City of Alexandria, Virginia
Department of Transportation and Environmental Services

COMBINED SEWER SYSTEM ANNUAL REPORT NO. 19 FOR 2013

VPDES Permit No. VA0087068

FINAL REPORT

March 2014

GREELEY AND HANSEN

City of Alexandria, Virginia
Department of Transportation and Environmental Services

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I. GENERAL

The City of Alexandria (City) owns and operates a combined sewer system (CSS) that discharges combined sewer overflows under wet weather conditions to waters of the Commonwealth of Virginia. The City is authorized to discharge wet weather overflows from its CSS under Virginia Pollutant Discharge Elimination System (VPDES) Permit No. VA0087068 (Permit) issued by the Commonwealth of Virginia Department of Environmental Quality (VDEQ).

Part I.E.10 of the Permit requires the City to submit to VDEQ an annual report on the CSS by March 31st of each year. This is the nineteenth CSS Annual Report for the City and summarizes information for the calendar year 2013. This annual report includes the following required information:

- Modeled results of the number of occurrences and the duration of overflows for each combined sewer outfall (CSO), including estimation of overflow occurrences.

- Measured storm event data (intensity, duration, and total precipitation) for storms predicted to result in a CSO discharge.

- A summary of CSO requirements for the year including:

  - CSS structure inspection and maintenance records
  - Outfall inspection records
  - Staff training
  - Certification of adequate funds
  - Maximize in-line storage capacity records
  - Control of non-domestic discharges
  - Maximize flow to POTW
  - Dry weather discharge records
  - Pollution prevention implementation records
  - Public notification records

- A summary of monitoring results for Outfalls 001, 002, 003, and 004 as applicable.

- A summary of in-stream monitoring results for Hunting Creek, as required in Part I.C.2 of the Permit.

- A summary of in-stream monitoring results for Oronoco Bay, as required in Part I.C.1 of the Permit.

The City's prior Permit was issued by VDEQ with an effective date of January 17, 2007 and expiration date of January 15, 2012. The City submitted an application for permit reissuance that was found to be timely and complete by VDEQ; therefore, the prior Permit was administratively continued and the City continued to operate under its requirements until VDEQ issued another permit. On August 22, 2013, VDEQ issued the City its current CSS permit. Annual report requirements of the current permit do not go into effect until calendar year 2014; therefore this annual report fulfills the requirements of the prior Permit effective January 17, 2007. The Permit requires the City to continue using the Nine Minimum Controls (NMCs) as its approved Long Term Control Plan (LTCP). The Permit also requires the City to implement a monitoring and sampling plan based on the recommendations made in the *Summary Report for Permit Reissuance Application*, dated September 2006. The City developed and executed monitoring plans for the CSO outfalls, Hunting Creek and Oronoco Bay to meet the prior Permit requirements. These plans were submitted to VDEQ on April 26, 2007 and revised on June 12, 2007 to address comments by VDEQ, and was subsequently approved by VDEQ on June 19, 2007.

The CSO monitoring plan includes flow monitoring and sampling requirements at each of the four outfalls associated with the City's CSS. For each outfall during the monitoring period, a minimum of four representative CSO events are to be sampled and analyzed. Flow monitoring and sampling occurred at one outfall per year starting with Outfall 001 in Year 2007. For Year 2008 of the Permit, Outfall 002 was monitored and for Year 2009 of the Permit, Outfall 003 was monitored and samples were collected. For Year 2010 of the Permit, Outfall 004 was monitored and samples were collected. The City was operating under the administratively continued Permit during Year 2012, and Outfall 001 was monitored and samples were collected. For Year 2013, the City continued to operate under the administratively continued Permit and performed monitoring and sampling at Outfall 002 per VDEQ's instructions.

The Hunting Creek in-stream monitoring plan consists of both routine sampling and wet weather sampling within 24 hours of a CSO event. Routine samples are collected once per week for a period of four weeks per year. The plan also calls for a minimum of two wet weather sampling events per year. Sampling has been conducted for each year of the Permit and was performed during this reporting period in conjunction with the other required monitoring plans (Oronoco Bay in-stream).

The Oronoco Bay in-stream monitoring plan consists of both routine sampling and wet weather sampling within 24 hours of a CSO event. Routine samples are collected twice per week for a period of four weeks per year. The plan also calls for a minimum of two wet weather sampling events per year. Sampling has been conducted for each year of the Permit and was performed during this reporting period in conjunction with the other monitoring plans (Hunting Creek in-stream).

II. DESCRIPTION OF THE ALEXANDRIA COMBINED SEWER SYSTEM

The City's CSS comprises three areas and four permitted CSO outfalls as shown on Figure 1. The area served by combined sewers comprises about 540 acres of the City, which are generally located in the Old Town area and areas east of U.S. Route 1.

During dry weather, sanitary wastewater collected in the CSS is conveyed to the advanced wastewater treatment plant (AWWTP) owned and operated by the Alexandria Renew Enterprises (ARenew). During particular rainfall events, the capacity of the CSS may be exceeded and this excess flow, which is a mixture of stormwater and sanitary wastes, is discharged directly to Hunting Creek, Hooffs Run, or the Potomac River (Oronoco Bay) through the City's four permitted CSO outfall structures. The following outfalls are regulated under the City's VPDES Permit as point source discharges of combined sanitary sewage and stormwater overflow from the City's CSS:

CSO Outfall No.	Description
001	Pendleton Street CSO
002	Royal Street CSO
003	Duke Street CSO
004	Hooffs Run CSO

III. CSO MODEL RESULTS FOR 2013

A. Model Description

A Sewer Overflow Model (SOM) was applied in earlier planning studies in the late 1980s and early 1990s to evaluate the response of the CSS to rainfall and other precipitation events. The SOM successfully simulated a network of sub-basins connected by trunk and intercepting sewers, pumps and treatment facilities; however, the SOM lacked the ability to model off-line storage. Therefore, the City decided to consider the merits of other software packages that could both build and improve upon the previous modeling work completed using the SOM. The City moved to a stormwater management model (SWMM) to build upon existing modeling work and upgraded an existing system-wide SWMM model to represent the City's combined sewer network. In 2010 the City moved again to a newer, more sophisticated model, XPSWMM. The old SWMM model lacked a graphical user interface and was not as robust as the new XPSWMM model. The 2012 report was the first annual report for which the XPSWMM model was used and results provided. This 2013 report continues to use the XPSWMM model.

In the XPSWMM model, three modules, or blocks, were used to simulate the City's CSS area: the RUNOFF block, the TRANSPORT block, and the EXTRAN block. While the XPSWMM model uses the same engine as the old SWMM model, it has enhancements and more available features to allow for a more complete representation of the system. XPSWMM uses the same blocks as SWMM but they are run in the background without the need for user input. Descriptions of these blocks are as follows:

- The RUNOFF block is used to simulate the quantity of storm runoff in the CSS area. XPSWMM uses an input rainfall record to create a step-by-step accounting of infiltration, surface detention, and overland flow. The hydrographs developed in RUNOFF are then used as input to the TRANSPORT block.

- The TRANSPORT block is used to simulate the hydraulics involved in passing non-surcharged flow through the CSS. TRANSPORT simplifies the CSS interceptor system to a series of links and nodes. Flows are routed downstream through the links and nodes until the hydrograph volume received from RUNOFF have been passed through the system.

- The EXTRAN block is used to simulate the more complex hydraulics including, but not limited to, surcharge flows and backwater effects due to tidal or non-tidal conditions. EXTRAN is also useful for representing special flow devices such as weirs, orifices, pumps, and storage basins. In the City's model, flows are routed through a TRANSPORT network to the more complicated lower reaches of the drainage system where their results serve as an input to the EXTRAN model.

B. Summary of Model Updates

Since the development of the SWMM model and the XPSWMM model in the CSS, a number of projects related to the collection system have taken place in the CSS. The City routinely incorporates these projects and other system changes into the model. A discussion of these changes is provided below.

The City, or private developers on behalf of the City, have undertaken various sewer separation projects in the CSS area, as has been documented in previous CSS Annual Reports. The SWMM model had been updated to include the Wythe Street Partial Sewer Separation Project in the King and West area, Tanyard Ditch Relief Storm Sewer Project in the Royal Street Area, and the new developments on Cameron Street and North Henry Avenue in the King and West Area. The Madden Homes (Chatham Square) project was included when the SWMM model was developed. All of these changes within the CSS were previously included in the XPSWMM model.

The initial CSS SWMM model included a grated connection between CSO 003 and 004. The grated connection was located in the CSO 003 overflow sewer on Duke Street. The purpose of the grated connection was to convey flow from sanitary laterals on Peyton Street between the King and West diversion and Outfall 003 to the 24-inch

sewer on Duke Street. Since the development of the City's CSS model, the sanitary connections were disconnected from the combined sewer and reconnected to a parallel sewer on Peyton Street, where sanitary flow is conveyed to the Duke Street Siphon Chamber. The grated connection was then abandoned so that all CSO overflow from the King and West diversion structure (during wet weather events) discharges directly through the CSO 003 outfall. This work was completed in 2005 and has been incorporated into the model. The XPSWMM model does not have this connection as a result.

The XPSWMM model was also previously modified to include updated City wastewater flows to the ARenew's AWWTP. These updates include the City's revised base flows to the treatment plant and revised rainfall derived infiltration and inflow (RDII) values in the City's separate sanitary collection system.

The model for CSO 003 was recalibrated in 2009 based on flow and rainfall monitoring collected from April 2009 – July 2009, as well as the removal of the grated connection between CSOs 003 and 004. This recalibration resulted in a decrease in overflow volume. The model was updated in 2010 to include the recalibration of CSO 004 based on flow and rainfall monitoring collected from April 2010 – August 2010. This recalibration was performed as part of a separate effort by the City. The flow monitoring for this effort included measurement of flows upstream of the existing Duke Street siphon chamber and measurement of the overflow downstream of the siphon chamber in the outfall pipe.

CSOs 001 and 002 were recalibrated as part of the City's permit reapplication in 2011. The recalibration consisted of using existing monitoring data both upstream and downstream of each outfall to ensure the model was properly predicting the number and volume of overflows. For CSO 001, some of the impervious area percentages were changed to reflect actual conditions. For CSO 002, no changes were necessary to calibrate the outfall.

For the 2013 Annual Report, all four outfalls were recalibrated to existing meter data to account for changes made to the model in the Holmes Run sewershed. The recalibration of the outfalls consisted of minor changes to the impervious areas and slopes of nodes in the CSS portion of the model. The changes made did not significantly impact the resulting overflows at each of the outfalls.

C. Summary of 2013 Rainfall Data

Rainfall data from Ronald Reagan Washington National Airport for 2013 is summarized as follows:

Total Number of Storm Events	**Total Rainfall (inches)**
67	44.30

During 2013, a total of 67 storm events were measured. A storm event is defined as rainfall equal to or exceeding 0.05" and separated by at least six continuous dry hours ("dry hours" is defined here to be six continuous hours of no measured rainfall). The presence of a storm event however, does not necessarily mean the occurrence of a CSO. There was at least one measureable event every month during the calendar year.

D. Rainfall Data and Model Results for CSO Outfalls

Rainfall data and model results for 2013 are presented in Tables 1 through 5 (refer to the "Tables" section of this report for detailed modeling results) and summarized below.

CITY OF ALEXANDRIA CSS - 2013 RAINFALL AND OVERFLOW MODEL SUMMARY					
CSO Outfall Number	**Description**	**Rainfall Data for Storms Resulting in Overflows**		**Estimated Annual Volume of Overflow (MG)**	**Average Duration of Overflow (Hours)**
		Number of Overflows (Occurrences)	**Rainfall Contributing to Overflow[1] (inches)**		
001	Pendleton St.	43	34.00	77.55	4.5
002	Royal St.	43	33.47	36.99	4.4
003	Duke St.	43	33.87	18.82	4.4
004	Hooffs Run	38	29.88	3.55	4.1

[1] For example, for a 1 inch storm, the first 0.5 inches of rain are conveyed to the plant. The last half inch of rain cannot be conveyed to the plant and causes an overflow. Therefore the amount of rain contributing to the overflow is 0.5 inches. This column represents the total amount of rainfall contributing to overflows for the entire year.

Figure 1 shows that both CSO Outfalls 003 and 004 serve the same drainage area, with Outfall 003 being located upstream from Outfall 004. As a result, the majority of overflow volume associated with this drainage area (King and West Streets) occurs primarily by discharging at Outfall 003. Consequently, Outfall 004 has a notably lower volume of overflow, as indicated above in the table.

Seventeen years of modeled results (1997 through 2013) are summarized and presented in the following table.

City of Alexandria CSS Performance			
	Total Recorded Rainfall (inches)	**Average Estimated Overflow Volume (MG)**	**Average Cumulative Duration[1] (hours)**
1997	33.82	2.1	3.2
1998	35.94	2.1	3.4
1999	40.35	3.8	3.4
2000	38.59	2.3	2.7
2001	29.95	2.0	2.8
2002	33.17	2.0	3.2
2003	59.12	3.3	3.4
2004	42.36	3.8	3.6

1 The average cumulative duration was calculated by summing the total amount of time that overflows occurred at CSOs 001 through 004 and dividing it by the sum of the total number of overflow events from CSOs 001 through 004.

City of Alexandria CSS Performance			
	Total Recorded Rainfall (inches)	**Average Estimated Overflow Volume (MG)**	**Average Cumulative Duration[1] (hours)**
2005	41.63	4.9	5.2
2006	46.99	5.4	4.2
2007	32.94	2.7	5.0
2008	46.04	4.6	4.2
2009	45.34	2.1	3.4
2010	39.69	3.2	6.8
2011	45.70	3.5	5.3
2012	32.06	2.8	3.5
2013	44.30	3.2	4.3

This table features annual data for the total recorded rainfall that caused CSOs to occur, the predicted average volume, and duration per event.

The CSS XPSWMM model was used to estimate the 2013 CSOs. For 2013, based on averages from each outfall, a total of approximately 3.2 million gallons (MG) was estimated to be discharged from the City CSS during each overflow event. Each overflow event had an average cumulative duration of about 4.3 hours based on the average duration for each outfall. Overall, model results, and related sampling and monitoring data, do not demonstrate any marked change in CSS performance.

IV. CSO MONITORING PLAN FOR OUTFALLS 001, 002, 003 AND 004

A. Plan Description

The City submitted a written CSO Monitoring Plan for VDEQ review on April 26, 2007. A revised plan was submitted on June 12, 2007 and approved by VDEQ on June 19, 2007. The approved monitoring plan consists of flow monitoring at the City's CSO outfalls to determine the frequency, duration, flow rate, and volume of CSO discharges. For Year 2013, flow monitoring and sample collections were performed at Outfall 002 (Royal Street Outfall). In addition to flow monitoring, a rain gauge was installed on top of the Nannie J. Lee Memorial Recreation Center on Jefferson Street, which is one block outside of the CSS, and the data was collected. The data were utilized to estimate runoff values for correlation of rain events and CSO overflows. Samples collected from Outfall 002 during overflow events were analyzed for the parameters listed in Part I.A.1 of the Permit. Flow meter locations are shown on Figure 2 for Year 2013.

B. Summary of CSO Flow Monitoring

The Year 2013 monitoring dates and durations for each temporary flow monitor are provided in the table below:

Year 2013 Flow Monitoring Summary

Flow Meter Number and Location		Begin Monitoring	End Monitoring	Duration
OUTFALL 002 – ROYAL STREET				
Royal U/S	84" x 60.5" Upstream of weir	06/22/2013	12/10/2013	~5.5 Months
Royal D/S	15" Overflow sewer downstream of regulator structure	06/22/2013	12/10/2013	~5.5 Months
Royal Overflow	84.5" x 60.5" Downstream of weir	06/22/2013	12/10/2013	~5.5 Months

Although the permit only requires flow monitoring downstream of the weir to measure to measure the overflows, two additional meters were installed. One meter was located upstream of the weir while the other meter was located downstream of the regulator structure in the pipe that carries dry weather flows to the treatment plant. These two meters allowed for verification of the data collected downstream of the weir. The flow monitoring period was extended approximately two and a half months to allow for wet weather sample collection as required in the Permit and CSO monitoring plan.

CSO flow monitoring results are presented in Appendix A.

Also in 2013, at the request of EPA, the City performed a tidal intrusion evaluation at Outfall 002. Data (depth and velocity) was collected from June 22, 2013 to September 22, 2013 to monitor tidal intrusion at Outfall 002. From June 22, 2013 to July 30, 2013, the average daily tidal intrusion was approximately 53,576 gallons per day. At the request of the City, the tide gate manufacturer manually adjusted the tide gates on July 31, 2013 in order to minimize inflow. After the manufacturer's adjustment, there was a significant decrease of tidal intrusion to approximately 6,015 gallons per day from August 1, 2013 to September 21, 2013. This new average daily tidal intrusion is insignificant since it is approximately $1/10{,}000^{th}$ of the dry weather capacity of the treatment plant (54 MGD). The small amount of tidal intrusion occurs as part of the normal design and operation of the tide gates at Outfall 002.

The results of the evaluation were also summarized and provided to both EPA and VDEQ in a report dated October 2013. The EPA has accepted the findings associated with this report.

C. Summary of CSO Sampling

In addition to flow monitoring, sample collection and analyses were also conducted at Outfall 002. The overflow samples are representative of the CSO regulator being activated during a storm event. Each collected sample was analyzed by Microbac Laboratories, Inc., who is certified by the Commonwealth of Virginia and in accordance with the test methods as stated in the Permit. The table below includes a summary of samples collected for Outfall 001.

Sampling results are presented in Appendix A.

CSO Sampling Summary

Date of CSO Event	Total Rainfall (inches)	Start of CSO Event	Start of Sample Collection	# of Samples Collected
10/7/2013	1.06	11:55	12:15	4
11/1/2013	0.12	9:45	9:50	2
11/26/2013 to 11/27/2013	2.20	8:10	23:15	6
12/6/2013	0.73	3:45	12:10	2

V. HUNTING CREEK MONITORING PLAN

A. Plan Description

The City submitted to VDEQ a written Hunting Creek Monitoring Plan for review on April 26, 2007. A revised plan was submitted on June 12, 2007 and approved by VDEQ on June 19, 2007. The approved plan requires that both routine sampling and CSO-related samples are collected. Samples are analyzed for the parameters listed in Part I.A.1 of the Permit. Figure 2 shows the location where samples were collected.

B. Summary of Results

Hunting Creek routine sampling was initiated on August 19, 2013 and performed in conjunction with the Oronoco Bay sampling. All 4 routine samples were collected as of September 23, 2013. Hunting Creek sampling results are presented in Appendix B.

VI. ORONOCO BAY MONITORING PLAN

A. Plan Description

The City submitted to VDEQ a written Oronoco Bay Monitoring Plan for review on April 26, 2007. A revised plan was submitted on June 12, 2007 and approved by VDEQ on June 19, 2007. The approved plan requires that both routine sampling and CSO-related samples are collected. Samples are analyzed for the parameters listed in Part I.A.1 of the Permit. The sampling locations are shown in Figure 3.

B. Summary of Results

Oronoco Bay routine sampling was initiated on August 19, 2013. All 8 routine samples were collected as of September 26, 2013. Oronoco Bay sampling results are presented in Appendix C.

VII. CSS INSPECTION, OPERATIONS, AND MAINTENANCE PROGRAMS

The City's Department of Transportation and Environmental Services (T&ES) is responsible for proper operation and maintenance (O&M) of the CSS and for demonstrating compliance with the NMCs. Previous studies and assessments showed that the City's CSO discharges did not preclude attainment of existing water quality standards. Based on those studies, VDEQ approved the City's current LTCP comprised of the NMCs.

A. Operation and Maintenance Programs

The Sewer Maintenance Section of T&ES is responsible for O&M of the CSS. Specific information regarding the City's current and ongoing activities for implementing proper operation and maintenance of the CSS are summarized below:

1. Designated Manager for the CSS

   Operation and maintenance activities are performed under the leadership of the CSS Manager. The CSS Manager also serves as a common communication link among respective parties as well as a liaison with the public and regulatory agencies. The City is required to designate a CSS manager pursuant to Fact Sheet 17.e)1.a of the current Permit. The City has designated the CSS Manager to be:

   Mr. Richard J. Baier, P.E., LEED AP
   Director
   Transportation and Environmental Services
   City of Alexandria
   301 King Street, Rm. 4000
   Alexandria, VA 22314

   Mr. Baier continues in his role as the designated CSS Manager.

2. Inspection and Maintenance of CSS

   Annual inspection of all outfalls, tide gates, diversion and regulator structures within the CSS are required under Fact Sheet 17.e) 1.b of the existing Permit. The City has implemented guidelines for inspecting the various elements of the CSS, including the four permitted outfalls, tide gates at Royal Street and Hoofs Run (Outfalls 002 & 004), and diversion structures at the Duke Street and Hooffs Run outfalls (Outfalls 003 & 004). Inspection and maintenance of diversion and regulator structures, and tide gates occur at least on a monthly basis per the permit; while dry weather outfall inspections occur twice a month. In July of 2012, the City developed a more comprehensive and uniform outfall inspection form in response to a June 2012 EPA inspection. The forms were developed so that consistent information

was collected at all outfalls and now includes Outfall 001 and Outfall 002 starting in July 2012. On July 16, 2013 and again on July 31, 2013 the City cleaned, inspected, and made manual adjustments to the Royal Streets to reduce inflow. The results of these inspections are documented and the corresponding forms are included in Appendix D, however the two inspections mentioned above are not included.

ARenew maintains the outfall and diversion structures for the Pendleton and Royal Street outfalls (Outfalls 001 & 002). ARenew also owns and maintains the Royal Street regulator structure. The documentation that corresponds with ARenew's inspections is included in Appendix E.

a. Preventive Maintenance

The City continues to practice an extensive program of sewer system preventive maintenance. Focusing on preventive maintenance has helped the City reduce the need for corrective and emergency maintenance. The City's current preventive maintenance program includes the following activities:

- Monthly Problem Area Grease Flushing
- Flushing of the sanitary sewers, storm sewers, and combined sewers in the CSS
- Internal Sewer CCTV Inspections
- Inlet and Catch Basin Cleaning
- Sweeping and Cleaning of the Streets

The activities performed under the City's preventive maintenance program help maintain the hydraulic capacity of the CSS in addition to maximizing the storage capacity of the collection system. Included in this report are the O&M records documenting the City's individual preventive maintenance activities for the City's sewer system, including the area within the CSS.

b. Allocation of Funds for O&M

During calendar year 2013, the City spent a total of approximately $7.1 million on operation and maintenance activities related to the City's sewer system. Of this amount, the City estimates that approximately 39 percent, or $2.8 million was related to the CSS.

In addition to its operations and maintenance budget, the City has allocated $96.7 million over the next ten years in capital improvement program (CIP) projects related to the entire sanitary sewer system. Based on a detailed review of the City's accounting system, project expenditures for combined sewer mitigation and continued

implementation of the LTCP totaled approximately $317,000 during calendar year 2013. Appendix F includes a copy of the City's approved FY 2013 ten-year CIP program related to sewer rehabilitation and pollution abatement.

c. Training

The City conducts periodic training programs in work and safety procedures related to the operation and maintenance of the CSS.

B. Maximize Use of Collection System for Storage

Measures implemented by the City to maximize storage within the CSS to retain wet weather flow are summarized as follows:

1. CSO diversion structures are designed to permit filling of the trunk sewers to at least 3 times dry weather flow (DWF) before overflow occurs.

2. Storm and sanitary sewers are flushed on a regular basis to remove accumulated sediments to maximize sewer capacity and diversion structure capacity. City maintenance records documenting sewer flushing and cleaning activities are included as required in the Permit Fact Sheet, Section 17.e)1.b).

C. Control of Non-Domestic Discharges

ARenew administers and implements an industrial pretreatment program under its VPDES Permit.

In 2001, the City developed a revised ordinance for environmental offenses. The ordinance is included in Appendix G. Also included in Appendix G is City ordinance dealing with requirements for discharging to the ARenew AWWTP.

ARenew has indicated there are no significant industrial users or remediated dischargers within the CSS.

D. Maximize Flow to the POTW

The AWWTP is owned, operated and maintained by ARenew and is regulated under a separate VPDES Permit. During wet weather conditions, the waste treated at the AWWTP is increased to the maximum rate that can be handled to provide complete treatment. Normally, the AWWTP increases treatment flow from a dry weather range of approximately 35 mgd to more than 100 mgd during wet weather events.

The City has undertaken various sewer separation projects, covering multiple Permit cycles, which increase the flow directed to the AWWTP. These projects are as follows:

- The Tanyard Ditch Relief Storm Sewer Project, completed in 2007, featured installing a new storm sewer within the combined area and relocating the existing combined sewer. The drainage area associated with the new storm sewer was removed from the CSS as the new storm sewer discharges to the Potomac River. Approximately 11.5 acres in the Royal Street CSS Area were separated.
- Approximately 3 city blocks in Pendleton Street CSS area were either partially separated (sanitary sewerage removed from the CSS area) or completely separated (storm and sanitary sewers no longer contribute to the CSS) as part of the Madden Homes/Chatham Square redevelopment project completed in 2007. The stormwater was diverted to existing stormwater outfalls. A 36-inch sanitary sewer on Pendleton Street was constructed to receive separated wastewater flows. This 36-inch sanitary sewer discharges to the Potomac Interceptor downstream of Outfall 001. A total of approximately 13 acres was separated.
- Two areas were redeveloped in the CSS area with sanitary flows redirected to the Potomac Yard Trunk Sewer, which connects directly to ARenew's AWWTP. The separation project was completed in 2008. Previously, these areas discharged to the combined sewer. The redeveloped areas include the following:

    - 1115 Cameron Street – includes 64 condominium units
    - 500 N Henry Street – includes 168 condominium units and retail

- The Wythe Street sewer separation project was completed in the summer of 2010 as part of a redevelopment project in the King and West combined sewer area. One thousand linear feet was pipe installed using trenchless technology along Wythe Street between N. Fayette Street and N. Alfred Streets. The project resulted in 1.44 acres separated and removed from the combined sewer service area.
- There are two projects associated with the Area Reduction Plan, which aims to redirect sanitary or storm flow to a separate system, that are currently in development. The Harris Teeter development along Madison Street between N. Saint Asaph Street and N. Pitt Street is currently under development and is expected to separate and remove approximately 1.50 acres from the combined sewer service area. The James Bland Phase II development located in the Braddock East area is under development and is expected to separate and remove approximately 3.20 acres from the combined sewer service area. There are other projects in the pre-concept and concept phases associated with the Area Reduction Plan, but these are not expected to be under development within the next five years.

The City has created a plan to further identify specific areas that can be separated as future development opportunities arise.

E. Dry Weather Overflows

In 2012, the City conducted a dry weather overflow (DWO) inspection program to ensure no dry weather overflows were occurring. In accordance with Fact Sheet 17 e.) 5 of the existing Permit, the City inspects each CSO outfall (Outfalls 001-004) at least twice per month and documents each occurrence as to the presence of DWOs. Attached in Appendix H are the DWO inspection records for Outfalls 001-004. There were no reported instances of a DWO for calendar year 2013.

F. Control Solid and Floatable Materials

Measures implemented to control solids and floatable materials in City CSOs are summarized as follows:

- Regular street and catch basin cleaning
- Regular sewer flushing to prevent buildup of solids
- Regular leaf collection and litter removal
- Use of hooded (inverted outlets) catch basins to retain solids and floatables

The City follows a regular street sweeping schedule to remove trash and litter in the streets and alleys that may otherwise be washed into the CSS. The City sweeps all of the streets in the CSS area at least once per week. Some areas are cleaned on a daily basis, Monday through Friday. Copies of the forms documenting the City's street sweeping activities are included along with the other activity reports in Appendix I.

Additionally, the City committed to providing overflow screens in the outfall gate chamber downstream of the Royal Street CSO regulator. VDEQ was notified of this initiative in a City letter to VDEQ dated January 31, 2007. The overflow screens were installed on July 23, 2008. In 2010, staff observed that the screens were becoming clogged from organic debris in the sewers that was causing the sewer to backup. In the fall of 2010, following consultation with VDEQ and approval by VDEQ staff, every other bar on the screens was removed to reduce clogging.

The City also routinely performs sewer flushing, as well as inlet and catch basin cleaning within the CSS. Copies of these maintenance reports are also included in Appendix J and Appendix K, respectively.

G. Pollution Prevention

Pollution prevention programs and activities implemented by the City are summarized as follows:

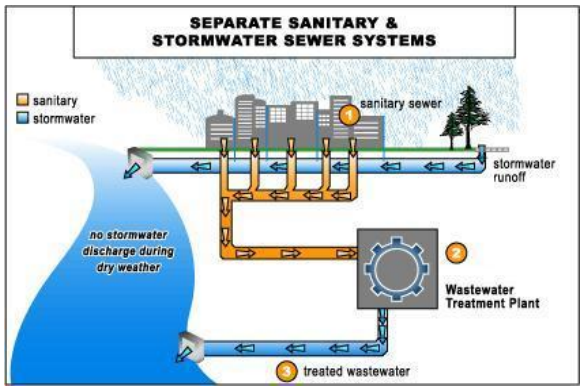
- Leaf collection
- Hazardous waste recycling
- General single-stream recycling and solid waste control

- Street cleaning and litter control
- Best management practices (BMP) manual for automotive related industries. All businesses that require a Special Use Permit (SUP) comply with this manual by placing appropriate conditions on their SUPs. A copy of the City's BMP handbook can be downloaded at http://alexandriava.gov/uploadedFiles/tes/info/Automotive_BMP_manual.pdf.
- Work release: T&ES uses work release crews under the general supervision of the Sheriff's Office to perform general clean-up and related projects that benefit the community.
- Aggressive illicit discharge detection and elimination system program with dedicated Code Enforcement staff as the Environmental and Industrial Unit (EIU).
- "My City" internal reporting program includes "illicit discharges" as part of the issue topics.

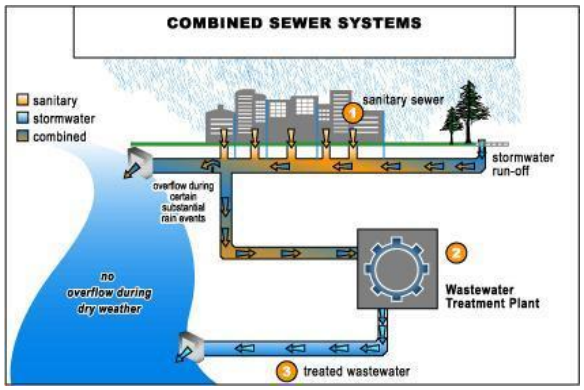
Included in Appendix L is a copy of information regarding the leaf collection program that is made available to all City residents.

H. Public Notification

1. During 2001, the City erected new public notice signs at each of the CSO outfall locations. In 2013, fulfilling requirements of the new CSS permit, new signs and pictograms were installed at each outfall. Photos of these signs are included in Appendix M.
2. The City also provides information to residents on the combined sewer systems. Appendix N includes a copy of the combined sewer system brochure provided by the City.
   More information can be obtained on the City's website at http://alexandriava.gov/tes/oeq/info/default.aspx?id=3844. Below is a screen capture image from the City's website illustrating the two types of sewer systems.



Source: www.dcwater.com



Source: www.dcwater.com

VIII. SUMMARY OF CSS ACTIVITIES

Activities for 2013 related to CSS operations and maintenance and the Nine Minimum Controls are as summarized below.

Summary of 2013 Operations and Maintenance Activities for City Sewer System Including CSS Related to the Nine Minimum Controls

Minimum Control	Description	Activity/Application
Operation and Maintenance	Regular sewer flushing	• Sewer siphons flushed weekly to ensure hydraulic capacity is available • Trunk sewers in CSS inspected on monthly schedules and flushed as needed • Problem grease area flushing on monthly schedule • 49,481 linear feet of sewer flushed/cleaned in CSS
	Regular Program of TV Inspection	• Annual visual inspection of CSS trunk sewers • CCTV = 23,399 linear feet
	Regular annual catch basin cleaning program	• Removal of debris from catch basins • Critical areas cleaned weekly • Non-critical areas 2-3 times / year • Inlets and catch basins cleaned = 264
Maximize Use of Collection System for Storage	Onsite Stormwater retention required in combined sewer area	• Required for new development by City code
Maximize Flow to the POTW	Redevelopment Separation of CSS	• Tanyard Ditch project (completed in 2007) provided for a new storm sewer in the combined area and removing it from the CSS. Approximately 11.5 acres in the Royal Street CSS Area were separated. • Approximately 13 acres of sanitary sewer in the Pendleton Street CSS Area was removed from the sanitary sewer (completed in 2007) and diverted a 36-inch sanitary sewer discharging into the Potomac Interceptor downstream of Outfall 001. A portion of the storm sewer was also removed from the sanitary. • Sanitary flow from two redeveloped areas connected to the Potomac Yard Trunk Sewer (completed in 2008) • Approximately 1.44 acres were separated along Wythe Street (James Bland Phase 1) in the King and West area that discharges to Outfall 003 (completed in 2010).
	Future Redevelopment Separation of CSS	• Approximately 3 acres are currently being separated as part of the Harris Teeter redevelopment in the Pendleton Area that discharges to CSO-001 and should be completed in 2014. • Approximately 5 acres are currently being separated as part of the James Bland Phase 2 project in the King and West area and should be completed in 2014.

Minimum Control	Description	Activity/Application
Eliminate Dry Weather Overflows (DWOs)	Diversion facilities inspected regularly & PM'd	• Monthly flap gate and diversion chamber inspections by the City of Alexandria, VA Renew Enterprises
	City maintains a 24 hour on-call response team for reported DWOs	• City Sewer Maintenance Division provides 24 hour response team
Control of Solid and Floatable Materials in CSOs	Regular sewer flushing	• See Section VII. B. 2. "Operation and Maintenance"
	Hooded catch basins	• Using hooded catch basin in CSS area
	Regular leaf season pickup	• Collected 39,853 biodegradable bags to be recycled for mulch distribution Spring 2014 • Collected 38,320 cubic yards (7,664 tons) of curbside vacuumed leaves to be recycled for mulch distribution Spring 2014
	Regular catch basin cleaning	• See Section VII.A Operation and Maintenance-2.a.
	Regular litter clean-up program	• Regular schedule for public litter cans, litter collection
	Regular street cleaning program	• Regular schedule for street sweeping and flushing • Approximately 5,225 linear miles cleaned
Pollution Prevention	Industrial Waste Reduction	• Encouraging industrial waste reduction through recycling and improved housekeeping
	Street Cleaning and Litter Controls	• Regular street cleaning and litter collection • See Control of Solid and Floatable Materials in CSOs
	Hazardous Waste Recycling	• Regular schedule for household hazardous waste day • HHW and Electronics recycling site is opened two days a week for residents to drop off

Minimum Control	Description	Activity/Application
	General Recycling and Solid Waste Control	• Regular recycling program • Curbside single-stream recycling
	BMPs for Automotive Related Industries	• Program to promote BMP for automobile industries • Manual for automobile related industries for BMPs on City's website @ alexandriava.gov/uploadedFiles/tes/info/Automotive_BMP_manual.pdf
	Leaf Collection	• Regular program for seasonal leaf collection • See Control of Solid and Floatable Materials in CSOs
	Ordinances and Enforcement	• City Pollution Prevention Program • City codes, summons and prepayable fines related to pollution prevention
	My City	• Internal reporting program includes "illicit discharges" as issue topic
	EIU	• Dedicated Code Enforcement Staff comprises the Environmental Industrial Unit that proactively inspects facilities and enforces the Environmental Crimes Ordinance
Public Notification	CSO Public Notice	• Public notice signs posted at CSO locations. Installations verified in 2013 that all are intact. See Appendix M • Public information bulletin available in City Hall and on website @ https://enews.alexandriava.gov/latest.php • Public information on Combined Sewer Systems on City's website. Brochure included in Appendix N
Monitoring		• The City has implemented a monitoring program for the CSS in accordance with Parts I.C of its VPDES Permit

LEGEND:
PM'd means performing maintenance work
CCTV means closed-circuit television inspection of the sewer.

