide for the needed additional capacity without the threat of basement backups or overflows, as determined by metering data, hydraulic analysis and field measurements. It is understood, however, that excused events (e.g. when the Governor declares a State of Emergency for general flooding or at the discretion of the Department following review of sufficient evidence provided by Susquehanna indicating a local flood emergency) are excluded.

Currently, the Authority has an overflow box located in the right-of-way leading to the Fox Run Pump Station at Manhole 2-79. Since the completion of clearing the rights-of-way, however, other locations of manhole overflows have been found at Manhole 1-56 located on the East Branch and Manhole 1-42 located on the main trunk as previously stated in the I/I Progress Reduction Reports. Based upon recent modeling of the Paxton Creek Interceptor, it is apparent that flows begin to backup from the City's combined sewers after a certain size of an extreme wet weather event; thereby, causing surcharging in the Paxton Creek Interceptor. An analysis of the metered flow data demonstrated a pattern in which the capacity of flow from the Paxton Creek interceptor to Harrisburg's line is significantly reduced during extreme wet weather events. An analysis of the historic wet weather events shows that during most wet weather events (non-extreme events), the Interceptor begins to surcharge when the flow reaches 17 mgd and has a system capacity of 24 mgd before resulting in overflows. However, during extreme wet weather events, this capacity is abruptly reduced. During these extreme events, the line to Harrisburg starts to surcharge at only 9 mgd and the system begins to overflow at around 18 mgd.

As stated above, since the completion of the rights-of-way clearing other locations of manhole overflows have been found. As shown in the table below, the Authority has determined via modeling which manholes need to have an overflow installed. There are also a number of manholes that need to be raised and/or bolted down. The Authority will be contacting the property owners to obtain permission to install overflows boxes on the manholes located on their land.

Manhole Number	Task
1-31	Main trunk of the Interceptor. Place overflow box.
1-53	East Branch of the Interceptor. Place overflow box.
1-58 (See Note)	East Branch of the Interceptor. Place overflow box.
Note: The overflow box may be placed on Manhole 1-58 or 1-61 with the other manhole cover bolted.	

Mini-Basin Monitoring

The purpose of the metering program is threefold: (1) investigate flows in order to prioritize the mini-basins for rehabilitation; (2) develop basin characteristic curves demonstrating a relationship between peak flows in the mini-basin as compared to I/I intensity as measured by peak flows in a control basin; and (3) to evaluate the effectiveness of the rehabilitation compared to the mini-basin characteristic curves.

Numbers 1 and 2 above are, for the most part, completed with prioritization reviewed each year to determine if future mini-basin projects should be re-prioritized. After completion of a mini-basin project the Authority will perform post-rehabilitation monitoring to evaluate the effectiveness of the rehabilitation by comparing pre and post rehabilitation mini-basin characteristic curves.

Monitoring Period

The Authority will monitor the flows entering and leaving the Township, meter the mini-basin results where rehabilitation/replacement has recently performed from November 1st through and including April 30th of each year. These months are typically when most of the precipitation occurs (e.g. snow melt and rain in the spring) barring unusual storm events such as tropical storms. Continuous, year-round monitoring does not provide any useful information when the precipitation is not frequent and the groundwater is low. The monitoring season may be extended, however, depending upon whether adequate data are obtained in the regular metering season and wet weather conditions are forecast. The Authority will meter the flow from all of the overflows boxes continuously and on a year round basis until the completion of the CAP.

Modeling

By July 31, 2014, the Authority will submit to the Department for its review a hydraulic analysis of the Paxton Creek Interceptor that is located in Susquehanna Township. The hydraulic analysis will show, in table format, the carrying capacity of each interceptor pipe under free flow conditions and the maximum carrying capacity of each interceptor pipe under pressure flow conditions that does not result in a sanitary sewer overflow.

Reporting Period

The Authority is currently submitting to Department the Infiltration/Inflow Reduction Progress Reports on an annual basis.

The Authority proposes to continue submitting annual reports following the metering season. The Authority believes this would be beneficial for the following reasons:

1. The Authority is performing more post-rehabilitation metering of mini-basins each year. Reporting post-rehabilitation results for an entire metering season is more beneficial than estimating the success of mini-basin rehabilitation project on a partial metering season.

2. Since flow meters are typically placed into the manholes in November of each year, the semi-annual report for the period of July through December only provides a maximum of two months of metering data. If extreme wet weather events have not occurred during the 2 months, majority of the report will be a repetition of the previously submitted report. (Refer to the July 2007 – December 2007 metering report as an example. Similarly, no wet weather events occurred during the January 2009 through June 2009 reporting period. The report for this period, if required to be submitted, would mostly be a duplication of the July 2008 – December 2008 metering report. Preparing such a report is not productive for the Authority nor, would we believe, a benefit for the Department to read.)

The Authority proposes:

1. As previously approved by the Department on August 25, 2009, the reports will be submitted to the Department by September of each year for the previous metering season which is typically from November to May. These reports will be submitted to the Department as long as the CAPs

are in place. The Authority suggests that the report is submitted by September 30th since large volume of metering data needs to be analyzed.

2. After DEP has the opportunity to review the report, DEP, the Authority, and the Authority's engineer meet annually to discuss recent projects, flow reduction progress, future metering and proposed future projects. Perhaps the meeting would take place in November of each year prior to the next metering season.

Paxton Creek Basin Connections

During the years that the Second CAP is in effect, as long as the Authority meets the Plan and Schedule outlined in the CAP, the Authority will review planning modules for development in the Paxton Creek Drainage Basin and submit them to the Department for approval. Such modules will be submitted only with the agreement by the developers to hold both the Department and Susquehanna Township Authority harmless if connection permits are not available.

Since 1999, approximately 1.63 mgd of peak excess I/I was removed from the Paxton Creek Basin as a result of the sanitary sewer rehabilitation projects that are occurring under the CAP. This does not include the illegal sump pumps that have been disconnected from the sewer system. The number EDUs connected to the entire Paxton Creek Basin since 1999 is approximately 1,570. Assuming 1,000 gpd peak per EDU, the additional peak flow added to the system due to new development since 1999 is 1.57 mgd, which is slightly less than the amount of peak excess I/I removed.

For the year 2013, the total number of connections provided by the Department to the Authority will be 158 (20 connections per month for March, April and May + 14 connections per month for June through December = 158 connections). It is the Authority's understanding that the Department has provided the Authority the 158 connections as of June 1, 2013. The Department stated that 'connections awarded based on need' may not be carried forward from year to year, but that need for connections would be evaluated and awarded annually by the Department based on its assessment from the Authority's annual reports submitted to the Department and the discussions at the annual meeting between DEP, the Authority and the Authority's engineer. However, the Department indicated that additional connections granted for demonstrated peak flow reductions may be carried forward from year to year. It is assumed that DEP will notify the Authority of the annual connections for the next year in December of each year. As approved by the Department in March 2013 a connection is defined for residential dwellings as 1 per residential unit and for commercial establishment as 350 gallons per day. The previous planning modules approved by the Department and shown in the Appendix B of the Annual reports remain approved and the developers may connect to the Paxton Creek sewer system without any additional approval from the Department as long as the Authority has connections remaining to issue. The previous connections allotment to Manhole 1-66R, however, is no longer valid.