TABLES

Table 1: CSO Outfall 001, Pendleton Street
2013 Rainfall and Overflow Model Summary

Date of Overflow	Storm Total (in.)	Duration of Storm (hrs.)	Maximum Storm Intensity (in./hr.)	Volume of Overflow (MG)	Duration of Overflow (hrs.)
15-Jan - 16-Jan	1.182	61	0.140	0.392	5.75
30-Jan - 31-Jan	1.141	13	0.420	2.110	6.33
26-Feb - 27-Feb	0.631	19	0.230	0.468	1.75
6-Mar	1.030	21	0.160	0.454	5.17
12-Mar	0.831	14	0.530	1.800	5.33
18-Mar	0.321	21	0.090	0.016	1.17
25-Mar	0.561	27	0.120	0.097	2.00
12-Apr	0.800	10	0.320	1.561	4.08
19-Apr - 20-Apr	1.370	10	0.530	3.333	5.75
7-May	0.552	31	0.200	0.500	3.42
10-May - 11-May	0.551	30	0.290	0.779	2.42
23-May - 24-May	0.201	38	0.160	0.071	1.00
28-May	1.340	2	1.170	5.358	2.50
2-Jun - 3-Jun	0.541	27	0.120	0.279	3.75
6-Jun - 7-Jun	2.521	36	0.420	4.094	12.42
10-Jun	2.781	26	1.050	9.427	10.25
23-Jun	0.460	4	0.330	0.921	2.000
27-Jun	0.230	8	0.220	0.237	1.25
28-Jun	2.860	8	1.200	12.093	6.75
30-Jun	0.220	2	0.190	0.161	1.25
1-Jul	0.661	21	0.570	1.557	1.75
2-Jul	0.171	16	0.090	0.004	0.75
3-Jul	0.150	7	0.120	0.010	0.67
10-Jul	0.570	13	0.530	1.390	1.67
12-Jul	1.391	27	0.650	3.586	3.75
18-Jul	1.040	4	0.980	3.833	2.00
27-Jul	0.261	11	0.120	0.034	0.92
1-Aug	0.411	24	0.160	0.356	2.17
13-Aug	0.440	2	0.440	1.025	1.67
12-Sep	0.180	4	0.100	0.018	1.00
21-Sep	0.870	10	0.270	1.258	6.92
7-Oct	1.130	8	0.660	2.865	4.33
10-Oct - 12-Oct	4.993	93	0.570	10.296	28.42
1-Nov	0.141	16	0.130	0.020	0.75
16-Nov	0.420	7	0.130	0.190	2.42
18-Nov	0.150	8	0.150	0.042	0.83
26-Nov - 27-Nov	2.201	42	0.350	2.708	9.83
6-Dec - 7-Dec	0.791	33	0.100	0.040	4.00
8-Dec - 9-Dec	1.511	31	0.160	0.895	17.33
10-Dec	0.350	8	0.090	0.016	1.17

Table 1: CSO Outfall 001, Pendleton Street
2013 Rainfall and Overflow Model Summary

Date of Overflow	Storm Total (in.)	Duration of Storm (hrs.)	Maximum Storm Intensity (in./hr.)	Volume of Overflow (MG)	Duration of Overflow (hrs.)
14-Dec	0.460	10	0.140	0.119	5.08
22-Dec - 23-Dec	1.091	34	0.240	0.709	4.25
29-Dec	1.310	11	0.320	2.424	5.58

Summary for Outfall 001

Number of Occurrences	**43**
Volume (MG)	**77.547**
Duration (hrs.)	**191.58**
Total Rainfall Causing Overflow (in):	**34.00**

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Table 2: CSO Outfall 002, Royal Street
2013 Rainfall and Overflow Model Summary

Date of Overflow	Storm Total (in.)	Duration of Storm (hrs.)	Maximum Storm Intensity (in./hr.)	Volume of Overflow (MG)	Duration of Overflow (hrs.)
15-Jan - Jan-16	1.182	61	0.140	0.268	5.50
30-Jan - 31-Jan	1.141	13	0.420	1.184	6.08
26-Feb - 27-Feb	0.631	19	0.230	0.236	1.75
6-Mar	1.030	21	0.160	0.513	5.17
12-Mar	0.831	14	0.530	0.687	5.33
18-Mar	0.321	21	0.090	0.017	1.17
25-Mar	0.561	27	0.120	0.047	2.00
12-Apr	0.800	10	0.320	0.738	4.08
19-Apr - 20-Apr	1.370	10	0.530	1.614	5.75
7-May	0.552	31	0.200	0.288	3.25
10-May - 11-May	0.551	30	0.290	0.259	2.42
24-May	0.201	38	0.160	0.001	0.58
28-May	1.340	2	1.170	1.917	2.50
2-Jun - 3-Jun	0.541	27	0.120	0.224	3.75
6-Jun - 7-Jun	2.521	36	0.420	2.247	12.42
10-Jun	2.781	26	1.050	3.577	10.25
23-Jun	0.460	4	0.330	0.260	2.00
27-Jun	0.230	8	0.220	0.029	1.25
28-Jun	2.860	8	1.200	6.050	6.75
30-Jun	0.220	2	0.190	0.022	1.25
1-Jul	0.661	21	0.570	0.438	1.75
2-Jul	0.171	16	0.090	0.002	0.75
3-Jul	0.150	7	0.120	0.001	0.67
10-Jul	0.570	13	0.530	0.349	1.67
12-Jul	1.391	27	0.650	1.502	3.75
18-Jul	1.040	4	0.980	1.193	2.00
27-Jul	0.261	11	0.120	0.009	0.83
1-Aug	0.411	24	0.160	0.119	2.17
13-Aug	0.440	2	0.440	0.241	1.50
12-Sep	0.180	4	0.100	0.004	0.75
21-Sep	0.870	10	0.270	0.666	6.67
7-Oct	1.130	8	0.660	1.339	4.25
10-Oct - 12-Oct	4.993	93	0.570	5.780	29.50
1-Nov	0.141	16	0.130	0.000	0.42
16-Nov	0.420	7	0.130	0.111	2.17
18-Nov	0.150	8	0.150	0.000	0.83
26-Nov - 27-Nov	2.201	42	0.350	2.075	9.83
6-Dec - 7-Dec	0.791	33	0.100	0.100	3.00
8-Dec - 9-Dec	1.511	31	0.160	0.978	17.33
10-Dec	0.350	8	0.090	0.060	1.17

Table 2: CSO Outfall 002, Royal Street
2013 Rainfall and Overflow Model Summary

Date of Overflow	Storm Total (in.)	Duration of Storm (hrs.)	Maximum Storm Intensity (in./hr.)	Volume of Overflow (MG)	Duration of Overflow (hrs.)
14-Dec	0.460	10	0.140	0.088	5.08
22-Dec - 23-Dec	1.091	34	0.240	0.340	4.25
29-Dec	1.310	11	0.320	1.416	5.58

Summary for Outfall 002

Number of Occurrences	**43**
Volume (MG)	**36.992**
Duration (hrs.)	**189.17**
Total Rainfall Causing Overflow (in):	**33.47**

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Table 3: CSO Outfall 003, Duke Street
2013 Rainfall and Overflow Model Summary

Date of Overflow	Storm Total (in.)	Duration of Storm (hrs.)	Maximum Storm Intensity (in./hr.)	Volume of Overflow (MG)	Duration of Overflow (hrs.)
15-Jan - Jan-16	1.182	61	0.140	0.117	5.67
30-Jan - 31-Jan	1.141	13	0.420	0.449	6.17
26-Feb - 27-Feb	0.631	19	0.230	0.102	1.75
6-Mar	1.030	21	0.160	0.140	5.17
12-Mar	0.831	14	0.530	0.371	5.33
18-Mar	0.321	21	0.090	0.015	1.17
25-Mar	0.561	27	0.120	0.033	2.00
12-Apr	0.800	10	0.320	0.328	4.08
19-Apr - 20-Apr	1.370	10	0.530	0.673	5.67
7-May	0.552	31	0.200	0.128	3.42
10-May - 11-May	0.551	30	0.290	0.163	2.42
24-May	0.201	38	0.160	0.018	0.83
28-May	1.340	2	1.170	1.535	2.50
2-Jun - 3-Jun	0.541	27	0.120	0.084	3.75
6-Jun - 7-Jun	2.521	36	0.420	0.864	12.42
10-Jun	2.781	26	1.050	2.702	10.25
23-Jun	0.460	4	0.330	0.187	2.00
27-Jun	0.230	8	0.220	0.050	1.25
28-Jun	2.860	8	1.200	3.590	6.75
30-Jun	0.220	2	0.190	0.038	1.25
1-Jul	0.661	21	0.570	0.305	1.75
2-Jul	0.171	16	0.090	0.007	0.75
3-Jul	0.150	7	0.120	0.006	0.67
10-Jul	0.570	13	0.530	0.270	1.67
12-Jul	1.391	27	0.650	0.755	3.75
18-Jul	1.040	4	0.980	0.895	2.00
27-Jul	0.261	11	0.120	0.013	0.92
1-Aug	0.411	24	0.160	0.078	2.17
13-Aug	0.440	2	0.440	0.201	1.58
12-Sep	0.180	4	0.100	0.011	1.00
21-Sep	0.870	10	0.270	0.281	6.92
7-Oct	1.130	8	0.660	0.581	4.25
10-Oct - 12-Oct	4.993	93	0.570	2.123	29.50
1-Nov	0.141	16	0.130	0.008	0.67
16-Nov	0.420	7	0.130	0.056	2.42
18-Nov	0.150	8	0.150	0.009	0.83
26-Nov - 27-Nov	2.201	42	0.350	0.605	9.83
6-Dec - 7-Dec	0.791	33	0.100	0.034	4.00
8-Dec - 9-Dec	1.511	31	0.160	0.266	17.33
10-Dec	0.350	8	0.090	0.016	1.17

Table 3: CSO Outfall 003, Duke Street
2013 Rainfall and Overflow Model Summary

Date of Overflow	Storm Total (in.)	Duration of Storm (hrs.)	Maximum Storm Intensity (in./hr.)	Volume of Overflow (MG)	Duration of Overflow (hrs.)
14-Dec	0.460	10	0.140	0.043	5.08
22-Dec - 23-Dec	1.091	34	0.240	0.164	0.16
29-Dec	1.310	11	0.320	0.509	5.58

Summary for Outfall 003

Number of Occurrences	**43**
Volume (MG)	**18.824**
Duration (hrs.)	**187.83**
Total Rainfall Causing Overflow (in):	**33.87**

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Table 4: CSO Outfall 004, Hooffs Run
2013 Rainfall and Overflow Model Summary

Date of Overflow	Storm Total (in.)	Duration of Storm (hrs.)	Maximum Storm Intensity (in./hr.)	Volume of Overflow (MG)	Duration of Overflow (hrs.)
15-Jan - 16-Jan	1.182	61	0.14	0.012	3.67
30-Jan - 31-Jan	1.141	13	0.42	0.060	6.00
26-Feb - 27-Feb	0.631	19	0.23	0.011	1.75
6-Mar	1.03	21	0.16	0.029	5.17
12-Mar	0.831	14	0.53	0.050	4.92
18-Mar	0.321	21	0.09	0.000	0.92
12-Apr	0.8	10	0.32	0.043	3.67
19-Apr - 20-Apr	1.37	10	0.53	0.119	5.50
7-May	0.552	31	0.2	0.011	3.33
10-May - 11-May	0.551	30	0.29	0.008	2.08
28-May	1.34	2	1.17	0.158	2.17
2-Jun - 3-Jun	0.541	27	0.12	0.005	2.08
6-Jun - 7-Jun	2.521	36	0.42	0.184	12.08
10-Jun	2.781	26	1.05	0.004	1.42
23-Jun	0.46	4	0.33	0.014	1.75
27-Jun	0.23	8	0.22	0.001	0.83
28-Jun	2.86	8	1.2	1.130	6.50
30-Jun	0.22	2	0.19	0.001	1.08
1-Jul	0.661	21	0.57	0.035	1.67
2-Jul	0.171	16	0.09	0.000	0.50
3-Jul	0.15	7	0.12	0.001	0.58
10-Jul	0.57	13	0.53	0.019	1.42
12-Jul	1.391	27	0.65	0.093	2.75
18-Jul	1.04	4	0.98	0.098	1.75
27-Jul	0.261	11	0.12	0.001	0.75
13-Aug	0.44	2	0.44	0.013	1.33
12-Sep	0.18	4	0.1	0.000	0.67
21-Sep	0.87	10	0.27	0.041	6.50
7-Oct	1.13	8	0.66	0.090	4.08
10-Oct - 12-Oct	4.993	93	0.57	0.934	24.83
1-Nov	0.141	16	0.13	0.000	0.50
26-Nov - 27-Nov	2.201	42	0.35	0.170	9.83
6-Dec - 7-Dec	0.791	33	0.1	0.001	3.83
8-Dec - 9-Dec	1.511	31	0.16	0.064	17.33
10-Dec	0.35	8	0.09	0.005	1.17
14-Dec	0.46	10	0.14	0.004	4.50
22-Dec - 23-Dec	1.091	34	0.24	0.028	3.08
29-Dec	1.31	11	0.32	0.109	5.58

Table 4: CSO Outfall 004, Hooffs Run
2013 Rainfall and Overflow Model Summary

Date of Overflow	Storm Total (in.)	Duration of Storm (hrs.)	Maximum Storm Intensity (in./hr.)	Volume of Overflow (MG)	Duration of Overflow (hrs.)
Summary for Outfall 004					
Number of Occurrences			**38**		
Volume (MG)			**3.546**		
Duration (hrs.)			**157.58**		
Total Rainfall Causing Overflow (in):			**29.88**		

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Table 5
Summary of Modeled Results for Alexandria Combined Sewer Overflows 1997-2013

	1997	1998	1999	2000	2001	2002	2003	2004 [1]	2005	2006	2007	2008	2009 [2]	2010 [3]	2011	2012 [4]	2013 [5]
Total Rainfall:	33.82	35.94	40.35	38.59	29.95	33.17	59.12	42.36	41.63	56.05	32.94	46.04	45.34	39.69	40.11	32.06	44.30
CSO 001 Pendleton Street:																	
Number of Occurrences:	27	28	27	41	23	28	48	30	26	28	22	31	27	32	30	29	43
Volume (MG):	24.23	23.68	48.07	39.69	21.03	23.31	69.45	40.82	44.26	61.71	23.61	49.99	20.26	31.43	35.21	33.62	77.55
Average Volume (MG):	0.9	0.8	1.8	1.0	0.9	0.8	1.4	1.4	1.7	2.2	1.1	1.6	0.8	1.0	1.2	1.2	1.8
Duration (hrs.):	72	74	81	98	52	76	137	99	137	106	84	128	93	95	66	90	192
Average Duration (hrs.):	2.7	2.6	3.0	2.4	2.3	2.7	2.9	3.3	5.3	3.8	3.8	4.1	3.4	3.0	2.2	3.1	4.5
Total Rainfall Causing Overflow (in):	22.39	26.48	28.65	31.19	17.99	24.49	48.02	31.73	32.25	37.13	24.28	36.14	26.52	32.57	30.05	23.12	34.00
CSO 002 Royal Street:																	
Number of Occurrences:	58	46	56	58	49	47	75	47	38	49	35	45	48	41	25	37	43
Volume (MG):	41.79	41.70	62.80	53.49	32.75	39.22	89.25	74.08	80.66	99.19	52.20	87.85	50.61	59.32	31.27	36.31	36.99
Average Volume (MG):	0.7	0.9	1.1	0.9	0.7	0.8	1.2	1.6	2.1	2.0	1.5	2.0	1.1	1.4	1.3	1.0	0.9
Duration (hrs.):	252	253	256	215	187	224	356	210	238	287	202	248	242	227	47	65	189
Average Duration (hrs.):	4.3	5.5	4.6	3.7	3.8	4.8	4.7	4.5	6.3	5.9	5.8	5.5	5.0	5.5	1.9	1.8	4.4
Total Rainfall Causing Overflow (in):	31.21	32.94	38.61	36.18	25.03	33.35	55.86	39.95	37.83	45.13	29.04	41.5	39.88	36.42	26.17	27.4	33.47
CSO 003 Duke Street:																	
Number of Occurrences:	19	24	25	38	19	24	41	42	35	45	28	42	48	41	67	63	43
Volume (MG):	9.62	8.82	22.50	15.34	8.08	8.65	30.52	34.78	36.79	50.64	21.23	41.74	14.83	21.02	36.67	38.77	18.82
Average Volume (MG):	0.5	0.4	0.9	0.4	0.4	0.4	0.7	0.8	1.1	1.1	0.8	1.0	0.3	0.5	0.5	0.6	0.4
Duration (hrs.):	50	51	66	73	42	49	108	175	201	220	153	198	203	315	356	329	188
Average Duration (hrs.):	2.6	2.1	2.6	1.9	2.2	2.0	2.6	4.2	5.7	4.9	5.5	4.7	4.2	7.7	5.3	5.2	4.4
Total Rainfall Causing Overflow (in):	17.49	24.67	27.27	30.31	15.43	22.43	42.15	36.88	36.87	44.11	27.24	40.94	38.20	36.24	39.15	28.82	33.87
CS0 004 Hooffs Run:																	
Number of Occurrences:	0	0	0	0	0	0	0	15	11	10	4	10	2	36	20	48	38
Volume (MG):	0	0	0	0	0	0	0	0.91	0.09	0.19	0.07	0.18	0.01	8.81	9.63	4.12	3.55
Average Volume (MG):	0	0	0	0	0	0	0	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.5	0.1	0.1
Duration (hrs.):	0	0	0	0	0	0	0	35	38	24	20	23	2.0	398	237	183	158
Average Duration (hrs.):	0	0	0	0	0	0	0	2.3	3.5	2.4	5.0	2.3	1.0	11.1	11.9	3.8	4.1
Total Rainfall Causing Overflow (in):	0	0	0	0	0	0	0	17.35	22.43	20.29	6.96	19.46	3.03	34.7	22.42	30.85	29.88
CSO Average, Each Event:																	
Cumulative Overflow Volume (MG):	2.1	2.1	3.8	2.3	2.0	2.0	3.3	3.8	4.9	5.4	3.3	4.6	2.1	3.2	3.5	2.8	3.2
Average Duration (hrs.):	3.2	3.4	3.4	2.7	2.8	3.2	3.4	3.6	5.2	4.2	5.0	4.2	3.4	6.8	5.3	3.5	4.3

[1] Note: Prior to 2004, the Sewer Overflow Model (SOM) was used to estimate annual overflows. Beginning in 2004, the system was modeled using PCSWMM RUNOFF, TRANSPORT, and EXTRAN.

[2] Note: The model was recalibrated in 2009 (using ASA flows and King / West CSS area)

[3] Note: The model was recalibrated in 2010 using monitored flows at CSO-004 as well as survey data collected as part of a separate effort.

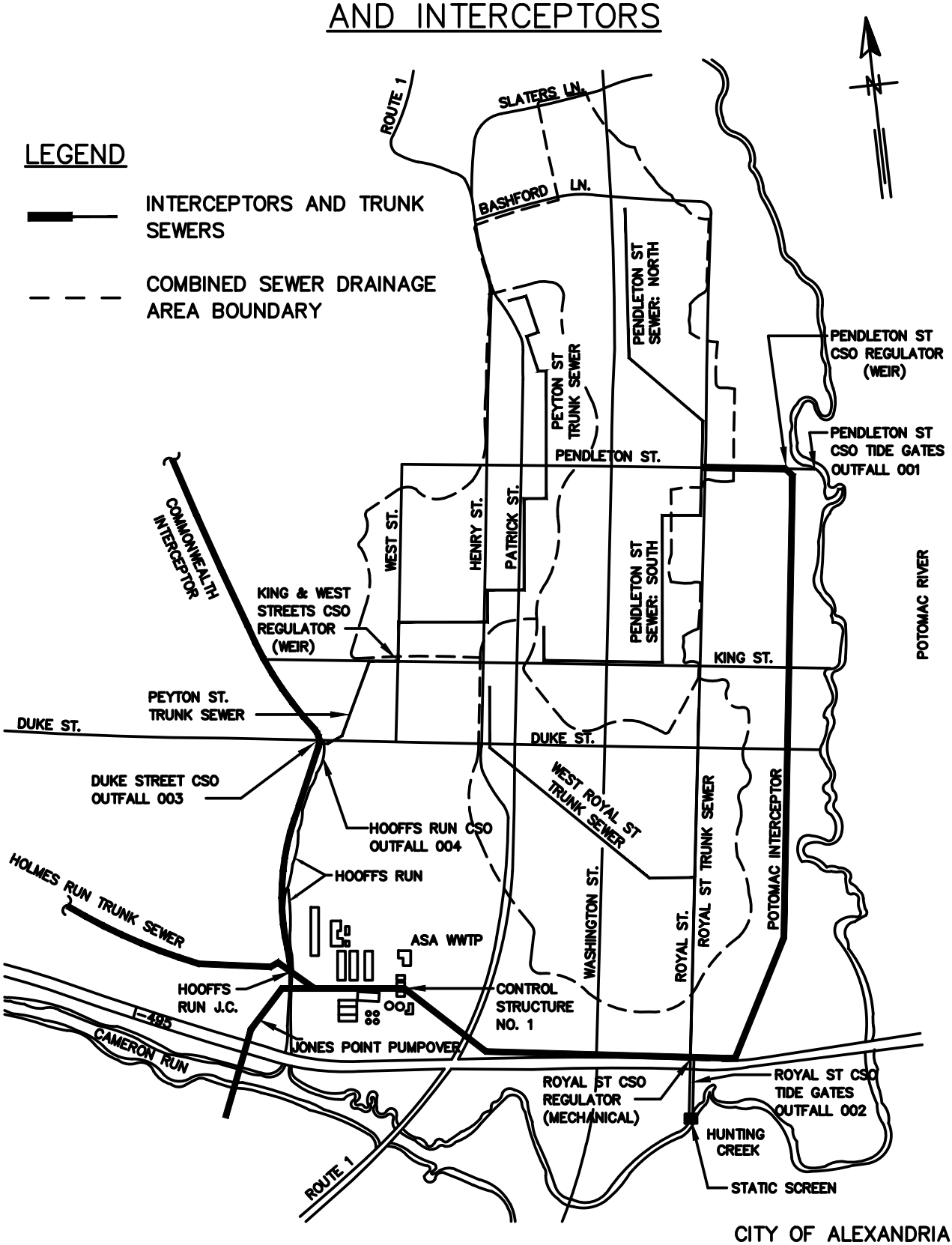
[4] Note: The model was updated to XPSWMM for the 2012 annual report. Recalibration was performed on all 4 CSOs during the update

[5] Note: Recalibration was performed on all 4 CSOs using existing meter data

FIGURES

FIGURE 1

ALEXANDRIA COMBINED TRUNK SEWERS AND INTERCEPTORS



CITY OF ALEXANDRIA
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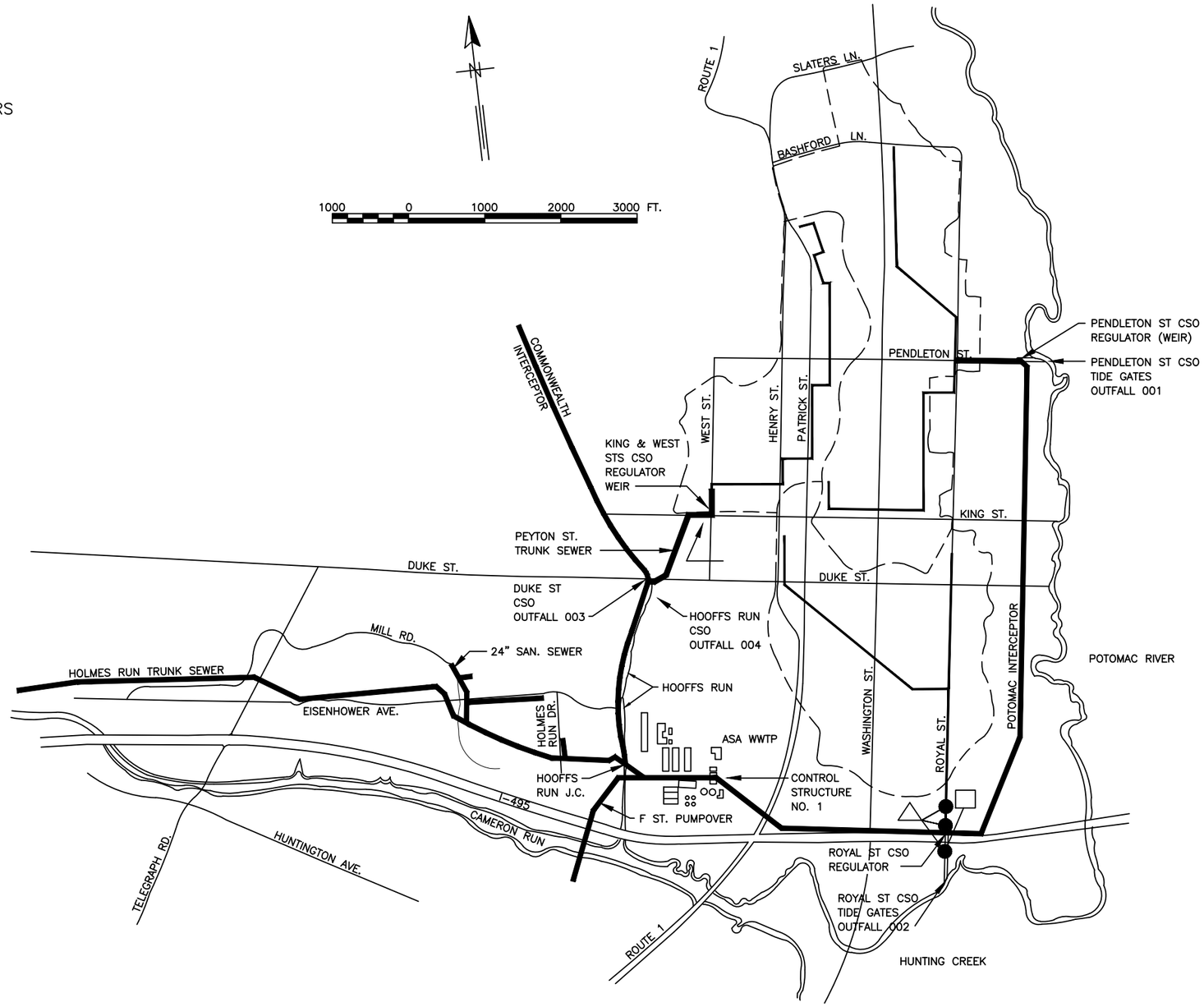
GREELEY AND HANSEN

FILE: X:\0057C -VA Discharge\0057C TO 13-02\06 General Studies - Rpts\06.01 Rpts\Annual Report\Figures\FIGURE 1 02/2014

LEGEND

- INTERCEPTORS AND TRUNK SEWERS
- COMBINED SEWER DRAINAGE AREA BOUNDARY
- FLOW MONITORING FOR ROYAL ST. CSO, 3 – METERS
- SAMPLING STATION FOR ROYAL ST. CSO



LOCATION OF FLOW MONITORS AND SAMPLING LOCATIONS
OUTFALL 002

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FILE: X:\0057C –VA Discharge\0057C TO 13-02\06 General Studies – Rpts\06.01 Rpts\Annual Report\Figures\FIGURE 2 02/2014

FILE: X:\0057C –VA Discharge\0057C TO 13-02\06 General Studies – Rpts\06.01 Rpts\Annual Report\Figures\FIGURE 3 02/2014

FIGURE 3

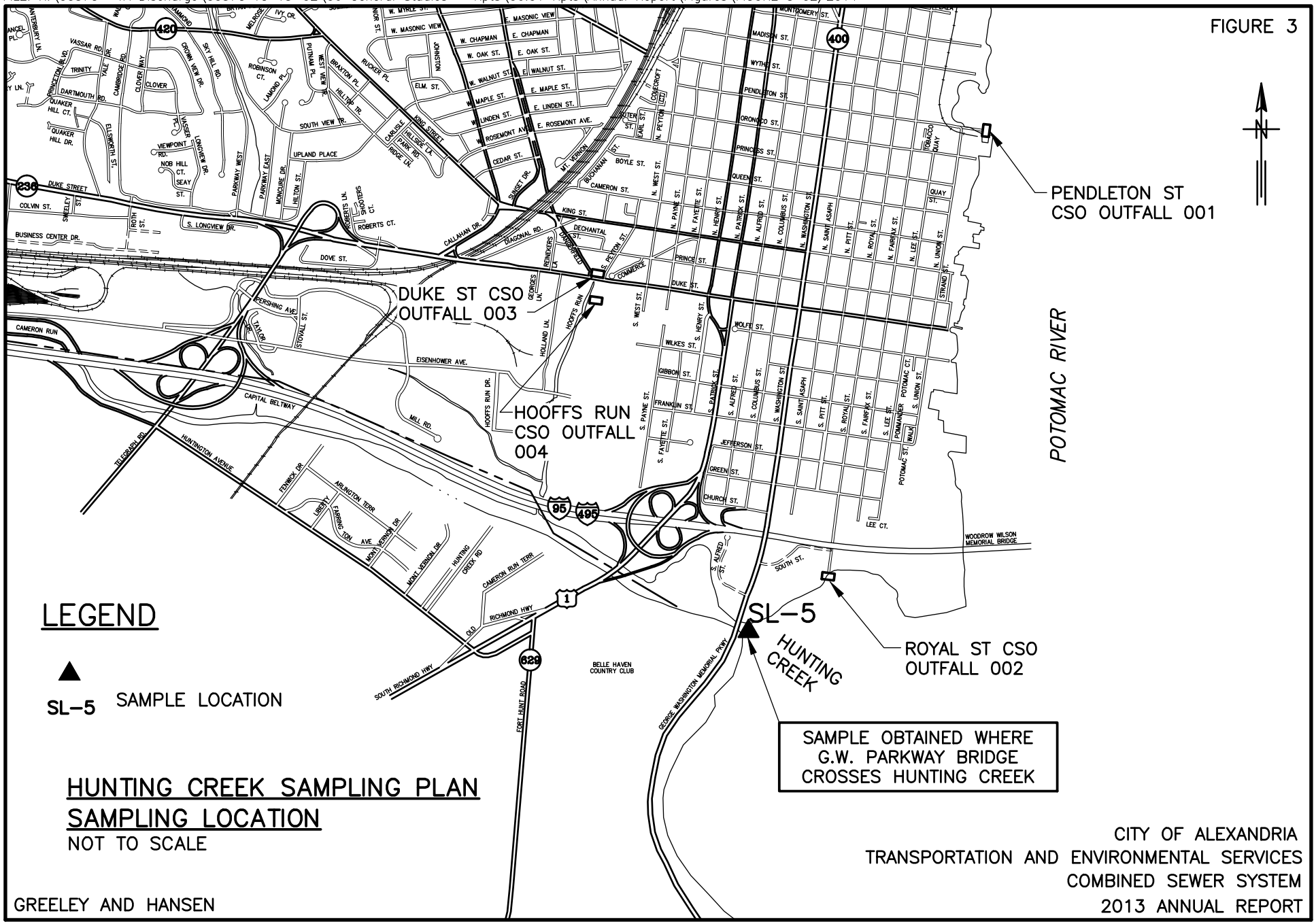
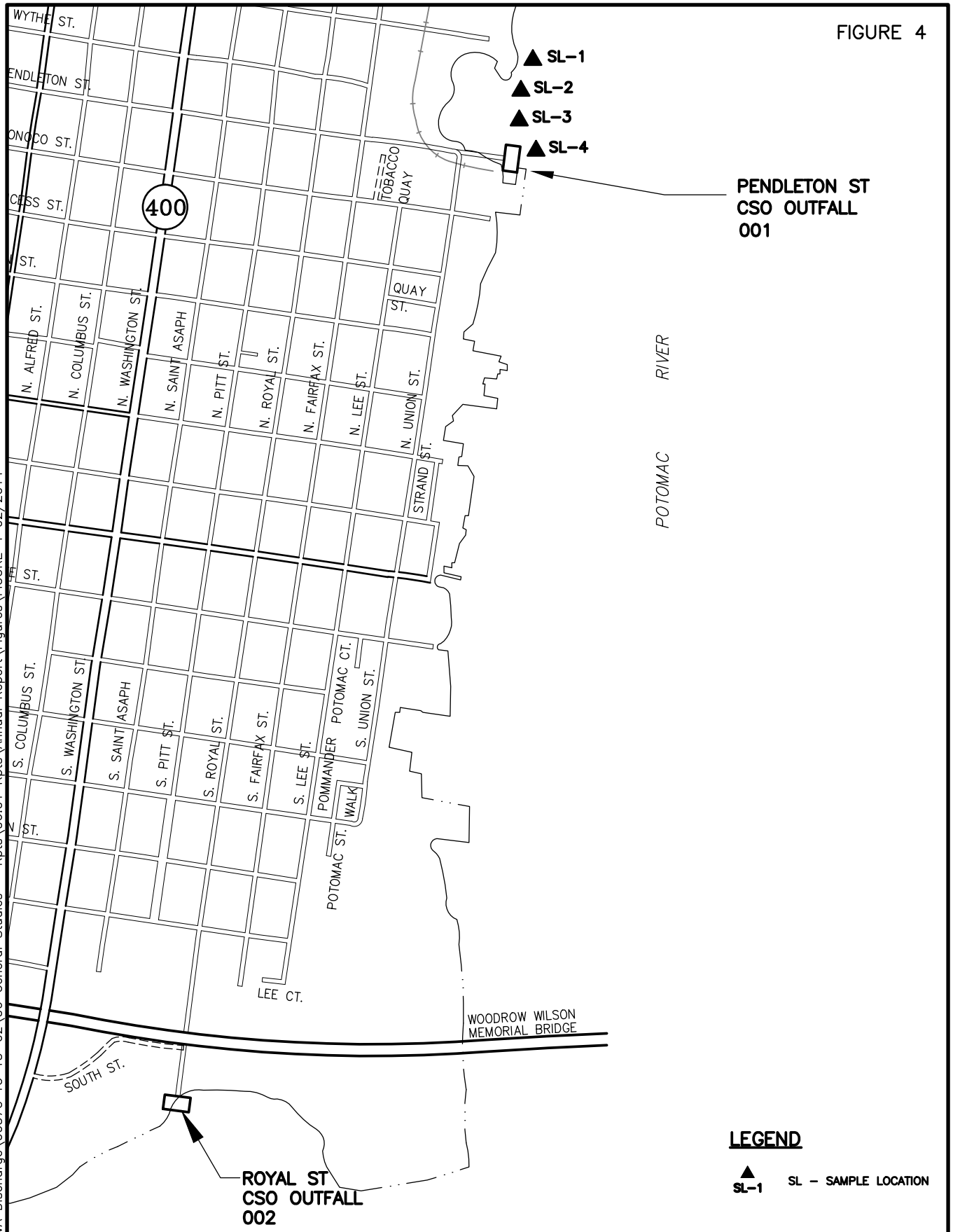


FIGURE 4



ORONOCO BAY SAMPLING PLAN
SAMPLING LOCATIONS

NOT TO SCALE

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COMBINED SEWER SYSTEM
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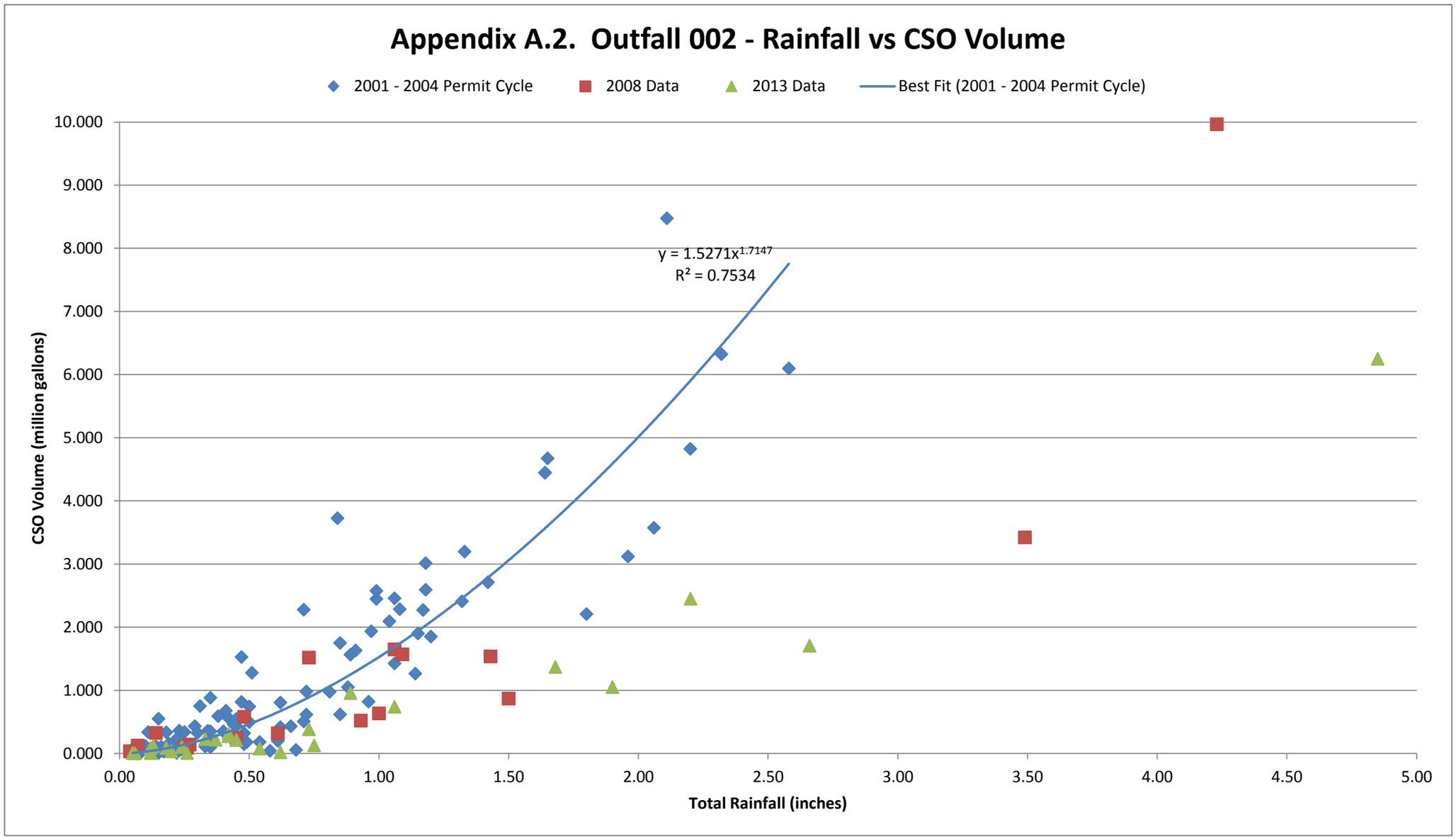
FILE: X:\0057C –VA Discharge\0057C TO 13-02\06 General Studies – Rpts\06.01 Rpts\Annual Report\Figures\FIGURE 4 02/2014

APPENDIX A:
SUMMARY OF STORM EVENTS, CSO EVENTS, AND SAMPLING EVENTS FOR CSO 002

Appendix A.1: Summary of Storm Events, CSO Monitoring, and Sampling Events for CSO 002

			Storm Duration						CSO Duration								
Date(s) of Event	Rainfall (in)	Peak Intensity (in/hr)	Start	End	Duration (hours)	Q_{total} (mg)	Q_{peak} (mgd)	Date/Time at Peak	Start	End	Duration (hours)	Outfall Samples Taken?	# of Samples Collected	Start	End	Duration (hours)	Comments
6/23/2013	0.54	0.07	6/23/13 7:55	6/23/13 10:30	2.58	0.079	2.74	6/23/2013 8:30	6/23/2013 8:30	6/23/2013 10:40	2.17						Non-Continuous Overflow
6/27/2013	0.75	0.10	6/27/13 15:00	6/27/13 21:05	6.08	0.128	10.28	6/27/2013 15:35	6/27/2013 15:35	6/27/2013 21:10	5.58						Non-Continuous Overflow
6/28/2013	1.90	0.24	6/28/13 15:40	6/28/13 21:55	6.25	1.052	23.95	6/28/2013 15:50	6/28/2013 15:50	6/28/2013 20:15	4.42						Non-Continuous Overflow
6/30/2013	0.45	0.16	6/30/13 10:20	6/30/13 11:40	1.33	0.215	12.90	6/30/2013 10:40	6/30/2013 10:40	6/30/2013 12:00	1.33						Non-Continuous Overflow
6/30/2013 - 7/01/2013	0.06	0.04	6/30/13 22:50	7/1/13 1:30	2.67	0.002	0.61	6/30/2013 23:10	6/30/2013 23:10	6/30/2013 23:15	0.08						
7/1/2013	0.42	0.11	7/1/13 10:10	7/1/13 12:55	2.75	0.273	12.59	7/1/2013 10:25	7/1/2013 10:25	7/1/2013 11:10	0.75						
7/2/2013	0.18	0.06	7/2/13 13:25	7/2/13 16:55	3.50	0.087	4.99	7/2/2013 14:25	7/2/2013 14:25	7/2/2013 15:15	0.83						
7/10/2013	0.13	0.07	7/10/13 19:50	7/10/13 20:05	0.25	0.120	9.36	7/10/2013 20:05	7/10/2013 20:05	7/10/2013 20:55	0.83						
7/12/2013	2.66	0.30	7/12/13 1:05	7/12/13 8:35	7.50	1.708	39.74	7/12/2013 3:15	7/12/2013 3:15	7/12/2013 5:40	2.42						
7/13/2013	0.12	0.11	7/13/13 19:20	7/13/13 19:30	0.17	0.090	9.24	7/13/2013 19:40	7/13/2013 19:40	7/13/2013 20:00	0.33						
7/22/2013 - 7/23/2013	0.37	0.14	7/22/13 23:50	7/23/13 0:35	0.75	0.219	10.72	7/23/2013 0:05	7/23/2013 0:05	7/23/2013 0:55	0.83						
7/27/2013	0.26	0.08	7/27/13 17:00	7/27/13 23:50	6.83	0.007	1.18	7/27/2013 17:20	7/27/2013 17:20	7/27/2013 20:50	3.50						Non-Continuous Overflow
7/31/2013 - 8/01/2013	0.62	0.06	7/31/13 19:25	8/1/13 10:45	15.33	0.019	2.63	8/1/2013 4:50	8/1/2013 4:50	8/1/2013 10:40	5.83						Non-Continuous Overflow
8/13/2013 - 8/14/2013	0.20	0.11	8/13/13 20:30	8/14/13 0:15	3.75	0.034	4.00	8/13/2013 20:50	8/13/2013 20:50	8/13/2013 21:20	0.50						Non-Continuous Overflow
8/18/2013	0.25	0.01	8/18/13 5:05	8/18/13 14:00	8.92						0.00						No Overflow
8/21/2013	0.18	0.02	8/21/13 20:50	8/21/13 23:25	2.58						0.00						No Overflow
8/23/2013	0.12	0.01	8/23/13 11:10	8/23/13 13:50	2.67						0.00						No Overflow
8/28/2013	0.10	0.02	8/28/13 7:20	8/28/13 15:40	8.33						0.00						No Overflow
9/2/2013	0.11	0.01	9/2/13 0:40	9/2/13 2:15	1.58						0.00						No Overflow
9/12/2013	0.24	0.05	9/12/13 16:55	9/12/13 18:55	2.00	0.103	4.26	9/12/2013 17:15	9/12/2013 17:15	9/12/2013 19:20	2.08						Non-Continuous Overflow
9/21/2013	0.89	0.08	9/21/13 15:20	9/21/13 22:50	7.50	0.957	14.23	9/21/2013 15:45	9/21/2013 15:45	9/21/2013 23:30	7.75						Non-Continuous Overflow
10/7/2013	1.06	0.12	10/7/13 11:20	10/7/13 16:25	5.08	0.741	27.71	10/7/2013 11:55	10/7/2013 11:55	10/7/2013 16:10	4.25	Yes	4	10/7/2013 12:15	10/7/2013 14:15	2.00	Non-Continuous Overflow
10/09/2013 - 10/12/2013	4.85	0.24	10/9/13 14:40	10/12/13 8:25	65.75	6.251	91.18	10/11/2013 7:50	10/9/2013 17:55	10/12/2013 2:50	56.92						Non-Continuous Overflow
10/23/2013	0.12	0.01	10/23/13 4:35	10/23/13 7:10	2.58	0.012	0.63	10/23/2013 6:10	10/23/2013 6:10	10/23/2013 8:15	2.08						Non-Continuous Overflow
10/30/2013	0.07	0.03	10/30/13 9:15	10/30/13 9:40	0.42												No Overflow
11/1/2013	0.12	0.07	11/1/13 9:25	11/1/13 10:15	0.83	0.008	1.52	11/1/2013 9:45	11/1/2013 9:45	11/1/2013 10:25	0.67	Yes	2	11/1/2013 9:50	11/1/2013 10:20	0.50	Non-Continuous Overflow
11/12/2013	0.05	0.05	11/12/13 9:30	11/12/13 9:35	0.08	0.009	0.73	11/12/2013 8:30	11/12/2013 8:30	11/12/2013 10:25	1.92						Non-Continuous Overflow
11/23/2013	0.10	0.03	11/23/13 3:30	11/23/13 6:15	2.75												No Overflow
11/15/2013 - 11/16/2013	0.42	0.13	11/15/13 22:00	11/16/13 5:00		0.316	2.93	11/16/2013 0:40	11/16/2013 0:40	11/16/2013 5:45	5.08						Rain gauge may possibly been out of position from 11/15/2013 to 11/16/2013. Rain Data was obtained from a rain meter at Reagan Airport.
11/23/2013 - 11/24/2013	0.07	0.05	11/23/13 19:10	11/24/13 0:10	5.00												No Overflow
11/26/2013 - 11/27/2013	2.20	0.35	11/26/13 5:00	11/27/13 23:00	42.00	2.451	26.29	11/26/2013 8:10	11/26/2013 8:10	11/27/2013 19:40	35.50	Yes	6	11/26/2013 23:15	11/27/2013 3:15	4.00	Rain Gauge was dislodged on 11/26/2013 and was put back in service on 12/2/2013. Rain Data was obtained from a rain meter at Reagan Airport.
12/06/2013 - 12/07/2013	0.73	0.08	12/6/13 2:50	12/7/13 2:50	24.00	0.385	6.40	12/6/2013 3:45	12/6/2013 3:45	12/7/2013 2:55	23.17	Yes	2	12/6/2013 12:10	12/6/2013 12:40	0.50	Non-Continuous Overflow
12/08/2013 - 12/09/2013	1.68	0.35	12/8/13 22:55	12/9/13 15:05	16.17	1.370	10.81	12/8/2013 16:15	12/8/2013 16:15	12/9/2013 17:15	25.00						Non-Continuous Overflow
12/10/2013	0.33	0.02	12/10/13 8:00	12/10/13 15:20	7.33	0.229	1.32	12/10/2013 8:20	12/10/2013 8:20	12/10/2013 17:45	9.42						Non-Continuous Overflow

Appendix A.2. Outfall 002 - Rainfall vs CSO Volume



Appendix A.3: Outfall 002 Overflow Sampling Results

				Field Data																										
Date	Time	Time Step	Total Time	Temp	pH	DO	CaCO3	Fecal Col.	E.coli	Total Coli	CBOD5	TP	TKN	TSS	NH3-N	NO3-N	NO2-N	NO_3-NO_2-N	Antimony	Cadmium	Cr III	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	Cr VI	Oil/Grease
																		SM 4500N03-H												
	hh:mm	min	hr	Field °C	Field	Field mg/L	SM 2340 C mg/l	SM 9221E MPN/100 mL	SM 9223B MPN/100 mL	SM 9221B MPN/100 mL	SM 5210B mg/L	EPA 365.1 mg/L P	EPA 351.2 mg/L N	SM 2540D mg/L	SM 4500NH3-G mg/L N	EPA 353.2 mg/L N	EPA 353.2 mg/L N	mg/L N	EPA 200.8 µg/L	EPA 200.8 µg/L	EPA 200.8 µg/L	EPA 200.8 µg/L	EPA 200.8 µg/L	EPA 245.1 µg/L	EPA 200.8 µg/L	EPA 200.8 µg/L	EPA 200.8 µg/L	EPA 200.8 µg/L	SM 3500 CR D µg/L	EPA 1664A mg/L
10/07/2013	12:15 PM	0	0.0	21.5	7.35	5.95	24.5	>1600	13,000	>1600	26.0	2.23	10.80	136.0	1.24	0.73	ND	0.73	0.658	ND	3.84	11.5	ND	ND	ND	ND	ND	44.9	ND	7.68
10/07/2013	12:45 PM	30	0.5	21.1	6.48	7.13	14.5	>1600	13,000	>1600	10.7	0.31	1.71	42.0	0.37	0.36	ND	0.36	0.79	ND	2.91	16.5	ND	ND	ND	ND	ND	35.4	ND	1.56
10/07/2013	1:15 PM	60	1.0	19.7	6.66	6.42	54.5	>1600	2,400	>1600	20.3	0.39	2.46	95.9	0.71	0.43	ND	0.43	1.12	ND	8.31	18.8	ND	ND	ND	ND	ND	44.8	ND	2.56
10/07/2013	2:15 PM	120	2.0	21.2	6.55	6.33	17.5	>1600	2,200	>1600	13.2	0.30	1.96	31.2	0.49	0.32	ND	0.32	0.847	ND	3.01	ND	ND	ND	ND	ND	ND	ND	ND	1.56
11/01/2013	9:50 AM	0	0.0	17.9	6.44	8.22	130.0	210	2,400	3,000	2.6	0.07	0.90	6.2	0.12	1.21	<0.05	1.21	ND	ND	1.17	2.98	ND	ND	ND	ND	ND	ND	<5	5.79
11/01/2013	10:20 AM	30	0.5	17.9	6.51	7.75	130.0	>160000	2,400	>160000	33.0	0.88	5.63	45.5	1.72	1.19	0.05	1.24	0.719	ND	1.49	11.5	5.33	ND	ND	ND	ND	36.1	<5	7.05
11/26/2013	11:15 PM	0	0.0	8.1	6.85	7.79	20.0	>1600	1,200	>1600	17	0.448	2.07	54.4	0.173	0.191	<.0200	0.191	1.15	ND	4.41	38.0	27.0	ND	ND	ND	ND	110	<20.0	3.74
11/26/2013	11:45 PM	30	0.5	7.9	7.07	8.00	14.0	>1600	1,900	>1600	9	0.222	1.04	28.5	0.160	0.265	<0.0200	0.265	0.553	ND	1.94	17.5	10.3	ND	ND	ND	ND	44.9	<20.0	ND
11/27/2013	12:15 AM	60	1.0	7.8	6.78	7.66	20.0	>1600	260	>1600	10	0.255	1.32	14.0	1.820	0.41	<0.0200	0.41	ND	ND	1.66	18.0	7.01	ND	ND	ND	ND	35.3	<20.0	ND
11/27/2013	1:15 AM	120	2.0	8.0	7.00	7.50	21.0	>1600	150	>1600	10	0.274	1.17	11.6	0.302	0.459	<0.0200	0.459	ND	ND	1.44	17.5	7.30	ND	ND	ND	ND	34.8	<20.0	ND
11/27/2013	2:15 AM	180	3.0	8.9	5.88	7.02	36.0	>1600	2,500	>1600	14	0.361	1.62	8.8	0.418	1.09	<0.0200	1.09	.580	ND	1.41	17.3	6.03	ND	ND	ND	ND	35.4	<20.0	ND
11/27/2013	3:15 AM	240	4.0	8.9	7.01	7.93	20.0	>1600	3,400	>1600	5	0.183	0.704	12.9	0.126	0.362	<.0200	0.362	ND	ND	2.07	15.2	7.24	ND	ND	ND	ND	31.3	<20.0	ND
12/6/2013	12:10 PM	0	0.0	13.3	6.32	7.45	146	900	5,700	>1600	2	0.0930	0.882	4.0	<0.100	4.14	0.0400	4.18	ND	0.563	3.04	3.86	ND	ND	ND	ND	ND	26.7	<20.0	ND
12/6/2013	12:40 PM	30	0.5	12.3	6.56	8.50	44.7	>1600	19,000	>1600	28	1.92	7.50	148	1.20	0.487	<0.0200	0.487	.955	ND	5.64	18.4	7.84	ND	ND	ND	ND	45.0	<20.0	11.2

Note:

Sampling analytical testing conducted by Microbac Laboratories, Inc.

APPENDIX B:
YEAR 2013 HUNTING CREEK SAMPLING RESULTS

APPENDIX B : HUNTING CREEK SAMPLING RESULTS

		Sample ID			Field Data				Hardness	Laboratory Data																					
		Date	SL		Measurments Taken From Sampling Container in the Field					MPN/100 mL			mg/L	mg/L P or N		mg/L	mg/L N			mg/L N	µg/L										µg/L	mg/L
Routine or CSO event	Last CSO Event	(mmddyy)	SL5	Pickup Time	Time	Temp (^{o}C)	pH	DO - mg/L	SM 2340 C mg/L CaCO3	SM 9221E Fecal C.	SM 9223B E. Coli	SM 9221B Total Coliform	SM 5210B CBOD5	EPA 365.1 TP	EPA 351.2 TKN	SM 2540D TSS	SM 4500NH3-G NH_3-N	EPA 353.2 NO_3-N	EPA 353.2 NO_2-N	SM 4500N03-H NO_3NO_2-N	EPA 200.8 Antimony	EPA 200.8 Cadmium	EPA 200.8 Cr III	EPA 200.8 Copper	EPA 200.8 Lead	EPA 245.1 Mercury	EPA 200.8 Nickel	EPA 200.8 Selenium	EPA 200.8 Silver	EPA 200.8 Zinc	SM 3500 CR D Cr VI	EPA 1664A Oil/Grease
Routine	>24 hrs	081913	SL-5-1	1:15 PM	11:40 AM	24.0	6.37	7.77	95.9	1,600	490	>1600	<2.00	ND	0.427	10.0	0.0727	1.04	<0.0200	1.05	ND	ND	1.30	ND	ND	ND	ND	ND	ND	15	ND	ND
Routine	>24 hrs	082613	SL-5-1	12:20 PM	11:00 AM	25.5	6.58	7.14	128	130	91	300	2.2	0.06	1.05	10.0	0.08	0.56	<0.05	0.56	ND	ND	1.11	ND	ND	ND	ND	ND	ND	<5	ND
Routine	>24 hrs	090913	SL-5-1	12:20 PM	11:05 AM	24.7	7.17	7.74	136	240	130	240	ND	0.02	0.77	9.1	0.11	0.64	ND	0.64	ND	ND	1.29	ND	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	092313	SL-5-1	11:50 AM	11:30 AM	19.9	6.21	7.36	121	240	330	900	ND	0.05	0.95	8.2	0.20	0.99	ND	0.99	ND	ND	1.15	ND	ND	ND	ND	ND	ND	ND	ND
CSO	<24 hrs	100813	SL-5-1	2:12 PM	11:26 AM	19.0	6.33	8.01	92.5	>1600	3,500	>1600	3.5	0.02	1.01	16.0	0.14	1.04	ND	1.04	ND	ND	1.71	3.17	ND	ND	ND	ND	ND	ND	ND
CSO	<24 hrs	100813	SL-5-2	2:12 PM	11:51 AM	18.8	6.48	7.66	67.5	>1600	3,100	>1600	ND	0.05	0.98	15.3	0.13	0.87	ND	0.87	0.720	ND	2.70	2.9	ND	ND	ND	ND	ND	ND	ND
CSO	<24 hrs	100813	SL-5-3	2:12 PM	12:20 PM	20.3	6.94	7.54	81.5	>1600	2,800	>1600	ND	0.15	0.77	5.0	0.08	0.86	ND	0.86	0.575	ND	2.41	3.96	ND	ND	ND	ND	ND	ND	ND
CSO	<24 hrs	120713	SL-5-1	11:45 AM	10:00 AM	8.8	6.33	7.44	45.7	1,600	2,200	>1600	3	0.165	0.850	14.4	<0.100	0.930	<0.0200	0.930	<4.0	<1.0	<2.25	1.29	<6.0		2.25	<10.0	<1.1	10.6	<20.0	ND
CSO	<24 hrs	120713	SL-5-2	11:45 AM	10:35 AM	8.6	6.14	6.56	44.7	160	23	>1600	2	0.185	0.750	12.7	<0.100	0.828	<0.0200	0.828	<4.0	<1.0	1.64	3.33	<6.0		3.21	<10.0	<1.1	9.64	<20.0	ND
CSO	<24 hrs	120713	SL-5-3	11:45 AM	11:05 AM	8.4	7.01	7.87	36.6	900	1,400	>1600	2	0.193	0.658	13.8	<0.100	0.801	<0.0200	0.801	<4.0	<1.0	1.61	4.77	<6.0		3.5	<10.0	<1.1	8.88	<20.0	ND

Note:

Sampling analytical testing conducted by Microbac Laboratories, Inc.

SL= Sample Location -Refer To Figure 3.

<24 hrs = CSO within 24 Hours

>24 hrs = No CSO within last 24 Hours

CSO event samples collected within 24 hours of CSO activation

Test value unavailable

APPENDIX C:
YEAR 2013 ORONOCO BAY SAMPLING RESULTS

APPENDIX C: ORONOCO BAY SAMPLING RESULTS

		Sample ID			Field Data					Laboratory Data (container numbers listed below)																											
		Date	SL		Measurments Taken From Sampling Container in Field				Hardness	MPN/100 mL			mg/L	mg/L P or N			mg/L	mg/L N		mg/L N		µg/L														µg/L	mg/L
Routine or CSO event	Last CSO Event	(mmddyy)	SL1-SL4	Pickup Time	Time	Temp (^{o}C)	pH	DO - mg/L	SM 2340 C mg/L CaCO3	SM 9221E Fecal C.	SM 9223B E. Coli	SM 9221B Total Coliform	SM 5210B CBOD5	EPA 365.1 TP	EPA 351.2 TKN	SM 2540D TSS	SM 4500NH3-G NH_3-N	EPA 353.2 NO_3-N	EPA 353.2 NO_2-N	SM 4500N03-H NO_3-NO_2-N	EPA 200.8 Antimony	EPA 200.8 Cadmium	EPA 200.8 Cr III	EPA 200.8 Copper	EPA 200.8 Lead	EPA 245.1 Mercury	EPA 200.8 Nickel	EPA 200.8 Selenium	EPA 200.8 Silver	EPA 200.8 Zinc	SM 3500 CR D Cr VI	EPA 1664A Oil/Grease
Routine	>24 hrs	081913	SL-1-1	1:15 PM	9:45 AM	24.9	6.54	6.95	137	80	51	130	<2.00	ND	0.147	36.5	0.144	0.706	<0.0200	0.716	ND	ND	2.44	ND	ND	ND	ND	ND	1.12	ND	ND
Routine	>24 hrs	081913	SL-2-1	1:15 PM	10:10 AM	24.9	6.38	7.67	133	50	240	80	<2.00	ND	0.254	14.5	0.151	0.676	<0.0200	0.686	ND	ND	1.85	ND	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	081913	SL-3-1	1:15 PM	10:25 AM	25.0	6.75	7.23	135	130	58	240	<2.00	ND	0.267	14.0	0.128	0.594	<0.0200	0.605	ND	ND	2.50	ND	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	081913	SL-4-1	1:15 PM	10:37 AM	25.0	6.42	7.36	132	110	56	300	<2.00	ND	0.325	13.5	0.0945	0.744	<0.0200	0.755	ND	ND	1.00	ND	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	082213	SL-1-1	11:05 AM	9:32 AM	26.9	6.59	6.18	140	300	65	300	<2.0	0.136	0.429	11.5*	0.154	0.728	<0.05	0.728	ND	ND	1.23	ND	ND	ND	ND	ND	ND	<5	ND
Routine	>24 hrs	082213	SL-2-1	11:05 AM	9:46 AM	27.2	6.73	6.28	140	300	110	240	<2.0	0.265	0.278	10.5*	0.175	0.726	<0.05	0.726	ND	ND	ND	ND	ND	ND	ND	ND	ND	<5	ND
Routine	>24 hrs	082213	SL-3-1	11:05 AM	9:57 AM	27.3	7.05	6.09	142	500	75	240	<2.0	0.170	0.348	15.0*	0.170	0.670	<0.05	0.670	ND	ND	3.02	ND	ND	ND	ND	ND	ND	<5	ND
Routine	>24 hrs	082213	SL-4-1	11:05 AM	10:10 AM	27.3	6.87	6.07	144	780	83	170	<2.0	0.229	0.341	6.0*	0.153	0.572	<0.05	0.572	ND	ND	8.21	ND	ND	ND	ND	ND	ND	<5	ND
Routine	>24 hrs	082613	SL-1-1	12:20 PM	9:15 AM	25.4	6.51	6.38	140	14	65	240	<2.0	0.07	0.53	18.5	0.15	0.56	<0.05	0.56	ND	ND	1.34	ND	ND	ND	ND	1.15	ND	ND	ND
Routine	>24 hrs	082613	SL-2-1	12:20 PM	9:30 AM	25.5	6.48	6.27	140	80	110	170	<2.0	0.06	0.57	17.3	0.13	0.55	<0.05	0.55	ND	ND	1.01	ND	ND	ND	ND	ND	ND	<5	ND
Routine	>24 hrs	082613	SL-3-1	12:20 PM	9:45 AM	25.5	6.76	6.42	142	30	75	80	<2.0	0.07	0.50	25.6	0.14	0.58	<0.05	0.58	ND	ND	ND	ND	ND	ND	ND	ND	ND	<5	ND
Routine	>24 hrs	082613	SL-4-1	12:20 PM	9:55 AM	25.6	6.68	6.25	144	50	83	130	<2.0	0.07	0.54	15.6	0.16	0.58	<0.05	0.58	ND	ND	ND	ND	ND	ND	ND	ND	ND	<5	ND
Routine	>24 hrs	082913	SL-1-1	2:05 PM	9:37 AM	26.0	6.71	6.04	130	50	40	240	<2.0	0.12	0.69	22.3	0.12	0.48	<0.05	0.48	ND	ND	3.57	ND	ND	ND	ND	ND	ND	<5	33.3
Routine	>24 hrs	082913	SL-2-1	2:05 PM	9:55 AM	26.0	7.18	6.35	126	90	52	900	<2.0	0.10	0.53	24.9	0.14	0.46	<0.05	0.46	ND	ND	1.25	2.69	6.15	ND	ND	ND	ND	<5	ND
Routine	>24 hrs	082913	SL-3-1	2:05 PM	10:07 AM	26.3	7.30	6.38	122	240	74	240	<2.0	0.08	0.58	13.2	0.14	0.50	<0.05	0.50	ND	ND	1.18	ND	ND	ND	ND	ND	ND	<5	ND
Routine	>24 hrs	082913	SL-4-1	2:05 PM	10:20 AM	26.5	7.17	6.45	122	90	62	500	<2.0	0.12	0.57	9.8	0.13	0.50	<0.05	0.50	ND	ND	1.28	ND	ND	ND	ND	ND	ND	<5	ND
Routine	>24 hrs	090513	SL-1-1	11:45 AM	9:45 AM	27.9	6.9	7.34	146	27	9.8	80	ND	0.06	0.48	9.2	0.13	0.58	ND	0.58	ND	ND	2.19	3.15	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	090513	SL-2-1	11:45 AM	10:00 AM	27.7	7.54	7.99	136	11	17	70	ND	0.13	0.49	9.6	0.12	0.58	ND	0.58	ND	ND	1.66	3.10	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	090513	SL-3-1	11:45 AM	10:12 AM	27.7	7.38	7.89	130	50	9.6	70	ND	0.14	0.50	10.9	0.11	0.59	ND	0.59	ND	ND	1.70	3.44	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	090513	SL-4-1	11:45 AM	10:27 AM	28.0	7.45	7.61	130	70	70	300	ND	0.12	0.40	10.9	0.13	0.58	ND	0.58	ND	ND	1.68	3.61	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	090913	SL-1-1	12:20 PM	9:33 AM	25.6	7.43	7.76	146	50	24	50	ND	0.05	0.50	17.1	0.12	0.62	ND	0.62	ND	ND	1.36	ND	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	090913	SL-2-1	12:20 PM	9:46 AM	25.7	7.29	7.66	140	50	23	130	ND	0.02	0.54	16.7	0.12	0.63	ND	0.63	0.753	ND	1.29	ND	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	090913	SL-3-1	12:20 PM	9:58 AM	25.7	6.98	7.37	140	22	26	240	4.7	0.07	0.55	12.9	0.11	0.62	ND	0.62	ND	ND	1.28	ND	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	090913	SL-4-1	12:20 PM	10:09 AM	25.7	7.57	7.71	140	30	19	240	ND	0.03	0.56	11.9	0.11	0.63	ND	0.63	ND	ND	1.17	ND	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	091213	SL-1-1	12:35 PM	9:45 AM	27.0	6.97	7.48	140	80	72	240	3.2	0.11	0.72	31.0	0.09	0.62	ND	0.62	ND	ND	2.34	2.66	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	091213	SL-2-1	12:35 PM	10:00 AM	27.0	7.27	7.02	142	13	25	300	ND	0.11	0.62	29.2	0.09	0.60	ND	0.60	ND	ND	1.25	ND	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	091213	SL-3-1	12:35 PM	10:12 AM	27.2	7.45	6.37	136	23	13	80	2.0	0.12	0.64	24.8	0.09	0.66	ND	0.66	ND	ND	1.53	ND	ND	ND	ND	ND	ND	7	ND
Routine	>24 hrs	091213	SL-4-1	12:35 PM	10:24 AM	27.2	7.29	6.52	144	23	16	110	ND	0.11	0.55	23.6	0.08	0.65	ND	0.65	ND	ND	1.27	2.63	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	092313	SL-1-1	11:50 AM	10:00 AM	20.6	6.32	7.74	131	300	220	>1600	27.2	0.05	0.93	5.6	0.22	1.00	ND	1.00	ND	ND	1.06	ND	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	092313	SL-2-1	11:50 AM	10:10 AM	20.9	6.42	7.84	131	130	370	300	ND	0.06	0.95	14.3	0.22	1.03	ND	1.03	ND	ND	1.09	ND	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	092313	SL-3-1	11:50 AM	10:28 AM	20.9	6.23	7.91	131	900	200	1,600	ND	0.06	1.00	10.9	0.22	1.04	ND	1.04	ND	ND	1.19	ND	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	092313	SL-4-1	11:50 AM	10:40 AM	21.1	6.3	8.68	131	300	230	>1600	ND	0.06	0.87	14.6	0.25	1.05	ND	1.05	ND	ND	1.10	ND	ND	ND	ND	ND	ND	ND	ND
Routine	>24 hrs	092613	SL-1-1	10:35 AM	10:28 AM	20.9	6.36	8.27								12.0 [1]															
Routine	>24 hrs	092613	SL-2-1	10:35 AM	10:32 AM	20.9	6.44	8.34								11.5 [1]															
Routine	>24 hrs	092613	SL-3-1	10:35 AM	10:39 AM	20.9	6.25	7.34								9.5 [1]															
Routine	>24 hrs	092613	SL-4-1	10:35 AM	10:43 AM	20.9	6.4	7.84								8.5 [1]															
CSO	<24 hrs	100813	SL-1-1	2:12 PM	10:50 AM	21.2	6.49	7.54		>1600	2,100	>1600																			
CSO	<24 hrs	100813	SL-2-1	2:12 PM	10:55 AM	20.8	6.70	8.15		>1600	9,000	>1600																			
CSO	<24 hrs	100813	SL-3-1	2:12 PM	11:00 AM	21.5	6.31	7.61	140	>1600	10,000	>1600	ND	0.05	0.73	12.1	0.21	0.84	ND	0.84	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CSO	<24 hrs	100813	SL-4-1	2:12 PM	11:10 AM	21.5	6.38	8.28		>1600	14,000	>1600																			
CSO	<24 hrs	100813	SL-1-2	2:12 PM	11:20 AM	21.4	6.50	7.77		>1600	2,000	>1600																			
CSO	<24 hrs	100813	SL-2-2	2:12 PM	11:25 AM	21.5	6.23	7.34		>1600	8,800	>1600																			
CSO	<24 hrs	100813	SL-3-2	2:12 PM	11:30 AM	21.5	6.96	7.52	142	>1600	12,000	>1600	ND	0.08	0.68	11.3	0.20	0.82	ND	0.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CSO	<24 hrs	100813	SL-4-2	2:12 PM	11:45 AM	21.2	6.91	8.03		>1600	11,000	>1600																			
CSO	<24 hrs	100813	SL-1-3	2:12 PM	11:55 AM	21.2	7.67	6.85		>1600	4,800	>1600																			
CSO	<24 hrs	100813	SL-2-3	2:12 PM	12:00 PM	21.2	6.44	7.41		>1600	6,400	>1600																			
CSO	<24 hrs	100813	SL-3-3	2:12 PM	12:05 PM	21.2	6.56	6.12	144	>1600	12,000	>1600	ND	0.04	0.71	9.3	0.19	0.79	ND	0.79	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CSO	<24 hrs	100813	SL-4-3	2:12 PM	12:15 PM	21.3	6.88	6.50		>1600	7,800	>1600																			
CSO	<24 hrs	120713	SL-1-1	11:45 AM	9:35 AM	6.5	6.83	7.20		280	34	>1600																			
CSO	<24 hrs	120713	SL-2-1	11:45 AM	9:40 AM	6.4	6.51	7.78		500	120	>1600																			
CSO	<24 hrs	120713	SL-3-1	11:45 AM	9:45 AM	6.4	7.03	6.95	138	900	210	>1600	<2.00	0.0780	0.344	14.2	<0.100	1.26	<0.0200	1.26	<4.0	<1.0	1.25	<1.0	<6.0		1.56	15.2	<1.1	5.68	<20.0	ND
CSO	<24 hrs	120713	SL-4-1	11:45 AM	9:54 AM	6.4	7.66	6.84		500	220	>1600																			
CSO	<24 hrs	120713	SL-1-2	11:45 AM	10:05 AM	6.3	7.50	8.00		160	69	>1600																			
CSO	<24 hrs	120713	SL-2-2	11:45 AM	10:10 AM	6.3	7.33	6.82		900	200	>1600																			
CSO	<24 hrs	120713	SL-3-2	11:45 AM	10:15 AM	6.3	7.27	6.97	112	1,600	64	>1600	<2.00	0.133	0.331	7.20	<0.100	1.27	<0.0200	1.27	<4.0	<1.0	<1.0	1.42	<6.0		2.69	<10.0	<1.1	<4.4	<20.0	ND
CSO	<24 hrs	120713	SL-4-2	11:45 AM	10:26 AM	6.3	7.25	7.07		900	180	>1600																			
CSO	<24 hrs	120713	SL-1-3	11:45 AM	10:39 AM	6.3	6.79	7.24		500	27	>1600																			
CSO	<24 hrs	120713	SL-2-3	11:45 AM	10:44 AM	6.3	6.82	6.93		170	170	>1600																			
CSO	<24 hrs	120713	SL-3-3	11:45 AM	10:49 AM	6.3	7.11	6.66	126	1,600	110	>1600	<2.00	0.106	0.441	10.3	<0.100	1.27	<0.0200	1.27	<4.0	<1.0	<1.0	<1.0	<6.0		3.01	<10.0	<1.1	<4.4	<20.0	ND
CSO	<24 hrs	120713	SL-4-3	11:45 AM	10:55 AM	6.3	6.58	6.68		1,600	280	>1600																			

Note:
Sampling analytical testing conducted by Microbac Laboratories, Inc.
SL= Sample Location -Refer To Figure 2.
<24 hrs = CSO within 24 Hours
>24 hrs = No CSO within last 24 Hours
CSO event samples collected within 24 hours of CSO activation
* = Holding time has been exceeded, additional follow up samples were collected.
[1] = Follow-up sample
Test value unavailable

APPENDIX D:
CITY OF ALEXANDRIA, VA OUTFALL AND DIVERSION STRUCTURE INSPECTION FORMS

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection 1/22/13
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection 1/30/13
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection 2/7/13
Performed By JEREMY HASSAN (Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection 2/22/13
Performed By JEREMY HASIAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection MARCH 8, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection MARCH 29, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection APRIL 19, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection APRIL 26, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____
_____
_____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____
_____
_____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____
_____
_____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____
_____
_____

☐ DWO Occurring - Describe: _____
_____
_____

☐ Additional Comments: _____
_____
_____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
_____
_____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection MAY 29*, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____
_____
_____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____
_____
_____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____
_____
_____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____
_____
_____

☐ DWO Occurring - Describe: _____
_____
_____

☐ Additional Comments: _____
_____
_____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
_____
_____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection MAY 30, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☑ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection JUNE 4, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☑ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☑ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☑ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☑ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection JUNE 26, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection JULY 17, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection JULY 25, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection AUGUST 12, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection AUGUST 22, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection September 20, 2013
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection September 27, 2013
Performed By Jeremy Hassan (Print & Sign Name) Jeremy Hassan

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☑ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection October 17, 2013
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☑ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☑ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☑ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☑ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection October 25, 2013
Performed By Jeremy Hassan (Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☑ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection NOVEMBER 4, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☑ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☑ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☑ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☑ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection NOVEMBER 19, 2012
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection DECEMBER 13, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection DECEMBER 19, 2013
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection January 9, 2014
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☒ 001 ☐ 002 ☐ 003 ☐ 004

Date of Inspection January 24, 2014
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection 1/22/13
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection 1/30/13
Performed By JEREMY HASSAN (Print & Sign Name)

CONDITION OBSERVED

- ☒ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: _____
- ☒ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: _____
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☒ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☒ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☒ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection 2/7/13
Performed By JEREMY HASSAN (Print & Sign Name) Jay Hass

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☒ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) < 10 GPM
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection 2/22/13
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection MARCH 8, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☒ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) <10 GPM
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection MARCH 29, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection APRIL 19, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection APRIL 20, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection MAY 23, 2013
Performed By JEREMY HABAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection MAY 30, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection JUNE 4, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☑ 002 ☐ 003 ☐ 004

Date of Inspection JUNE 26, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☑ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☑ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☑ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☑ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection JULY 17, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection JULY 25, 2012
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____
_____
_____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____
_____
_____

☒ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) < 10 GPM
☒ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____
_____
_____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____
_____
_____

☐ DWO Occurring - Describe: _____
_____
_____

☐ Additional Comments: _____
_____
_____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
_____
_____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection AUGUST 12, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☑ 002 ☐ 003 ☐ 004

Date of Inspection AUGUST 22, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☑ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☑ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☑ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☑ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection September 20, 2013
Performed By Jeremy Hassan Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection September 27, 2013
Performed By Jeremy Hassan Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☑ 002 ☐ 003 ☐ 004

Date of Inspection October 17, 2013
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☑ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☑ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☑ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☑ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection October 25, 2013
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____
_____
_____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____
_____
_____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____
_____
_____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____
_____
_____

☐ DWO Occurring - Describe: _____
_____
_____

☐ Additional Comments: _____
_____
_____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
_____
_____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☑ 002 ☐ 003 ☐ 004

Date of Inspection NOVEMBER 4, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☑ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☑ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☑ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☑ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required
☐ Yes – Describe: _____
☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection NOVEMBER 19, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection DECEMBER 13, 2013
Performed By JEREMY HASMAN (Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☒ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) ~ < 10 GPM
☒ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection December 19, 2013
Performed By Jeremy Hassan (Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection January 9, 2014
Performed By Jeremy Hassen
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☒ 002 ☐ 003 ☐ 004

Date of Inspection January 24, 2014
Performed By Jeremy Hasson
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection 1/22/13
Performed By JEREMY HASTAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection 1/30/13
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection 2/7/13
Performed By JEREMY HASSAN (Print & Sign Name)

CONDITION OBSERVED

- ☒ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: _____
- ☒ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: _____
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☐ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: N/A
- ☐ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: N/A
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☒ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection 2/22/13
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☐ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection MARCH 8, 2013
Performed By JERRY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection MARCH 29, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection APRIL 19, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☒ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection APRIL 26, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection MAY 23, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection MAY 30, 2013
Performed By JEREMY HASSAN (Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☐ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection JUNE 4, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☑ 003 ☐ 004

Date of Inspection JUNE 26, 2013
Performed By JEREMY HASSAN (Print & Sign Name)

CONDITION OBSERVED

☑ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____
_____
_____

☑ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____
_____
_____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☐ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: N/A
_____
_____

☐ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: N/A
_____
_____

☐ DWO Occurring - Describe: _____
_____
_____

☐ Additional Comments: _____
_____
_____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required
☐ Yes – Describe: _____
_____
_____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☑ 003 ☐ 004

Date of Inspection JULY 17, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☑ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☑ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection JULY 25, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☑ 003 ☐ 004

Date of Inspection AUGUST 12, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☑ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☑ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☑ 003 ☐ 004

Date of Inspection AUGUST 22, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☑ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☑ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection September 20, 2013
Performed By Jeremy Hassan Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection September 27, 2013
Performed By Jeremy Hasson
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection October 17, 2013
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection October 25, 2013
Performed By Jeremy Hassan (Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☐ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☑ 003 ☐ 004

Date of Inspection NOVEMBER 6, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☑ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☑ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection NOVEMBER 19, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☑ 003 ☐ 004

Date of Inspection DECEMBER 13, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☑ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☑ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☑ 003 ☐ 004

Date of Inspection December 19, 2013
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☑ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☑ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection January 9, 2014
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal
☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal
☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
☐ Intrusion Rate Within Manufacturer's Specifications*
☐ Intrusion Rate Not Within Manufacturer's Specifications*
☐ Tide Gate Structural Condition Normal
☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal
☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required
☐ Yes – Describe: _____
☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☒ 003 ☐ 004

Date of Inspection January 29, 2014
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: _____

☒ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: _____

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☐ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: N/A

☐ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: N/A

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection 1/22/13
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☒ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☒ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☒ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection 1/30/13
Performed By JEREMY HASSAN (Print & Sign Name)

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☒ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☒ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☒ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☑ 004

Date of Inspection 2/7/13
Performed By JEREMY HASSAN (Print & Sign Name)

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☑ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☑ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☑ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection 2/22/13
Performed By JEREMY HASSAN (Print & Sign Name) Jeremy Hassan

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☒ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☒ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☒ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection MARCH 8, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☐ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: N/A

☐ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: N/A

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☐ Tide Gate Clean & Functioning Normal

☒ Tide Gate Obstructed / Open – Describe: SMALL DEBRIS / TRASH PROPPING FLAP - GATE OPEN (APPEARS LIKE CLOTH / PLASTIC)

☐ DWO Occurring - Describe: _____

☒ Additional Comments: DWO NOT OCCURRING, AS TIDE GATE DOES NOT REGULATE FLOW.

MAINTENANCE ACTIVITIES

☐ No Maintenance Required

☒ Yes – Describe: REMOVE DEBRIS

☒ Cityworks Service Request # 30223

MAINTENANCE COMPLETED

☒ Yes - Date Maintenance Performed: 3/11/13

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection MARCH 29, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☒ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: N/A

☐ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: N/A

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection APRIL 19, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☒ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☒ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☒ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection APRIL 26, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☐ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: N/A

☐ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: N/A

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection MAY 23, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☒ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☒ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☒ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection MAY 30, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☐ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: N/A

☐ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: N/A

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection JUNE 4, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☒ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☒ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☒ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection JUNE 24, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☒ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☒ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☒ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection JULY 17, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☐ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: N/A

☐ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: N/A

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☑ 004

Date of Inspection JULY 25, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☐ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: N/A

☐ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: N/A

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☑ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☑ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☑ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection AUGUST 12, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☒ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☒ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☒ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection AUGUST 22, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☐ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: N/A

☐ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: N/A

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection September 20, 2013
Performed By Jeremy Hasson Jeremy Hasson
(Print & Sign Name)

CONDITION OBSERVED

☐ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: N/A

☐ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: N/A

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection September 27, 2013
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☒ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☒ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☒ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection October 17, 2013
Performed By Jeremy Hasson
(Print & Sign Name)

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☒ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☒ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☒ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection October 25, 2013
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☒ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☒ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☒ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection NOVEMBER 6, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☐ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: N/A

☐ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: N/A

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection NOVEMBER 19, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

☐ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: N/A

☐ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: N/A

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☑ 004

Date of Inspection DECEMBER 13, 2013
Performed By JEREMY HASSAN
(Print & Sign Name)

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☑ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☑ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☑ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection December 19, 2013
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☒ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☒ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☒ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☑ 004

Date of Inspection January 9, 2014
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

- ☐ Diversion Dam Structural Condition Normal
- ☐ Diversion Dam Structural Condition Other – Describe: N/A
- ☐ Diversion Dam Clean & Functioning Normal
- ☐ Diversion Dam Debris Build-Up – Describe: N/A
- ☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____
- ☐ Intrusion Rate Within Manufacturer's Specifications*
- ☐ Intrusion Rate Not Within Manufacturer's Specifications*
- ☑ Tide Gate Structural Condition Normal
- ☐ Tide Gate Structural Condition Other – Describe: _____
- ☑ Tide Gate Clean & Functioning Normal
- ☐ Tide Gate Obstructed / Open – Describe: _____
- ☐ DWO Occurring - Describe: _____
- ☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

- ☑ No Maintenance Required
- ☐ Yes – Describe: _____
- ☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

- ☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

City of Alexandria, Virginia
Transportation & Environmental Services

CSS Diversion Structure and Tide Gate Inspection Log

CSS Outfall # ☐ 001 ☐ 002 ☐ 003 ☒ 004

Date of Inspection January 29, 2014
Performed By Jeremy Hassan
(Print & Sign Name)

CONDITION OBSERVED

☐ Diversion Dam Structural Condition Normal

☐ Diversion Dam Structural Condition Other – Describe: N/A

☐ Diversion Dam Clean & Functioning Normal

☐ Diversion Dam Debris Build-Up – Describe: N/A

☐ Intrusion Observed - If So, Visually Estimated Intrusion Rate (Gal/Min) _____

☐ Intrusion Rate Within Manufacturer's Specifications*

☐ Intrusion Rate Not Within Manufacturer's Specifications*

☒ Tide Gate Structural Condition Normal

☐ Tide Gate Structural Condition Other – Describe: _____

☒ Tide Gate Clean & Functioning Normal

☐ Tide Gate Obstructed / Open – Describe: _____

☐ DWO Occurring - Describe: _____

☐ Additional Comments: _____

MAINTENANCE ACTIVITIES

☒ No Maintenance Required

☐ Yes – Describe: _____

☐ Cityworks Service Request # _____

MAINTENANCE COMPLETED

☐ Yes - Date Maintenance Performed: _____

*The maximum allowable intrusion rate for CSS 001 is 32 gpm

APPENDIX E:
ARENEW INSPECTION AND MAINTENANCE FORMS

Safety Instructions LINW28

PM - PM - 1 Week - Line Run, Pendleton Street Intercepting Chamber, Check, Clean & Monitor Inspection

Title	Retain on History W.O.
PM - PM - 1 Week - Line Run, Pendleton Street Intercepting Chamber, Check, Clean	Yes

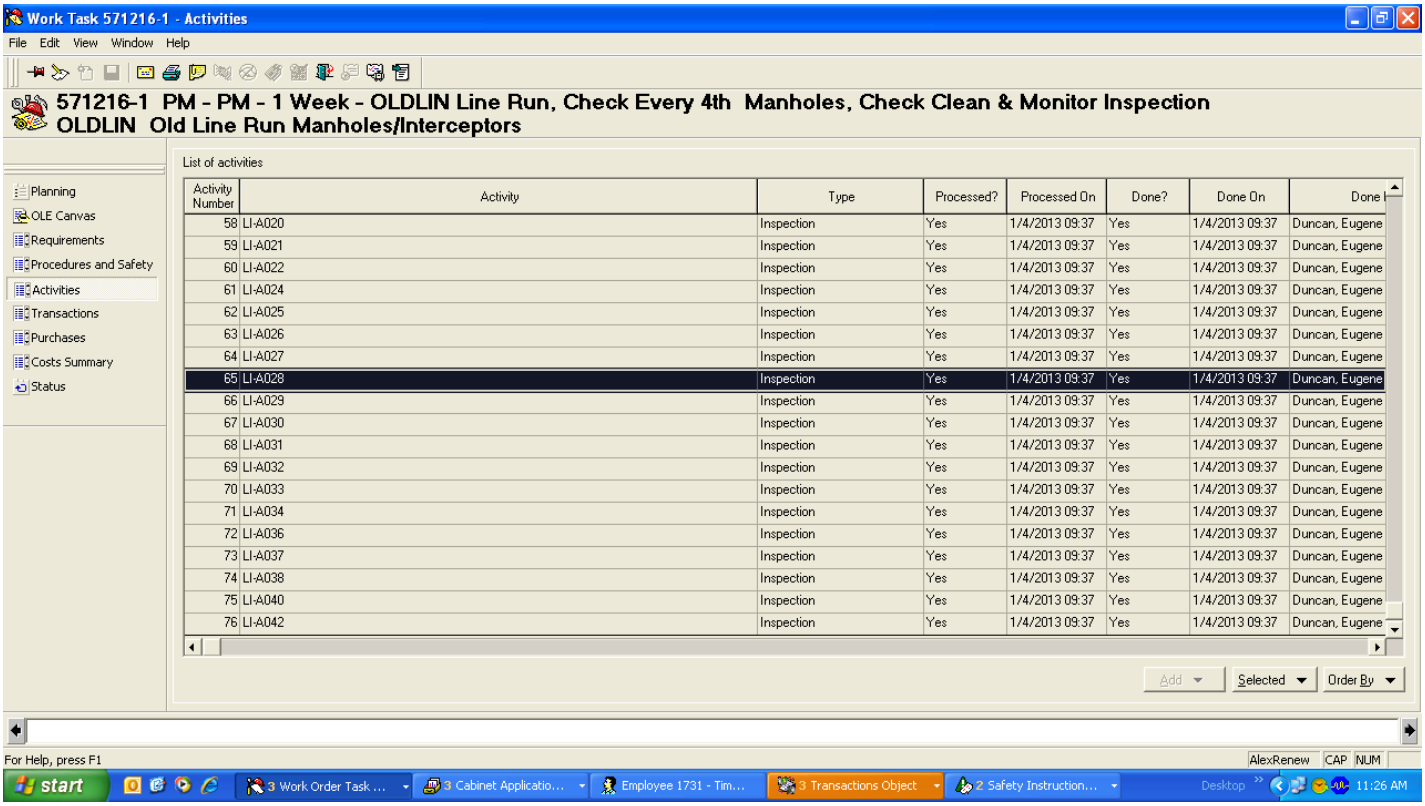
LINW28 (A) Line Run

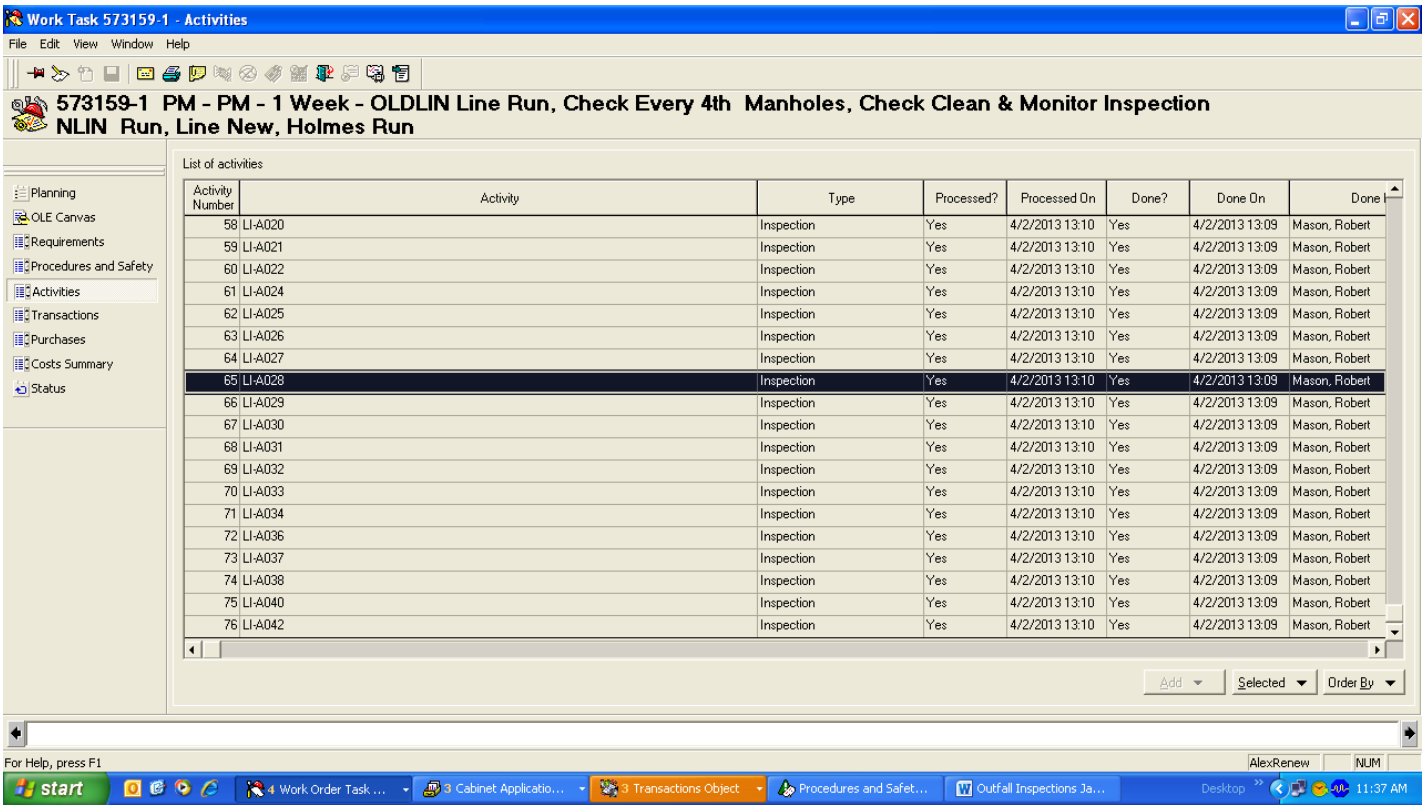
Note: When Entering A Confined Space, Display A Confined Space Entry Permit Issued By A Supervisor In Accordance With All Confined Space Entry Rules. The Rules & Regulations Will Be Posted In The Supervisor's Office.