The Department may consider allowing additional connections for projects with larger or bulk connection needs. This would be considered on a case-by-case basis by the Department similar in manner as the adjustment made for the PEMA allocation and, most recently, the Blue Mountain Apartments and Paxton Creek Apartments as discussed in Authority's letter dated October 11, 2013 and the Departments response letter dated October 22, 2013.

Asylum Run Drainage Basin
Hydraulic Overload Corrective Action Plan

Introduction

There is currently a limitation on connections in the Asylum Run Drainage Basin up-gradient of Manhole 137 because of overflows and hydraulic overloading of the sewer system caused by infiltration/inflow (I/I) during wet weather. An aggressive rehabilitation and replacement program has been in progress in the basin since 1999, significant I/I reductions have been realized.

The pipe material in this drainage area is mostly vitrified clay, cast iron, and truss. Because of the condition of the pipe in this mini-basin, total mini-basin replacement was conducted in three mini-basins (AR-22D, AR-22I_S, and AR-22B) along with other smaller projects. Total replacement includes replacement of all main line sewers, service laterals, and manholes, followed by air testing and vacuum testing, respectively, to ensure proper installation. Total replacement also includes installation of observation tees, typically at the transition from the service lateral to the building sewer, and replacement of the building sewer if the building sewer fails an air test. This effort involves construction on private property and, therefore, requires each property owner to sign an agreement for work to be performed on their property.

All of the replacement projects are successful in removing excess I/I to a degree. This is best illustrated by the experience from Mini-Basins AR-22D, AR-22B, and AR-22I_S, which were total replacement projects. All mainline, manholes, and service laterals were replaced, and all building sewers were either successfully air tested or replaced up to the house. Although the exact amount of excess I/I removed from Mini-Basin AR-22D is not known due to the difficulty of metering the mini-basin, it is estimated that approximately 1.0 mgd of excess I/I has been removed. In addition, no overflows or basement backups have occurred since the mini-basin was completed. The peak measured excess I/I in this mini-basins is less than 1,000 gpd/EDU. Similarly, Mini-Basin AR-22B pre-replacement project peak measured excess I/I was 9,136 gpd/EDU. Post-replacement peak measured excess I/I is almost non-measurable.

Mini-Basin AR-22I_S was also successful in removing excess I/I but not at the degree as the previous two examples. All mainline, manholes, and service laterals were replaced, and all building sewers were either successfully air tested or replaced up to the house. Despite this effort, which resulted in the elimination of approximately 50% of excess I/I, wet weather peak excess I/I is remains high at approximately 4,000 gpd/EDU. Wet weather investigations will be conducted to determine the I/I sources which could include under slab sources and property owners reconnecting illegal sump pumps.

General Description of Plan Elements

The elements of this Corrective Action Plan consist of two groups of mini-basins. Group 1 contains those mini-basins where sewer replacement has not yet occurred that are tributary to Manhole 137. Group 2 contains the one mini-basin were significant rehabilitation and replacement has been completed during the first CAP and substantial reductions of excess I/I peak flow rates have occurred but, excess I/I in the mini-basin remains high. This CAP will continue until there are no more overflows occurring at Manholes 126 and 138 during non-excusable wet weather events. The approach for Group 1 mini-basins is provided below:

- Continuation of the Mini-Basin I/I Replacement Program:
    - Replacement of essentially all sewer main, manholes, and service laterals.
    - Televising/air testing and repair or replacement, if needed, of all building sewers that fail air testing.

Group 2 contains mini-basins where rehabilitation/replacement projects have been completed within the previous CAP. This effort resulted in significant reductions of excess I/I in those mini-basins, but excess I/I remains high. The Authority will investigate the mini-basins during wet weather event(s) to determine where the I/I source(s) are occurring. This includes opening up manholes and cleanouts located at the curbs, and televising sewer mains and laterals during wet weather events. If underslab I/I sources are located, the Authority will further investigate the possibilities to remove the I/I source on a case-by-case basis. The priority and schedule for Group 2 mini-basins is provided in Table 2.

A completed mini-basin project in Group 1 or Group 2 is defined to be:

- Completion of a) replacement of the sewer mains, manholes, service laterals and, b) televising/air testing and repair or replacement, if needed, of all building sewers that fail air testing.

or

- Demonstration that the mini-basin from the Prioritization Schedule meets or is below 1,000 gpd/EDU based on the Mini-Basin Characteristic Curve from the control basin, SC-26C_N.

At state previously, this CAP will continue until there are no more overflows occurring at Manholes 126 and 138 during non-excusable wet weather events. This Plan will essentially involve addressing an estimated 46,400 LF of VCP sewer mains and associated service laterals and manholes and the testing and potential repair/replacement of an estimated 13,150 LF or more of building sewers.

Given the success and the knowledge gained from the completion of the First Asylum Run CAP, the continuation of the Mini-Basin I/I Replacement Program will eliminate overflows and reduce the hydraulic overload in the Asylum Run Basin tributary to Manhole 137 to accommodate future build-out.

The 6 mini-basins in Group 1 and the one mini-basin in Group 2 listed in Tables 3 and 4, represent basins with significant excess I/I. Replacement/rehabilitation of those basins has the potential to remove 4.81 mgd of excess peak I/I flow.

In year 2022, the Authority will evaluate the progress and success of the Second CAP and determine whether any storage facilities will be required to insure future capacity.

Per the May 29, 2013 meeting discussions, the attached tables provided to the Department on April 4, 2013, were revised as requested by the Department to include the estimated construction completion dates as well as estimated post-rehabilitation flow metering dates. As discussed at the meeting, the estimated construction completion dates and the post-rehabilitation flow metering dates are dependent on factors beyond the Authority's control, such as weather that could delay the construction completion of a mini-basin, and the number of wet weather events that occur during post-metering of a mini-basin. Therefore, matters not in the Authority's control could require the schedules to be modified. The Authority will notify the Department of any need for modification of the schedules.

Flow Monitoring and Reporting Period

Interceptor Flow Monitoring Locations

Lower Paxton Township connects to Susquehanna Township Authority's Asylum Run Interceptor at two locations. These locations are at manhole 553A (also known as SU-03) situated near Canterbury Road and Tudor Drives, and at Manhole 559 (also known as SU-04) situated near 39th Street and Over Drive. Susquehanna Township owns and maintains the flow meters in these manholes. Flow data out of Susquehanna Township is measured at Manhole 86 (also known as SU-06) located on the property formerly known as the State Hospital. Susquehanna Township Authority owns and maintains this flow meter as well.