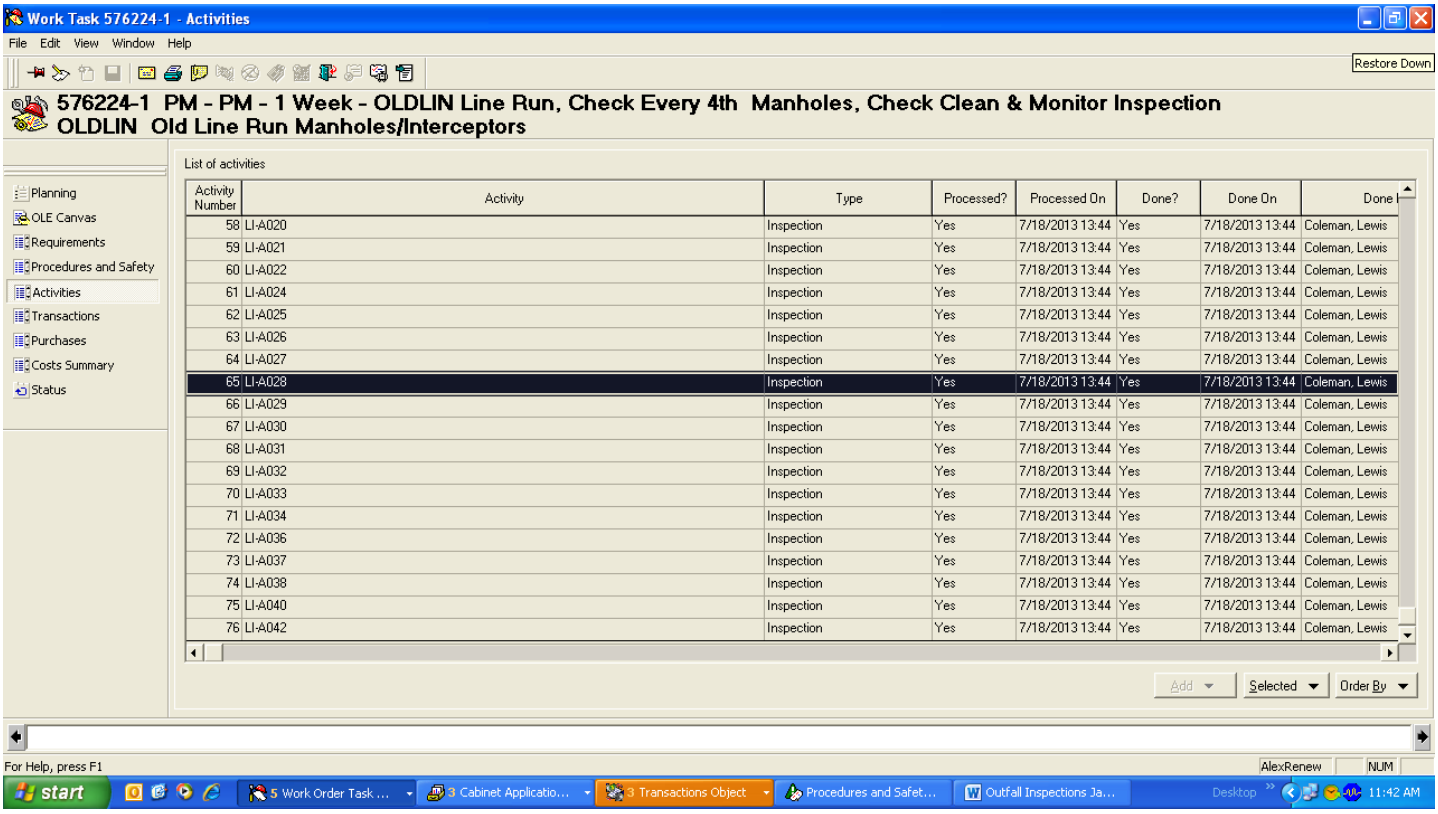
Observe Safety Rules.

Tools Required: 1) Traffic Cones
2) Safety Harness
3) Lanyard
4) Gas Detector
5) Portable Lantern
6) Grease Gun
7) Deodorant Block

Instructions:
1) Pendleton Street Intercepting Chamber.
2) Set Up Traffic Cones & Display Flashing Lights.
3) Check Atmosphere With Gas Detector.
4) Environmental Monitoring - Time_____, O2_____, Combust_____, Toxicity_____
5) Check For Stoppage Or Grease Build-Up.
6) Check For Debris Or Obstructions. Report Any Abnormalities To The Supervisor!!


Work Task 571216-1 - Activities
File Edit View Window Help
571216-1 PM - PM - 1 Week - OLDLIN Line Run, Check Every 4th Manholes, Check Clean & Monitor Inspection
OLDLIN Old Line Run Manholes/Interceptors
Planning
OLE Canvas
Requirements
Procedures and Safety
Activities
Transactions
Purchases
Costs Summary
Status
List of activities
Activity Number | Activity | Type | Processed? | Processed On | Done? | Done On | Done
58 LI-A020 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
59 LI-A021 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
60 LI-A022 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
61 LI-A024 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
62 LI-A025 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
63 LI-A026 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
64 LI-A027 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
65 LI-A028 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
66 LI-A029 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
67 LI-A030 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
68 LI-A031 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
69 LI-A032 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
70 LI-A033 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
71 LI-A034 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
72 LI-A036 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
73 LI-A037 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
74 LI-A038 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
75 LI-A040 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
76 LI-A042 Inspection Yes 1/4/2013 09:37 Yes 1/4/2013 09:37 Duncan, Eugene
Add Selected Order By
For Help, press F1
AlexRenew CAP NUM
start
3 Work Order Task ...
3 Cabinet Applicatio...
Employee 1731 - Tim...
3 Transactions Object
2 Safety Instruction...
Desktop
11:26 AM


Work Task 573159-1 - Activities
File Edit View Window Help
573159-1 PM - PM - 1 Week - OLDLIN Line Run, Check Every 4th Manholes, Check Clean & Monitor Inspection
NLIN Run, Line New, Holmes Run
Planning
OLE Canvas
Requirements
Procedures and Safety
Activities
Transactions
Purchases
Costs Summary
Status
List of activities
Activity Number | Activity | Type | Processed? | Processed On | Done? | Done On | Done
58 LI-A020 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
59 LI-A021 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
60 LI-A022 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
61 LI-A024 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
62 LI-A025 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
63 LI-A026 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
64 LI-A027 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
65 LI-A028 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
66 LI-A029 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
67 LI-A030 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
68 LI-A031 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
69 LI-A032 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
70 LI-A033 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
71 LI-A034 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
72 LI-A036 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
73 LI-A037 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
74 LI-A038 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
75 LI-A040 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
76 LI-A042 Inspection Yes 4/2/2013 13:10 Yes 4/2/2013 13:09 Mason, Robert
Add Selected Order By
For Help, press F1
AlexRenew NUM
start
4 Work Order Task ...
3 Cabinet Applicatio...
3 Transactions Object
Procedures and Safet...
Outfall Inspections Ja...
Desktop
11:37 AM


Work Task 576224-1 - Activities
File Edit View Window Help
Restore Down
576224-1 PM - PM - 1 Week - OLDLIN Line Run, Check Every 4th Manholes, Check Clean & Monitor Inspection
OLDLIN Old Line Run Manholes/Interceptors
Planning
OLE Canvas
Requirements
Procedures and Safety
Activities
Transactions
Purchases
Costs Summary
Status
List of activities
Activity Number | Activity | Type | Processed? | Processed On | Done? | Done On | Done
58 LI-A020 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
59 LI-A021 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
60 LI-A022 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
61 LI-A024 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
62 LI-A025 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
63 LI-A026 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
64 LI-A027 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
65 LI-A028 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
66 LI-A029 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
67 LI-A030 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
68 LI-A031 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
69 LI-A032 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
70 LI-A033 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
71 LI-A034 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
72 LI-A036 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
73 LI-A037 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
74 LI-A038 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
75 LI-A040 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
76 LI-A042 Inspection Yes 7/18/2013 13:44 Yes 7/18/2013 13:44 Coleman, Lewis
Add
Selected
Order By
For Help, press F1
AlexRenew
NUM
start
5 Work Order Task ...
3 Cabinet Applicatio...
3 Transactions Object
Procedures and Safet...
Outfall Inspections Ja...
Desktop
11:42 AM

Safety Instructions LINW29

PM - PM - 1 Week - Line Run, Pendleton Street Tide Gates, Lubrication, Exercise & Clean Inspection

Title	Retain on History W.O.
PM - PM - 1 Week - Line Run, Pendleton Street Tide Gates, Lubrication, Exercise & C	Yes

LINW29 (A) Line Run

Note: When Entering A Confined Space, Display A Confined Space Entry Permit Issued By A Supervisor In Accordance With All Confined Space Entry Rules. The Rules & Regulations Will Be Posted In The Supervisor's Office.

Observe Safety Rules.

Tools Required:
1) Traffic Cones
2) Safety Harness
3) Lanyard
4) Gas Detector
5) Portable Lante
6) Grease Gun
7) Deodorant Block

Instructions:
1) Pendleton Street Tide Gates.
2) Set Up Traffic Cones & Display Flashing Lights.
3) Check Mechanical Parts For Proper Operation & Lubricate As Needed.
4) Check Position Of Tide Gates.
5) Check For Debris Or Obstructions Report Any Abnormalities To The Supervisor!!

Safety Instructions LINW30

PM - PM - 1 Week - Line Run, Pendleton St. Sluice Gate, Check Clean & Monitor Inspection

Title	Retain on History W.O.
PM - PM - 1 Week - Line Run, Pendleton St. Sluice Gate, Check Clean & Monitor Ins	Yes

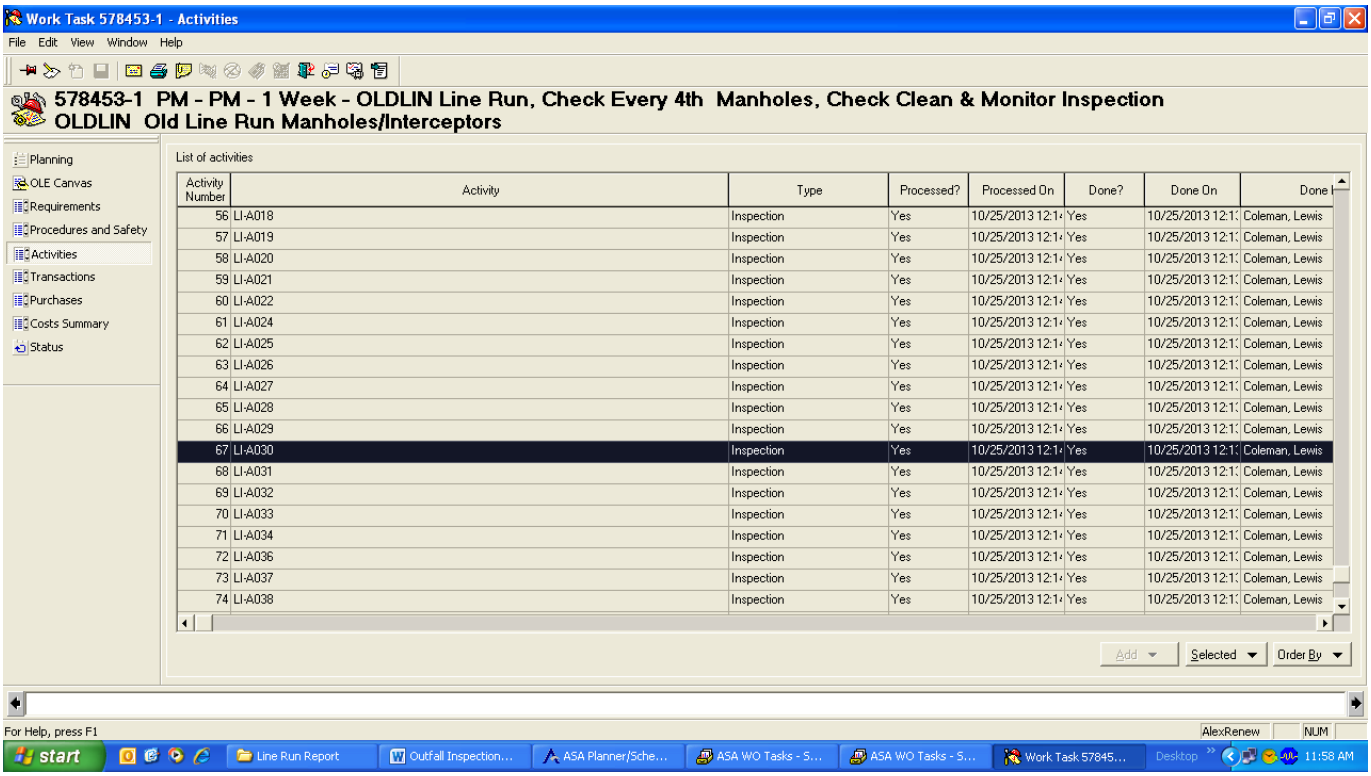
LINW30 (A) Line Run

Note: When Entering A Confined Space, Display A Confined Space Entry Permit Issued By A Supervisor In Accordance With All Confined Space Entry Rules. The Rules & Regulations Will Be Posted In The Supervisor's Office.

Observe Safety Rules.

Tools Required:
1) Traffic Cones
2) Safety Harness
3) Lanyard
4) Gas Detector
5) Portable Lantern
6) Communication Radio
7) Tripod
8) Block & Tackle
9) Grease Gun
10) Deodorant Block

Instructions:
1) Pendleton Street Sluice Gate
2) Set Up Traffic Cones & Display Flashing Lights.
3) Check Atmosphere With Gas Detector.
4) Environmental Monitoring - Time_____, O2_____, Combust_____, Toxicity_____.
5) Operate Gate Open & Close - If Tight Note Under Remarks.
6) Check For Debris Or Obstructions. Report Any Abnormalities To The Supervisor!!


Work Task 578453-1 - Activities
File Edit View Window Help
578453-1 PM - PM - 1 Week - OLDLIN Line Run, Check Every 4th Manholes, Check Clean & Monitor Inspection
OLDLIN Old Line Run Manholes/Interceptors
Planning
OLE Canvas
Requirements
Procedures and Safety
Activities
Transactions
Purchases
Costs Summary
Status
List of activities
Activity Number | Activity | Type | Processed? | Processed On | Done? | Done On | Done
56 LI-A018 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
57 LI-A019 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
58 LI-A020 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
59 LI-A021 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
60 LI-A022 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
61 LI-A024 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
62 LI-A025 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
63 LI-A026 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
64 LI-A027 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
65 LI-A028 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
66 LI-A029 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
67 LI-A030 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
68 LI-A031 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
69 LI-A032 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
70 LI-A033 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
71 LI-A034 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
72 LI-A036 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
73 LI-A037 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
74 LI-A038 Inspection Yes 10/25/2013 12:1 Yes 10/25/2013 12:1 Coleman, Lewis
Add
Selected
Order By
For Help, press F1
AlexRenew
NUM
start
Line Run Report
Outfall Inspection...
ASA Planner/Sche...
ASA WO Tasks - S...
ASA WO Tasks - S...
Work Task 57845...
Desktop
11:58 AM

Safety Instructions LINW34

PM - PM - 1 Week - Line Run, Outlet Manhole From Royal Street Regulator, Check Clean & Monitor Inspection

Title	Retain on History W.O.
PM - PM - 1 Week - Line Run, Outlet Manhole From Royal Street Regulator, Check C	Yes

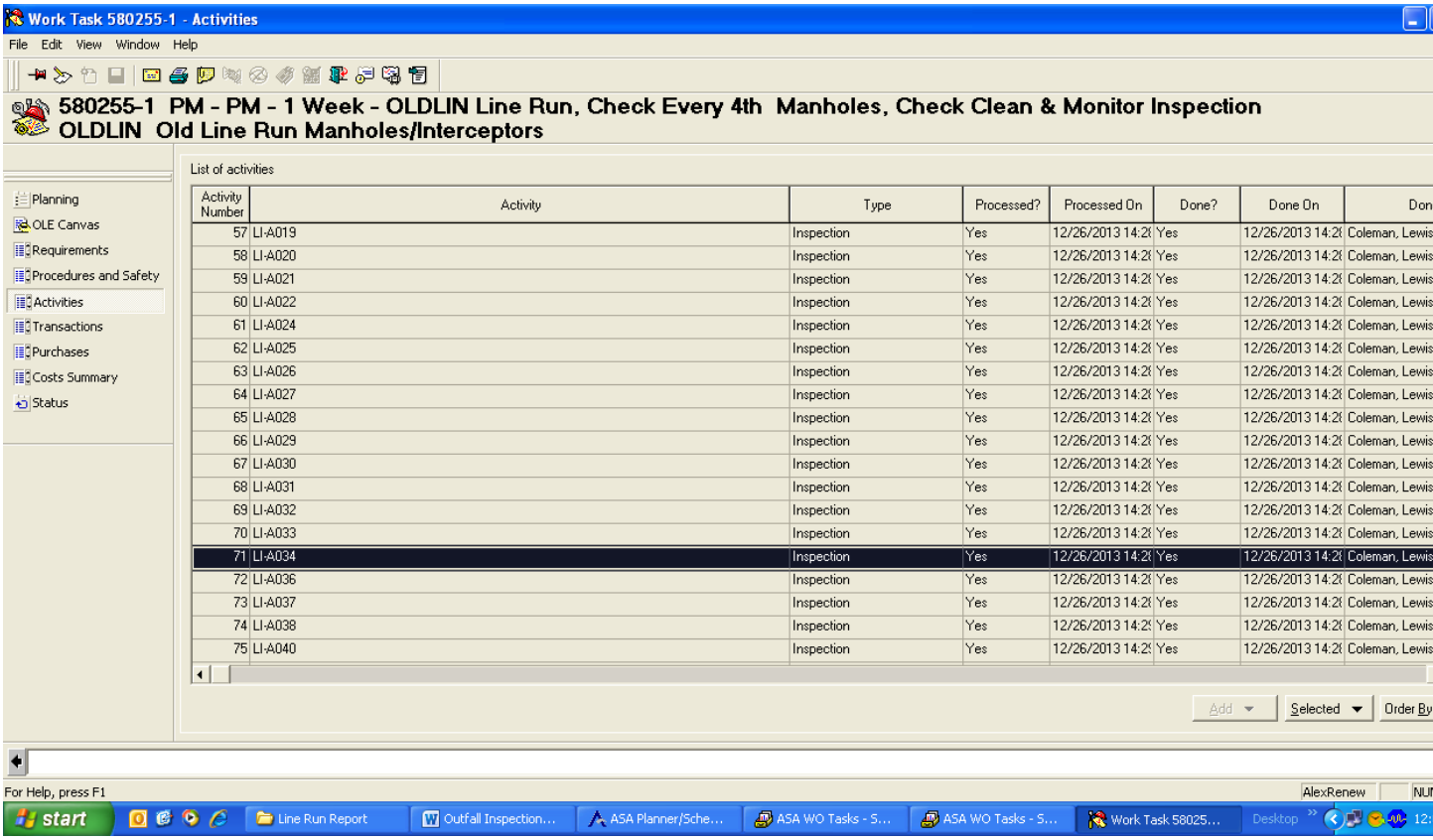
LINW34 (A) Line Run

Note: When Entering A Confined Space, Display A Confined Space Entry Permit Space Entry Permit Issued By
A Supervisor In Accordance With All Confined Space Entry Rules. The Rules & Regulations Will Be Posted In The Supervisor's Office.

Observe Safety Rules.

Tools Required: 1) Traffic Cones
2) Safety Harness
3) Lanyard
4) Gas Detector
5) Portable Lantern
6) Grease Gun
7) Deodorant Block

Instructions:
1) Outlet Manhole From Royal Street Regulator.
2) Set Up Traffic Cone & Display Flashing Lights
3) Check Atmosphere With Gas Detector.
4) Environmental Monitoring - Time_____, O2_____, Combust_____, Toxicity_____
5) Check For Stoppage.
6) Check For Debris Or Obstructions. Report Any Abnormalities To The Supervisor!!


Work Task 580255-1 - Activities
File Edit View Window Help
580255-1 PM - PM - 1 Week - OLDLIN Line Run, Check Every 4th Manholes, Check Clean & Monitor Inspection
OLDLIN Old Line Run Manholes/Interceptors
Planning
OLE Canvas
Requirements
Procedures and Safety
Activities
Transactions
Purchases
Costs Summary
Status
List of activities
Activity Number | Activity | Type | Processed? | Processed On | Done? | Done On | Don
57 LI-A019 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
58 LI-A020 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
59 LI-A021 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
60 LI-A022 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
61 LI-A024 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
62 LI-A025 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
63 LI-A026 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
64 LI-A027 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
65 LI-A028 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
66 LI-A029 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
67 LI-A030 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
68 LI-A031 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
69 LI-A032 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
70 LI-A033 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
71 LI-A034 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
72 LI-A036 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
73 LI-A037 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
74 LI-A038 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
75 LI-A040 Inspection Yes 12/26/2013 14:2 Yes 12/26/2013 14:2 Coleman, Lewis
Add Selected Order By
For Help, press F1
AlexRenew
start
Line Run Report
Outfall Inspection...
ASA Planner/Sche...
ASA WO Tasks - S...
ASA WO Tasks - S...
Work Task 58025...
Desktop

Safety Instructions LINW36

PM - PM - 1 Week - Line Run, Royal Street Regulator, Check

Title	Retain on History W.O.
PM - PM - 1 Week - Line Run, Royal Street Regulator, Check	Yes

LINW36 (A) Line Run

Note: When Entering A Confined Space, Display A Confined Space Entry Permit Issued By A Supervisor In Accordance With All Confined Space Entry Rules. The Rules & Regulations Will Be Posted In The Supervisor's Office.

Tools Required:
1) Traffic Cones
2) Gas Detector
3) Portable Lantern
4) Deodorant Block

Instructions:
1) Royal Street Regulator.
2) Set-Up Traffic Cones & Display Flashing Lights.
3) Check Atmosphere With Gas Detector.
4) Environmental Monitoring - Time_____, O2_____, Combust_____, Toxicity_____
5) Check Outlet For Blockage. Report Any Abnormalities To The Supervisor!!

Safety Instructions LINW37

PM - PM - 1 Week - Line Run, Royal Street Tide Gates, Check & Monitor Inspection

Title	Retain on History W.O.
PM - PM - 1 Week - Line Run, Royal Street Tide Gates, Check & Monitor Inspection	Yes

LINW37 (A) Line Run

Note: When Entering A Confined Space, Display A Confined Space Entry Permit Issued By A Supervisor In Accordance With All Confined Space Entry Rules. The Rules & Regulations Will Be Posted In The Supervisor's Office.

Observe Safety Rules.

Tools Required: 1) Traffic Cones
2) Safety Harness
3) Lanyard
4) Gas Detector
5) Portable Lantern
6) Long Handle Basket
7) Grease Gun
8) Deodorant Block

Instructions:
1) Royal Street Tide Gates.
2) Check Atmosphere With Gas Detector.
3) Environmental Monitoring - Time_____, O2_____, Combust_____, Toxicity_____
4) Check Mechanical Parts For Proper Operation & Lubricate As Needed.
5) Check Position Of Tide Gates.
6) Remove Any Debris That May Impede Operation of the tide gate mechanism. Report Any Abnormalities To The Team Leader !!

APPENDIX F:
SEWER REHABILITATION AND POLLUTION ABATEMENT, TEN-YEAR CIP

SANITARY SEWERS

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Sanitary Sewers
Approved FY 2014 – 2023 Capital Improvement Program
Summary of Projects

CIP Section/Subsection/Project	*Unallocated (06/13)*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Sanitary Sewers												
Holmes Run Trunk Sewer	*$5,637,000*	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Combined Sewer Separation Projects	*$1,100,000*	$200,000	$600,000	$200,000	$200,000	$600,000	$200,000	$200,000	$600,000	$200,000	$200,000	$3,200,000
Combined Sewer System Permit Compliance	*$1,840,690*	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$3,000,000
Four Mile Run Sanitary Sewer Repair	*$1,330,000*	$500,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$500,000
Reconstructions & Exts. of Sanitary Sewers	*$1,495,918*	$900,000	$900,000	$900,000	$900,000	$900,000	$900,000	$900,000	$900,000	$900,000	$900,000	$9,000,000
Holmes Run Sewershed Infiltration & Inflow	*$9,320,000*	$0	$3,000,000	$2,375,000	$3,075,000	$2,850,000	$4,000,000	$0	$0	$0	$0	$15,300,000
Wet Weather Management Facility	*$0*	$0	$3,375,000	$1,125,000	$0	$8,750,000	$9,000,000	$0	$0	$0	$0	$22,250,000
Combined Sewer Overflow 001 Planning	*$0*	$0	$0	$0	$500,000	$0	$0	$0	$0	$0	$0	$500,000
Sewer Assessment & Rehabilitation	*$450,000*	$0	$0	$0	$0	$0	$3,700,000	$2,550,000	$2,550,000	$0	$0	$8,800,000
AlexRenew WWTP Capacity	*$500,000*	$0	$0	$0	$0	$0	$0	$11,070,000	$11,400,000	$11,750,000	$0	$34,220,000
Sanitary Sewers Total	*$21,673,608*	$1,900,000	$8,175,000	$4,900,000	$4,975,000	$13,400,000	$18,100,000	$15,020,000	$15,750,000	$13,150,000	$1,400,000	$96,770,000

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Holmes Run Trunk Sewer

Document Subsection: Sanitary Sewers
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: 255074

Project Location: AlexRenew Plant to the City/Fairfax Border
Reporting Area: See Text Below
Project Category: 2 – Renovations/Existing Assets
Estimated Useful Life: 40 years

Holmes Run Trunk Sewer													
	A (B+M)	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	*Through FY 2013*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	9,002,000	*9,002,000*	0	0	0	0	0	0	0	0	0	0	0
Financing Plan													
General Obligation Bonds - Sanitary Sewer	4,200,000	*4,200,000*	0	0	0	0	0	0	0	0	0	0	0
Sanitary Sewer Fees	4,802,000	*4,802,000*	0	0	0	0	0	0	0	0	0	0	0
Total Financing Plan	9,002,000	*9,002,000*	0	0	0	0	0	0	0	0	0	0	0
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0

Basis of Project Cost Estimation: Costs were estimated by engineering consultant.

Project Description & Justification

This project provides for an increase in capacity in the Holmes Run trunk sewer line, required to support development occurring in the Eisenhower Valley, as well as future development and redevelopment in the West End. Engineering studies indicated that lining the existing sewer with specialized materials would provide the needed capacity increase with minimal environmental disruption. Relining will increase the capacity in the western portion of the sewer from Van Dorn Street to Eisenhower Avenue at Cameron Run.

Phase I of this project included relining the western portion of the trunk sewer, completed in summer 2008. Additional engineering and analysis has determined that pipe lining alone will not increase capacity sufficiently in the Phase II – East Eisenhower section. Additional engineering analysis is underway to evaluate other capacity relief options, including constructing a relief sewer from Eisenhower Avenue to the AlexRenew plant, and potential wet weather sewer storage and treatment in the Holmes Run Service Area.

A total of $9.0 million from the Sanitary Sewer fund has been budgeted in prior fiscal years for this project. Engineering analysis which is being coordinated with Fairfax County and AlexRenew is expected to be completed in FY 2014. Upon completion of the analysis, design will begin for recommended improvements. Depending on the outcome of the current on-going study, additional funding may be required in future years.

Completion of this project will improve the City's sanitary sewer infrastructure, which will help mitigate sanitary sewer overflows during periods of wet weather. Additionally the project will improve the City's readiness for quality economic growth.

Linking to the City's Strategic Plan

Goal 1 – Economic Development

- LTO: Increase the City's non-residential and residential tax base
  - IO: Increase value created by the City's planning and development process.
  - IO: Increase residential developer/builder base for new projects
  - IO: Improve the markets' awareness of Alexandria development opportunities

Goal 2 – Health & Environment

- LTO: Improve natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards
  - IO: Reduce contaminants in water runoff

Goal 5 – Financial Sustainability

- LTO: Improve community's perception of the effectiveness of City services
  - IO: Improve public's satisfaction regarding their requests to fix public infrastructure

External or Internal Adopted Plan or Recommendation

- 2013 Sanitary Sewer Master Plan

Details of Changes from Prior Year Approved Plan

No changes from prior year approved plan. Project has been fully funded; however, depending on the outcome of the current on-going study, additional funding may be required in future years.

Additional Operating Budget Impact

An impact on the annual operating budget is not anticipated.

Four Mile Run Sanitary Sewer Repair

Document Subsection: Sanitary Sewers
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: 255136

Project Location: End of Commonwealth Ave to Bruce St.
Reporting Area: Potomac West
Project Category: 2 – Renovations/Existing Assets
Estimated Useful Life: 40 years

Four Mile Run Sanitary Sewer Repair													
	A (B+M)	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	*Through FY 2013*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	2,300,000	*1,800,000*	500,000	0	0	0	0	0	0	0	0	0	500,000
Financing Plan													
General Obligation Bonds - Sanitary Sewer	800,000	*490,000*	310,000	0	0	0	0	0	0	0	0	0	310,000
Sanitary Sewer Fees	1,500,000	*1,310,000*	190,000	0	0	0	0	0	0	0	0	0	190,000
Total Financing Plan	2,300,000	*1,800,000*	500,000	0	0	0	0	0	0	0	0	0	500,000
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0

Basis of Project Cost Estimation: Cost estimate based on costs of previous similar projects.

Project Description & Justification

This project will fund the rehabilitation of the Four Mile Run sanitary sewer. During field inspections of the Four Mile Run Inflow and Infiltration project in FY 2001, surcharged manholes with significant solids were encountered along the 36-inch diameter trunk sewer upstream of the Four Mile Run pump station. Efforts to clean the trunk sewer were unsuccessful due to the heavy solids volume and compaction in the sewer. In FY 2008, a specialty contractor successfully removed the solids and an inspection and condition assessment was completed. Based on the condition assessment of the trunk sewer following the removal of the solids, rehabilitation is necessary.

Total project costs are estimated at $2.3 million, and include planning, design and engineering, construction management, and construction. The project is currently in the design phase and construction is tentatively scheduled to start in FY 2014.

Completion of this project will improve the City's sanitary sewer infrastructure and extend its useful life, reducing potential pipe collapse and other emergency repairs.

Linking to the City's Strategic Plan

Goal 5 – Financial Sustainability

- LTO: Maintain the value of City's physical assets
  - IO: Increase the ration of maintenance investment relative to repair expenditures

External or Internal Adopted Plan or Recommendation

- 2013 Sanitary Sewer Master Plan

Details of Changes from Prior Year Approved Plan

Add additional $500,000 from the Sanitary Sewer Fund is added to the project to complete construction funding.

Additional Operating Budget Impact

An impact on the annual operating budget is not anticipated.

Combined Sewer System (CSS) Permit Compliance

Document Subsection: Sanitary Sewers
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: 255208

Project Location: Old Town CSO Area
Reporting Area: Old Town
Project Category: 1 – Asset Maintenance
Estimated Useful Life: Varies

Combined Sewer System (CSS) Permit Compliance													
	A	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Allocated Balance (06/13)	*Unallocated (06/13)*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	*10,849*	*1,840,690*	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	3,000,000
Financing Plan													
General Obligation Bonds - Sanitary Sewer	*0*	*0*	0	0	200,000	0	0	0	180,000	0	0	0	380,000
Sanitary Sewer Fees	*10,849*	*1,840,690*	300,000	300,000	100,000	300,000	300,000	300,000	120,000	300,000	300,000	300,000	2,620,000
Total Financing Plan	*10,849*	*1,840,690*	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	3,000,000
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0

Basis of Project Cost Estimation: Cost estimate for the study based on the analysis needed and associated work to develop revision to the LTCP (Long Term Control Plan). Annual cost estimates based on the past history of annual costs for similar costs.

Project Description & Justification

The City's combined sewer system (sanitary and storm sewers) comprise approximately 540 acres located in the Old Town area. During certain wet weather events, flows in excess of the sewer pipes carrying capacity are discharged into receiving waterways via one of four combined sewer outfalls. These discharges are permitted by the Virginia Department of Environmental Quality (VDEQ). The Hunting Creek Bacteria Total Maximum Daily Load (TMDL) requires reductions in these discharges from 3 of the 4 permitted outfalls. The City is currently in discussions with VDEQ regarding what will be required of the City in the next permit cycle. It is likely the City will be required (mandated) to implement significant combined sewer system controls over a specified timeframe (still being negotiated).

In order to comply with this future CSS permit, the City must perform a number of activities. The City will be required to conduct an Alternatives Analysis envisioned to be in the upcoming permit as it was included in the City's proposal to Virginia Department of Environmental Quality. This Alternatives Analysis is a detailed study of all possible alternatives, their financial costs, and other impacts. Based on the analysis a revised Long Term Control Plan is to be developed which becomes basis of the implementation of projects at a schedule that is acceptable to Virginia Department of Environmental Quality.

The project will also fund the construction of a new weir structure at Outfall 004. This new weir structure will decrease both the number of combined sewer overflow (CSO) discharges at Outfall 004 and the total CSO volume, which will provide the benefit of improving water quality in Hooff's Run.

Completion of these initiatives will enhance the ecological integrity of waterways by maintaining and improving storm water and sanitary infrastructure and stream system health to minimize environmental impacts.

(Continued on next page)

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards
  - IO: Reduce contaminants in water runoff
- LTO: Improve the health of the waterways within the City
  - IO: Reduce pollutants discharged by residents and businesses within the City
- LTO: Decrease residents' incidence of preventable diseases
  - IO: Reduce contaminants in water runoff

External or Internal Adopted Plan or Recommendation

- Consistent with the Eco-City Charter and Eco-City Action Plan 2030, adopted by City Council June 2008 and June 2009 respectively
- T&ES Strategic Plan: Key Result Area – Meet or exceed state and federal requirements of the City's MS4 and combined sewer permits
- 2013 Sanitary Sewer Master Plan

Details of Changes from Prior Year Approved Plan

Annual funding for permitting and construction activities now budgeted at $300,000 annually. Annual costs varied in prior year approved plan.

Additional Operating Budget Impact

An impact on the annual operating budget is not anticipated.

Combined Sewer System (CSS) Permit Compliance (Continued)

Project Description and Justification (Continued)

Funding also ensures compliance with Commonwealth and Federal statutes and permits, and will continue to improve the City's combined sewer system.

For the City to stay in compliance with future CSS permits, overflows from the Combined Sewer System need to be mitigated. This is primarily because of new regulatory requirements of the bacteria TMDL for Hunting Creek. Total cost of mitigation of these overflows can range as high as $200 - $300 million and depends on the type and mix of technologies that get implemented. Through the Alternatives Analysis being conducted by the City in FY 2014 – 2018, an update to its Long-Term Control Plan will be developed. Only after completion of this analysis, and with the approval of the Long Term Control Plan update by the Virginia Department of Environmental Quality (VDEQ), will the exact costs of the resulting projects and applicable schedule will become certain. In the upcoming permit cycle, the City is required to continue implementation of Nine Minimum Controls, Area Reduction Plan. This includes implementation of several capital projects including Green Infrastructure, and select separation projects. The City will also need to continue extensive monitoring, sampling, inspections, and reporting. This budget reflects the anticipated costs of improvements over the next five years only. Costs of improvements required for implementing the approved updated Long Term Control Plan (FY 2019 onwards) are not reflected in the budget. These costs over two to three decades could be in the $200 million - $300 million range.

Reconstruction and Extension of Sanitary Sewers

Document Subsection: Sanitary Sewers
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: 255133

Project Location: Citywide
Reporting Area: Citywide
Project Category: 1 – Asset Maintenance
Estimated Useful Life: 50 years

Reconstruction and Extension of Sanitary Sewers													
	A	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Allocated Balance (06/13)	*Unallocated (06/13)*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	*2,350,262*	*1,495,918*	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	9,000,000
Financing Plan													
General Obligation Bonds - Sanitary Sewer	*0*	*0*	0	900,000	900,000	900,000	360,000	900,000	900,000	500,000	0	800,000	6,160,000
Sanitary Sewer Fees	*2,350,262*	*1,495,918*	900,000	0	0	0	540,000	0	0	400,000	900,000	100,000	2,840,000
Total Financing Plan	*2,350,262*	*1,495,918*	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	9,000,000
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0

Basis of Project Cost Estimation: Cost estimate based on costs of previous similar projects.

Project Description & Justification

This project provides for the construction of new sewer mains and the replacement and rehabilitation of old lines as needed, repairs to City streets disturbed by sewer line repairs and reconstruction, and also funds for the City's share of the cost of sewer extensions required for development. This is an essential infrastructure project.

Prior year allocated and unallocated balances of $3.956 million along with annual funding of $900,000 will be utilized to fund multiple projects in this request. Several projects are in early planning stages, while others are currently under design. Obstacles to construction may include the moving of buried utility lines, such as power, water, and gas lines by the various utility owners that if not moved would interfere with the construction.

Projects currently under study/design and tentatively scheduled for construction in FY 2014 include:

- Groves Avenue sewer replacement
- West Uhler Avenue sewer replacement
- Hooff's Run sewer relocation (Chapman Street to Maple Street)
- Beauregard and King Street sewer replacement (being completed in conjunction with the Beauregard and King Street intersection improvement project (Streets & Bridges CIP section)
- Mt. Vernon and Glebe Road sewer siphon replacement
- North Alfred and Pendleton Street alley reconstruction
- Sewer lining project not yet identified
- Miscellaneous or emergency repairs as required

Completion of these projects improves the City's sanitary sewer infrastructure, while reducing the frequency of unplanned repairs due to deferred maintenance.

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards

Goal 5 – Financial Sustainability

- LTO: Maintain the value of the City's physical assets
  - IO: Increase the maintenance investment relative to repair expenditures

External or Internal Adopted Plan or Recommendation

- 2013 Sanitary Sewer Master Plan

Details of Changes from Prior Year Approved Plan

Annual funding for reconstruction and extension project now budgeted at $900,000 annually. Annual costs varied in prior year approved plan.

Additional Operating Budget Impact

An impact on the annual operating budget is not anticipated.

Combined Sewer Separation Projects

Document Subsection: Sanitary Sewers
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: 255115

Project Location: Old Town CSO Area
Reporting Area: See Text Below
Project Category: 1 – Asset Maintenance
Estimated Useful Life: 50 years

Combined Sewer Separation Projects													
	A	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Allocated Balance (06/13)	*Unallocated (06/13)*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	*1,445,886*	*1,100,000*	200,000	600,000	200,000	200,000	600,000	200,000	200,000	600,000	200,000	200,000	3,200,000
Financing Plan													
General Obligation Bonds - Sanitary Sewer	*0*	*0*	0	600,000	200,000	200,000	600,000	200,000	200,000	600,000	25,000	200,000	2,825,000
Sanitary Sewer Fees	*1,445,886*	*1,100,000*	200,000	0	0	0	0	0	0	0	175,000	0	375,000
Total Financing Plan	*1,445,886*	*1,100,000*	200,000	600,000	200,000	200,000	600,000	200,000	200,000	600,000	200,000	200,000	3,200,000
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0

Basis of Project Cost Estimation: Cost estimate based on limited information, including current field evaluation and design services for the ongoing separation project and engineer's planning-level estimate for design.

Project Description & Justification

This project provides funding for the City to proactively separate small areas of combined sewers. Areas of opportunity exist for separation of combined sewer systems where construction of additional sewers in a few blocks due to new development may result in completing the separation of a larger area. Opportunities may also arise in conjunction with redevelopment in the combined sewer area.

In 2011 City staff identified portions of the King and West combined sewershed where separation may be achieved by disconnecting sanitary sewers from the combined sewer system and reconnecting to the Potomac Yards Trunk Sewer, which was designed to accommodate separated sanitary flow from this area. Field investigations were conducted in the fall of 2011 to collect survey data, confirm sewer connectivity, and to provide sewer separation recommendations and planning level design and construction costs. In 2012, the City moved forward with design of the recommended separation projects and construction is anticipated to commence in 2013.

The City is currently in the process of identifying other areas of opportunity for sewer separation. Once these areas are identified, staff will move forward with field evaluation, design and construction phases for the next project.

This project will provide water quality benefits in that the separation of sanitary sewers in the combined area will decrease the bacteria loading into Hooff's Run during rain events where combined sewer overflows are activated.

(Continued on next page)

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards
  - IO: Reduce contaminants in water runoff
  - IO: Increase public awareness of Eco-City Alexandria
  - IO: Reduce pollutants discharged to residences and businesses within the City
- LTO: Decrease residents' incidence of preventable diseases
  - IO: Reduce contaminants in water runoff

External or Internal Adopted Plan or Recommendation

- Consistent with the Eco-City Charter and Eco-City Action Plan 2030, adopted by City Council June 2008 and June 2009 respectively
- T&ES Strategic Plan: Key Result Area – Meet or exceed state and federal requirements of the City's MS4 and combined sewer permits
- 2013 Sanitary Sewer Master Plan

Details of Changes from Prior Year Approved Plan

Total funding reduced from $4.9 million in prior year approved plan to $3.0 million in current plan based on anticipated needs and project implementation rates. Funding in the amount of $200,000 is added from FY 2023.

Additional Operating Budget Impact

An impact on the annual operating budget is not anticipated.

Combined Sewer Separation Projects (Continued)

Project Description and Justification (Continued)

For the City to stay in compliance with the future CSS permits, overflows from the Combined Sewer System need to be mitigated. This is primarily because of new regulatory requirements of the bacteria TMDL for Hunting Creek. Total cost of mitigation of these overflows can range as high as $200 million - $300 million and depends on the type and mix of technologies that get implemented. Through the Alternatives Analysis being conducted by the City in FY 2014 – 2018, an update to its Long-Term Control Plan will be developed. Only after completion of this analysis, and with the approval of the Long Term Control Plan update by the Virginia Department of Environmental Quality (VDEQ), will the exact costs of the resulting projects and applicable schedule will become certain. In the upcoming permit cycle, the City is required to continue implementation of Nine Minimum Controls, Area Reduction Plan. This includes implementation of several capital projects including Green Infrastructure, and select separation projects. The City will also need to continue extensive monitoring, sampling, inspections, and reporting. This budget reflects the anticipated costs of improvements over the next five years only. Costs of improvements required for implementing the approved updated Long Term Control Plan (FY 2019 onwards) are not reflected in the budget. These costs could be over a two to three decade period in the $200 million to $300 million range.

Holmes Run Sewershed Infiltration and Inflow

Document Subsection: Sanitary Sewers
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: 255105

Project Location: Holmes Run Sewer Shed
Reporting Area: See Text Below
Project Category: 2 – Renovations/Existing Assets
Estimated Useful Life: 40 years

Holmes Run Sewershed Infiltration & Inflow													
	A (B+M)	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	*Through FY 2013*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	35,161,440	*19,861,440*	0	3,000,000	2,375,000	3,075,000	2,850,000	4,000,000	0	0	0	0	15,300,000
Financing Plan													
General Obligation Bonds - Sanitary Sewer	30,215,000	*15,750,000*	0	3,000,000	2,375,000	2,925,000	2,565,000	3,600,000	0	0	0	0	14,465,000
Sanitary Sewer Fees	4,946,440	*4,111,440*	0	0	0	150,000	285,000	400,000	0	0	0	0	835,000
Total Financing Plan	35,161,440	*19,861,440*	0	3,000,000	2,375,000	3,075,000	2,850,000	4,000,000	0	0	0	0	15,300,000
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0

Basis of Project Cost Estimation: Cost estimate based on previous inspection and remediation contracts, and consultant estimate.

Project Description & Justification

This project provides for the evaluation and remediation of infiltration/inflow and sewer rehabilitation conditions for the sanitary sewer system in the Holmes Run sewershed, which impacts the Alexandria West, Landmark/Van Dorn and Seminary Hill/Strawberry Hill reporting areas.

Many of the sewers and manholes located in these areas are old and deteriorated, and require rehabilitation. During wet weather, infiltration and inflow into the sanitary sewers have created overload conditions causing basement backups. The field work and monitoring is being performed by dividing the 4,600 acre sewershed into sections and proceeding through each section sequentially. Leaking sewers and connections (which allow excessive infiltration/inflow to enter sewers), and deteriorated sewers requiring remediation, will be identified via street by street closed circuit television inspection of sewers. The results of this field study are being evaluated to develop remediation projects that are expected to include the relining of sewers and manhole repairs. This information will be utilized to prioritize capital improvements.

Design of remediation measures started in summer 2010 for two sub-basins and construction is anticipated to begin in FY 2013. To date, a total of $19.9 million has been budgeted for this project, with current allocated and unallocated balances of $17.1 million remaining. During FY 2014, the Pegram and Strawberry Run sewersheds drainage basin are tentatively scheduled for construction. Funding from the Sanitary Sewer fund planned for FY 2015 – 2019 includes completing remaining field evaluations ($1.0 million) design ($1.0 million) and remediation costs ($1.0 million).

Completion of this project will help mitigate sanitary sewer overflows. Additionally, it will improve the City's sanitary sewer infrastructure and extend the infrastructure's useful life by reducing the potential of pipe collapse and other emergency repairs

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve the natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards
  - IO: Reduce contaminants in water runoff

Goal 5 – Financial Sustainability

- LTO: Maintain the value of the City's physical assets
  - IO: Increase the maintenance investment relative to repair expenditures

External or Internal Adopted Plan or Recommendation

- 2013 Sanitary Sewer Master Plan

Details of Changes from Prior Year Approved Plan

Planned funding from FY 2014 – 2017 totaling $15.5 million reduced to $15.3 million and extended to FY 2019 based on anticipated construction schedule.

Additional Operating Budget Impact

An impact on the annual operating budget is not anticipated.

Wet Weather Management Facility

Document Subsection: Sanitary Sewers
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: TBD

Project Location: Near the AlexRenew Facility
Reporting Area: Southwest Quadrant
Project Category: 3 – New Facilities
Estimated Useful Life: 20+ years

Wet Weather Management Facility													
	A (B+M)	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	*Through FY 2013*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	22,250,000	*0*	0	3,375,000	1,125,000	0	8,750,000	9,000,000	0	0	0	0	22,250,000
Financing Plan													
General Obligation Bonds - Sanitary Sewer	19,740,000	*0*	0	3,220,000	1,125,000	0	7,875,000	7,520,000	0	0	0	0	19,740,000
Sanitary Sewer Fees	2,510,000	*0*	0	155,000	0	0	875,000	1,480,000	0	0	0	0	2,510,000
Total Financing Plan	22,250,000	*0*	0	3,375,000	1,125,000	0	8,750,000	9,000,000	0	0	0	0	22,250,000
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	300,000	309,000	318,270	327,818	1,255,088
Cumulative Impact			0	0	0	0	0	0	300,000	609,000	927,270	1,255,088	1,255,088

Basis of Project Cost Estimation: Cost estimate provided in the draft report, "Wet Weather Management Evaluation Update (Task Order 14-2005)" prepared by CH2MHill on behalf of the City, Fairfax County and AlexRenew dated July 2012.

Project Description & Justification

During periods of extreme wet weather, stormwater enters the City's sanitary sewer collection system. This has the potential to lead to sewer back-ups in homes and businesses throughout the City. In addition, wet weather flows in the sewer can cause sanitary sewer overflows (SSOs), where raw sewage is discharged to receiving waters before being treated. There are two SSO locations in the City - at the Four Mile Run Pumping Station and at the Alexandria Renew Enterprises (AlexRenew) wastewater treatment facility. Due to forecasted growth in the City (and Fairfax County), there is concern that this growth will lead to increased SSOs in the future and create an additional potential for sewer back-ups.

A study was completed in 2010 (and updated in 2012) which recommended a wet weather management facility to mitigate SSOs and basement back-ups. The facility also would reduce the occurrence of combined sewer overflows (CSOs) from Outfall 004. The wet weather management facility includes the following components: increasing the flow at the AlexRenew plant from 108 to 116 mgd (through primary treatment), relocation of Outfall 004 from Duke Street to just outside the AlexRenew plant, construction of a 500,000 gallon storage tunnel, and wet weather pumping to reduce the surcharging in the interceptor sewers to prevent back-ups.

Initial planning and design funding is scheduled to begin in FY 2015. The total project cost is estimated to be $22.3 million (2012 dollars), and it is assumed that the costs for this facility would be shared equally between Fairfax County and the City. In addition, the funding includes extending the storage tunnel upstream to capture additional combined sewage from Outfall 003.

This project provides a number of benefits including reducing sanitary sewer backups into homes and business, while reducing the impact that sanitary sewer that SSOs and CSOs have on the environment.

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve the natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards
  - IO: Reduce contaminants in water runoff
  - IO: Reduce pollutants discharged to residences and businesses within the City
- LTO: Decrease residents' incidences of preventable diseases
  - IO: Reduce contaminants in water runoff

External or Internal Adopted Plan or Recommendation

- 2013 Sanitary Sewer Master Plan

Details of Changes from Prior Year Approved Plan

Total estimated costs reduced from $31.5 million to $22.3 million based on the draft report entitled "Wet Weather Management Evaluation Update" prepared by CH2M Hill on behalf of the City, Fairfax County, and AlexRenew dated July 2012.

Additional Operating Budget Impact

The annual operating and maintenance costs associated with the facility includes electricity costs associated with the wet weather pumping, labor and equipment rental for the tunnel cleaning and inspection, and equipment replacement costs. The operating costs are assumed to be shared with Fairfax County with the City being responsible for 50 percent of the costs. Operating costs will be paid for from the Sanitary Sewer Fund

Sewer Assessment and Rehabilitation

Document Subsection: Sanitary Sewers
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: TBD

Project Location: Old Town CSO area
Reporting Area: Old Town, Old Town North
Project Category: 1 – Asset Maintenance
Estimated Useful Life: Varies

Sewer Assessment & Rehabilitation													
	A (B+M)	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	*Through FY 2013*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	8,800,000	*0*	0	0	0	0	0	3,700,000	2,550,000	2,550,000	0	0	8,800,000
Financing Plan		*0*											
General Obligation Bonds	4,400,000	*0*	0	0	0	0	0	1,850,000	1,275,000	1,275,000	0	0	4,400,000
General Obligation Bonds - Sanitary Sewer	1,480,000	*0*	0	0	0	0	0	1,480,000	0	0	0	0	1,480,000
Sanitary Sewer Fees	2,920,000	*0*	0	0	0	0	0	370,000	1,275,000	1,275,000	0	0	2,920,000
Total Financing Plan	8,800,000	*0*	0	0	0	0	0	3,700,000	2,550,000	2,550,000	0	0	8,800,000
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0

Basis of Project Cost Estimation: Cost estimate is based on previous infiltration and inflow contracts for field evaluation services (CCTV, condition assessment, engineering design) and construction and construction management services (lining, manhole rehabilitation, etc). Costs have been increased to account for inflation based on the date of the previous contracts and by applying 3% inflation for project being performed in out years.

Project Description & Justification

This project provides funding from both the Sanitary Sewer and Stormwater Management funds for the condition assessment of all of the sewers (sanitary, storm, combined) in the combined sewer service area in Old Town and remediation of structurally deficient sewers.

The City will perform condition assessments including cleaning and televising of the lines; assessing information to determine condition of lines; and determining if rehabilitation is needed. Structurally deficient sewers will be identified and the results of the field work will be evaluated to develop remediation projects, which are expected to include the relining of sewers and manhole repairs.

Funding is not planned until FY 2019, and totals $8.8 million with 50% coming from the Sanitary Sewer Fund and 50% from the Stormwater Management Fund.

In addition to the health and environmental benefits of this project, completion of this project will repair and renew the City's sewer infrastructure, extend the infrastructure's useful life, and reduce the number of pipe collapses and other emergency repairs.

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve the natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards
  - IO: Reduce contaminants in water runoff
  - IO: Increase public awareness of Eco-City Alexandria
  - IO: Reduce pollutants discharged to residences and businesses within the City

Goal 5 – Financial Sustainability

- LTO: Maintain the value of the City's physical assets
  - IO: Increase the maintenance investment relative to repair expenditures

External or Internal Adopted Plan or Recommendation

- 2013 Sanitary Sewer Master Plan

Details of Changes from Prior Year Approved Plan

This is a new project in the Capital Improvement Program.

Additional Operating Budget Impact

An impact to the annual operating budget is not anticipated.

Combined Sewer Overflow 001 Planning

Document Subsection: Sanitary Sewers
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: TBD

Project Location: CSO 001 – Pendleton St. at Potomac River
Reporting Area: Old Town/Old Town North
Project Category: 3 – New Facilities
Estimated Useful Life: N/A

Combined Sewer Overflow 001 Planning													
	A (B+M)	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	*Through FY 2013*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	500,000	*0*	0	0	0	500,000	0	0	0	0	0	0	500,000
Financing Plan													
Sanitary Sewer Fees	0	*0*	0	0	0	500,000	0	0	0	0	0	0	500,000
Total Financing Plan	500,000	*0*	0	0	0	500,000	0	0	0	0	0	0	500,000
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0

Basis of Project Cost Estimation: Rough estimate based on limited information, including communication from the City's combined sewer permit contractor regarding how much the study and design services might be. Costs were based on unit costs that were derived from other similar facilities.

Project Description & Justification

The City's combined sewer system (sanitary and storm sewers) comprise approximately 540 acres located in the Old Town area. During certain wet weather events, flows in excess of the sewer pipes are discharged into receiving waterways via one of four combined sewer outfalls. These discharges are permitted by the Virginia Department of Environmental Quality (VDEQ). The Hunting Creek Bacteria Total Maximum Daily Load (TMDL) requires reductions in these discharges from 3 of the 4 permitted outfalls. This project is related to the Combined Sewer System (CSS) Permit Compliance project, but focuses only on the CSO 001 area.

The CSO 001 Mitigation project will provide initial feasibility planning funding for combined sewer storage at CSO Outfall 001 (Pendleton Street), resulting in a reduction of 30-40 overflows per year at each outfall to approximately four per year per outfall which will provide significant water quality benefits in Oronoco Bay and the Hunting Creek area.

There will be an additional benefit of significantly reducing the nutrient and sediment loadings into the Chesapeake Bay. These reductions could be applied towards the Chesapeake Bay TMDL stormwater reduction requirements and may benefit the City. Finally, the redevelopment of the GenOn site in Old Town will require developer contributions towards separating the combined sewage at the site. These potential contributions can be used to fund the storage at CSO 001. The timing of the construction of the CSO 001 storage facility should be done prior to the development of the Robinson Terminal North site.

(Continued on next page)

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve the natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards
  - IO: Reduce contaminants in water runoff
- LTO: Improve the health of the waterways within the City
  - IO: Reduce pollutants discharged by residents and businesses within the City
- LTO: Decrease residents' incidences of preventable diseases
  - IO: Reduce contaminants in water runoff

External or Internal Adopted Plan or Recommendation

- T&ES Strategic Plan 2012-2015: Key Result Area III: Meet or exceed state or federal requirements of City's separate storm sewer and combined sewer system permits and maintain compliance with these environmental permits
- Eco-City Charter (Water Resources) and Eco-City Action Plan, Chapter 4, Goal 4: Eliminate the harmful impact of combined sewer systems in the long-term, and minimize them in the short-term
- 2013 Sanitary Sewer Master Plan

Details of Changes from Prior Year Approved Plan

This is a new project in the Capital Improvement Program.

Additional Operating Budget Impact

Impact on the annual operating budget is unknown until specific capital improvement projects are identified and funded.

Combined Sewer Overflow 001 Planning (Continued)

Project Description & Justification (Continued)

For the City to stay in compliance with the future CSS permits, overflows from the Combined Sewer System need to be mitigated. This is primarily because of new regulatory requirements of the bacteria TMDL for Hunting Creek. Total cost of mitigation of these overflows can range as high as $200 million - $300 million over a two to three decade period and depends on the type and mix of technologies that get implemented. Through the Alternatives Analysis being conducted by the City in FY 2014 – 2018, an update to its Long-Term Control Plan will be developed. Only after completion of this analysis, and with the approval of the Long Term Control Plan update by the Virginia Department of Environmental Quality (VDEQ), will the exact costs of the resulting projects and applicable schedule will become certain. In the upcoming permit cycle, the City is required to continue implementation of Nine Minimum Controls, Area Reduction Plan. This includes implementation of several capital projects including Green Infrastructure, and select separation projects. The City will also need to continue extensive monitoring, sampling, inspections, and reporting. This budget reflects the anticipated costs of improvements over the next five years only. Costs of improvements required for implementing the approved updated Long Term Control Plan (FY 2019 onwards) are not reflected in the budget.

AlexRenew Wastewater Treatment Plant Capacity

Document Subsection: Sanitary Sewers
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: TBD

Project Location: 1500 Eisenhower Ave.
Reporting Area: Southwest Quadrant
Project Category: 2 – Renovations/Existing Assets
Estimated Useful Life: 20+ years

AlexRenew Wastewater Treatment Plant Capacity													
	A (B+M)	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	*Through FY 2013*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	34,720,000	*500,000*	0	0	0	0	0	0	11,070,000	11,400,000	11,750,000	0	34,220,000
Financing Plan													
General Obligation Bonds - Sanitary Sewer	34,220,000	*0*	0	0	0	0	0	0	11,070,000	11,400,000	11,750,000	0	34,220,000
Sanitary Sewer Fees	500,000	*500,000*	0	0	0	0	0	0	0	0	0	0	0
Total Financing Plan	34,720,000	*500,000*	0	0	0	0	0	0	11,070,000	11,400,000	11,750,000	0	34,220,000
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0

Basis of Project Cost Estimation: Planning level cost estimate provided by AlexRenew in 2011.

Project Description & Justification

The City's Department of Planning and Zoning (P&Z) has developed growth forecasts for build-out conditions (post year 2040) as presented in the Sanitary Sewer Master Plan. Based on these forecasts, the City is projected to exceed its wastewater allocation at the Alexandria Renew Enterprises (AlexRenew) Water Resource Recovery Facility by approximately 4 million gallons per day (mgd) beginning incrementally sometime after 2040.

AlexRenew has indicated that their facility can be expanded / upgraded to treat this additional 4 mgd at a total capital cost of $35.2 million (increased for inflation). This cost is based on hydraulically expanding the plant at the same time as other anticipated upgrades are needed (as existing process equipment reaches the end of its useful life). Thus, although the need for an additional 4 mgd is not anticipated until after 2040, it would be more cost-effective to perform the hydraulic expansion while other upgrades are occurring based on the timeline provided by AlexRenew.

The costs provided do not include any additional nutrient (phosphorous and nitrogen) loads associated with these flows, which the City will reach around 2040. Options for addressing these added nutrient loadings have been identified in the Sanitary Sewer Master Plan and will continue to be evaluated. Funding for this project is not planned until FY 2020 – 2022. With the hydraulic expansion, the agreements between the City and AlexRenew and AlexRenew and Fairfax County would have to be renegotiated.

Another option for an additional 4 mgd is to purchase 4 mgd of wastewater treatment capacity from Fairfax County at AlexRenew, estimated to be approximately $56.0 million (2011 dollars). This option would not require any offset of nutrient loadings since the design flow at AlexRenew wouldn't change, but the City may be expected by Fairfax County to finance the entire $56.0 million now for capacity the City will not need for 30 years. Additionally, this option is contingent on Fairfax County acquiring additional treatment plant capacity at DC Water Blue Plains facility. The City will be continuing discussions with Fairfax County concerning this option.

Linking to the City's Strategic Plan

Goal 1 – Economic Development

- LTO: Increase the City's non-residential and residential tax base
  - IO: Increase value created by the City's planning and development process.
  - IO: Increase residential developer/builder base for new projects
  - IO: Improve the markets' awareness of Alexandria development opportunities

Goal 5 – Financial Sustainability

- LTO: Improve community's perception of the effectiveness of City services
  - IO: Improve public's satisfaction regarding their requests to fix public infrastructure

External or Internal Adopted Plan or Recommendation

- 2013 Sanitary Sewer Master Plan

Details of Changes from Prior Year Approved Plan

Initial feasibility study funding of $500,000 budgeted in FY 2014 in the prior year approved plan is no longer required. No changes to funding planned from FY 2020 – 2022.

Additional Operating Budget Impact

An impact on the annual operating budget is not anticipated.

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STORMWATER MANAGEMENT

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Stormwater Management
Approved FY 2014 – 2023 Capital Improvement Program
Summary of Projects

CIP Section/Subsection/Project	*Unallocated (06/13)*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Stormwater Management												
Ft. Ward Stormwater	*$460,000*	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taylor Run at Janney's Lane	*$551,250*	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NPDES / MS4 Permit	*$134,000*	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Four Mile Run Channel Maintenance	*$1,610,000*	$0	$0	$0	$0	$600,000	$0	$0	$0	$0	$600,000	$1,200,000
Storm Sewer Capacity Assessment	*$0*	$250,000	$0	$0	$0	$0	$0	$950,000	$0	$0	$0	$1,200,000
Green Infrastructure in CSO Areas	*$0*	$300,000	$700,000	$500,000	$0	$0	$0	$0	$0	$0	$0	$1,500,000
Stream & Channel Maintenance	*$488,750*	$2,150,000	$1,100,000	$1,100,000	$550,000	$450,000	$450,000	$450,000	$450,000	$450,000	$450,000	$7,600,000
MS4-TMDL Compliance Water Quality Imprv.	*$0*	$800,000	$800,000	$0	$0	$0	$0	$0	$0	$0	$0	$1,600,000
Storm Sewer System Spot Improvements	*$2,734,113*	$0	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$2,700,000
Stormwater Management Total	*$5,978,113*	$3,500,000	$2,900,000	$1,900,000	$850,000	$1,350,000	$750,000	$1,700,000	$750,000	$750,000	$1,350,000	$15,800,000

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Ft. Ward Stormwater

Document Subsection: Stormwater Management
Managing Department: Transportation & Environmental Services
Supporting Department(s): Recreation, Parks & Cultural Activities, Historic Alexandria
OCA: 250071

Project Location: 4301 West Braddock Rd.
Reporting Area: Seminary Hill/Strawberry Hill
Project Category: 3 – New Facilities
Estimated Useful Life: 25 years

Ft. Ward Stormwater													
	A (B+M)	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	*Through FY 2013*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	585,000	*585,000*	0	0	0	0	0	0	0	0	0	0	0
Financing Plan													
Prior City Funding	585,000	*585,000*	0	0	0	0	0	0	0	0	0	0	0
Total Financing Plan	585,000	*585,000*	0	0	0	0	0	0	0	0	0	0	0
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0
Basis of Project Cost Estimation: Cost estimate prepared by staff based on similar projects.													

Project Description & Justification

Fort Ward Park is the best preserved of the system of Union forts and batteries built to protect Washington, DC during the American Civil War (1861-1865). This site receives drainage from the adjacent Marlboro Estates subdivision built in the late 1970's, Episcopal High School property and from the adjacent Braddock Road area. Over time, due to changes in grading and overland drainage patterns, erosion has occurred in the park and in the adjacent Oakland Baptist Church cemetery. Additionally, the stream in the park is showing signs of erosion and degradation. Property owners at the bottom of the park are experiencing flooding. In calendar year 2011, an interim drainage system was installed to protect the Oakland Baptist Church Cemetery from further soil erosion and flooding due to overland flow and erosion.

The scope of work includes studying the existing drainage infrastructure in Fort Ward Park and make recommendations for improvements as well as the construction of those recommended improvements. This project will be informed by and will be required to coordinate planning and construction activities with OHA archaeological investigations and discoveries; which are ongoing.

This project has been fully funded and will be active in FY 2014. As of February 2013, the City is seeking to secure the services of a qualified consulting firm to perform the drainage study and formulate the storm water management plan for the park.

Environmental benefits achieved by the completion of this project include include overland flow improvements, erosion protection, stream restoration and flood prevention, all of which will improve the natural quality of the land in the project area.

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve the natural quality of the land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards

Goal 5 – Financial Sustainability

- LTO: Improve community's perception of the effectiveness of City services
  - IO: Improve public's satisfaction regarding their requests to fix public infrastructure

Goal 6 – Public Safety

- LTO: Decrease loss of property from disasters
  - IO: Decrease areas within the City that frequently flood

External or Internal Adopted Plan or Recommendation

- Recommended by the Ad Hoc Fort Ward Park and Museum Area Stakeholder Advisory Group
- Budget Memorandum #46, April 8, 2011 (FY 2012)

Details of Changes from Prior Year Approved Plan

No changes from prior year approved plan. Project does not require additional funding.

Additional Operating Budget Impact

An impact on the annual operating budget is not anticipated.

Taylor's Run at Janney Lane

Document Subsection: Stormwater Management
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: 255050

Project Location: Taylor Run Parkway at Janney's Ln.
Reporting Area: Taylor Run
Project Category: 2 – Renovations/Existing Assets
Estimated Useful Life: 50 years

Taylor Run at Janney's Lane													
	A (B+M)	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	*Through FY 2013*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	1,051,250	*1,051,250*	0	0	0	0	0	0	0	0	0	0	0
Financing Plan													
Prior City Funding	1,051,250	*1,051,250*	0	0	0	0	0	0	0	0	0	0	0
Total Financing Plan	1,051,250	*1,051,250*	0	0	0	0	0	0	0	0	0	0	0
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0
Basis of Project Cost Estimation: Cost estimate based on costs of previous similar projects.													

Project Description & Justification

This project consists of reconstructing culvert head wall, stream restoration and realignment of sanitary sewer to eliminate a siphon at the culvert located at Taylor Run Parkway at Janney's Lane.

This project has been fully funded and will be active in FY 2014. The project design has been completed and is tentatively scheduled for completion in FY 2014. Environmental permitting must be obtained from state and federal authorities before construction can begin. Project completion will need to be coordinated with the re-paving project on Janney's Lane also scheduled for FY 2014.

Completion of this project will improve and extend the useful life of the City's stormwater infrastructure.

Linking to the City's Strategic Plan

Goal 5 – Financial Sustainability

- LTO: Maintain the value of City's physical assets
  - IO: Increase the ration of maintenance investment relative to repair expenditures

External or Internal Adopted Plan or Recommendation

- N/A

Details of Changes from Prior Year Approved Plan

No changes from prior year approved plan.

Additional Operating Budget Impact

An impact on the annual operating budget is not anticipated.

NPDES / Municipal Separate Storm Sewer System (MS4) Permit Program

Document Subsection: Stormwater Management
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: 255230

Project Location: Citywide
Reporting Area: Citywide
Project Category: 3 – New Facilities
Estimated Useful Life: Varies

NPDES / MS4 Permit													
	A (B+M)	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	*Through FY 2013*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	350,000	*350,000*	0	0	0	0	0	0	0	0	0	0	0
Financing Plan													
Prior City Funding	350,000	*350,000*	0	0	0	0	0	0	0	0	0	0	0
Total Financing Plan	350,000	*350,000*	0	0	0	0	0	0	0	0	0	0	0
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0
Basis of Project Cost Estimation: N/A													

Project Description & Justification

This project provides for the data collection, reporting activities, public education, outreach, involvement and citizen participation associated with implementation of the programs required by the National Pollution Discharge Elimination System (NPDES) permit regulations that are administered currently by the Virginia Department of Conservation and Recreation (DCR) through the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Storm Water from Municipal Separate Storm Sewer Systems (MS4) per 4VAC50-60 et. seq.

The permit requires the City to develop, implement and enforce our MS4 Program Plan to reduce discharges of pollutants from the MS4, protect water quality, and satisfy the appropriate requirements of the Clean Water Act.

The City was originally issued General Permit VAR040057 on July 8, 2003. The DCR permit re-issued on July 9, 2008 will expire June 30, 2013. The currently proposed five-year permit is scheduled to be effective through June 30, 2018. Each successive permit has contained more regulatory requirements which necessitates more resources. The proposed permit is no exception.
The new permit regulations require more public education and outreach, increased staff training, creation of new TMDL plans and SOPs for daily operations, enhanced inspections, greater data collection, and additional reporting. The new permit also contains stringent requirements to meet the recent Chesapeake Bay Total Maximum Daily Load (TMDL) for nutrients and sediment, as well as other TMDLs that have been developed for local surface waters.

This project maintains the City's compliance with regulatory permits, while developing and enhancing the MS4 program.

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve the natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards
  - IO: Reduce contaminants in water runoff
  - IO: Increase public awareness of Eco-City Alexandria
  - IO: Reduce pollutants discharged to residences and businesses within the City

External or Internal Adopted Plan or Recommendation

- N/A

Details of Changes from Prior Year Approved Plan

No changes from prior year approved plan. Project does not require additional funding.

Additional Operating Budget Impact

An impact on the annual operating budget is not anticipated.

Four Mile Run Channel Maintenance

Document Subsection: Stormwater Management
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: 210237

Project Location: Four Mile Run Stream/Channel
Reporting Area: Potomac West
Project Category: 2 – Renovations/Existing Assets
Estimated Useful Life: 10 years

Four Mile Run Channel Maintenance													
	A (B+M)	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	*Through FY 2013*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	3,293,000	*2,093,000*	0	0	0	0	600,000	0	0	0	0	600,000	1,200,000
Financing Plan													
General Obligation Bonds	3,010,000	*1,810,000*	0	0	0	0	600,000	0	0	0	0	600,000	1,200,000
Cash Capital	283,000	*283,000*	0	0	0	0	0	0	0	0	0	0	0
Total Financing Plan	3,293,000	*2,093,000*	0	0	0	0	600,000	0	0	0	0	600,000	1,200,000
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0
Basis of Project Cost Estimation: Estimate prepared by consultant and based on previous work.													

Project Description & Justification

This project reflects the City's share of the costs to maintain the federally funded stormwater flood control channel and system of flood walls and levees. The project was constructed as a federal flood control project built by the U.S Army Corps of Engineers (USACE) in the late 1970's which by mutual agreement requires the City to provide regular upgrades to its capital infrastructure. The U.S. Army Corps of Engineers annually inspects Four Mile Run and dictates the extent of the channel maintenance activities that are to be completed. The City has hired a consultant to perform a detailed inspection of the flood control system, and to develop recommendations for corrections. Staff is working with the Corps to determine exactly what improvements the City needs to do to bring the rating up to the upgraded post-Hurricane Katrina standards that the USACE now considers acceptable.

To date, $2.093 million in City funding has been applied to the project, with an allocated and unallocated project balance of $1.85 million remaining to complete current maintenance activities. Funding is programmed in the out-years of the CIP to address future capital infrastructure requirements.

As Four Mile Run maintenance is a shared responsibility with Arlington County, it will be necessary for the County and the City to engage in a joint decision making process concerning some elements of Four Mile Run Maintenance activities. Levee/flood wall maintenance remains the responsibility of the jurisdiction where the levee/wall is located.

The regular upgrades to the flood control system ensure that the flood control project will perform as predicted and protect citizens and property from flooding.

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve the natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards

Goal 6 – Public Safety

- LTO: Decrease loss of property from disasters
  - IO: Decrease areas within the City that frequently flood

External or Internal Adopted Plan or Recommendation

- N/A

Details of Changes from Prior Year Approved Plan

Funding originally planned in FY 2017 is shifted to FY 2018 based on anticipated timing of maintenance and restoration work. Funding in the amount of $600,000 is added for FY 2023.

Additional Operating Budget Impact

An impact on the annual operating budget is not anticipated.

Storm Sewer Capacity Assessment

Document Subsection: Stormwater Management
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: 255210

Project Location: Citywide
Reporting Area: Citywide
Project Category: 1 – Asset Maintenance
Estimated Useful Life: N/A

Storm Sewer Capacity Assessment													
	A	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Allocated Balance (06/13)	*Unallocated (06/13)*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	*607*	*0*	250,000	0	0	0	0	0	950,000	0	0	0	1,200,000
Financing Plan													
Prior City Funding	*607*	*0*	0	0	0	0	0	0	0	0	0	0	0
Prior Year Stormwater Balances	*0*	*0*	52,935	0	0	0	0	0	0	0	0	0	52,935
Cash Capital	*0*	*0*	0	0	0	0	0	0	950,000	0	0	0	950,000
Stormwater Management Tax	*0*	*0*	197,065	0	0	0	0	0	0	0	0	0	197,065
Total Financing Plan	*607*	*0*	250,000	0	0	0	0	0	950,000	0	0	0	1,200,000
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0
Basis of Project Cost Estimation: Cost estimate prepared by staff based on previous work.													

Project Description & Justification

This project provides for a multi-year City-wide storm sewer analysis and flow modeling to determine the stormwater system's capacity and to develop recommendations for improvements to the existing storm sewer system.

The project includes flow modeling, field verification of invert elevations and manhole locations, and condition assessments of pipes 24 inch diameter or greater. This study is budgeted as a response to several large magnitude storms in 2003 and 2006 that caused flooding in low-lying areas of the City.

The analysis and assessment will look at employing a variety of technologies to reduce flooding in problem areas including "Green Infrastructure" such as: Rain gardens, infiltration swales, planter boxes, tree canopy and infiltration wells, pervious pavement, gutters, and sidewalks, street/alley retrofits into "green streets", rain barrels and cisterns, green roofs, etc. It is anticipated that completion of this project will result in some recommended improvements to the City storm sewer system. These future projects will be funded through the Storm Sewer System Spot Improvements project as funding becomes available.

As of February 2012, the project has collected field data, updated the City's GIS storm sewer layers, built computer models, and performed condition assessments on storm sewer manholes and pipes for Hooff's Run, Holmes Run, and Four Mile Run watersheds. Problem identification and developing and prioritizing solutions are the next step. Funding planned in FY 2020 will provide for updated analysis and flow modeling.

This project provides the resources for a thorough understanding of the City's storm sewer system, and will assist in anticipating problems in performance and capacity allowing for proactive solutions in protecting citizens and property from stormwater flooding.

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve the natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards
  - IO: Reduce contaminants in water runoff

Goal 6 – Public Safety

- LTO: Decrease loss of property from disasters
  - IO: Decrease areas within the City that frequently flood

External or Internal Adopted Plan or Recommendation

- N/A

Details of Changes from Prior Year Approved Plan

Planned funding in FY 2014 in the amount of $400,000 is reduced to $250,000 based on anticipated funding needed to complete the current study. Funding in the amount of $950,000 is added in FY 2020 to provided updated analysis and flow modeling.

Additional Operating Budget Impact

An impact on the annual operating budget is not anticipated.

Green Infrastructure in Combined Sewer Overflow (CSO) Areas

Document Subsection: Stormwater Management
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: TBD

Project Location: Citywide
Reporting Area: Citywide
Project Category: 3 – New Facilities
Estimated Useful Life: Varies

Green Infrastructure in CSO Areas

	A (B+M)	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	*Through FY 2013*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	1,500,000	*0*	300,000	700,000	500,000	0	0	0	0	0	0	0	1,500,000
Financing Plan													
General Obligation Bonds	750,000	*0*	150,000	350,000	250,000	0	0	0	0	0	0	0	750,000
General Obligation Bonds - Sanitary Sewer	600,000	*0*	120,000	280,000	200,000	0	0	0	0	0	0	0	600,000
Sanitary Sewer Fees	150,000	*0*	30,000	70,000	50,000	0	0	0	0	0	0	0	150,000
Total Financing Plan	1,500,000	*0*	300,000	700,000	500,000	0	0	0	0	0	0	0	1,500,000
Add. Operating Impact													
Annual Impact			0	0	750	1,523	1,568	1,615	1,663	1,713	1,765	1,818	12,415
Cumulative Impact			0	0	750	2,273	3,841	5,456	7,120	8,833	10,598	12,415	12,415

Basis of Project Cost Estimation: Staff estimate based on limited information.

Project Description & Justification

This project provides funding from both the sanitary sewer and storm sewer funds for study, design, and construction of at least two green infrastructure demonstration projects in the combined sewer area. Green infrastructure projects will include at least one "green alley". Completion of these projects will provide the following benefits: increased stormwater infiltration, reduction of stormwater into the combined sewer system (CSS), providing stormwater treatment (nutrients), and decreasing the volume of combined sewer overflow (CSO) discharges. The City is currently in discussions with the Virginia Department of Environmental Quality (VDEQ) regarding requirements of the next VPDES permit for the CSS. Based on recent discussions with VDEQ, it is anticipated that some funding towards green infrastructure will be a requirement (mandate) of the next CSS permit.

The City will be conducting an Alternatives Analysis as part of the upcoming permit cycle to determine what CSO controls (storage, sewer separation, etc.) should be pursued for meeting the Hunting Creek Bacteria Total Maximum Daily Load (TMDL), which calls for significant reductions from three of the four City CSO outfalls.

For the City to stay in compliance with the CSS permit, overflows from the Combined Sewer System need to be mitigated. This is primarily because of new regulatory requirements of the bacteria TMDL for Hunting Creek. Total cost of mitigation of these overflows over two to three decades could range as high as $200 million - $300 million and depends on the type and mix of technologies that get implemented. Through the Alternatives Analysis to be conducted by the City in FY 2014 – 2018, an update to its Long-Term Control Plan will be developed. Only after completion of this analysis, and with the approval of the Long Term Control Plan update by the Virginia Department of Environmental Quality, will the exact costs of the resulting projects and applicable schedule will become certain. In the upcoming permit cycle, the City is required to continue implementation of Nine Minimum Controls, Area Reduction Plan, several capital projects that include Green Infrastructure, and select separation projects. The City will also need to continue extensive monitoring, sampling, inspections, and reporting.