Overflow Box Locations

Overflow boxes were fabricated and installed in the middle of December of 2002 at Manholes 126, 138, and 540 of the Asylum Run Drainage Basin. The purpose of metering the overflows is to quantify the total wet weather flow. The amount of excess I/I to be removed, or stored, is that required to reduce the hydraulic overload. Meaning that the wet weather flows in the collection and conveyance system are reduced to the point where the system will properly function and provide for the needed additional capacity without the threat of basement backups or overflows, as determined by metering data, hydraulic analysis and field measurements. It is understood, however, that excused events (e.g. when the Governor declares a State of Emergency for general flooding or at the discretion of the Department following review of sufficient evidence provided by Susquehanna indicating a local flood emergency.) are excluded. Manhole 126 is located on the Pines Interceptor and is near the junction of the Asylum Run Interceptor and the Pines Interceptor. Manhole 138 is located on the Asylum Run Interceptor and is near the junction of the Asylum Run Interceptor and the Pines Interceptor. Manhole 540 is located on the Asylum Run Interceptor up-gradient of the junction of the Asylum Run Interceptor and the Pines Interceptor.

In August 2005, the Authority received odor complaints from a resident along Ridgeway Road. The odor was coming from Manhole 540 that had an overflow box. Even though no overflows had occurred at this location, odors were coming from the interceptor. Because of the complaints, the Authority removed the overflow box from Manhole 540 and bolted the manhole cover. The overflow box was installed down-gradient at Manhole 536 where no business or residence is nearby. Manhole 536 is on the Asylum Run Interceptor.

Since no overflows have ever occurred at Manhole 536 or any nearby manhole, the Authority is planning to remove the overflow box at this location. Except for unusual storm events that result in State of Emergency or significant flooding, no other overflow locations are known to be occurring in the Asylum Run Basin during extreme wet weather events other than at Manhole 126 and 138.

Mini-Basin Monitoring

The purpose of the metering program is threefold: (1) investigate flows in order to prioritize the mini-basins for rehabilitation; (2) develop basin characteristic curves demonstrating a relationship between peak flows in the mini-basin as compared to I/I intensity as measured by peak flows in a control basin; and (3) to evaluate the effectiveness of the rehabilitation compared to the mini-basin characteristic curves.

Numbers 1 and 2 above are, for the most part, completed with prioritization reviewed each year to determine if future mini-basin projects should be re-prioritized. After completion of a mini-basin project the Authority will perform post-rehabilitation monitoring to evaluate the effectiveness of the rehabilitation by comparing pre and post rehabilitation mini-basin characteristic curves.

Monitoring Period

The Authority will monitor the flows entering and leaving the Township, meter the mini-basin results where rehabilitation/replacement has recently performed from November 1st through and including April 30th of each year. These months are typically when most of the precipitation occurs (e.g. snow melt and rain in the spring) barring unusual storm events such as tropical storms. Continuous, year-round monitoring does not provide any useful information when the precipitation is not frequent and the groundwater is low. The monitoring season may be extended, however, depending upon whether adequate data are obtained in the regular metering season and wet weather conditions are forecast. The Authority will meter the flow from all of the overflows boxes continuously and on a year round basis until the completion of the CAP.

Modeling

By July 31, 2014, the Authority will submit to the Department for its review a hydraulic analysis of the Asylum Run Interceptor that is located in Susquehanna Township. The hydraulic analysis will show, in table format, the carrying capacity of each interceptor pipe under free flow conditions and the maximum carrying capacity of each interceptor pipe under pressure flow conditions that does not result in a sanitary sewer overflow.

Reporting Period

The Authority is currently submitting to Department the Infiltration/Inflow Reduction Progress Reports on an annual basis.

The Authority proposes to continue submitting annual reports following the metering season. The Authority believes this would be beneficial for the following reasons:

1. The Authority is performing more post-rehabilitation metering of mini-basins each year. Reporting post-rehabilitation results for an entire metering season is more beneficial than estimating the success of mini-basin rehabilitation project on a partial metering season.

2. Since flow meters are typically placed into the manholes in November of each year, the semi-annual report for the period of July through December only provides a maximum of two months of metering data. If extreme wet weather events have not occurred during the 2 months, majority of the report will be a repetition of the previously submitted report. (Refer to the July 2007 – December 2007 metering report as an example. Similarly, no wet weather events occurred during the January 2009 through June 2009 reporting period. The report for this period, if required to be submitted, would mostly be a duplication of the July 2008 – December 2008 metering report. Preparing such a report is not productive for the Authority nor, would we believe, a benefit for the Department to read.)

The Authority proposes:

1. As previously approved by the Department on August 25, 2009, the reports will be submitted to the Department by September of each year for the previous metering season which is typically from November to May. These reports will be submitted to the Department as long as the CAPs are in place. The Authority suggests that the report is submitted by September 30th since large volume of metering data needs to be analyzed.

2. After DEP has the opportunity to review the report, DEP, the Authority, and the Authority's engineer meet annually to discuss recent projects, flow reduction progress, future metering and proposed future projects. Perhaps the meeting would take place in October of each year prior to the next metering season.

Asylum Run Basin Connections

In 1999, the Department allocated 37 connections to be shared between Susquehanna Township Authority and Lower Paxton Township Authority. On March 5, 2008, the Department approved 15 more connections to Susquehanna Township Authority. Prior to the Department placing a ban on connections in October 31, 2012 for the area tributary to Manhole 137, Susquehanna Township Authority had 8 connections available up-gradient of Manhole 137.

The area in the Asylum Run Basin in Susquehanna Township that is tributary to Manhole 137 is mostly developed with the exception of a large 23 acre parcel located east of the Game Commission on Elmerton Avenue, a portion of the 50 acre open parcel located east of the State Police Building could possibly flow to the Asylum Run Basin and the remaining portion flow to the Paxton Creek Basin, and 5 acres located between Locust Lane and Thornton Road.

Since 1999, it is estimated that approximately 2.12 mgd of peak excess I/I was removed from the Asylum Run Basin tributary to Manhole 137 as a result of the sanitary sewer replacement projects that are occurring under the CAP. The number EDUs connected to the entire Asylum Run Basin since 1999 is approximately 44 as reported in the 2012 Chapter 94 report. Assuming 1,000 gpd per EDU, the additional peak flow added to the system due to new development since 1999 is 0.044 mgd which is significantly less than the 2.12 mgd of peak excess I/I removed.

The number of connections issued since 2008 for the area tributary to Manhole 137 was 7 or 1.4 connections per year. Presently, there are no planning modules pending that are tributary to Manhole 137, and the only development that has planning module approval but has not constructed is Bethel AME Church with 6 EDUs as shown in the June 2011-May 2012 Infiltration/Inflow Reduction Progress report.

During the years that the Updated CAP is in effect, as long as the Authority meets the Plan and Schedule outlined in the CAP, the Authority will review planning modules for development in the Asylum Run Drainage Basin and submit them to the Department for approval. Such modules will be submitted only with the agreement by the developers to hold both the Department and Susquehanna Township Authority harmless if connection permits are not available.

For the year 2013, the total number of connections provided by the Department to the Authority will be 6 per year. As the Department stated, they did not want to intertwine Lower Paxton Township Authority (LPTA) with discussions of Susquehanna Township Authority. GHD, therefore, recommends to the Department that the 6 connections be allocated to Susquehanna Township Authority per their May 10, 2013 letter and that the Department provide separate connections to Lower Paxton Township Authority. LPTA recently completed a mini-basin (Mini-Basin ARA) in the Asylum Run Basin in which the results of flow metering indicate that the peak flows are within the pipe capacity (i.e. no surcharging) and the peak flow is less than 1,000 gpd/EDU. As approved by the Susquehanna Township Authority Board at their June 4, 2013 Board meeting, the Board gave back to LPTA the 9 connections that LPTA gave to Susquehanna Township Authority on February 3, 2009. Therefore, Susquehanna Township Authority currently has 12.5 connections (15.5 connections as of June 3, 2013 – 9 connections transferred back to LPTA from STA on June 4, 2013 + 6 connections DEP provided in their May 10, 2013 letter). Lower Paxton Township Authority currently has 11.5 connections (2.5 connections as of June 3, 2013 + 9 connections transferred back to LPTA from STA on June 4, 2013) plus any additional connections the

Department provides to LPTA as result of them removing excess I/I from their ARA mini-basin rehabilitation project.

The Department stated that 'connections awarded based on need' may not be carried forward from year to year, but that need for connections would be evaluated and awarded annually by the Department based on its assessment from the Authority's annual reports submitted to the Department and the discussions at the annual meeting between DEP, the Authority and the Authority's engineer. However, the Department indicated that additional connections granted for demonstrated peak flow reductions may be carried forward from year to year. It is assumed that DEP will notify the Authority of the annual connections for the next in December of each year. As approved by the Department in March 2013 a connection is defined for residential dwellings as 1 per residential unit and for commercial establishment as 350 gallons per day. The previous planning modules approved by the Department and shown in the Appendix C of the Annual reports remain approved and the developers may connect to the sewer system without any additional approval from the Department as long as the Authority has connections remaining to issue.

The Department may consider allowing additional connections for projects with larger or bulk connection needs. This would be considered on a case-by-case basis by the Department similar in manner as the adjustment made for the PEMA allocation.

TABLES

Paxton Creek Drainage Basin

Table 1 – Group 1 Mini-Basins: Replacement/Rehabilitation Priority Schedule
Table 2 – Group 2 Mini-Basins: Post Rehabilitation Priority Schedule

Asylum Run Drainage Basin

Table 3 – Group 1 Mini-Basins: Replacement/Rehabilitation Priority Schedule
Table 4 – Group 2 Mini-Basins: Post Rehabilitation Priority Schedule

Table 1 - Group 1 Mini-Basins
Paxton Creek Drainage Basin
Replacement/Rehabilitation Priority Schedule [1]
Revised September 2015

Mini-Basin	Est. EDUs	Estimated Peak Excess I/I (mgd)	Estimated Peak Excess I/I per EDU (gpd/EDU)	Est. ACP/VCP Mainline and Service Laterals (feet)	Estimated Building Sewer (feet)	Estimated Total Project Cost [2]	Estimated Cumulative Total Project Cost	Estimated Construction Beginning / Ending [7]	Post Rehabilitation Metering Season [7]
Tentative Priority for 2013 - 2015									
29A(North)	80	Note 3	-	4,300	1,600	$1,289,338 [5]	$1,289,338	2013 / 2014	2014 - 2015
29C	54	0.95	17,593	6,200	1,080	$3,937,072 [6]	$5,226,410	2014 / 2015	2015 - 2016
32C	41	0.53	12,927	7,100	820		$5,226,410	2014 / 2015	2016 - 2017
Tentative Priority for 2016 - 2018 [4]									
32D	137	1.13	8,248	11,500	2,740	$2,321,000	$7,547,410	2015 / 2016	2017 - 2018
32E	245	1.91	7,796	16,900	4,900	$4,033,000	$11,580,410	2015 / 2016	2017 - 2018
32G	79	0.75	9,494	8,100	1,580	$1,238,000	$12,818,410	2016 / 2017	2018 - 2019
32A	72	0.68	9,444	3,900	1,440	$1,084,000	$13,902,410	2016 / 2018	2019 - 2020
Tentative Priority for 2019 - 2022 [4]									
30G (South)	125	1.08	8,640	9,800	2,500	$2,037,000	$15,939,410	2018 / 2019	2020 - 2021
33A	130	0.53	4,077	17,600	2,600	$2,248,000	$18,187,410	2019 / 2021	2022 - 2023
30B	248	0.38	1,532	13,200	4,960	$4,964,000	$23,151,410	2021 / 2022	2023 - 2024
Total		> 7.94		98,600	24,220		$23,151,410		

Notes:

(1) Priority of mini-basins projects may change as result of flow metering results and/or conditions.

(2) Estimated project cost includes surveying, engineering design, permitting, bidding and awarding, construction, construction administration, construction observation, public relations, and record drawings. The estimate costs shown is expressed in dollars for the given year.

(3) Mini-Basin 29A(North) includes a pump station and; therefore, the peak excess I/I can not be measured accurately. This mini-basin was moved up in priority because the wet well of the pump station overflows during extreme wet weather events.

(4) The Authority will continue to assess the excess I/I in the Paxton Creek Drainage Basin as they perform sewer rehabilitation projects. At these milestones, if the Authority would like to pursue other means such as storage to reduce the hydraulic overloads the Authority will meet with DEP to discuss modifying the CAP.

(5) Actual project cost includes surveying, engineering design, permitting, bidding and awarding, construction, construction administration, construction observation, and public relations. The cost shown is expressed in dollars for the year the project was completed.

(6) Only the actual construction price awarded to the contractor for Mini-Basins 29C, 29D, and 32C. Does not yet include total project costs.

(7) The estimated construction completion dates and the post-rehabilitation flow metering dates are dependent on items not within the Authority's control such as weather that could delay the construction completion of a mini-basin and the number of wet weather events that occur during post-metering of a mini-basin. Therefore, matters not in the Authority's control could require the schedules to be modified. The Authority will notify the Department of any modification to the schedules.

Table 2 - Group 2 Mini-Basins
Paxton Creek Drainage Basin
Post Rehabilitation Priority Schedule
Revised September 2015

Mini-Basin	Est. EDUs	Estimated Peak Excess I/I (mgd)	Estimated Peak Excess I/I per EDU (gpd/EDU)	Est. ACP/VCP Mainline and Service Laterals (feet)	Estimated Building Sewer (feet)	Estimated Total Project Cost [1]	Estimated Cumulative Total Project Cost	Estimated Construction Beginning / Ending [2]	Post Rehabilitation Metering Season [2]
Tentative Priority for 2013 - 2015									
29D	79	0.90	11,392	6,100	1,580	$1,214,000 [3]	$1,214,000	2014 / 2015	2016 - 2017

Notes:

(1) Estimated project cost includes surveying, engineering design, permitting, bidding and awarding, construction, construction administration, construction observation, public relations, and record drawings. The estimate costs shown is expressed in dollars for the given year.