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve the natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards
  - IO: Reduce contaminants in water runoff
  - IO: Increase public awareness of Eco-City Alexandria

Goal 5 – Financial Sustainability

- LTO: Maintain the value of the City's physical assets

External or Internal Adopted Plan or Recommendation

- 2013 Sanitary Sewer Master Plan

Details of Changes from Prior Year Approved Plan

This is a new project in the Capital Improvement Program.

Additional Operating Budget Impact

Additional operating costs for a green alley and a bioretention facility will be approximately $750 each annually for maintenance. Maintenance of a green alley includes vacuuming of sediments from the permeable pavement 3-4 times per year. Maintenance of a bioretention facility includes inspection, possible repair and replacement of the individual components. Inflation at 3% per year has been included.

Stream and Channel Maintenance

Document Subsection: Stormwater Management
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: 210112

Project Location: Citywide
Reporting Area: Citywide
Project Category: 1 – Asset Maintenance
Estimated Useful Life: Varies

Stream & Channel Maintenance													
	A	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Allocated Balance (06/13)	*Unallocated (06/13)*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	*1,710,720*	*488,750*	2,150,000	1,100,000	1,100,000	550,000	450,000	450,000	450,000	450,000	450,000	450,000	7,600,000
Financing Plan													
Prior Year Stormwater Balances	*1,710,720*	*488,750*	840,000	100,000	0	0	0	0	0	0	0	0	940,000
General Obligation Bonds	*0*	*0*	0	0	375,000	550,000	450,000	450,000	450,000	450,000	450,000	425,000	3,600,000
Cash Capital	*0*	*0*	50,000										
Environmental Restoration Funds	*0*	*0*	600,000	0	0	0	0	0	0	0	0	25,000	625,000
FEMA Reimbursement	*0*	*0*	660,000	1,000,000	725,000	0	0	0	0	0	0	0	2,385,000
Total Financing Plan	*1,710,720*	*488,750*	2,150,000	1,100,000	1,100,000	550,000	450,000	450,000	450,000	450,000	450,000	450,000	7,550,000
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0

Basis of Project Cost Estimation: Cost estimate based on actual costs from 2007 and 2011 Stream Channel Restoration work.

Project Description & Justification

This project provides funding for annual capital infrastructure improvements to various streams and channels throughout the City to preserve their capacity to carry a 100-year floodwater, and for repairs to erosion damage, stream corridor degradation, grade control structures, storm sewer discharge points, and stream stabilization/restoration.

Prior year allocated and unallocated balances of $2.2 million will be combined with requested FY 2014 funding of $2.15 million to mitigate damages caused by Tropical Storm Lee. Projects currently under design include: Cameron Run Weirs #2, #3, #4, and #5 repairs; Backlick Run S-Curve repairs; Backlick Run Flume Outlet repairs. These projects are eligible for up to 75% reimbursement from the Federal Emergency Management Agency, and City staff will pursue reimbursement as work is completed.

Continued urbanization in the City and in Fairfax County over the years has put excessive stress on the vitality of natural streams throughout the City. This has caused erosion, loss of natural habitat and flooding issues in these streams. Designing and implementing restoration for these streams will provide the additional capacity needed to handle the added stormwater runoff from urbanization, allowing for the return of natural habitat and enhancing the health of these important resources in our City. Having access to healthy, thriving natural areas provides opportunities for people to connect with the natural world and improves the overall well-being of communities.

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve the natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards
  - IO: Reduce contaminants in water runoff

Goal 6 – Public Safety

- LTO: Decrease loss of property from disasters
  - IO: Decrease areas within the City that frequently flood

Goal 5 – Financial Sustainability

- LTO: Maintain the value of the City's physical assets
  - IO: Increase the maintenance investment relative to repair expenditures

External or Internal Adopted Plan or Recommendation

- N/A

Details of Changes from Prior Year Approved Plan

Funding in the prior year approved plan totaled $8.4 million from FY 2014 – 2022. Based on anticipated project implementation rates, funding is reduced to $7.2 million from FY 2014 – 2022. Funding in the amount of $450,000 is added for FY 2023.

Additional Operating Budget Impact

An impact on the annual operating budget is not anticipated.

MS4 / Total Maximum Daily Load (TMDL) Compliance Water Quality Improvements

Document Subsection: Stormwater Management
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: TBD

Project Location: Citywide
Reporting Area: Citywide
Project Category: 3 – New Facilities
Estimated Useful Life: 50+ years

MS4-TMDL Compliance Water Quality Improvement													
	A (B+M)	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	*Through FY 2013*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	1,600,000	*0*	800,000	800,000	0	0	0	0	0	0	0	0	1,600,000
Financing Plan													
Prior Year Stormwater Balances	450,000	*0*	0	450,000	0	0	0	0	0	0	0	0	450,000
General Obligation Bonds	0	*0*	0	0	0	0	0	0	0	0	0	0	0
Cash Capital	1,150,000	*0*	800,000	350,000	0	0	0	0	0	0	0	0	1,150,000
Total Financing Plan	1,600,000	*0*	800,000	800,000	0	0	0	0	0	0	0	0	1,600,000
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0

Basis of Project Cost Estimation: Budgetary Costs for the major stormwater management facilities were developed in working with the engineer conducting the Feasibility Study. Costs for stormwater retrofits were based on the C-Bay TMDL Compliance Analysis and Options report.

Project Description & Justification

The Virginia Department of Conservation and Recreation (DCR) has indicated that City-specific stormwater nutrient and sediment reduction targets for the Chesapeake Bay (C-Bay) Total Maximum Daily Load (TMDL) will be imposed through the City's next Municipal Separate Storm Sewer System (MS4) Permit. DCR has issued new stormwater regulations that apply to all Virginia jurisdictions in the Cheaspeake Bay watershed. Accordingly, the proposed permit - with a planned effective date of July 1, 2013 - will require the City to implement practices sufficient to achieve 5% of the reduction targets during the first 5-year permit and 40% of reduction targets by the end of 10 years.

In the fall of 2012, the City completed the Chesapeake Bay TMDL Compliance Analysis and Options (Analysis) which recommends that treating stormwater can be treated through multiple strategies. In addition to regional facilities, stormwater quality retrofits of City facilities and ROW will also be required to meet the reductions. The budgetary estimates were developed in working with engineers from the respective firms conducting the Chesapeake Bay TMDL Compliance Analysis and Options and the Feasibility Study.

The funding request for FY 2014 – 2015 of $1.6 million does not completely satisfy the funding needs for compliance with the upcoming permit cycle (FY 2014 – 2018). This request funds only immediate planning and feasibility studies to determine the type and mix of technologies and locations of capital improvements. This analysis will allow determination of more accurate future funding requirements for FY 2016 – 2023, and will become the basis for future requests.

For the City to stay in compliance with its MS4 (Municipal Separate Storm System) permit, the City must improve stormwater management and water quality of discharges from its storm sewer system.

(Continued on next page)

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve the natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards
  - IO: Reduce contaminants in water runoff
  - IO: Increase public awareness of Eco-City Alexandria
  - IO: Reduce pollutants discharged to residences and businesses within the City

Goal 5 – Financial Sustainability

- LTO: Maintain the value of the City's physical assets

External or Internal Adopted Plan or Recommendation

- Consistent with the Eco-City Charter and Eco-City Action Plan 2030, adopted by City Council June 2008 and June 2009 respectively
- T&ES Strategic Plan: Key Result Area – Meet or exceed state and federal requirements of the City's MS4 and combined sewer permits

Details of Changes from Prior Year Approved Plan

This is a new project in the FY 2014 – 2023 Capital Improvement Program.

Additional Operating Budget Impact

Additional operating impacts for the maintenance of the retrofit facilities that will be constructed are undetermined at this time, as a construction schedule is yet to be determined.

Project Description and Justification (Continued)

This is primarily because of new regulatory requirements of Chesapeake Bay TMDLs for nutrients and sediments, bacteria TMDLs for Hunting Creek, and Four Mile Run. Total cost of compliance and mitigation for FY 2014 – 2023 may range as high as $50 million and depends on the type and mix of technologies implemented. The cost of compliance beyond 2023 (i.e. FY 2023 – 2033) may be an additional $100 million.

Storm Sewer System Spot Improvements

Document Subsection: Stormwater Management
Managing Department: Transportation & Environmental Services
Supporting Department(s): N/A
OCA: 250076

Project Location: Citywide
Reporting Area: Citywide
Project Category: 1 – Asset Maintenance
Estimated Useful Life: Varies

Storm Sewer System Spot Improvements													
	A	*B*	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Allocated Balance (06/13)	*Unallocated (06/13)*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total FY 2014-2023
Expenditure Budget	*112,824*	*2,734,113*	0	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	2,700,000
Financing Plan													
Prior City Funding	*112,824*	*2,734,113*	0	0	0	0	0	0	0	0	0	0	0
General Obligation Bonds	*0*	*0*	0	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	2,700,000
Total Financing Plan	*112,824*	*2,734,113*	0	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	2,700,000
Add. Operating Impact													
Annual Impact			0	0	0	0	0	0	0	0	0	0	0
Cumulative Impact			0	0	0	0	0	0	0	0	0	0	0

Basis of Project Cost Estimation: Cost estimate is based on historical costs of similar projects.

Project Description & Justification

This project provides funding for essential capital infrastructure improvements on the City's storm sewer system. These projects are identified as reconstruction projects due to deterioration or need additional capacity to reduce flooding.

The current allocated and unallocated project balance of $2.9 million will be utilized for projects listed on the next page.

Completion of this project will improve the City's storm sewer capital infrastructure, while mitigating the impacts of flooding. Regular capital infrastructure improvements can reduce the number of pipe collapses while reducing emergency repair costs caused by deferred maintenance.

Linking to the City's Strategic Plan

Goal 2 – Health & Environment

- LTO: Improve the natural quality of land within the City
  - IO: Improve ecological quality of green spaces to meet regional standards
  - IO: Reduce contaminants in water runoff

Goal 6 – Public Safety

- LTO: Decrease loss of property from disasters
  - IO: Decrease areas within the City that frequently flood

Goal 5 – Financial Sustainability

- LTO: Maintain the value of the City's physical assets
  - IO: Increase the maintenance investment relative to repair expenditures

External or Internal Adopted Plan or Recommendation

- N/A

Details of Changes from Prior Year Approved Plan

Funding in the amount of $9.6 million from FY 2014 – 2022 in the prior year approved plan has been reduced to $2.4 million over the same time period. Funding in the amount of $300,000 is added for FY 2023.

Increased operating costs associated with regular cleaning and maintenance, and increased staffing required for MS4 / TMDL requirements has reduced the amount of funding available for capital projects. When current identified projects are completed, additional resources may need to be added to this project.

Additional Operating Budget Impact

An impact on the annual operating budget is not anticipated.

Storm Sewer Spot Improvements (Continued)

Current Storm Sewer Spot Improvement Projects

Project	Description	Status
Monroe Avenue / Nelson Avenue Alley Improvements	Alley re-grading and storm sewer improvements to alleviate flooding on adjacent properties in the vicinity of the Alexandria and Wayne Avenues	Currently under design; Construction tentatively scheduled for FY 2014
Bishop Lane Drainage Improvements	Installation of storm sewer improvements to alleviate ponding and drainage onto adjacent properties from the public right-of-way	Design complete; Construction spring or summer of calendar year 2013
North Henry Street / Montgomery Street	Drainage improvements (along with sanitary sewer separation) along North Henry and Montgomery Streets	Currently under design; Construction tentatively scheduled for FY 2015
North Rosser Street / Calhoun Avenue / Colfax Avenue / Dawes Avenue Drainage System	Storm sewer evaluation and possible improvements including extension of existing storm sewers in roadside ditches to alleviate nuisance flooding and ponding water.	Currently under design; Construction tentatively scheduled for FY 2014
N. Frazier Ave. / N. Frost Ave. / Lawrence Ave. Drainage System	Storm improvements along North Frazier, North Frost, and Lawrence Avenue. The existing drainage ditch has limited capacity and frequent ponding occurs.	Currently under design; Construction tentatively scheduled for FY 2014
DASH Facility Stormwater Outfall	This project includes storm sewer design and construction of a new storm sewer outfall through CSX railroad property which will provide an adequate outfall to the DASH facility to eliminate frequent flooding.	Currently under design; Construction tentatively scheduled for FY 2014
Route 1 Transitway Stormwater Collection System	Stormwater improvements along the Route 1 Transitway corridor, specifically the new construction of the Bus Rapid Transit (BRT) lanes	Currently under design; Construction tentatively scheduled for FY 2014

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APPENDIX G:
ILLICIT DISCHARGE ORDINANCES

Alexandria, Virginia, Code of Ordinances >> PART II - THE CODE OF GENERAL ORDINANCES >> TITLE 5 - Transportation and Environmental Services >> CHAPTER 6 Water and Sewer >>

CHAPTER 6 Water and Sewer

Cross References: Water supply in foodhandling establishments, Sec. 11-2-171 et seq.; drinking water in nursery schools, Sec. 12-3-44.

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ARTICLE A Water

Editorial Note: Ord. No. 4747, § 1, adopted Jan. 21, 2012, repealed § 5-6-1 and renumbered the remaining sections of Art. A as set out herein. The historical notation has been retained with the amended provisions for reference purposes. The former § 5-6-1 pertained to water use in emergencies and derived from § 40-1 of the 1963 Code.

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DIVISION 1 Stagnant Water

Sec. 5-6-1 Stagnant water—owner to fill in place of collection.

(a) It shall be the duty of the owner of any lot or parcel of land located in the city which, because of the contour of the surface of the land, catches and holds rain and surface water, so that pools or ponds of stagnant water result, to fill in the lots, or parcels of land with earth to a grade as will prevent the collection of pools or ponds of stagnant water. In cases where the basin formed by the contour of the land in which the water collects is composed of two or more lots or parcels of land in separate ownership, the owners shall be responsible for the filling in of the portions of their respective lots or parcels of land as may be affected. At the request of any owner, the city engineer shall furnish the proper grade to which the fill should be made.

(b) The provisions of this section shall be applicable in all cases where stagnant water collects,

whether the result of abandoned excavations, establishments of street grades or otherwise. (Code 1963, Sec. 40-2; Ord. No. 4747, § 1, 1-21-12)

Charter Reference: Power of city as to grounds subject to be covered by stagnant water, Sec. 2.04(m).

Cross Reference: Drainage of driveways of filling stations, Sec. 9-7-6

Sec. 5-6-2 Same—action by city when owner refuses to fill in.

(a) In the event that any owner shall fail or refuse to fill in any lot or parcel of land as provided in the preceding section, within 10 days of receipt of written notice from the city manager to do so, the notice to be sent by registered mail, the city manager may cause the lot or parcel of land to be filled in with earth to the proper grade, and the cost thereof shall be a charge against the owner and the amount thereof shall be certified by the city manager to the director of finance to be added to the current tax bill against the land, which shall constitute a lien thereon as a part of the current tax bill, and the charges shall bear interest at the rate of six percent commencing 30 days after completion of this work.

(b) In addition to certifying the amount of the charges to the director of finance, the city manager may certify same to the city attorney for any appropriate action at law to recover that as may be deemed proper. (Code 1963, Sec. 40-3; Ord. No. 4747, § 1, 1-21-12)

Sec. 5-6-3 Same—penalty for violation of two preceding sections.

Any violation of the provisions of the two preceding sections shall be subject to a fine of not less than $5 nor more than $100, and each day that any owner fails or refuses to comply after 10 days from receipt of the written notice from the city manager as provided in the preceding section, shall constitute a separate offense, but the notice shall not be prerequisite to liability for violation of the provisions of section 5-6-2 of this Code. (Code 1963, Sec. 40-4; Ord. No. 4747, § 1, 1-21-12)

DIVISION 2 Water Supply Emergency

Sec. 5-6-4 Purpose.

The purpose of this division is to provide for the necessary reduction and curtailment of water usage through voluntary and/or mandatory restrictions during a water shortage condition or water

supply emergency affecting the city and its residents and businesses. (Ord. No. 4747, § 1, 1-21-12)

Sec. 5-6-5 Definitions.

(a) *Water shortage condition.* A state wherein the Potomac River Basin is experiencing unusually dry weather, or a state wherein there exists the potential for a water supply emergency if water demands are not reduced.

(b) *Water supply emergency.* A condition wherein the present or expected future ability of the city to deliver adequate supplies of water to customers to enable normal levels of potable water usage is endangered due to an extended drought and/or disruption in the city's water supply system. (Ord. No. 4747, § 1, 1-21-12)

Sec. 5-6-6 Declaration of water shortage condition.

(a) Whenever the city manager, or designated agent, determines that a water shortage condition exists, a water shortage condition may be declared by the city manager. The city manager, or designated agent, shall notify the general public that a water shortage condition has been declared and that more specific voluntary restrictions of water usage by residents and businesses are requested in order to help preserve the supply of potable water to the city.

(b) Upon the declaration of a water shortage condition, the city manager, or designated agent, may issue voluntary restrictions or recommend water conservation practices to help preserve the supply of potable water to the city. Such voluntary restrictions or conservation practices may include, but shall not be limited to, voluntary restriction of one or more of the following:

(1) Watering of shrubbery, trees, lawns, grass, plants, or other vegetation, except plants of flowers grown by a duly licensed florist;

(2) Washing of automobiles, trucks, trailers or other mobile equipment, except in a vehicle wash facility with an effective and efficient water recycling system;

(3) Washing of streets, driveways, parking lots, service station aprons, the exterior of commercial or residential buildings, or any other outdoor surfaces unless such washing is required to eliminate a hazard;

(4) Operation of any ornamental fountain or other structure making similar use of water;

(5) Serving water to customers in restaurants, cafeterias, or any other establishment, unless specifically requested;

(6) Filling of swimming and/or wading pools and use of water for outdoor recreation;

(7) Use of water from fire hydrants, except for health and safety purposes;

(8) Request water users to inspect all plumbing and repair leaks; and

(9) Suggestion of a maximum daily consumption goal for residents to strive and achieve.

(c) At any time after the declaration of a water shortage condition, if the city manager determines that such a condition no longer exists, then he or she may declare the rescission of the water shortage condition and the termination of all associated voluntary restrictions and recommended water conservation practices. (Ord. No. 4747, § 1, 1-21-12)

Sec. 5-6-7 Declaration of water supply emergency.

(a) Whenever the city manager finds that a water supply emergency exists, or is reasonably likely to occur if water conservation measures are not taken, he or she may declare a water supply emergency restricting or prohibiting the use of water by residents and businesses for the duration of such emergency or for a period of time necessary to prevent the occurrence of a water supply emergency. Such a condition may be determined from information obtained by

the city manager through the city's water supplier (Virginia American Water Company), information obtained from a recognized authority, or from other sources as determined appropriate and prudent by the city manager.

(b) Upon the declaration by the city manager of a water supply emergency he or she is authorized to promulgate and implement, in writing, mandatory water consumption restrictions or prohibitions necessary to preserve the ability of the city to provide adequate and acceptable levels of potable water to preserve the public health, safety and welfare. Water restrictions or prohibitions promulgated by the city manager may include, but shall not be limited to, restriction or prohibition of one or more of the following activities as provided in section 5-6-6(b).

(c) If, at any time after the city manager declares a water supply emergency and the city manager finds that a water supply emergency no longer exists, then the city manager may declare that the water supply emergency has ended. At any time during a water supply emergency, the city manager may, by written declaration, declare the rescission, in whole or in part, of any restrictions or prohibitions promulgated and implemented under section 5-6-7(b). Such declarations by the city manager shall be based upon a factual finding that the ability of the city to deliver acceptable quantities of potable water is no longer limited, or that the extent of the declared emergency is reduced and that the existing restrictions or prohibitions, or some part thereof, are no longer required to protect the public health, safety and welfare.

(d) The city manager, or designated agent, shall notify the general public, and the city council, when the city manager promulgates, or rescinds, mandatory restrictions or prohibitions authorized by this section or by any ordinance adopted hereafter. Such notification shall describe the mandatory restrictions and prohibitions promulgated or rescinded by the city manager, the effective date or dates thereof, and the penalties for noncompliance. Such a notice to the general public shall be published in a newspaper of general circulation within the city and posted in a public space in the city manager's office. Such notice shall be deemed due and proper notice to every customer supplied with water by the city. (Ord. No. 4747, § 1, 1-21-12)

Sec. 5-6-8 Exemptions of essential uses for public health, safety and welfare.

The provisions of any declaration by the city manager of a water supply emergency, and any restrictions or prohibitions implemented by the city manager, shall not apply to any governmental, business, or industrial use which is deemed by the city manager to be essential to the preservation of the public health, safety and/or welfare. (Ord. No. 4747, § 1, 1-21-12)

Sec. 5-6-9 Appeals.

Upon receipt of a written request by an individual customer of water supplied by the city, the city manager, for good cause shown, including evidence that the applicant is affected in a substantial manner not common to other persons or businesses generally, may permit less than full compliance with any of the water restrictions or prohibitions promulgated during a declared water supply emergency. No waiver shall be granted by the city manager unless he or she determines that the public health, safety and welfare will not be adversely affected by the waiver. (Ord. No. 4747, § 1, 1-21-12)

Sec. 5-6-10 Penalties.

(a) Any person who violates or fails to comply with any of the mandatory provisions of this division may be charged with a Class Five civil violation and may be fined as provided in section 1-1-

11(b)(5) of this Code.

(b) The imposition of a fine or penalty for violating any of the mandatory provisions of this division shall not excuse the violation or permit it to continue.

(c) The city manager, or designated agent, may seek suspension of water service to any violator of the mandatory provisions of this division by injunction, abatement or other appropriate legal remedy, if the city manager determines that such action is necessary to prevent any continued or future violation. (Ord. No. 4747, § 1, 1-21-12)

Secs. 5-6-11 through 5-6-20 reserved.

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ARTICLE B Sewage Disposal and Drains

Alexandria, Virginia, Code of Ordinances >> PART II - THE CODE OF GENERAL ORDINANCES >> TITLE 5 - Transportation and Environmental Services >> CHAPTER 6 - Water and Sewer >> ARTICLE B - Sewage Disposal and Drains >> DIVISION 1 General Provision >>

DIVISION 1 General Provision

State Law Reference: Authority of city to regulate sewer connections,Code of Va., Sec. 32-61; power of council to construct, etc., sewers and drains, Code of Va., Sec. 15.1-292.

Cross Reference: Power of city as to assessments for construction of sewers, culverts and drains, City Charter. Sec. 2.03, subsec. (e); power of city as to sewer pipes and connections, Charter. Sec. 2.04, subsec. (h); construction of sewers or drains in future subdivisions. Sec. 5-2-4 of this code; acceptance of streets, sewers or drains in future subdivisions. Sec. 5-2-5; constructing sewers or drains in existing subdivisions, Sec. 5-2-6

Sec. 5-6-21 Control of council.

All sewers, storm, water, sanitary or combined, except house connections from curb line to lot line, that have heretofore been or may hereafter be constructed by any person under any street, road, alley or park space or under any private court or alley, and which have been or may hereafter be connected into any sewer constructed by or belonging to the city, shall be under the jurisdiction and control of the city council so long as such sewer shall remain connected with any sewer constructed by or belonging to the city. (Code 1963, Sec. 28-1)

Sec. 5-6-22 Installed by contract with council.

All sewers that may be constructed by any person in any street, road, alley or park space now open to the public use, any street, road, alley or park space duly dedicated for public use in any city easement or grant or in any area under city option or agreement shall be installed by or under contract with the city council, and shall be of the size and established at such grades and constructed according to such other specifications as may be prescribed by the director of transportation and environmental services; except, that service connections running from a city sewer main, trunk or lateral to any premises shall be installed by the owner as hereinafter provided. (Code 1963, Sec. 28-2)

Sec. 5-6-23 Constructed so as to require separate and direct service for each house, building or parcel of property.

Any extension of the sewer system from sewers now built or hereafter built shall be constructed so that each house, building or separate parcel of property that connects with or is served by or through any part of the city sewer system shall be connected separately and directly with the city system, when and after the full amount required by section 5-6-25 has been paid into the city

treasury, in accordance with provisions of section 5-6-31. (Code 1963, Sec. 28-3)

Sec. 5-6-24 Duty of owner to connect; emptying into wells, tanks or open streams prohibited.

The owner of any dwelling or other building in which human beings live or congregate shall, whenever a trunk line or lateral line sewer is available, connect the dwelling or building with such trunk line or lateral line sewer, subject to the provisions of this article. It shall be unlawful for any person to empty any sewer or sewer system into any well, septic tank or open stream in the city, when a public trunk or lateral line sewer is available with which to connect. (Code 1963, Sec. 28-4)

Sec. 5-6-25 Sewer taps; clearance for sewer or water systems.

(a) Sewer taps shall be at least two feet apart. Sewer taps into public manholes must be approved by the director of transportation and environmental services before the tap is made. Taps into public storm sewers shall be made as directed by the director of transportation and environmental services. Trenches and excavations shall be kept free from water to permit adequate inspection.

(b) All sewer taps and laterals in public streets, roads, pavements, alleys and utility rights-of-way must be free of jumps; and grades shall not exceed one-quarter inch per foot until they reach the property line or the limit of the public sewer easement unless approved in advance by the director of transportation and environmental services.

(c) Clearance required. A house sewer or water system shall be laid in such a manner that the system can be serviced and maintained without entering or disturbing adjacent property unless an easement has been recorded which is adequate for that purpose. (Ord. No. 4659, 5/15/10, Sec. 7)

Editor's note—

Prior to the reenactment of § 5-6-25 by Ord. No. 4659, Ord. No. 4257, § 3, adopted June 15, 2003, repealed § 5-6-25, which pertained to sewer connection permits and service fees; construction costs; constructing sewers by owners rather than city; additional connections. See the Code Comparative Table.

Sec. 5-6-25.1 Sewer connection permits and service fees; construction costs; constructing sewers by owners rather than city; additional connections.

(a) Any person who is required, or who desires, to provide a connection for sewer service from his property, through any sewer constructed by or belonging to the city or any sewer serving the area annexed to the city in 1952, but belonging to a county, by direct connection at a city sewer main, trunk or lateral, shall, before starting to make such connection, apply to the director for a permit to make the connection, and the director shall issue a permit for the sewer connection when and after the person shall have paid to the department of finance the sum hereinafter provided.

(1) For each single family dwelling, townhouse dwelling, or townhouse type dwelling irrespective of classification for other purposes, or for each dwelling unit in a two-family dwelling, the amount of $8,404.

(2) For each multifamily dwelling, an amount equal to the product of the number of dwelling units in the multifamily dwelling, multiplied by $4,201. For all final site plans submitted on or after September 1, 2013, the amount shall be increased to 90 percent of the single family dwelling amount.

(3) For each hotel room, an amount equal to the product of the number of dwelling units in the hotel multiplied by $4,201. For all final site plans submitted on or after September 1, 2013, the amount shall be increased to 70 percent of the single family dwelling amount, and for all final site plans submitted on or after July 1, 2014, the amount shall be increased to 90 percent of the single family dwelling amount.

(4) For each nonresidential property, an amount determined in accordance with the following fee schedule based on the size of each water meter which serves such nonresidential property:

Meter Size (inches)	Max. Capacity (GPM)	¾" Meter Equiv.	Fee
¾ or smaller	30	1.00	$8,404
1	50	1.67	$14,034
1½	100	3.33	$27,985
2	160	5.33	$44,793
3	320	10.76	$90,425
4	500	16.67	$140,092
6	1000	33.33	$280,101
8	1600	53.33	$448,178
10	2300	76.67	$644,323

(5) For each mixed use property, where such property includes both residential and nonresidential uses, an amount equal to the sum of the fee determined for the residential portion of such property, in accordance with this section, plus the fee determined for the nonresidential portion of such property, in accordance with this section; provided, however, if the residential portion and nonresidential portion of such property are served by a single water meter, the fee shall be an amount determined by the director in his reasonable discretion.

(6) For connections that involve the removal of an existing structure with an existing tap, a credit for the existing tap shall be applied towards the total connection fee otherwise due in accordance with this section for final site plans submitted on or after September 1, 2013. The amount of the credit shall be estimated by the director and shall be based on the previous use. The credit shall only apply to properties removed or demolished not longer than three years prior to the submission of the final site plan for the new structure. The credit shall be equal to 50 percent of the current fee that would be applied to the structure or structures being removed. For mixed use properties, the credit will be based on the sum of the residential credit and nonresidential credit, in accordance with this section. If the previous use was served by a single water meter, the credit shall be an amount determined by the director in his reasonable discretion.

(7) For an existing property that changes its use, such as from non-residential to residential (or vice versa), increases the number of residential units or hotel rooms, or adds or increases the water meter size to account for the change in use, the amount shall be calculated as follows:

(i) If the same sewer connection (tap) is utilized, then the fee shall be based on the net increase in units (or usage) between the existing and proposed uses.

(ii) If a new sewer tap is required, then the fee shall be set in accordance with the fees for new construction set forth in this section, net of any credits due pursuant to section (6) above.

(8) In cases where a DSP/DSUP extension is filed after the connection fees have been established for a development project (following final plan submission), the connection fee rate shall be

revised to reflect the current fee structure in effect at the time the extension is approved. For all final site plans submitted prior to April 1, 2013, one DSP/DSUP extension may be granted without revising the connection fee rate previously established at the time of the final site plan submission.

(9) Sections (1) through (4) reflect the fees for final site plans submitted before July 1, 2013. Beginning in fiscal year 2014 and going forward, the foregoing fees shall increase each year at the rate of inflation as determined by the annual CPI-U for the Washington-Baltimore-Northern Virginia, DC-MD-VA-WVA Combined Statistical Area and shall apply to all final plans filed submitted between July 1 of that year and June 30 of the subsequent year.

(b) Extension of service; credits for such extension.

(1) A person required or desiring to provide extension of sewer service to his property shall construct or have constructed such extension at his own expense. The person shall execute a satisfactory agreement with the city, as prescribed by the city manager, agreeing to construct such sewer or sewers in accordance with plans and specifications approved by the director and the person shall in addition furnish such guarantee of performance and maintenance to the city as the city manager may require. Such sewers shall become the property of the city upon completion and acceptance of the work.

(2) If, pursuant to a written requirement of the director, the person constructs such extension in a manner that exceeds the requirements to provide service to the property of such person, a credit shall be available to be applied to the fees otherwise due under this section, in an amount equal to the difference between the cost of such extension, constructed in accordance with the written requirement of the director, and the cost of such extension, constructed as originally proposed by the person, such amount to be determined by the director. The amount of the credit shall be estimated by the director prior to commencement of construction, and an interim fee shall be paid by the person in an amount equal to the fees otherwise due under this section minus the estimated credit; provided, the minimum interim fee shall be for each single family dwelling, townhouse dwelling or dwelling unit in a two-family dwelling residential unit, $100, for each dwelling unit in a multifamily dwelling, $100, and for each floor of a nonresidential property, $100 or $0.08 per square foot of floor space, whichever is greater.

(3) Upon satisfactory completion of the work, the actual amount of the credit shall be determined by the director based on certified bills submitted to and approved by him. The final fee to the person shall be an amount equal to the fees otherwise due under this section minus the amount of the actual credit; provided, the minimum final fee shall be for each single family dwelling, townhouse dwelling or dwelling unit in a two-family dwelling residential unit, $100, for each dwelling unit in a multifamily dwelling, $100, and for each floor of a nonresidential property, $100 or $0.08 per square foot of floor space, whichever is greater. Any difference between the interim fee and the final fee shall immediately be paid to or refunded by the department of finance.

(4) If the amount of the credit estimated under subsection (b)(2) above exceeds the amount of the fees otherwise due under this section without regard to the minimum fee calculated under subsection (b)(2) of this section, prior to the commencement of construction, the city shall agree to pay the person an amount equal to such excess or shall withdraw the written requirement of the director for construction of such extension in a manner that exceeds the requirements to provide service to the property of such person.

(c) Exclusions and exemptions.

(1) Notwithstanding anything to the contrary contained in this section, no fee shall be charged to connect a sewer system or sewage disposal system which serves exclusively a fire sprinkler system, installed pursuant to section 906.0 of the Virginia Uniform Statewide Building Code, as amended, a fire standpipe system, installed pursuant to section 915.0 of the Virginia Uniform

Statewide Building Code, as amended, or a yard hydrant, installed pursuant to section 917.0 of the Virginia Uniform Statewide Building Code, as amended.

(2) Notwithstanding anything to the contrary contained in this section, no fee shall be charged to connect a sewer system or sewage disposal system which serves property owned by the Alexandria City Public Schools, the Alexandria Redevelopment and Housing Authority, or an entity in which the Alexandria Redevelopment and Housing Authority holds an ownership interest and the purpose of such entity is to develop property using federal low income tax housing credits.

(3) The fees established and imposed by this section shall not apply to a connection where (i) such connection is within the limits of a coordinated development district approved by city council, (ii) the main or trunk line to which such connection will be made extends from such coordinated development district directly to the publicly owned treatment works of the Alexandria Sanitation Authority, without connection at the time of its construction to any city sewer, unless such a connection is made pursuant to a written requirement of the director and exceeds the requirements to provide service to the coordinated development district, (iii) such main or trunk line was constructed totally at private expense, and (iv) the application for such connection is submitted within 22 years of the date of issuance of the first building permit subsequent to April 1, 2002, within such coordinated development district. Upon satisfaction of the foregoing criteria, a permit for the sewer connection shall be issued upon payment of a fee for each single family dwelling, townhouse dwelling or dwelling unit in a two-family dwelling residential unit, of $100, for each dwelling unit in a multifamily dwelling, of $100, and for each floor of a nonresidential property, of $100 or $0.08 per square foot of floor space, whichever is greater; provided, however, in the event construction of the improvements to be served by such permitted connection has not substantially commenced within 23 years of the date of issuance of the first building permit subsequent to April 1, 2002, within such coordinated development district, the permit for the sewer connection issued shall expire and thereafter the fees established and imposed generally by this section shall apply.

(d) If the city manager finds that construction of an extension by a person would constitute a hardship on such person, by reason of his inability to secure a satisfactory contract, or otherwise, the city manager may direct that the construction be done by or for the city; provided, however, that the cost to the city shall not exceed the fees paid by such person less for each single family dwelling, townhouse dwelling or dwelling unit in a two-family dwelling residential unit, $100, for each dwelling unit in a multifamily dwelling, $100, and for each floor of a nonresidential property, $100 or $0.08 per square foot of floor space, whichever is greater. Costs in excess of such fees shall be paid by the person prior to making any connection to such sewer.

(e) The total sum to be paid to the department of finance for sewer service at the city sewer main, trunk or lateral for any property in the city, the sewage of which will be transported from such property through sewers constructed previously by private parties into sewers constructed or belonging to the city, except for such sewers as may have been constructed by private parties under the control or supervision of the city or other public authority, shall be as provided generally in this section for each such property so connected.

(f) Any person desiring additional sewer service connection to any property shall make application to the director for permission to construct such connection and shall pay to the department of finance the sum as provided generally in this section for each additional connection prior to the issuance of the permit for the sewer connection.

(g) Nothing in this chapter shall be construed to prevent the city sanitation authority from making a service charge for collecting and treating sewage. (Ord. No. 4257, 6/15/02, Sec. 1; Ord. No. 4394, 5/2/05, Sec. 1; Ord. No. 4536, 5/5/08, Sec. 1; Ord. No. 4682, 10/16/10, Sec. 1; Ord. No. 4730, 6/25/11, Sec. 1; Ord. No. 4808, 5/18/13, Sec. 1)

Editor's note—

It should be noted that § 2 of Ord. No. 4257 provides, "That the provisions of section 5-6-25.1 shall become effective on July 1, 2002, and shall apply to all applications for permits for sewer connections which may be filed after such date; provided, however, that: (a) With respect to any property for which a preliminary site plan was filed with the city and determined by the Director of Planning and Zoning to be complete prior to April 1, 2002, the applicable fee shall be determined in accordance with section 5-6-25, with the exception of any credit, which shall be determined not in accordance with subsection (e) of section 5-6-25, but in accordance with subsection (b) of section 5-6-25.1; provided, however, in the event construction of the improvements to be served by such permitted connection has not substantially commenced prior to April 1, 2004, the permit for the sewer connection issued shall expire and thereafter the fees established and imposed by section 5-6-25.1 shall apply, without any adjustment.

(b) With respect to any property for which a preliminary site plan is filed and determined by the Director of Planning and Zoning to be complete from April 1, 2002, until September 30, 2002, the fee shall be the product of the fee determined in accordance with section 5-6-25.1, multiplied by fifty percent (50%); provided, however, in the event construction of the improvements to be served by such permitted connection has not substantially commenced prior to April 1, 2004, the permit for the sewer connection issued shall expire and thereafter the fees established and imposed by section 5-6-25.1 shall apply, without any adjustment.

(c) With respect to any property for which a preliminary site plan is filed or determined by the Director of Planning and Zoning to be complete from and after October 1, 2002, the fee shall be as provided in section 5-6-25.1, without any adjustment." See the Code Comparative Table.

It should be noted that § 2 of Ord. No. 4536 provides that "this ordinance shall become effective on the date and at the time of final passage, and shall apply to all applications for permits for sewer connections which may be filed after such effective date; provided, however, that with respect to any property for which the first final site plan was filed with the city on or before April 1, 2008, the applicable fee shall be determined in accordance with Section 5-6-25.1 prior to amendment."

Sec. 5-6-26 Sewer line maintenance charge imposed; provisions for collection; liens and cessation of water service for delinquent charges.

(a) There is hereby imposed, upon all parcels of real estate from which sewerage is discharged into lines maintained by the city, a sewer line maintenance charge of $1.20 per quarter or $1.25 for every 1,000 gallons of water supplied per quarter to such parcel by the Virginia-American Water Company, whichever is the greater sum; provided, that if the charge for water supplied to any parcel is billed on a monthly basis, the sewer line maintenance charge imposed on the parcel shall be $0.40 per month or $1.25 for every 1,000 gallons of water supplied per month to such parcel, whichever is greater; and provided, further, that for any parcel of real estate having more than one meter for the measurement of water consumption attributable to that parcel, one or more of which meters measures only water which will not be discharged into the sanitary sewer lines of the city, that parcel shall be charged as provided herein on the total water consumption attributable to that parcel after subtracting the amount of water not discharged into the sanitary sewer lines of the city.

(b) For the purpose of this article, bills shall be considered monthly bills if submitted 12 times per year for periods of approximately one month each and quarterly bills if submitted four times per year for periods of approximately three months each.

(c) The sewer line maintenance charge shall in every case be collected by the Alexandria sanitation authority or its designee from the owner, lessee or tenant of each parcel, or some or all of them, and remitted by the Alexandria sanitation authority or its designee to the city in such manner and on such terms as shall be agreed upon by the water company and the city council, consistent with the provisions of this section. In the event any such charges are unpaid 30 days after the date they are billed by the Alexandria sanitation authority or its designee as

hereinabove provided, interest shall at that time begin to accrue thereon at the rate of one percent per month, and the owner, lessee or tenant, as the case may be, of the parcel of real estate on which the charge was imposed shall, until such charges shall be paid with interest to the date of payment, cease to dispose of sewage or industrial waste originating from or on such real estate by discharge thereof directly or indirectly into the sewer line maintained by the city, and is such owner, lessee or tenant shall not cease disposal within two months thereafter, the water company shall cease supplying water thereto unless the Director of the Alexandria Health Department shall certify that the shutting off of the water will endanger the health of the occupants of the premises or the health of others. Such charges and interest thereon shall constitute a lien against the property, ranking on a parity with liens for unpaid taxes. (Code 1963, Sec. 28-5.1; Ord. No. 3793, 5/3/95, Sec. 1; Ord. No. 4301, 5/17/03, Sec. 1; Ord. No. 4348, 5/3/04, Sec. 1; Ord. No. 4393, 5/2/05, Sec. 1; Ord. No. 4778, 11/17/12, Sec. 1)

Sec. 5-6-27 Duty of director of transportation and environmental services to compute amounts due city.

In the event that any persons affected by any of the provisions of this article should fail, after 10 days' notice in writing from the city manager, to do that which may be required under the provisions of this article, it shall be the duty of the director of transportation and environmental services to compute the sewer service fee due to the council that may be applicable in each instance under the provisions of this article and certify same to the director of finance and the amount so certified shall be a lien against the real estate as a part of, and the same as, taxes duly assessed against the real estate by the city.

Sec. 5-6-28 Unlawful to connect without permit and payment.

It shall be unlawful for any person to make any sewer service connection from any property, which abuts a public sewer to the public sewer system, either directly or indirectly, through any other sewer, without first having obtained a permit from the director of transportation and environmental services and paid into the city treasury the amount required by section 5-6-25 of this code for public sewer service. (Code 1963, Sec. 28-7)

Sec. 5-6-29 Connection lines running from city sewer main, trunk or lateral to the premises.

(a) The owner of any property desiring sewer service shall be responsible for the construction and maintenance of connection lines running from the city sewer main, trunk or lateral to the premises. The connections shall be installed by a duly authorized and licensed master plumber and all work shall be in accordance with the provisions of the Uniform Statewide Building Code and the building code of the city.

(b) Connection lines shall be connected to the sewer main, trunk or lateral by means of cast-iron saddle approved by the director of the department of transportation and environmental services. No connection shall be less than four (4) inches inside diameter. Bedding for connections within a street, alley or other right of way shall conform to standards of the department of transportation and environmental services. It shall be unlawful for any person to make any connection with any public or city sewer main trunk or lateral without first notifying the city plumbing inspector.

(c) The owner of any property furnished sewer services shall be responsible for keeping the sewer lines between the premises and the city sewer main, trunk or lateral free and clean and in good repair, but it shall be unlawful for any person to break, dig up, or disturb any portion of any

sidewalk, street, alley or right-of-way for sewer maintenance or repair without first notifying the city plumbing inspector.

(d) It shall also be the duty of any person disturbing, breaking or digging up any portion of any sidewalk, street, alley or right of way for sewer maintenance to furnish and maintain proper warnings and barricades.

(e) Notwithstanding the above provisions of this section, the city will continue to service and maintain those connection lines, running between the city sewer mains, trunks and laterals and the curb lines that were installed prior to July 1, 1955. (Code 1963, Sec. 28-8)

Sec. 5-6-30 Property binding on certain old sewers.

Property binding on certain old public sewers constructed by the city on private property, and property binding on certain old sewers built on private property and used by the city with the consent of the property owners as public sewers, shall have the right to public sewer service without paying the amount into the city treasury required by section 5-6-25 or section 5-6-27 of this code, by the requirements of section 5-6-28 of this code relative to permit from and construction under the supervision of the director of transportation and environmental services of any property sewer service connections shall be compiled with by any person desiring to make any sewer service connection with the public sewers built on their property. (Code 1963, Sec. 28-9)

Sec. 5-6-31 Obstructing, breaking or injuring sewers, catch basins or manholes; garbage, earth or trash.

It shall be unlawful for any person to obstruct, break or injure in any manner any public sewer, or to obstruct, break or injure in any manner any catch basin or manhole, or to place any garbage, earth, trash or any other material of any kind in any catch basin or manhole. (Code 1963, Sec. 28-10)

Sec. 5-6-32 Draining rain water into public sanitary sewers—nuisance declared.

The connection of any roof, down spout, yard or walkway drain or any other drain, except for existing driveway or existing footer drains, carrying rain water into any house service sewer connected with any public sanitary sewer or any other sewer leading into a public sanitary sewer in the city is detrimental to the public health, safety and welfare and is hereby declared a public nuisance. (Code 1963, Sec. 28-10.1)

Sec. 5-6-33 Same—prohibited; compliance with notice to disconnect.

(a) It shall be unlawful for any property owner to connect or cause to be connected any roof, down spout, yard or walkway drain or any other drain carrying rain water into any house service sewer connected with any public sanitary sewer, or any sewer leading into any public sanitary sewer in the city.

(b) Except when section 5-6-36 applies, it shall be unlawful for any property owner to fail, within 14 days from the receipt of the written notice prescribed for in section 5-6-35, to disconnect or cause to be disconnected any roof, down spout, yard or walkway drain or any other drain, except for an existing driveway drain or existing footer drain, carrying rain water into any house service sewer connected with any public sanitary sewer or any sewer leading into any public sanitary sewer in the city. (Code 1963, Sec. 28-11)

Sec. 5-6-34 Same—penalty for violation of section 5-6-33.

Any person violating section 5-6-33 shall, upon conviction thereof, be punished by a fine not to exceed $25. (Code 1963, Sec. 28-11.1)

Sec. 5-6-35 Same—disconnection by city; costs to constitute lien.

Whenever the property owner fails to disconnect or cause to be disconnected any rain water drainage connection, except for any existing driveway drain, or existing footer drain, with any public sanitary sewer or any other sewer leading into a public sanitary sewer in the city within 14 days from the receipt of written notice from the city manager to disconnect such rain water drainage connection, the city manager is hereby authorized to cause the connection to be disconnected. The cost for the disconnection by the city shall be computed thereafter, charged to the property owner, and a bill for the costs shall be prepared by the department of finance and mailed to the owner at his last known post office address within a reasonable time after the disconnection. In the event the city does not receive payment of the bill within 30 days after mailing, a duplicate statement of the bill shall be forwarded to the director of finance, who shall see that the costs are charged to the owner and collected in the same manner as city taxes. Every such cost shall constitute a lien against the real estate from which such rain water connection was disconnected, the lien to continue until actual payment of the cost shall have been made to the city. (Code 1963, Sec. 28-12)

Sec. 5-6-36 Same—same; exceptions for connections existing on November 28, 1972, upon finding of hardship.

Whenever the city manager finds that a disconnection would constitute a financial hardship to an owner, the city manager shall direct that the disconnection be done by or for the city at the expense of the city. This exception shall apply only to connections in existence in the city on November 28, 1972. (Code 1963, Sec. 28-12.1)

Sec. 5-6-37 Air conditioning and refrigeration equipment discharging water—definition of "air conditioning" and "refrigeration."

For the purpose and within the meaning of sections 5-6-38 and 5-6-39 of this code, the following definitions shall apply:

(1) *Air conditioning.* The cooling or dehumidification, or both, of space used for human occupancy.

(2) *Refrigeration.* The artificial production of cold for the purpose of preservation of food products, process work and maintenance of storage temperature. (Code 1963, Sec. 28-13)

Sec. 5-6-38 Same—rate of water discharge.

It shall be unlawful for any person to discharge or allow to be discharged into the sanitary sewers of the city or connections thereto, either directly or indirectly, water from any air-conditioning or refrigeration equipment at a rate in excess of 10 gallons per hour per rated ton of air conditioning or refrigeration in the aggregate. (Code 1963, Sec. 28-14)

Sec. 5-6-39 Same—permit required for installation.

It shall be unlawful for any person to install or cause to be installed any air-conditioning or refrigeration equipment which discharges, or is capable of discharging, water without first complying with the appropriate provisions of title 8, chapter 1 of this code, relating to plumbing and gas fitting, and obtaining the permit therein required. (Code 1963, Sec. 28-15)

Sec. 5-6-40 Same—VPDES permit requirements.

(a) Notwithstanding any contrary provision of this code, it shall be unlawful for any person, after May 16, 1998 to:

(1) construct any new combined sewer, or any extension of a combined sewer, inside or outside of the combined sewer service area of the city, provided that this subsubsection (1) shall not prohibit the connection of new sanitary sewers constructed after May 16, 1998 to combined sewers within the combined sewer service area, so long as the owner of the property to be served by the new sanitary sewer demonstrates to the satisfaction of the director that the connection will not cause any combined sewer overflows during dry weather flow conditions; or

(2) connect any new inflow source other than sewage disposal permitted under subsubsection (1), including without limitation rain water drainage, sump pump discharge, or air conditioning or refrigeration condensate discharge, into a sanitary sewer which is tributary to the combined sewer system.

(b) A violation of this section shall constitute a class one civil violation. (Ord. No. 3998, 5/16/98, Sec. 1)

Secs. 5-6-41 through 5-6-50 reserved.

DIVISION 2 Sewage Disposal Systems

SUBDIVISION A

General

Cross References: Power of city with reference to sewage disposal system, see City Charter, Sec. 2.03, subsec. (u): toilets and basins in nursery schools, Title 12, Ch. 3; of this Code; toilet and lavatory facilities in foodhandling establishments, Title 11. Ch. 2.

Sec. 5-6-51 Construction of terms.

The terms "install," "repair," "approved," and "standard," as used in this article shall be

construed to mean in accordance with the specifications and standards established within this article. (Code 1963, Sec. 28-16)

Sec. 5-6-52 Approved method of disposal of human excrement required.

It shall be unlawful for the owner of any house used as a human habitation or other place where human beings congregate or are employed in the city to use or occupy, or to rent or lease the same for the use of occupancy by any person, unless and until the house or building shall have been supplied or equipped with an approved method of disposal of human excrement of such construction as will comply with the requirements hereinafter designated. "An approved method of disposal of human excrement" shall be deemed to be either:

(1) a properly installed flush toilet connected to a public or approved private sewer;
(2) a flush toilet connected to an approved properly installed septic tank system; or
(3) a flush toilet connected to an approved sewage disposal plant, publicly or privately owned. (Code 1963, Sec. 28-17)

Sec. 5-6-53 Approval of plans for sewer system, sewage disposal system and water system in new subdivision or housing developments.

It shall be unlawful for any person to start any new subdivision or housing development before furnishing, in triplicate, plans and specifications of the sewer system or sewage disposal system to be used, together with plans for the anticipated water system to be used in the structures. These plans and specifications must be approved by the director of public health or his agent before construction is started. (Code 1963, Sec. 28-18)

Sec. 5-6-54 Compliance with article; injunction.

It shall be unlawful for any person to fail, neglect or refuse to comply with any provisions of this article. Any person violating any provision of this article may be enjoined from proceeding with the installation of or operation of any disposal system until the person shall comply with the provisions of this article. (Code 1963, Sec. 28-19)

Secs. 5-6-55 through 5-6-60 reserved.

SUBDIVISION B

Septic Tank Systems

Cross Reference: Power of city as to septic tanks and dry closets, City Charter, Sec. 2.04, subsec. (h).

Sec. 5-6-61 Permit for installation or repair.

(a) It shall be unlawful for any person to install or repair any septic tank system in the city except upon a permit as provided in this section.
(b) It shall be unlawful for any person to install or repair, have installed or repaired, allow to be installed or repaired or contract to install or repair a septic tank system for another person without first making application to the director of public health for a septic tank permit on application forms furnished by the director of public health. The application form shall contain clearly a description, location and dimensions of the land or lot on which the septic tank,

distribution box and sewer piping are to be installed, the dimensions of the subsurface disposal field, the type of land, such as loam, sandy loam, clay, gravel, etc., the direction in which the land drains in relation to reservoirs, springs and wells, and be accompanied by a plat of the land when required, showing the location of dwelling house and all other buildings, and the plans and specifications of the whole septic tank system intended to be installed or repaired. Upon approval of such application, the director of public health shall issue a permit to the applicant for the installation of a septic tank system in accordance with the plans and specifications furnished. If the plans are not approved, but the size and location of the lot and type of soil are suitable for a septic tank system, properly planned, the director of public health shall clearly outline proper plans for the same and grant the permit only according to the plans so outlined by him. (Code 1963, Sec. 28-20)

Sec. 5-6-62 Specifications.

(a) *Generally.* All septic tank systems installed or repaired in the city shall consist of sewer line from building to tank, septic tank, distribution box and drain tile disposal field. The sewer line shall be of cast-iron soil pipe, unless otherwise specified by the plumbing inspector. The entire system shall be built in accordance with the plans and specifications shown on the permit required.

(b) *Excavations.* All excavations and trenches shall be of sufficient dimensions to permit sewers, tanks and other structures of the size shown, specified to be properly placed therein, according to the plans and specifications as required by this regulation, and to permit the removal of any obstructing material within the disposal field.

(c) *Re-excavations and the filling and refilling of trenches.*

(1) Where unsuitable foundation is encountered at the depth of any excavation shown on the drawing or specified by the director of public health, further excavation and refilling the excavated spots with such foundation material as may be directed by film, is hereby required.

(2) A representative of the health department shall inspect septic tank construction after completion and before any part of the system shall be covered. Septic tank systems shall be back-filled immediately after inspection and approval by the director of public health and care shall be taken not to disturb the pipe, grades, joints or alignment by the backfilling, or otherwise.

(d) *Pipes and jointing materials; size and types of house sewer.*

(1) The house sewer for individual homes shall be constructed of four (4) inch or larger cast-iron pipe or equivalent.

(2) All house sewer pipes shall be laid complete with all jointing materials. All house sewer cast-iron pipe shall be jointed with lead and oakum or similar jointing material, and shall be approved by the plumbing inspector.

(3) All house sewer pipe shall be laid accurately and shall have a grade of not less than one-fourth (¼) of an inch to the foot, or as otherwise specified by the director of public health, and approximately 30 inches from the outside of the house there shall be a standard cast-iron cleanout tie with screw cover, and all right angle bends in the house sewer shall be made with long sweep soil pipe ells. Where septic tanks are located more than 35 feet from the above cleanout, then additional cleanouts are to be provided.

(e) *Location, design, liquid capacity and material required in septic tank disposal systems.*

(1) Location and installation of the sewage disposal system and each part thereof shall be such that, with reasonable maintenance, it will function in a sanitary manner and will not create a nuisance nor endanger the safety of any domestic water supply. In determining a suitable location for the system consideration shall be given to the size and shape of the lot, slope of

natural and finished grade, depth of ground water table, proximity to existing or future water supplies, and possible expansion of the system.

a. No part of the system shall be located so that it is nearer to any water supply than 50 feet, or so that surface drainage from its location may reach any domestic water supply.

b. The lot size shall be sufficient to permit proper location, installation and operation. The disposal field shall be located at least 10 feet from property line.

c. Installations in low swampy area or areas with a high water table or which may be subject to flooding are prohibited.

(2) Type of system shall be determined on a basis of location permeability and ground water level.

a. The system shall be designed to receive all sanitary sewage from the dwelling.

b. Basement floors, footings or roof drainage shall not enter any part of the septic tank system.

(3) Design of the septic tank shall be rectangular in shape and the length shall not be less than twice nor more than three (3) times the width. The liquid depth shall be not less than four (4) feet and the freeboard or airspace shall not be less than one (1) foot.

(4) Liquid capacity of all septic tanks shall be based upon the number of bedrooms contemplated in the building served and shall conform to Table I, herein shown.

TABLE I. CAPACITY OF SEPTIC TANK

Potential	Minimum	Minimum Dimensions of Septic			
Capacity of Home No. of Bedrooms	Capacity of Septic Tanks Gallons	A Length	B Width	C Air Space	D Liquid Depth
3 or less	720	7′0″	3′6″	1′0″	4′0″
4	1000	8′0″	4′0″	1′0″	4′0″
5	1250	9′0″	4′6″	1′0″	4′3″
6	1480	9′6″	4′8″	1′3″	4′6″
7	1720	10′0″	5′0″	1′3″	4′8″

(5) Construction of the septic tank shall be such as to assure its being watertight and prevent the entrance of rain water or surface drainage.

a. The tank shall be constructed of sound and durable material not subject to excessive corrosion or decay.

b. Adequate access to each compartment of the tank for inspection and sludge removal, shall be provided by a manhole or removable cover.

1. Where the top of the tank is located more than 18 inches below the surface of the ground, manholes shall be built up to within 12 to 18 inches of the surface.

c. Inlet and outlet connections shall be submerged or baffled to assure the least possible disturbances in the tank.

1. The inlet pipe or baffle shall extend approximately six (6) inches above the water surface and the outlet shall extend approximately two (2) feet below and six (6) inches above the water surface.

2. Venting of the tank shall be provided through the inlet and main building stack and shall be approved by the plumbing inspector. The outlet shall be similarly vented to provide proper ventilation of the disposal field or seepage pits back into the septic tank and thence through the main building stack.

d.

Septic tanks shall be poured-in-place concrete, or precast concrete, or brick wall, or cinder block wall, or properly coated metal.

1. Concrete septic tanks, poured in place, shall be poured with a standard concrete mixture of 1-2-3 or 1-24 mix. Where the excavation is subject to caving, or where the water table is objectionably high, outside forms and pumping will be required in order to assure a water-tight tank. The walls, top and bottom of the tank are to be not less than four (4) feet thick, as shown on plans; top and manhole cover to be reinforced with reinforcing steel, as shown on plans.

2.i. Precast concrete tanks shall be of a design and size as stated in specifications submitted in accordance with section 5-6-61 of this code, and made with a standard 1-2-3 mixture. The walls shall not be less than two and one-fourth (2¼) inches in thickness, reinforced with No. 9 steel placed as shown in specifications submitted in accordance with section 5-6-61 of this code.

ii. The precast tank may be made in two (2) sections or more with a horizontal half lap joint, cement grounded. The bottom or top and a portion of the side walls shall be poured monolithically.

3. Where metal septic tanks are used, they are to be of the same design and with the same fittings as required for concrete tanks, provided they are constructed of a material of sufficient thickness and properly coated to prevent rusting.

(f) *Subsurface disposal field.*

(1) Location of the disposal field should be in an unobstructed and unshaded area, and the distances given shall be the minimum which the disposal field can be located from the following: ;$;

a. Any water supply (except as noted below) .....50 feet

b. Streams .....25 feet

c. Dwellings .....10 feet

d. Large trees .....10 feet

e. Property lines .....10 feet ;

f. When existing wells are involved or exceptionally coarse soil formations are encountered, the 50 foot distance from any water supply shall be increased in accordance with the recommendations of the health department.

(2) Distribution box of sufficient size to accommodate the necessary field lateral lines shall be constructed at the head of each disposal field.

a. Each field lateral line shall be connected separately to the distribution box and shall not be subdivided.

b. The invert of all outlets shall be level and the inlet invert shall be at least one (1) inch above the outlets.

(3) Minimum seepage area (total flat bottom of trenches) of the disposal field shall be determined by one of the following methods:

a. Recommendation of the health department, based upon experience data, in which case requirements should be stated on a basis of square feet of absorptive area per bedroom rather than lineal feet of tile.

b. Results of actual percolation tests conducted on the site of proposed disposal field. The tests shall be made by the owner and under the direct supervision of the health department and in the following manner:

1. Number of test holes. When a septic tank disposal field is to be constructed for a single dwelling unit with two (2) bedrooms or less, a minimum of two (2) test holes shall be used. One (1) additional hole shall be provided for each additional bedroom to be served. When

installations are planned for multiple units or buildings not used as dwellings at least one (1) test hole shall be provided for each 400 square feet of area of the proposed disposal field site.

2. Location of test holes. The test holes shall be located on the site selected for the disposal field in a manner to be representative of the area under consideration. Tests shall not be made in filled ground unless it has been compacted for several years. All necessary surface drainage shall be completed before any percolation tests are made.
3. Preparation of test holes. The holes shall be six (6) inches to 12 inches in size and may be either circular or square and shall be dug to the depth of the proposed disposal field trench. A fixed reference point shall be provided in each test hole to permit accurate measurements of water levels. A layer of sand or fine gravel one (1) to two (2) inches thick shall be placed in the bottom of each test hole before any water is placed in the hole. Earth shall be mounded around tops of holes to prevent entrance of surface water and suitable covers shall be placed over them when holes are left unattended.
4. Conducting tests. First place water in hole to depth of at least 12 inches and allow to seep away. Proceed with test by filling hole to a depth of six (6) inches and record time required for the water to seep away. Then compute the average time required for the water level to lower one (1) inch. If water does not disappear from hole within six (6) hours, no further observations are necessary.
5. Determination of absorptive area from results of percolation tests.

Average Time in Minutes for Water Level to Lower One Inch	Effective Absorption Area (Area in bottom of disposal trench) In Square Feet Per Bedroom or Per 100 Gal. Per Day of Estimated Water Use.
10 minutes or less	130
11-20 minutes	170
21-30 minutes	210
31-40 minutes	250
41-50 minutes	290
51-60 minutes	330
Over 60 minutes	Unsuitable for subsurface drainage

Minimum installation shall be for a two (2) bedroom house.

(4) Construction shall be in accordance with recommendations of the health department.

a. All trenches in a disposal field shall be the and length, and the following same width standards shall be required.

1. Minimum number of lines per field, two (2).
2. Maximum length of individual lines, 100 feet.
3. Minimum bottom width of trench, 18 inches.
4. Maximum depth of cover of tile lines, 24 inches.
5. Preferred depth of cover of tile lines, 16 inches.
6. Grade of tile lines, 2″ to 4″ per 100 ft.
7. Spacing of trenches, at least six (6) feet apart.
8. Minimum filter material under tile, six (6) inches.
9. Minimum filter material over tile, two (2) inches.

b. Pipe used for the lines between the septic tank and distribution box, on all lines within 10 feet

of dwelling, under paved areas and on all main laterals from distribution box in fields constructed on sloping ground, shall be bell and spigot type of vitrified clay or concrete with watertight joints. Pipe used under driveways or other areas subject to heavy loads shall be bell and spigot cast iron with leaded joints. The sections laid in the disposal field shall not be considered in determining the effective absorption area.

c. Field tile used in the disposal field shall be not less than four (4) inches in diameter and shall be laid with one-fourth (¼) of an inch open joints.

1. All open joints shall be protected, on top, by strips of asphalt-treated building paper at least ten (10) inches long and three (3) to six (6) inches wide.

2. All bends used in the disposal field shall have one (1) tight joint at each end of the bend.

d. Filter material shall be hard and durable, of crushed stone, gravel, slag, screened cinder or similar material having sufficient voids and shall be acceptable to the health department of the city. Such material may vary from one-fourth (¼) of an inch to three (3) inches size.

e. Grade boards, securely staked in the bottom of the trench, shall be provided for all lines except where bell and spigot pipe is used. The grade boards shall be one (1) inch by four (4) inches and nailed to stakes in center of the trench as shown on the plans, or grade stakes at intervals of not more than five (5) feet. The grade boards shall be given a grade of from two (2) inches to four (4) inches per 100 feet. (Code 1963, Sec. 28-21)

Sec. 5-6-63 Inspection.

If, upon any inspection the director of public health or his authorized agent shall find any violation of this division or the provisions of the permit issued under it, he shall direct the person to whom the permit was issued by written notice to make the necessary corrections within such reasonable time as shall be specified therein. (Code 1963, Sec. 28-22)

Sec. 5-6-64 Cleaning septic tanks; disposition of sludge.

(a) No person shall engage in the business of cleaning septic tanks unless and until the equipment to be used by such person in connection with the operation of such business complies with this section and has been inspected and approved in writing by the health department.

(b) The tank into which the septic tank sludge is pumped or delivered and carried shall be fully enclosed and watertight. All inlets and outlets to the tank shall be fully enclosed and provided with watertight valves. Suction and discharge hose shall be watertight and provision shall be made for carrying such hose in a manner that will prevent any leakage therefrom. All exposed surfaces shall be painted and maintained in a sanitary condition by frequent washings. The name and address of the person owning or operating the equipment shall be painted thereon in letters at least four (4) inches high.

(c) It shall be unlawful to dispose of the sludge and other material removed from septic tanks except by depositing it under the surface of the ground in such manner that it will not be exposed to the atmosphere or endanger the source of domestic water supplies, or by depositing it into a public sewerage system or sewage treatment plant, at such designated locations and under such conditions as may be promulgated by the owners or operators thereof. In any event the sludge or other material shall be carefully deposited and the surface of the ground, manholes, tanks, etc. into which the deposit is made, shall be maintained in a sanitary condition. Any covering of such surfaces with sludge or other, material shall be promptly and completely removed. (Code 1963, Sec. 28-23)

Secs. 5-6-65 through 5-6-70 reserved.

Alexandria, Virginia, Code of Ordinances >> PART II - THE CODE OF GENERAL ORDINANCES >> TITLE 5 - Transportation and Environmental Services >> CHAPTER 6 - Water and Sewer >> ARTICLE B - Sewage Disposal and Drains >> DIVISION 3 Discharges into Sewer Collection System and POTW >>

DIVISION 3 Discharges into Sewer Collection System and POTW

Editorial Note: Ord. No. 3504, § 1, adopted March 16, 1991, repealed Tit. 5, Ch. 6, Art. B, Div. 3, §§ 5-6-71—5-6-77, 5-6-80—5-6-83, 5-6-90—5-6-99, which pertained to discharges into the sewage disposal system and POTW and derived from Ord. No. 3334, § 2, adopted Oct. 15, 1988. Section 2 of said Ord. No. 3504 added new provisions designated as Tit. 5, Ch. 6, Art. B, Div. 3, §§ 5-6-71—5-6-78, 5-6-80—5-6-82, 5-6-90—5-6-104 to read as herein set out. See the Ordinance Comparative Table for a detailed analysis of inclusion of Ord. No. 3504. Subsequently, Ord. No. 3661, § 1, adopted Sept. 18, 1993, amended Div. 3, in its entirety, to read as herein set out. Subsequently, Ord. No. 4-35, § 1, adopted March 23, 1999, repealed Div. 3, in its entirety. See the Ordinance Comparative Table.

Secs. 5-6-71—5-6-100 reserved.

Secs. 5-6-71—5-6-100 reserved.

Alexandria, Virginia, Code of Ordinances >> PART II - THE CODE OF GENERAL ORDINANCES >> TITLE 5 - Transportation and Environmental Services >> CHAPTER 6 - Water and Sewer >> ARTICLE B - Sewage Disposal and Drains >> DIVISION 3.1 Discharges into POTW >>

DIVISION 3.1 Discharges into POTW

Editorial Note: Ord. No. 4035, § 2, adopted March 23, 1999, added Div. 3.1, §§ 5-6-101—5-6-223, to read as herein set out. Subsequently, Ord. No. 4501, § 1, adopted October 13, 2007, amended Div. 3.1, in its entirety, to read as herein set out. See also the Ordinance Comparative Table.

Alexandria, Virginia, Code of Ordinances >> PART II - THE CODE OF GENERAL ORDINANCES >> TITLE 5 - Transportation and Environmental Services >> CHAPTER 6 - Water and Sewer >> ARTICLE B - Sewage Disposal and Drains >> SUBDIVISION A General Provisions >>

SUBDIVISION A General Provisions

Sec. 5-6-101 Purpose and policy.

This division sets forth uniform requirements for users of the Alexandria Sanitation Authority's publicly owned treatment works ("POTW") and the sewer system which carries wastewater to the

POTW, and enables the Sanitation Authority to comply with all applicable federal and state laws, including but not limited to the Clean Water Act (33 U.S.C. § 1251 et seq.) and the general pretreatment regulations promulgated by the United States Environmental Protection Agency (40 C.F.R. Part 403). The objectives of this division are:

(1) To prevent the introduction of pollutants into the POTW that will interfere with its operation;

(2) To prevent the introduction of pollutants into the POTW that will pass through the POTW inadequately treated into receiving waters or will otherwise be incompatible with the POTW;

(3) To protect the general public and POTW personnel who may be affected by wastewater and sludge;

(4) To provide for the imposition of fees for the equitable distribution of the costs of operation, maintenance and improvement of the POTW and of other activities of the Alexandria Sanitation Authority under this division; and

(5) To enable the Alexandria Sanitation Authority to comply with its National Pollutant Discharge Elimination System permit conditions, sludge use and disposal requirements, and all other federal and state laws which apply to the operation of the POTW.

This division shall apply to all users of the POTW. This division authorizes the authority to issue wastewater discharge permits, to engage in monitoring, compliance and enforcement activities, to establish administrative review procedures, to require user reporting, and to set fees which equitably distribute the costs of its activities under this division. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-102 Definitions.

For the purposes of this division, the following words and phrases shall have the meanings given below, except in those instances when the context clearly indicates a different meaning.

(a) *Act* or *"the Act".* The Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 33 U.S.C. Section 1251 et seq.

(b) *Administrator.* The Administrator of the United States Environmental Protection Agency or those acting on his behalf.

(c) *Approval authority.* The Director of the Virginia Department of Environmental Quality.

(d) *Authority.* The City of Alexandria, Virginia, Sanitation Authority.

(e) *Authorized representative of the user.* A duly authorized representative of the individual or entity identified in paragraphs (1), (2), (3) or (4) below, if such representative is responsible for the overall operation of the facility from which the discharge originates. The authorization must be submitted to the authority in writing and must name the representative and the position he occupies. Whenever such authorization is no longer accurate, a new authorization must be submitted to the authority at least two weeks prior to submission of any reports signed by the authorized representative. An authorized representative shall be:

(1) if the user is a corporation:

(a) the president, secretary, treasurer or a vice-president of the corporation who is in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(b) the manager of one or more manufacturing, production or operation facilities provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty or making major capital investment recommendations, and initiate and direct other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; can ensure that the necessary systems are established or actions taken to gather complete and accurate

information for control mechanism requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

(2) if the user is a partnership, a general partner of the partnership;

(3) if the user is a sole proprietorship, the proprietor; or

(4) if the user is a federal, state or local governmental facility, a director or highest official appointed or designated to oversee the operation and performance of the activities of the government facility, or such person's designee.

The individuals described in subsubsections (1) through (4) above may designate another authorized representative if the authorization is in writing, the authorization specifies the individual or position responsible for the overall operation of the facility from which the discharge originates or having overall responsibility for environmental matters for the user, and the written authorization is submitted to the authority at least two weeks prior to any reports being signed by the new designee.

(f) *Best management practices* or *BMP* means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices or procedures of users to prevent or reduce the discharge of pollutants, listed in section 5-6-11, into the POTW. Such practices may include, but are not restricted to, notification plans of any accidental discharge, solvent and toxic organic management plans, operating procedures, practices to control batch discharges, sludge and waste disposals, spillage or leaks, or drainage from raw material storage, and practices for pollution prevention control.

(g) *City.* The City of Alexandria.

(h) *Control authority.* The City of Alexandria, Virginia, Sanitation Authority.

(i) *Conventional pollutants.* BOD, TSS, fecal coliform, oil and grease, and pH.

(j) *Daily maximum limit* or *daily maximum.* The maximum allowable discharge of pollutant during a calendar day. Where daily maximum limitations are expressed in units of mass, the daily discharge is the total mass discharged over the course of the day. Where daily maximum limitations are expressed in terms of concentration, the daily discharge is the arithmetic average measurement of the pollutant concentration derived from all measurements taken that day.

(k) *Director.* The director of the department of transportation and environmental services of the city.

(l) *Discharge* or *indirect discharge.* The introduction of pollutants or wastewater containing pollutants into the POTW.

(m) *Engineer.* The engineer-director of the authority or another employee of the authority who has been duly authorized to act on the engineer-director's behalf or duly delegated the engineer director's authority.

(n) *Improperly shredded garbage.* The wastes from the preparation, cooking, eating, handling, dispensing, sale or storage of food that have not been shredded to such a degree that all particles are less than a half an inch (1.27 centimeters) in any dimension and will be carried freely under the flow conditions normally prevailing in public sewers.

(o) *Instantaneous limit.* The maximum concentration of a pollutant allowed to be discharged at any time, determined from the analysis of any discrete or composited sample collected, independent of the industrial flow rate and the duration of the sampling event.

(p) *Interference.* A discharge which, alone or in conjunction with a discharge or discharges from other sources:

(1) inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, or the use or disposal of its sludge;

(2) is a cause of a violation of any requirement of the authority's NPDES permit, including an

increase in the magnitude or duration of a violation; or

(3) prevents the use or disposal of sludge at the POTW from complying with any provisions of federal, state or local law, including but not limited to section 405 of the Clean Water Act, the Solid Waste Disposal Act ("SWDA") (42 U.S.C.3251 et seq.), including title II which is more commonly referred to as the Resource Conservation and Recovery Act ("RCRA")(42 U.S.C.6901 et seq.), state regulations contained in any state sludge management plan prepared pursuant to subtitle D of the SWDA, the Clean Air Act and the Marine Protection, Research and Sanctuaries Act (33 U.S.C.1420 et seq.).

(q) *Medical waste.* Isolation waste, infectious agents, human blood and blood products, pathological wastes, sharps, body parts, contaminated bedding, surgical waste, potentially contaminated laboratory waste or dialysis waste which have been generated in the diagnosis, treatment or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals, and any other medical wastes as specified in the Virginia Medical Waste Management Regulations, 9 VAC20-120. The term does not include any household waste identified in 40 C.F.R.261.4(b)(l).

(r) *National categorical pretreatment standards* or *categorical standards.* Any regulation containing pollutant discharge limits, promulgated by the United States Environmental Protection Agency pursuant to sections 307(b) and (c) of the Clean Water Act (33 U.S.C Section 1317), which apply to a specific category of users which appear in 40 C.F.R., Chapter I, Subchapter N, Parts 405 through 471. All such standards are included in this division as if fully set forth herein.

(s) *National Pollutant Discharge Elimination System permit* or *NPDES permit.* A permit issued pursuant to Section 402 of the Clean Water Act.

(t) *New source.*

(1) Any building, structure, facility or installation from which there is or may be a discharge, the construction of which commences after the publication in the Federal Register of proposed pretreatment standards under the Clean Water Act that would be applicable to the source if such standards were thereafter promulgated, provided that:

(i) the building, structure, facility or installation is constructed at a site where no other source of pollutant discharges is located; or

(ii) the building, structure, facility or installation totally replaces the process or production equipment that causes the discharge from an existing source; or

(iii) the production or wastewater generating processes of the building, structure, facility or installation are substantially independent of an existing source at the same site.

In determining whether this "substantially independent" criterion is met, factors such as the extent to which the new facility is integrated with the existing plant and is engaged in the same general type of activity as the existing source shall be considered.

(2) Construction at a site at which an existing source of pollutant discharges is located results in a modification of the existing source, rather than a new source, if the construction does not create a new building, structure, facility or installation meeting the criteria of subsubsection (1) above, but otherwise alters, replaces or adds to existing process or production equipment.

(3) Construction of a new source has commenced if the owner or operator has:

(i) begun, or caused to begin, as part of a continuous on-site construction program, any replacement, assembly or installation of facilities or equipment, or any significant site preparation work, including excavation work or clearing or removal of existing buildings or structures;

(ii) entered into binding contractual obligations for the purchase of facilities or equipment which are intended to be used in the operation of the new source within a reasonable time; provided,

that options to purchase, contracts which may be terminated or modified without substantial loss, and contracts for feasibility, engineering or design studies shall not constitute a contractual obligation under this subsubsection.

(u) *Noncontact cooling water.* Water used solely for cooling purposes which does not come in contact with any other discharge until it is discharged into the collection system or the POTW, and which does not exceed the pretreatment standards.

(v) *Pass through.* Any discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit, including an increase in the magnitude or duration of a violation.

(w) *Permittee.* A holder of a wastewater discharge permit issued by the authority.

(x) *pH.* The logarithm of the reciprocal of the weight of hydrogen ions in grams per liter of solution.

(y) *Photographic processing facility.* A facility which processes images from silver sensitized films and papers, including, but not limited to commercial photographic and film processing facilities, in-house photographic processing facilities, mini-labs, printers, and x-ray and other medical, dental, industrial, institutional or diagnostic facilities which produce a silver rich solution.

(z) *Pollutant.* Any dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, medical wastes, chemical wastes, industrial wastes, biological materials, radioactive materials, rock, sand, municipal wastes, and agricultural wastes.

(aa) *POTW* or *publicly owned treatment works.* The wastewater treatment plant operated by the authority, along with the pump stations and sewers which deliver wastewater to the plant.

(bb) *Pretreatment.* The reduction of the amount of pollutants to a less harmful state, or the elimination of pollutant properties in wastewater, prior to or in lieu of the discharge of the pollutants into the POTW. This reduction or elimination may be obtained by physical, chemical or biological processes or other means; it may not be obtained by dilution of the concentration of the pollutants, unless allowed by an applicable pretreatment standard, or by other means which are prohibited by 40 C.F.R.403.6(d).

(cc) *Pretreatment requirements.* Any substantive or procedural requirement related to pretreatment imposed on a user, other than a pretreatment standard.

(dd) *Pretreatment standards* or *standards.* Federal, state or local standards which prohibit certain pollutants from appearing in discharges or which limit the quantity or concentration of certain pollutants which may appear in discharges, including national categorical pretreatment standards promulgated by the United States Environmental Protection Agency.

(ee) *Prohibited discharge.* Any discharge containing a pollutant which is prohibited from entering the POTW.

(ff) *Sewer connection permit.* A permit issued pursuant to section 5-6-25 of this article.

(gg) *Silver CMP.* The Code of Management Practice for Silver Dischargers, issued by the Silver Council and the Association of Metropolitan Sewage Agencies, dated September 1995, as amended from time to time, which provides recommendations on technology, equipment and management practices for controlling silver discharges from facilities that process photographic materials. (A copy of the Silver CMP shall be obtainable from the authority.)

(hh) *Silver recovery.* The process of removing silver from silver rich solutions.

(ii) *Silver rich solution.* A solution containing sufficient silver such that cost-effective silver recovery can be done either on-site or off-site. In photographic processing facilities, such solutions include, but are not limited to, fix and bleach-fix solutions, stabilizers, low replenished (low-flow) washes, and all functionally similar solutions, but do not include low silver solutions such as used developers, bleaches, stop baths, pre-bleaches, stabilizers following washes and wash

waters.

(jj) *Slug discharge.* Any discharge which, because of the concentration of pollutants or the quantity of flow, could cause a violation of a standard for prohibited discharges.

(kk) *User.* Any person or entity which is the source of a discharge.

(ll) *User, industrial.* Any person or entity which is a non-residential source of a discharge.

(mm) *User, significant industrial:*

(1) *Categorical.* Any industrial user subject to the national categorical pretreatment standards in 40 C.F.R.403.6 and 40 C.F.R. Parts 405 through 471; and

(2) *Noncategorical.* Any other industrial user that discharges an average of 25,000 or more gallons per day of process wastewater to the POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater), contributes a process waste stream which makes up five percent or more of the average dry weather hydraulic or organic capacity of the POTW's treatment capacity, or is designated a significant industrial user in accordance with 40 C.F.R. section 403.8(f)(g), on the basis that the industrial user has a reasonable potential to adversely affect the POTW's operation or to violate any national categorical pretreatment standard or requirement.

(3) The authority may determine that the industrial user subject to categorical pretreatment standards is a non-significant categorical industrial user rather than a significant industrial user on a finding that the industrial user never discharged more than 100 gallons per day (gpd) of total categorical wastewater) excluding sanitary, non-contact cooling and boiler blow-down wastewater, unless specifically included in the pretreatment standard) and the following conditions are met:

(a) The industrial user, prior to engineer's finding, has consistently complied with all applicable categorical pretreatment standards and requirements;

(b) The industrial user annually submits the certification statement required by 40 CFR 403.12(q), together with any additional information necessary to support the certification statement; and

(c) The industrial user never discharges any untreated concentrated wastewater.

(4) Upon a finding that a user meeting the criteria in (mm)(2) of this section has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the engineer may determine that the user should not be considered a significant user in accordance with procedures in 40 CFR 403.8(f)(6).

(nn) *Wastewater.* Liquid and water-carried wastes containing any pollutants whether treated or untreated, which are discharged from any source into a POTW. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-103 Administration.

Except as otherwise expressly provided in this division, the director is authorized to administer and enforce the provisions of this division, and is further authorized to delegate all or part of his authority to the engineer, who is authorized to redelegate his authority to another employee of the authority who has been authorized to act on the engineer's behalf. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-104 Promulgation of procedures.

The authority is hereby authorized to establish rules and promulgate procedures that it deems necessary to implement the provisions of this division, including but not limited to the development of a compliance schedule for industrial users, the installation of pretreatment technology required to meet applicable pretreatment standards and requirements and to meet the requirements imposed by accidental spill and slug control plans or best management practices. (Ord. No. 4501, 10/13/07, Sec.

1)

Secs. 5-6-105 through 5-6-110. reserved.

Alexandria, Virginia, Code of Ordinances >> PART II - THE CODE OF GENERAL ORDINANCES >> TITLE 5 - Transportation and Environmental Services >> CHAPTER 6 - Water and Sewer >> ARTICLE B - Sewage Disposal and Drains >> SUBDIVISION B General User Requirements >>

SUBDIVISION B General User Requirements

Sec. 5-6-111 Prohibited discharges.