(2) The estimated construction completion dates and the post-rehabilitation flow metering dates are dependent on items not within the Authority's control such as weather that could delay the construction completion of a mini-basin and the number of wet weather events that occur during post-metering of a mini-basin. Therefore, matters not in the Authority's control could require the schedules to be modified. The Authority will notify the Department of any modification to the schedules.

(3) Only the actual construction price awarded to the contractor for Mini-Basins 29C, 29D, and 32C. Does not yet include total project costs.

Table 3 - Group 1 Mini-Basins
Asylum Run Drainage Basin
Replacement/Rehabilitation Priority Schedule [1]
Revised September 2015

Mini-Basin	Est. EDUs	Estimated Peak Excess I/I (mgd)	Estimated Peak Excess I/I per EDU (gpd/EDU)	Est. VCP Mainline and Service Laterals (feet)	Estimated Building Sewer (feet)	Estimated Total Project Cost [2]	Estimated Cumulative Total Project Cost	Estimated Construction Beginning / Ending [5]	Post Rehabilitation Metering Season [5]
Tentative Priority for 2013 - 2015									
22A	149	1.11	7,450	7,800	2,980	$1,672,264 [4]	$1,672,264	2013 / 2014	2014 - 2015
22H	33	0.32	9,697	2,500	660	$1,041,121 [4]	$2,713,385	2014 / 2015	2015 - 2016
Tentative Priority for 2016 - 2018									
23B	160	0.95	5,938	11,400	3,200	$3,531,000	$6,244,385	2016 / 2017	2017 - 2018
22M (East) [3]	223	0.72	3,229	11,800	2,230	$4,165,000	$10,409,385	2017 / 2018	2018 - 2019
Tentative Priority for 2019 - 2020									
221 (North) [3]	75	0.56	7,467	4,800	1,500	$1,560,000	$11,969,385	2018 / 2020	2020 - 2021
22C [3]	40	0.24	6,000	3,200	800	$963,000	$12,932,385	2018 / 2020	2021 - 2022
Total		3.9		41,500	11,370		$12,932,385		

Notes:

(1) Priority of mini-basins projects may change as result of flow metering results and/or conditions.

(2) Estimated project cost includes surveying, engineering design, permitting, bidding and awarding, construction, construction administration, construction observation, public relations, and record drawings. The estimate costs shown is expressed in dollars for the given year.

(3) This mini-basin in Asylum Run may not be required to be performed depending upon basin flow meter results. If the project is not performed, projects scheduled in the future will be moved forward.

(4) Actual project cost includes surveying, engineering design, permitting, bidding and awarding, construction, construction administration, construction observation, and public relations. The cost shown is expressed in dollars for the year the project was completed.

(5) The estimated construction completion dates and the post-rehabilitation flow metering dates are dependent on items not within the Authority's control such as weather that could delay the construction completion of a mini-basin and the number of wet weather events that occur during post-metering of a mini-basin. Therefore, matters not in the Authority's control could require the schedules to be modified. The Authority will notify the Department of any modification to the schedules.

Table 4 - Group 2 Mini-Basins
Asylum Run Drainage Basin
Post Rehabilitation Priority Schedule
Revised September 2015

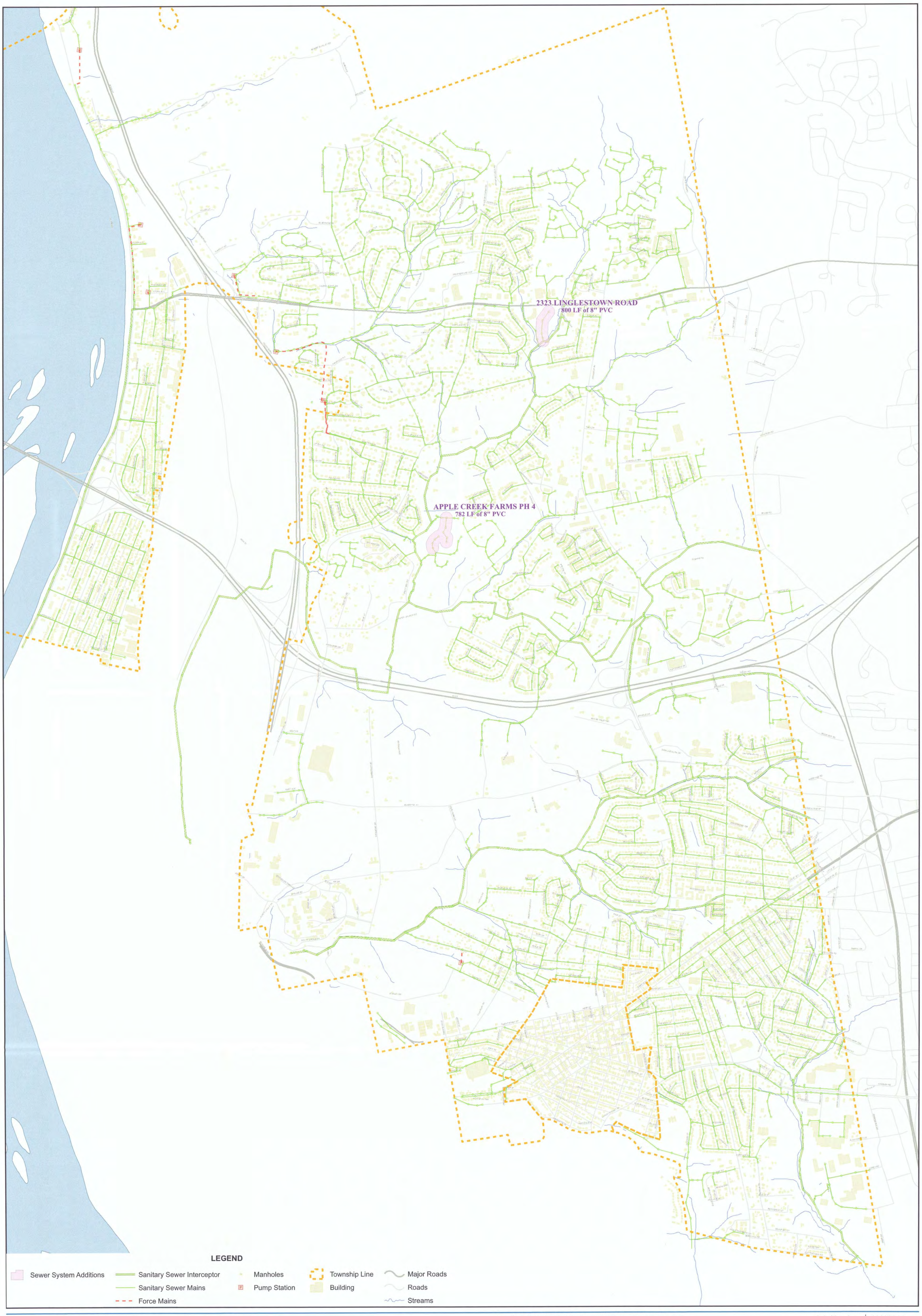
Mini-Basin	Est. EDUs	Estimated Peak Excess I/I (mgd)	Estimated Peak Excess I/I per EDU (gpd/EDU)	Est. VCP Mainline and Service Laterals (feet)	Estimated Building Sewer (feet)	Estimated Total Project Cost [1]	Estimated Cumulative Total Project Cost	Estimated Construction Beginning / Ending [3]	Post Rehabilitation Metering Season [3]
Tentative Priority for 2013 - 2015									
22I (South)	89	0.91	10,225	4,900	1,780	Note 2		2013 / 2014	2014 - 2015

Notes:

(1) Estimated project cost includes surveying, engineering design, permitting, bidding and awarding, construction, construction administration, construction observation, public relations, and record drawings. The estimate costs shown is expressed in dollars for the given year.

(2) The Authority will conduct a wet weather investigation to locate the source(s) of excess I/I entering the sewers in this mini-basin. After locating the source(s) the Authority will rehabilitation or replacement on the sewer. The Authority will report their wet weather investigation findings to DEP.

(3) The estimated construction completion dates and the post-rehabilitation flow metering dates are dependent on items not within the Authority's control such as weather that could delay the construction completion of a mini-basin and the number of wet weather events that occur during post-metering of a mini-basin. Therefore, matters not in the Authority's control could require the schedules to be modified. The Authority will notify the Department of any modification to the schedules.



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0 500 1,000 2,000 3,000

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

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SANITARY SEWER SYSTEM
2015 CHAPTER 94 ANNUAL REPORT

SUSQUEHANNA TOWNSHIP AUTHORITY
SUSQUEHANNA TOWNSHIP, DAUPHIN COUNTY, PA

Job Number	11110863
Revision	A
Date	Mar 16, 2016

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APPENDIX M-6

CHAPTER 94 REPORT
FOR
SWATARA TOWNSHIP AUTHORITY

SWATARA TOWNSHIP AUTHORITY

2015 CHAPTER 94 ANNUAL REPORT

FOR THE

HARRISBURG WASTEWATER SYSTEM

SWATARA TOWNSHIP

Dauphin County, Pennsylvania

March 2016

ARRO Consulting, Inc.
108 West Airport Road
Lititz, PA 17543

2015 CHAPTER 94 ANNUAL REPORT

for the

HARRISBURG WASTEWATER SYSTEM

SWATARA TOWNSHIP

Dauphin County, Pennsylvania

March 2016

Preparer: ARRO Consulting, Inc.
108 West Airport Road
Lititz, PA 17543

G. Matthew Brown, P.E., DEE

Permittee: Swatara Township Authority
599 Eisenhower Boulevard
Swatara, PA 17111

Gene Lank II
O&M Superintendent

SWATARA TOWNSHIP AUTHORITY

Harrisburg Wastewater System

2015 CHAPTER 94 REPORT

FLOW HISTORY AND PROJECTIONS

A. LAWNTON-OAKLEIGH DRAINAGE BASIN

Exhibit 1 presents the past and projected Equivalent Dwelling Units (EDUs) for the combined Lawnton-Oakleigh and Oberlin-Enhaut-Bressler drainage basins. This exhibit identifies past and projected EDUs for the years 2011 through 2020.

Exhibit 2 depicts quarterly flows of the combined Lawnton-Oakleigh and Oberlin-Enhaut-Bressler drainage basins. EDUs are based on flow divided by178 gals/EDU (a value established by the agreement with the City of Harrisburg).

Exhibit 3 identifies the five (5) year hydraulic loading history of the combined Lawnton-Oakleigh and Oberlin-Enhaut-Bressler drainage basins (2011 through 2015 as previously reported separately).

B. INDUSTRIAL WASTES

Swatara Township Authority notifies the City of Harrisburg when new non-residential customers are connected to either the Lawnton-Oakleigh or Oberlin-Enhaut-Bressler drainage basins. The industrial wastewater pretreatment program for these drainage basins is administered by the City of Harrisburg.

C. PROJECTED DEVELOPMENT

Projections are based upon available data pertaining to development within each drainage basin and upon past development trends. Exhibit 4 identifies anticipated development within the Lawnton-Oakleigh and Oberlin-Enhaut-Bressler drainage basins, which is either in the planning, preliminary submission, final submission, or construction phase.

D. SEWER SYSTEM EXTENSIONS

There were no sewer extensions in the Lawnton-Oakleigh Drainage Basin and Oberlin-Enhaut-Bressler Drainage Basin Collection Systems during 2015.

E. COLLECTION SYSTEM MAINTENANCE AND CORRECTIVE ACTION PLAN

1. Lawnton-Oakleigh Drainage Basin Collection System

Routine maintenance in the Lawnton-Oakleigh Drainage Basin Collection System consisted of cutting roots and/or flushing 31 manhole sections for the reduced interval maintenance program and inspection of facilities in unimproved rights-of-way (R/W) for problems and vandalism two times during the year. In past years the Lawnton-Oakleigh Drainage Basin was broken down into two programs. The first program dealt with the older portion of the system which was flushed and visually inspected every two years. The second program consisted of the newer portion flushed and visually inspected every four years. With the ongoing progress of the maintenance program, the two portions were flushed and visually inspected in 2015 and will continue to be performed jointly. The whole Lawnton-Oakleigh system will be flushed and visually inspected in a three year cycle starting in 2018.

An open cut service maintenance contract was awarded and scheduled to commence on January 1, 2015, along with a trenchless service maintenance contract (Costars) that is ongoing. The contract work included general

repairs/lining to the existing sanitary sewer system along with the performance of emergency repairs on an as-needed basis for a period of twelve months. The emergency repairs portion of the contract was extended to December 31, 2015.

Scheduled maintenance and repairs included replacement of:

- 2746′ of 8″ Vitrified Clay (VC) pipe with 2746' of 8" Polyvinyl Chloride (PVC) pipe.

Rehabilitation consisted of:

- Lining 1190' of 8" VC pipe with 1190' of 8" Blue-Tek Cured In Place Pipe (CIPP) liner.
- Lining 385' of 8" Asbestos Cement (AC) pipe with 8" Blue-Tek CIPP liner.

  Replacement of 26 brick manholes with 26 precast concrete (PC) manholes.

Scheduled maintenance and repairs were also performed throughout the year on the only pump station in the system:

- Pump Station #5's average daily flow was 7,757 gallons. The maximum daily flow was 13,676 gallons with the two pumps running alternately for a combined total of 3.8 hours when the maximum flow occurred, and at no time did both pumps run together at the same time. This pump station has a design flow of 52,500 gpd. There is no increase in flow projected for this pump station in the next two years.
- Copies of the meter calibration for this pump station is included at the end of this report.