(a) No user shall discharge or cause to be discharged into or the POTW any of the following substances, materials, waters or wastes:

(1) any gasoline, benzene, naphtha, fuel oil or other flammable or explosive liquid, solid or gas, which creates a fire or explosion hazard in the collection system or POTW, including but not limited to waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit (60 degrees Celsius) using methods specified in 40 C.F.R. 261.21;

(2) any petroleum oil, non biodegradable cutting oil or products of mineral oil origin in amounts that will cause interference or pass through;

(3) any water or waste containing toxic or poisonous solids, liquids or gases in sufficient quantity, either singly or by interaction with other wastes, to injure or interfere with any sewage treatment process, to constitute a hazard to humans or animals, to create a public nuisance or to create any hazard in the receiving waters of the collection system or the POTW, including but not limited to cyanides, chromium, copper, zinc, silver, lead, nickel, arsenic, mercury, cadmium and phenols;

(4) any water or waste having a pH of less than 6.0 or more than 11.0 standard units or having any corrosive property capable of causing damage or hazard to structures, equipment or personnel of the city, the collection system or the POTW;

(5) any solid or viscous substance capable of causing obstruction to the flow in the collection system or the POTW or interference with the proper operation of the collection system or the POTW, including but not limited to improperly shredded garbage, ashes, cinders, sand, mud, straw, wood or paunch manure;

(6) any liquid or vapor having a temperature higher than 140 degrees Fahrenheit (60 degrees Celsius) or, at the point of intake to the POTW, having a temperature higher than 104 degrees Fahrenheit (40 degrees Celsius);

(7) any waters or wastes containing fats, wax, grease or oils of animal or vegetable origin in concentrations greater than 100 mg/l as an instantaneous maximum or containing substances which may solidify or become viscous at temperatures between 32 degrees Fahrenheit and 140 degrees Fahrenheit;

(8) any radioactive substance of such half-life or concentration as may exceed safe limits as established by federal or state regulations;

(9) any odor- or color-producing substance exceeding concentrations which may be established by the authority for the purpose of meeting NPDES permit conditions;

(10) any quantity of flow or concentration, or both, which constitutes a slug discharge, and any pollutant, including any conventional pollutant, released in a discharge at a flow rate or pollutant concentration, or both, which will cause interference with the POTW;

(11) any substance from a septic tank, a truck or a portable vessel or device without prior written permission from the authority;

(12) used motor oil in any amount;

(13) any product containing used or otherwise contaminated antifreeze (ethylene glycol);

(14) any medical waste, except as specifically authorized by the engineer in a wastewater discharge permit;

(15) any hazardous waste, as defined in the Resource Conservation and Recovery Act, which is not covered by the domestic sewage exemption contained in 40 C.F.R. 261.4(a)(1)(ii);

(16) any substance, material, water or waste which the engineer determines to be or to contain a pollutant which will pass through or cause interference with the operation or performance of the POTW or will contaminate the resulting sludge; and

(17) any silver rich solutions from a photographic processing facility, unless such silver rich solution is managed by the photographic processing facility in accordance with the Silver CMP, prior to its introduction into the POTW.

(b) No user shall make or cause to be made any of the following discharges:

(1) any discharge which causes interference;

(2) any discharge which constitutes a pass through;

(3) any discharge without a permit required by this division;

(4) any discharge which violates national categorical pretreatment standards;

(5) any discharge which constitutes or results in a violation of any permit term or condition;

(6) any discharge which violates local limit pretreatment standards established by the authority under section 5-6-113 and in accordance with 40 C.F.R. 403.5(c)(1); and

(7) any discharge of groundwater, stormwater, surface water, artesian well water, roof runoff, subsurface drainage, swimming pool drainage, condensate, deionized water, noncontact cooling water and unpolluted wastewater into the collection system or the POTW without written approval of the authority, except for those circumstances covered by sections 5-6-32 through 5-6-39

(c) Dilution of waste streams to meet the requirements of this section is prohibited.

(d) Substances, materials, waters or wastes prohibited by this section shall not be processed or stored in such a manner that they could be discharged into the collection system or the POTW. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-112 National categorical pretreatment standards.

(a) Where a categorical pretreatment standard is expressed only in terms of the mass or the concentration of a pollutant in wastewater, the engineer may impose equivalent concentration or mass limits in accordance with 40 C.F.R. 403.6(c).

(b) Where wastewater subject to a categorical pretreatment standard is mixed with wastewater not regulated by the same standard, the engineer shall impose an alternate limit using the combined waste stream formula in 40 C.F.R. 403.6(e).

(c) A user may obtain from the engineer a variance from a categorical pretreatment standard if the user can prove, pursuant to the provisions in 40 C.F.R. 403.13, that the factors relating to its discharge are fundamentally different from the factors considered by the United States Environmental Protection Agency when developing the categorical standard.

(d) A user may obtain from the engineer a net gross adjustment to a categorical pretreatment standard in accordance with 40 C.F.R. 403.15. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-113 Local limits.

(a) The authority may establish, by regulation, maximum mass or concentration discharge limits for any pollutant that threatens the public health, presents an endangerment to the environment, interferes with the operation of the POTW or causes the authority to be in violation of its NPDES permit or any state permit issued to regulate the treatment of wastewater or the treatment or application of sludge. Such limits shall be determined at the point where the user's wastewater is discharged to the collection system, except where the engineer determines that a limit may be applied at the end of process. All concentrations for metallic substances are for total metals unless otherwise indicated. Compliance with all parameters may be determined from a single grab sample. In addition, the authority shall impose the validly adopted local discharge limits of any political subdivision for those users whose discharges are tributary to a publicly owned treatment works of the subdivision, where the limits are applicable in the city pursuant to an agreement between the authority and the political subdivision.

(b) The authority may establish, by regulation or in discharge permits, standards or requirements for discharges which are necessary to ensure user compliance with section 5-6-111; provided, that no such standard or requirement may be less stringent than applicable federal standards and requirements. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-114 Dilution.

No user shall increase the use of process water, or in any way dilute a discharge, in order to achieve compliance with a discharge limit, unless expressly authorized by an applicable pretreatment standard or requirement. The engineer may impose discharge limits that are based on the mass of pollutants upon users which are using dilution to meet applicable pretreatment standards or requirements, or when the imposition of such limits is otherwise appropriate. (Ord. No. 4501, 10/13/07, Sec. 1)

Secs. 5-6-115 through 5-6-120. reserved.

SUBDIVISION C Pretreatment of Wastewater

Sec. 5-6-121 Pretreatment facilities.

Users shall provide wastewater treatment as is necessary to comply with this division, and shall comply with all categorical pretreatment standards and local limits and with the prohibitions set out in section 5-6-111, within the time limitations specified by federal, state or local regulation or by the authority, whichever is more stringent. Any facilities necessary for compliance shall be provided, operated and maintained at the user's expense. Detailed plans describing such facilities and operating procedures shall be submitted to the authority for review, and must be approved by the authority before such facilities are constructed. The review of such plans and operating procedures shall in no way relieve the user from the responsibility of modifying any such facility to produce a discharge acceptable to the authority under the provisions of this division. The engineer may require a user to have a certified operator on staff to ensure proper operation and maintenance of the pretreatment facility. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-122 Additional pretreatment measures.

(a) Whenever deemed necessary, the engineer may require users to restrict their discharge during peak flow periods, to discharge certain wastewater only into specific sewers, to relocate and/or consolidate points of discharge, to separate sewage waste streams from industrial waste streams, and to comply with such other conditions as are necessary to protect the POTW. In addition, the engineer shall determine the user's compliance with requirements of this division.

(b) The engineer may require any person discharging into the POTW to install and maintain on its property and at its expense, a suitable storage and flow-control facility to ensure equalization of flow. A wastewater discharge permit may be issued solely for flow equalization. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-123 Grease, fat and oils removal systems.

(a) Grease, fat and oils removal systems shall be installed where the discharge of grease laden waste from food preparation or food processing, or from any other commercial establishment, into the POTW will cause an impediment or obstruction. A grease, fats and oils removal system, to be approved by the authority, shall consist of one or a combination of the following:

(1) passive technology which includes an approved in-ground grease trap and an approved grease interceptor; or

(2) active technology which includes a grease recovery device that has been approved by the authority and a solids transfer/grease recovery device that has been approved by the authority.

(b) Waste that does not contain fat, grease or oils and that otherwise does not require treatment shall not be discharged into a grease, fats and oils removal system. Wastewater from dishwasher machines and wastewater that exceeds 130 degrees Fahrenheit shall not be introduced into a grease removal system. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-124 Passive system requirements.

(a) *Grease traps.* The size, type and location of each grease trap shall be approved by an official designated by the authority. Grease traps of pre-cast or poured in-place concrete shall be constructed of sound durable material, not be subjected to excessive corrosion or decay, and shall be water and gas tight.

(b) *Grease interceptor.* A grease interceptor shall be sized and engineered based upon the anticipated load and/or conditions of actual use. A grease interceptor shall receive grease laden waste discharge from major point sources. A floor drain shall not be considered a major point source.

(c) *Grease interceptor capacity.* A grease interceptor shall have the grease retention capacity for the flow rates indicated in Table 1 set forth below in subsection (d).

(d) *Rate of flow controls.* A grease interceptor shall be equipped to control the rate of flow as set forth in Table 1.

TABLE 1

Grease Interceptor Capacity, Sizing and Rating

Sizing Symbol	4	7	10	15	20	25	30	35	50	75
Flow Rate										
GPM	4	7	10	15	20	25	30	35	50	75
L/S	0.25	0.44	0.63	0.95	1.26	1.58	1.89	2.20	3.16	4.73
Retention Capacity										
Pound	8	14	20	30	40	50	60	70	100	150
Kilograms	3.6	6.4	9.1	13.6	18.2	22.7	27.3	31.8	45.4	68.2

(Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-125 Active system requirements.

(a) *Grease recovery devices.* Grease recovery devices shall be permitted in lieu of grease interceptors or grease traps in accordance with the following requirements:

(1) *Location.* Grease recovery devices shall receive all grease laden waste discharge from the major point sources. A floor drain shall not be considered a major point source.

(2) *Sizing.* Grease recovery devices shall be sized based upon the anticipated load and/or conditions of actual use.

(3) *Capacity.* Grease recovery devices shall have a minimum retention capacity as indicated in Table 1 set forth in 5-6-124(d) for the flow-rates indicated. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-126 High risk facilities.

Any high risk facility that has had violations of a wastewater discharge permit, of federal, state or local laws, or of requirements of the authority shall incorporate a grease recovery device in combination with and preceding the grease trap. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-127 Alternative methods.

(a) *Technology and methods,* other than those set forth in sections 5-6-123 through 5-6-125, may be permitted by the authority; provided, that the technology or method meets the minimum performance standards established by the authority.

(b) *Biological or chemical treatment agents.* Biological or chemical treatment agents for the separation, emulsification and/or removal of grease, fats and oils are prohibited, unless a written authorization has been obtained from the authority. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-128 Discharges from photographic processing facilities

(a) It shall be unlawful to discharge or otherwise induce silver rich solutions from a photographic processing facility into the POTW, unless such silver rich solution is managed by the photographic processing facility in accordance with the silver CMP, prior to its introduction into the collection system or the POTW.

(b) The silver CMP is a fully enforceable element of the authority's industrial pretreatment program and constitutes a local limitation for silver that is discharged from photographic processing facilities.

(c) Within 90 days after the enactment of this division for existing photographic processing facilities, or within 90 days before the date upon which a new photographic processing facility commences the discharge of silver rich solution into the POTW, the photographic processing facility shall notify the authority that it discharges or intends to discharge silver rich solutions and shall confirm that these discharges shall thereafter be managed in accordance with the silver CMP. No photographic processing facility shall thereafter discharge waste, solutions or other substances that are not in accordance with the silver CMP.

(d) A photographic processing facility which has implemented the silver CMP for the control of silver discharges to the POTW shall submit an annual compliance certification to the authority by November 30 of each year. This compliance certification shall be completed by an authorized representative of the photographic processing facility and shall contain the following statement:

On behalf of [name and address of photo-graphic processing facility], I certify that, except as specifically noted below, this facility, since the date of its last certification, has implemented and maintained the silver CMP for the control of silver discharges to the POTW, and that, as of the date of this certification, this facility is in compliance with the requirements of the silver CMP. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-129 Best management practices.

Where reasonably appropriate and required by the engineer, an industrial user shall provide and implement best management practices. The authority, acting through the engineer, shall have the authority and responsibility to enter upon the property of any industrial user, at any reasonable time, for the purpose of investigating whether the user is following the required best management practices. Best management practices may be part of the industrial user permit issued to industrial users. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-130 Accidental discharge and slug control plan.

(a) The Engineer shall evaluate whether each industrial user needs an accidental discharge and slug control plan. Where reasonably appropriate and required by the engineer, an industrial user shall provide protection from spills, leaks and/or slug discharges of prohibited materials

and other wastes regulated under this division. For the purpose of this section, a slug discharge is any discharge of a nonroutine, episodic nature, including but not limited to an accidental spill or a noncustomary batch discharge. If the authority determines that an industrial use shall implement an accidental discharge and slug control plan is needed, the plan shall contain, at a minimum, the following elements:

(1) a description of the user's discharge practices, including nonroutine batch discharges;

(2) a description of stored chemicals;

(3) procedures for immediately notifying the authority of a slug discharge, including any discharge that would be a violation of section 5-6-111, with procedures for follow-up written notification within five days of the discharge;

(4) if necessary, procedures to prevent adverse impacts from accidental spills, including inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site run-off, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents), and measures and equipment for emergency response.

(b) Facilities to prevent such spills, leaks or slug discharges shall be provided and maintained at the industrial user's expense. Detailed plans showing such facilities and the operating procedures to provide this protection shall be submitted to the engineer for review, and shall be approved by the engineer prior to facility construction. The authority, acting through the engineer, shall have the authority and responsibility to enter upon the property of an industrial user, at any reasonable time, for the purpose of investigating or testing any facility to assure that an accidental spill and slug control plan is at all times fully effective. Accidental spill and slug control plan requirements may be part of the industrial user permit issued to industrial users.

(c) Immediately following a leak or spill, the industrial user shall notify the engineer or other authority personnel by telephone of the fact of the leak or spill, the extent of the leak or spill, and the known causes. Within five days following the leak or spill, the user shall submit to the engineer a detailed written report describing the cause of the leak or spill and the measures to be taken by the user to prevent similar future occurrences. Such notification shall not relieve the user of any expense, loss, damage or other liability which may be incurred as a result of damage to the POTW or any other property or of injury to persons caused by the leak or spill. Any such notification shall not relieve the user of any liabilities, fines or other applicable penalties which may be imposed under this code or other applicable laws. (Ord. No. 4501, 10/13/07, Sec. 1)

Secs. 5-6-131 through 5-6-140 reserved.

SUBDIVISION D Wastewater Discharge Permits

Sec. 5-6-141 Wastewater discharge permits required.

(a) No significant industrial user shall discharge wastewater into the POTW without first obtaining a wastewater discharge permit from the authority, except that a significant industrial user that has filed a timely application pursuant to section 5-6-142 may continue to discharge for the time period specified therein.

(b) The engineer may require other users to obtain wastewater discharge permits as may be necessary to carry out the purposes of this division.

(c) Any violation of the terms or conditions of a wastewater discharge permit shall be deemed a violation of this division.

(d) Receipt of a wastewater discharge permit does not relieve a permittee of its obligation to comply with all federal and state pretreatment standards and requirements and with all other requirements of federal, state and local law. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-142 Wastewater discharge permit required for new connections.

Any user required to obtain a wastewater discharge permit which proposes to begin or recommence discharging into the POTW shall obtain such permit prior to beginning or recommencing such discharge. An application for a wastewater discharge permit shall be filed at least 90 days prior to the date upon which any discharge will begin or recommence. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-143 Wastewater discharge permits application content.

(a) All users required to obtain a wastewater discharge permit shall submit a permit application. The engineer may require all users to submit, as part of an application, the following information:

(1) all information required by section 5-6-161 of this division;

(2) a description of the activities, facilities and plant processes on the premises of the user, including a list of all raw materials and chemicals stored at the facility which are, or could accidentally or intentionally be, discharged to the POTW;

(3) the number and type of employees, hours of operation, and proposed or actual hours of operation;

(4) each product produced by type, amount, process or processes, and rate of production;

(5) the type and amount of raw materials processed (average and maximum per day);

(6) site plans, floor plans, mechanical and plumbing plans, and details to show all sewers, floor drains and appurtenances by size, location and elevation, and all points of discharge;

(7) time and duration of discharge; and

(8) any other information as may be deemed necessary by the engineer to evaluate the application.

(b)

Incomplete or inaccurate applications will not be processed and will be returned to the user. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-144 Issuance of wastewater discharge permit.

The engineer will evaluate the application and any data and other information furnished by the user, and may require additional information. Within 60 days after receipt of a complete wastewater discharge permit application, the engineer will determine whether to issue a wastewater discharge permit. The engineer may deny any application for a wastewater discharge permit if he determines that the discharge will not comply with the requirements set forth in this division or in federal, state and local law. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-145 Wastewater discharge permit content.

A wastewater discharge permit shall contain a provision that expressly subjects the permit to all provisions of this division and all other applicable federal, state and local laws, regulations and conditions, and any user charges and fees established by the authority and/or the city. A permit shall also contain, at a minimum, the following:

(1) the name and address of the owner or operator of the user (the permittee), and the issuance, effective and expiration dates of the permit;

(2) the most stringent applicable discharge limits, including those limits established by this division, limits contained in applicable national categorical pretreatment standards, and limits established by another political subdivision pursuant to agreements between the authority and the subdivision;

(3) the local pretreatment limits as set forth in section 5-6-113

(4) the monitoring requirements imposed on all permittees, including but not limited to the pollutants to be monitored, the locations for taking samples, the methods of taking and analyzing samples, and the frequency of taking samples;

(5) the reporting requirements imposed on the permittee, including but not limited to the type and contents of each report and the date of submission for each report;

(6) a requirement that, in the event sampling indicates a violation of any permit condition, the permittee shall notify the authority of the violation within 24 hours of first becoming aware of it, and shall repeat the sampling and analysis and submit the results of the repeat analysis to the authority within 30 days of first becoming aware of the violation; provided, that the permittee shall not be required to resample if the authority or the permittee performs sampling at the facility covered by the permit at a frequency of at least once per month, or the authority or the permittee performs sampling at the facility between the time when the permittee performs its initial sampling and the time when the permittee receives the results of this sampling;

(7) standard conditions that are contained in all wastewater discharge permits;

(8) specific conditions that apply to the particular permittee, including but not limited to requirements to construct, maintain and operate certain pretreatment facilities, requirements to develop and implement compliance schedules, requirements to develop and implement best management practices, and requirements to develop and implement accidental spill and slug control plans;

(9) other conditions as may be reasonably necessary to regulate the permittee; and

(10) the circumstances in which the permit may be examined and modified by the authority. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-146 Wastewater discharge permit duration.

A wastewater discharge permit shall be issued for a specified time period, not to exceed five years from the effective date of the permit. A wastewater discharge permit may be issued for a period less than five years at the discretion of the engineer. Each wastewater discharge permit shall indicate the specific date upon which it will expire. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-147 Wastewater discharge permit modifications.

(a) Upon the promulgation of a national categorical pretreatment standard, the authority shall notify all users holding a wastewater discharge permit which may be subject to the new standard. If the new standard is more stringent than corresponding requirements in the permits of such users, the authority shall modify the permits to require compliance with the new standard within the time frame prescribed by the standard. Where a user which becomes subject to a new pretreatment standard does not hold a wastewater discharge permit, the user shall file a completed permit application form with the authority within 90 days after the promulgation of the new standard, unless a federal or state statute or regulation requires that the application be filed within a shorter period of time.

(b) A wastewater discharge permit is subject to modification by the engineer as limitations or requirements identified in this division are revised or upon just cause. An industrial user shall be informed of any permit modification at least 30 days prior to the effective date of the modification, unless federal or state law or regulation requires an earlier effective date. Any modification in a permit shall include a reasonable time schedule for compliance. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-148 Wastewater discharge permit transfer.

A wastewater discharge permit shall be issued to a specific user, as the permittee, for a specific facility and a specific operation. A permit shall not be assigned, transferred or sold by a permittee to a new owner or operator of the permittee's facility or to another user, unless the assignment, transfer or sale has been approved by the engineer. A permit shall, in the case of a new or changed user operation, automatically expire unless the new or changed operation has been approved by the engineer. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-149 Wastewater discharge permit revocation.

If the director or the engineer determines that a user's violation of any discharge limitations or standards or other requirements imposed on it by this division, including a permit issued pursuant to this division, threatens the public health, presents an endangerment to the environment, interferes with the operation of the POTW or causes the authority to be in violation of its NPDES permit or any state permit issued to regulate the treatment of wastewater or the treatment or application of sludge, the authority may suspend wastewater treatment service, including collection and treatment services, to the user. In addition, the city and the authority may revoke any permit issued under this article when the city or the authority determines that the user's continued discharge into the POTW will be in violation of any federal, state or local law or regulation, or any requirement or procedure issued pursuant to any such law. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-150 Permit reissuance.

A wastewater discharge permittee may apply for the reissuance of a wastewater discharge permit at least 90 days prior to the expiration of the existing permit. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-151 Regulation of waste received from other political subdivisions.

No user shall discharge into the POTW any wastewater containing pollutant levels above the local limit pretreatment standards set by the authority in accordance with 40 C.F.R. 403.5(c)(1). The authority shall require compliance with validly adopted local limits of other political subdivisions for users whose discharges are tributary to the POTW of such political subdivisions and applicable pursuant to agreements between the authority and the political subdivision. The authority may impose maximum mass or concentration discharge limits in accordance with section 5-6-113. (Ord. No. 4501, 10/13/07, Sec. 1)

Secs. 5-6-152 through 5-6-160 reserved.

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SUBDIVISION E Reporting Requirements

Sec. 5-6-161 Baseline monitoring reports.

Within 180 days after the effective date of a new or revised categorical pretreatment standard, or 180 days after a final administrative decision regarding a category determination submission under 40 C.F.R. 403.6(a)(4), whichever is later, any existing industrial user subject to the standard or determination which is currently discharging to or scheduled to discharge to or the POTW shall submit to the authority a report which contains the information set forth in subsections (1) through (7) below. At least 90 days prior to discharging into the POTW, any new industrial user, and any user that becomes a categorical industrial user by virtue of the promulgation of the new or revised categorical pretreatment standard, shall submit to the authority a report which contains the information described in subsections (1) through (7) below; provided, that new users shall give estimates of the information requested in subsections (4) and (5). New users shall also be required to

include in this report information on the method of pretreatment that the user intends to use to meet the new or revised pretreatment standard.

(1) *Identifying information.* The industrial user shall submit the name and address of the facility, including the name of the operator and owners.

(2) *Permits.* The industrial user shall submit a list of any environmental control permits held by or for the facility.

(3) *Description of operations.* The industrial user shall submit a brief description of the nature, average rate of production, and the standard industrial classification of each operation carried out by the user. This description should include a schematic process diagram which indicates points of discharge from the regulated processes to the POTW.

(4) *Flow measurement.* The industrial user shall submit information showing the measured average daily and maximum daily flow, in gallons per day, to the POTW from each of its regulated process streams and from all other streams as necessary to allow use of the combined waste stream formula of 40 C.F.R. 403.6(e). The authority may allow for verifiable estimates of these flows where considerations justified by cost or feasibility.

(5) *Measurement of pollutants.*

(i) The industrial user shall identify the pretreatment standards applicable to each of its regulated processes.

(ii) The industrial user shall conduct, and submit the results of, sampling and analyses that identify the nature and concentration, or mass where required by an applicable pretreatment standard or by the authority, of the regulated pollutants that are in the discharge from each of its regulated processes. Both daily maximum concentrations and applicable average concentrations, or mass where required, shall be reported for each regulated pollutant. All samples shall be representative of daily operations. All sampling and analyses shall be performed in accordance with the techniques prescribed in 40 C.F.R. Part 136 and any amendments thereto; provided, that, if 40 C.F.R. Part 136 does not contain sampling or analytical techniques for the pollutants in question, or where the administrator determines that the Part 136 sampling and analytical techniques are inappropriate for the pollutants in question, sampling and analytical procedures suggested by the authority or other parties and approved by the administrator may be used.

(iii) In conducting the sampling required by this subsection the industrial user shall take a minimum of one representative sample to compile the data necessary to comply with the requirements of this subsection.

(iv) In conducting the sampling required by this subsection, samples shall be taken immediately downstream from pretreatment facilities associated with the industrial user, if any, or immediately downstream from the user's regulated processes if no pretreatment facility exists. If non-regulated wastewater is mixed with the user's regulated wastewater prior to treatment, the user shall measure the flows and concentrations necessary to allow use of the combined waste stream formula of 40 C.F.R. 403.6(e) in order to evaluate compliance with each applicable pretreatment standard. Where an alternate concentration or mass limit has been calculated in accordance with 40 C.F.R. 403.6(e), this alternate limit, along with supporting data, shall be submitted to the authority.

(v) In its baseline report, the industrial user shall state the time, date and exact place of the sampling it has conducted pursuant to this subsection and the methods it used to analyze the samples, and shall certify that such sampling and analysis is representative of normal work cycles and expected pollutant discharges to the collection system and the POTW.

(vi) The authority may allow the submission of a baseline report which provides a measurement of pollutants by utilizing only historical data, as long as the authority concludes that the data

provide sufficient information for it to determine the need for industrial pretreatment measures.

(6) *Certification.* The industrial user shall submit a statement, executed by an authorized representative of the user, as defined in section 5-6-172 and certified by a qualified professional as required by 40 C.F.R. 403.12(b)(6), that it is meeting all applicable pretreatment standards and requirements on a consistent basis or, if not, that identifies the additional operation and maintenance measures and/or the additional pretreatment measures that are required in order for it to meet the standards and requirements.

(7) *Compliance schedule.* If additional operation and maintenance measures and/or additional pretreatment measures are required in order for an industrial user to meet any pretreatment standard, the user shall describe the shortest schedule by which it will provide and implement such additional measures. The completion date shown on such schedule shall not be later than the compliance date established for the applicable pretreatment standard.

(8) *Modifications of pretreatment standards.*

(i) If, at the time an industrial user's baseline report is submitted, the user's categorical pretreatment standard has been modified by a removal allowance pursuant to 40 C.F.R. 403.7, by the combined waste stream formula pursuant to 40 C.F.R. 403.6(e), or by a fundamental different factors variance pursuant to 40 C.F.R. 403.13, the information required by subsections (6) and (7) shall pertain to the modified limits.

(ii) If, subsequent to the submission of an industrial user's baseline report, the user's categorical pretreatment standard is modified by a removal allowance pursuant to 40 C.F.R. 403.7, by the combined waste stream formula pursuant to 40 C.F.R. 403.6(e), or by a fundamentally different factors variance pursuant to 40 C.F.R. 403.13, the user shall submit to the authority all amendments to the information required by subsections (6) and (7) within 60 days after the modified limit is approved.

(9) *Compliance schedule for meeting categorical pretreatment standards.* The following conditions shall apply to the schedule required by this section.

(i) The schedule shall contain increments of progress in the form reported by the dates for the commencement and completion of major events leading to the construction and operation of additional operation and maintenance measures and/or additional pretreatment measures required for the industrial user to meet applicable pretreatment standards (e.g., hiring an engineer, completing preliminary plans, completing final plans, executing contract for major components, commencing construction, completing construction); provided, that in no event, shall an increment referred to in this subsection exceed nine months

(ii) The industrial user shall commit that not later than 14 days following each date set forth in the schedule and the final date for compliance, it will submit a progress report to the authority which, at a minimum, states whether it has complied with the increment of progress to be met on such date and, if not, states the date on which it expects to comply with the increment of progress, the reasons for delay, and the steps being taken to adhere in the future to the compliance schedule; provided, that in no event shall more than nine months elapse between the submission of those reports to the authority. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-162 Report on compliance with categorical pretreatment standard deadline.

Within 90 days following the date for final compliance with an applicable categorical pretreatment standard or, in the case of a new source, following commencement of the introduction of wastewater into the POTW, any industrial user subject to the pretreatment standard and its requirements shall submit to the authority a report containing the information described in section 5-6-161(4) through (6) of this section. For industrial users subject to equivalent mass or concentration limits established by the authority in accordance with the procedures in 40 C.F.R. 403.6(c), this report

shall contain a reasonable measure of the user's long term production rate. For all other industrial users subject to categorical pretreatment standards expressed in terms of allowable pollutant discharge per unit of production, or other measure of operation, this report shall include the user's actual production during the appropriate sampling period. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-163 Periodic compliance reports.

(a) All industrial users subject to pretreatment standard, after the compliance date of the standard or, in the case of a new source, after commencement of its discharge into the POTW, submit not less than two times per year, unless required more frequently in the pretreatment standard or by the authority or the approval authority, a report stating the nature and concentration in the user's effluent of the pollutants which are limited by each pretreatment standard applicable to the user. This report shall also include a record of measured or estimated average and maximum daily flows during the reporting period for the discharge reported in section 5-6-161(4), except that the authority may require a more detailed report of the flows. At the authority's discretion and in consideration of such factors as local high or low flow rates, holidays, budget cycles and similar factors, the authority may agree to alter the months during which the reports required by this subsection shall be submitted. In cases where the Pretreatment Standard required compliance with a Best Management Practice (BMP) or pollution prevention alternative, the User must submit documentation required by the engineer or the pretreatment standard necessary to determine the compliance status of the user.

(b) Where the authority has imposed mass limitations on industrial users, as provided for by 40 C.F.R. 403.6(d), the report required by subsection (a) shall indicate the mass of pollutants regulated by the applicable pretreatment standards in the discharge from the industrial user.

(c) For industrial users subject to equivalent mass or concentration limits established by the authority in accordance with the procedures in 40 C.F.R. 403.6(c), the report required by subsection (a) shall contain a reasonable measure of the user's long-term production rate. For all other industrial users subject to categorical pretreatment standards expressed only in terms of allowable pollutant discharge per unit of production, or other measure of operation, the report required by subsection (a) shall include the user's actual average production rate for the reporting period.

(d) The user shall report all monitoring results collected at the prescribed monitoring point as specified in the wastewater permit. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-164 Monitoring and analysis to demonstrate continued compliance.

(a) The reports required by sections 5-6-161 through 5-6-163 shall contain the results of the sampling and analysis of the discharge of the industrial user, including the flow and the nature and concentration, or production and mass where requested by the authority, of the pollutants contained in the discharge which are limited by an applicable pretreatment standard. This sampling and analysis may be performed by the authority in lieu of the user. Where the authority performs the required sampling and analysis, the user will not be required to submit the compliance certification required under 40 C.F.R. 403.12(b)(6) and 40 C.F.R. 403.12(d). In addition, where the authority itself collects the information required for a report, including flow data, the user shall not be required to submit the report.

(b) If sampling performed by an industrial user indicates a violation of any permit condition, the user shall notify the authority within 24 hours of becoming aware of the violation. The user shall also repeat the sampling and analysis, and shall submit the results of the repeat analysis to the authority within 30 days after becoming aware of the violation.

(c) The reports required by section 5-6-163 shall be based upon data obtained through

appropriate sampling and analysis performed during the period covered by the report, and the data shall be representative of conditions occurring during the reporting period. The authority shall require monitoring as frequently as necessary to assess and assure compliance by industrial users with applicable pretreatment standards and requirements.

(d) All analyses conducted under this section shall be performed in accordance with the applicable procedures set forth in section 5-6-161. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-165 Notice of potential problems, including slug loading.

(a) In the case of any discharge, including but not limited to accidental discharges, discharges of a nonroutine, episodic nature, noncustomary batch discharges or slug loads, that may cause potential problems for the POTW, the user shall immediately telephone and notify the authority of the discharge. This notification shall include the location of the discharge, the type of waste, the concentration and volume, if known, of the waste, and the corrective actions taken by the user.

(b) Within five days following such discharge, the user shall submit a detailed written report describing the causes of the discharge and the measures to be taken by the user to prevent similar future occurrences. The authority may waive this requirement. Such notification shall not relieve the user of any expense, loss or damage (including damage to property and injury to persons); nor shall such notification relieve the user of any fines, penalties or other liabilities which may be imposed pursuant to this code.

(c) A notice shall be permanently posted on the user's bulletin board or other prominent place advising employees who to call in the event of a discharge described in subsection (a). Employers shall ensure that all employees who may cause such a discharge to occur are advised of the emergency notification procedure.

(d) Significant industrial users are required to notify the authority immediately of any changes at its facility affecting potential for a slug discharge. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-166 Reports of changed discharge.

(a) Each user must notify the authority, in writing, of any planned significant changes to the user's operations or system which might alter the nature, quality or volume of its wastewater, at least 30 days prior to the change.

(b) The engineer may require the user to submit such information as may be deemed necessary to evaluate the changed condition, including the submission of a wastewater discharge permit application under section 5-6-141

(c) The engineer may issue a wastewater discharge permit under section 5-6-141 et seq. or modify an existing wastewater discharge permit in response to changed conditions or anticipated changed conditions.

(d) For purposes of this section, significant changes include, but are not limited to, flow increases of 20 percent or greater, and the discharge of any previously unreported pollutants. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-167 Reports from unpermitted users.

All users not required to obtain a wastewater discharge permit shall provide reports to the engineer as required by the engineer. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-168 Notice of violation; repeat sampling and reporting.

In the event sampling indicates a violation of any permit condition, the permittee shall notify the authority of the violation within 24 hours of first becoming aware of it, and shall repeat the sampling and analysis and submit the results of the repeat analysis to the authority within 30 days of first becoming aware of the violation; provided, that the permittee shall not be required to resample if the authority or the permittee performs sampling at the facility covered by the permit at a frequency of at least once per month, or the authority or the permittee performs sampling at the facility between the time when the permittee performs its initial sampling and the time when the permittee receives the results of this sampling. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-169 Notification of the discharge of hazardous waste.

(a) Any user who discharges hazardous waste shall notify the authority, the Environmental Protection Agency Regional Waste Management Division Director, and all Virginia Hazardous Waste Authorities, in writing, of any discharge into the collection system or the POTW of a substance which, if otherwise disposed of, would be a hazardous waste under 40 C.F.R. Part 261. Such notification must include the name of the hazardous waste as set forth in 40 C.F.R. Part 261, the Environmental Protection Agency hazardous waste number, and the type of discharge (continuous, batch or other).

(b) If the user discharges more than 100 kilograms of such waste per calendar month to the collection system or the POTW, the notification shall contain, to the extent such information is known and readily available to the user, an identification of hazardous constituents in the waste stream discharged during that calendar month, and an estimate of the mass of constituents in the waste stream expected to be discharged during the following 12 months. All notification must take place no later than 180 days after the discharge commences. Any notification under this subsection must be submitted once for each hazardous waste discharged. However, notifications of changed discharges must be submitted under section 5-6-166. The notification requirement in this section does not apply to pollutants already reported by users subject to categorical pretreatment standards under the self-monitoring requirements of sections 5-6-161 through 5-6-163

(c) Dischargers are exempt from the requirements of subsection (a) during a calendar month in which they discharge no more than 15 kilograms of hazardous wastes, unless the wastes are acute hazardous wastes as specified in 40 C.F.R. 261.3(d) and 261.33(e). Discharge of more than 15 kilograms of non-acute wastes, as specified in 40 C.F.R. 261.30(d) and 261.33(e), requires a one-time notification. Subsequent months during which the user discharges more than 15 kilograms of the same non-acute wastes do not require additional notification.

(d) In the event that new regulations are promulgated under Section 3001 of RCRA identifying additional characteristics of hazardous waste or listing any additional substance as a hazardous waste, the user shall notify the engineer, the EPA Regional Waste Management Waste Division Director and the Virginia Hazardous Waste Authorities of the discharge of such substance within 90 days of the effective date of the regulations.

(e) In the case of any notification made under this section, the user shall certify that it has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it has determined to be economically practical.

(f) This section does not create a right to discharge any substance not otherwise permitted to be discharged under a permit issued under this division or pursuant to applicable federal, state or local law. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-170 Analytical requirements.

All pollutant analyses, including sampling techniques, to be submitted as part of a wastewater

discharge permit application or report shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto, unless otherwise specified in an applicable categorical pretreatment standard. If 40 CFR Part 136 does not contain sampling or analytical techniques for the pollutant in question, or where the EPA determines that the Part 136 sampling and analytical techniques are inappropriate for the pollutant in question, sampling and analyses shall be performed by using validated analytical methods or any other applicable sampling and analytical procedures, including procedures suggested by the director or other parties approved by EPA. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-171 Sample collection.

Samples collected to satisfy reporting requirements must be based on data obtained through appropriate sampling and analysis performed during the period covered by the report, based on data that is representative of conditions occurring during the reporting period.

(a) Except as indicated in section (b) and (c) below, the user must collect wastewater samples using 24-hour flow-proportional composite sampling techniques, unless time-proportional composite sampling or grab sampling is authorized by engineer. Where time-proportional composite sampling or grab sampling is authorized by the authority, the samples must be representative of the discharge. Using protocols (including appropriate preservation) specified in 40 CFR Part 136 and appropriate EPA guidance, multiple grab samples collected during a 24-hour period may be composited prior to the analysis as follows: for cyanide, total phenols, and sulfides the samples may be composited in the laboratory or in the field; for volatile organics, the samples may be composited in the laboratory. Composite samples for other parameters unaffected by the compositing procedures as documented in approved EPA methodologies may be authorized by engineer, as appropriate. In addition, grab samples may be required to show compliance with instantaneous limits.

(b) Samples for oil and grease, temperature, pH, cyanide, total phenols, sulfides, and volatile organic compounds must be obtained using grab collection techniques.

(c) For sampling required in support of baseline monitoring and 90-day compliance reports required in section 5-6-161 and 5-6-162 [40 CFR 403.12(b) and (d)], a minimum of four grab samples must be used for pH, cyanide, total phenols, oil and grease, sulfide and volatile organic compounds for facilities for which historical sampling data do not exist; for facilities for which historical sampling data are available, the director may authorize a lower minimum. For the reports required by paragraphs section 5-6-164 (40 CFR 403.12(e) and 403.12(h)), the industrial user is required to collect the number of grab samples necessary to assess and assure compliance by with applicable pretreatment standards and requirements. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-172 Report submission.

All written reports which are required to be submitted to the authority or engineer will be deemed to have been submitted on the date postmarked by the United States Postal Service. For any report which is not deposited, postage prepaid, into a mail facility serviced by the United State Postal Service, the date of the authority's or engineer's receipt of the report shall govern. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-173 Recordkeeping requirements.

All records which the engineer requires to be maintained by an industrial user shall be made available for copying by the administrator, the city, the approval authority and the control authority

upon request, including documents associated with required Best Management Practices. These records shall remain available for a period of at least three years. This period shall be automatically extended for the duration of any litigation involving the user or the authority, or where the user has been specifically notified of a longer retention period by the authority or the engineer. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-174 Application signatories and certification.

All reports, data, product and materials information, and other information required by the authority or engineer to be maintained by users shall be submitted to the authority or engineer upon request. All reports submitted to the authority or engineer shall be signed by a representative of the user, who is authorized to make a certification on behalf of the user, and shall include the following 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 gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or the person or 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 a knowing violation. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-175 Fraudulent and false statements.

All reports and certifications required by this division are subject to the provisions of 18 U.S.C. 1001, relating to fraudulent and false statements and the provision of the Clean Air Act, 330 S.C. 1311 and 1314, relating to false statements, representation or certifications in reports required by the Act. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-176 Information requests to users; generally.

The engineer may request that a user submit information on the nature and characteristics of its wastewater. The user shall provide this information within 60 days of the request. The engineer is authorized to prepare a form for this purpose and may periodically require users to update all information which has been provided in accordance with this section. (Ord. No. 4501, 10/13/07, Sec. 1)

Secs. 5-6-177 through 5-6-180 reserved.

SUBDIVISION F Compliance Monitoring

Sec. 5-6-181 Right of entry for inspection and sampling; compliance schedules.

(a) The approval authority, the director, the engineer and other authorized personnel of the city and the authority may inspect any user to ascertain whether the requirements of this division are being complied with. Occupants of premises where wastewater is created for discharging into, or is discharged into, the collection system or the POTW shall allow the approval authority, the director, the engineer and authorized personnel of the city and the authority access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records, or the performance of any duties imposed by this division. The approval authority, the authority and the city shall have the right to set up on the property of a user all equipment and devices necessary to conduct sampling inspections, compliance monitoring and/or metering operations. Where a user has security measures in force which require proper identification and clearance before entry onto its property, the user shall make necessary arrangements so that, upon presentation of suitable identification, the director, the engineer and other personnel from the city and authority, or the approval authority, shall be permitted to enter, without delay, for the purpose of performing an inspection or monitoring.

(b) The approval authority, the authority and the city may require that each industrial user develop a compliance schedule for the installation of technology required to meet applicable pretreatment standards and requirements.

(c) The engineer may require a user to install monitoring equipment. The user at its own expense shall maintain at all times the facility's sampling and monitoring equipment in a safe and proper operating condition. All equipment and devices used to measure wastewater flow and quality shall be calibrated at least every six months by a qualified technician to ensure their accuracy.

(d) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected or where sampling is to be conducted shall be promptly removed by the user at the request of the engineer and shall not be replaced. The cost of clearing such access shall be borne by the user.

(e) Unreasonable delays in allowing the engineer access to the user's premises shall be a violation of this division. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-182 Search warrants.

If the engineer has been refused access to a building, structure or any other part of a user's property or premises, and is able to demonstrate probable cause to believe that there may be a violation of this division, or that there is a need to inspect and/or sample as part of a routine division inspection and sampling program of the authority designed to verify compliance with this division or any permit or order issued hereunder, or to protect the overall public health, safety and welfare of the community, the engineer may seek the issuance of a search warrant from an appropriate court