The following is a summary of the I/I project activities and findings during 2015:

- Ten portable meters were used to meter five subdrainage areas within the project areas during the year.

In addition to the metering performed in the project area, five additional meters were used to determine the remaining capacity in various critical sections of the collection system. This information is used for planning purposes.

2. Oberlin-Enhaut-Bressler Drainage Basin Collection System

Routine maintenance consisted of cutting roots and/or flushing two manhole sections for the reduced interval maintenance program and inspection of facilities in unimproved R/W for problems and vandalism two times during the year. Flushing and visual inspection of this entire system is performed every three years, which is scheduled for 2016.

Scheduled maintenance performed in 2015 consisted of lining 839' of 8" ABS Truss pipe with 839' of Blue-Tek CIPP Liner.

- Pump Station #1's average daily flow was 13,841 gallons. The maximum daily flow was 51,558 gallons with the two pumps running alternately for a combined total of 7.5 hours when the maximum flow occurred, and at no time did both pumps run together at the same time. This pump station has a design flow of 204,000 gpd. An Omni-Site Pump Station Monitoring System was installed during 2015.

- Pump Station #2's average daily flow was 28,276 gallons. The maximum daily flow was 47,200 gallons with the two pumps running alternately for a combined total of 4.5 hours when the maximum flow occurred, and at no

time did both pumps run together at the same time. This pump station has a design flow of 108,000 gpd. There is no increase in flow projected for either of these pumping stations in the next two years.

- Copies of the pump stations meter calibrations are included at the end of this report.

The following is a summary of the I/I project activities and findings during 2015:

- Eight portable meters were used to meter the drainage basin.

With emphasis being placed on the Lawnton-Oakleigh I/I Project, minimal investigation was performed in the Oberlin-Enhaut-Bressler system.

3. General

The collection system maintenance department consists of seven full-time positions--a Foreman and six Collection System Maintenance Workers. The Foreman has a Level II ABC Collection System Certification and the UCC Commercial Plumbing Inspector Certification.

Major equipment used to inspect and maintain the collection system includes:

- Sewer flusher-1600 gallon, 2000 PSI, 65 GPM – truck mounted
- Main line televising and grouting rig – truck mounted
- Smoke testing equipment
- Manhole vacuum tester
- Low pressure main line air testing equipment
- 34 – portable flow meters

- Portable Velocity meter
- 2 – portable flow measurement devices – ISCO Flow Poke
- Lateral camera
- Two brush mowers
- Polyurethane grout manhole sealing system

The maintenance contracts provide the Authority with the services of a contractor to repair or replace defective pipe and manholes on an as needed basis. A backlog of defects found during previous I/I investigations will be repaired using these contracts.

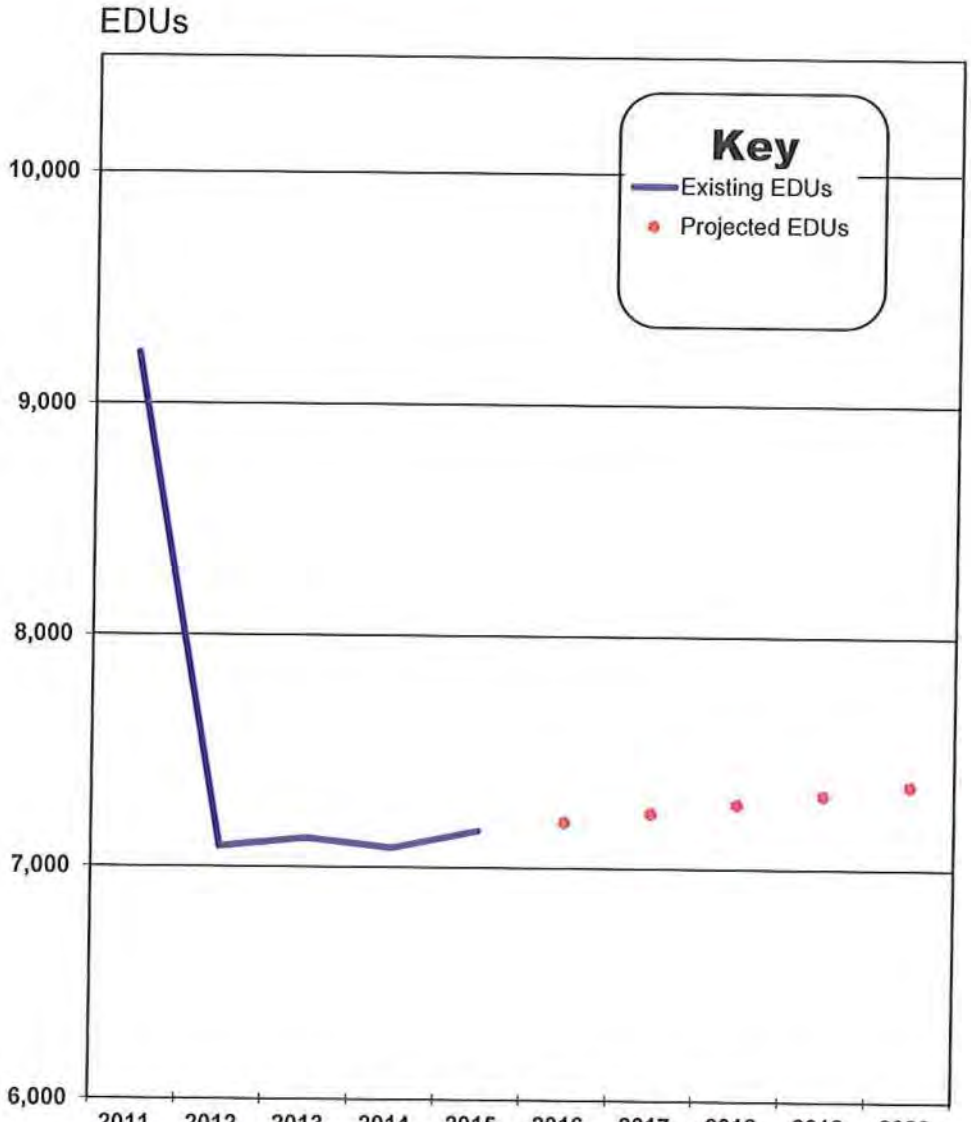
All sanitary sewer extension installations receive full-time inspection by an Authority Inspector. The installations must pass low pressure pipe testing and vacuum manhole testing before lateral connections are approved.

EXHIBIT NO. 1

SWATARA TOWNSHIP AUTHORITY

Lawnton-Oakleigh and Oberlin-Enhaut-Bressler Drainage Basins

Historical and Projected EDU Data



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Existing EDUs	9,221	7,089	7,126	7,086	7,161					
Projected EDUs						7,201	7,241	7,281	7,321	7,361

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Note: 2012 - 2019 EDUs are based on flow/178 gals/edu, which are more accurate than the previous method of calculating EDUs based on billing dollars/$92.00/edu for residental customers and 16,250 gal/qtr/edu for commerical customers.

EXHIBIT 2

SWATARA TOWNSHIP AUTHORITY

Lawnton-Oakleigh and Oberlin-Enhaut-Bressler Drainage Basins

Contribution to the Harrisburg AWWTF

2015 CHAPTER 94 ANNUAL REPORT

Quarter	Days/Qtr	Flow (gals)	Flow (MGD)	EDUs [1]
1	90	107,680,000	1.20	6,722
2	91	116,839,000	1.28	7,213
3	92	129,122,000	1.40	7,885
4	92	111,597,000	1.21	6,815
AVERAGE		116,309,500	1.27	7,161

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NOTES: [1] EDUs based on flow divided by 178 gals/EDU

EXHIBIT 3

SWATARA TOWNSHIP AUTHORITY

Lawnton-Oakleigh and Oberlin-Enhaut-Bressler Drainage Basins

5-Year Loading History
2015 CHAPTER 94 ANNUAL REPORT

Year	EDUs	Total Wastewater Flow (MGD)
2011	9,221 (1)	1.43
2012	7,089 (2)	1.26
2013	7,126 (2)	1.27
2014	7,086 (2)	1.26
2015	7,161 (2)	1.27

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(1) 2009 - 2011 EDUs based on combining Lawnton-Oakleigh and Oberlin-Enhaut-Bressler drainage basin EDUs previously reported

(2) 2012 - 2019 EDUs based on flow / 178 gals/edu. Previous year EDUs were based on billing dollars / $92.00 /edu for residential customers and 16,250 gal / qtr/edu for commercial customers

EXHIBIT 4

SWATARA TOWNSHIP AUTHORITY

Projected Development

2015 CHAPTER 94 ANNUAL REPORT

Project	PaDEP Code	Area (Acres)	Connected EDUs	Future EDUs	Total EDUs
Oberlin-Enhaut-Bressler Drainage Basin					
MISC	-	-	-		
ORCHARD PARK	A3-22931-332-3	16.80	-	45.0	45.0
IVY RIDGE	A3-22932-286-3	82.20	371.0	7.0	378.0
TECH PORT (PHASE 3)	A3-22932-303-3	33.80	45.0	115.0	160.0
Lawnton-Oakleigh Drainage Basin					
MISC	-	-	-	-	-
SMITHLAND DEVELOPMENT CORP	A3-22932-325-3	21.30	-	261.0	261.0
HIGH POINTE COMMONS	A3-22932-290-3	43.17	152.0	8.0	160.0
CAPITAL MANOR	A3-22932-322-3	0.77	-	23.0	23.0
DERRY STREET COMMONS	A3-22932-293-3	6.87	-	12.0	12.0

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SERVICE REPORT

SWATARA TOWNSHIP
8675 PAXTON ST
HUMMELSTOWN, PA 17036

SERVICE DATE: 12/22/2015
METER#: C8784 AA
LOCATION: PS #1
SERIAL #: 3K210000040512
MANUFACTURER: F & P/ ABB
RECORDER: COMMANDER 1300
TRANSMITTER: F & P 10 D1430U
PRIMARY: 4" MAG
MAXIMUM CAPACITY: 400 GPM
SERVICE CONTRACT: ANNUAL

WORK PERFORMED

CLEANED EQUIPMENT: X **PRIMARY:** X

RECORDER CALIBRATION **CHECKED AT:** 0, 50, 100%
ERROR: 0% **CORRECTED ACCURACY:** ±1%

TOTALIZER CALIBRATION **CHECKED AT:** OPERATING RATE
ERROR: 0 **CORRECTED ACCURACY:** ±1

TRANSMITTER CALIBRATION

VOLUMETRIC DRAW DOWN
ERROR: -1% **CORRECTED ACCURACY:** ±1%

COMMENT: PERFORMED VOLUMETRIC DRAW DOWN

SERVICE REPRESENTATIVE: JERRY/DENNIS **PERSON SEEN:** JEREMIAH
copies:

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P.O. BOX 196, EAST EARL, PA 17519
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SERVICE REPORT

SWATARA TOWNSHIP
8675 PAXTON ST
HUMMELSTOWN, PA 17036

SERVICE DATE: 12/22/2015
METER#: C8784 AC
LOCATION: PS #2
SERIAL #: N/32002/2/7 / 7503A0795J6
MANUFACTURER: F&P/ABB
RECORDER: COMMANDER 1300
TRANSMITTER: F & P 10 D1430U
PRIMARY: 4" MAG
MAXIMUM CAPACITY: 400 GPM
SERVICE CONTRACT: ANNUAL

WORK PERFORMED

CLEANED EQUIPMENT: X **PRIMARY:** X

RECORDER CALIBRATION **CHECKED AT:** 0 AND OPERATING RATE
ERROR: -4% **CORRECTED ACCURACY:** ±1%

TOTALIZER CALIBRATION **CHECKED AT:** 0 AND OPERATING RATE
ERROR: 0% **CORRECTED ACCURACY:** ±1%

TRANSMITTER CALIBRATION

PORTABLE TRANSIT TIME, VOLUMETRIC DRAW DOWN.
ERROR: 0% **CORRECTED ACCURACY:** ±1%

COMMENT: PERFORMED VOLUMETRIC DRAW DOWN AND PORTABLE TRANSIT TIME.

SERVICE REPRESENTATIVE: JERRY/DENNIS **PERSON SEEN:** JEREMIAH
copies:

W.G. MALDEN
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SERVICE REPORT

SWATARA TOWNSHIP
8675 PAXTON ST
HUMMELSTOWN, PA 17036

SERVICE DATE: 12/22/2015
METER#: C8784 AD
LOCATION: PS #5
SERIAL #: 7ME6910-1AA10-1AAD/93251236850001
MANUFACTURER: SIEMENS/ HONEYWELL
RECORDER: DR4500
TRANSMITTER: MAG 5000
PRIMARY: 4" MAG
MAXIMUM CAPACITY: 200 GPM
SERVICE CONTRACT: ANNUAL

WORK PERFORMED

CLEANED EQUIPMENT: X **PRIMARY:** X

RECORDER CALIBRATION **CHECKED AT:** 0, 50, 100%
ERROR: * **CORRECTED ACCURACY:** ±1%

TOTALIZER CALIBRATION **CHECKED AT:** 0, 50, 100%
ERROR: 0 **CORRECTED ACCURACY:** ±1

TRANSMITTER CALIBRATION

VOLUMETRIC DRAW DOWN
ERROR: -1% **CORRECTED ACCURACY:** ±1%

COMMENT: *CORRECTED PROGRAMMING IN RECORDER. CHANGED MAX CAPACITY TO 200 GPM-ELECTRONICS AND RECORDER.

SERVICE REPRESENTATIVE: JERRY/DENNIS **PERSON SEEN:** JEREMIAH
copies: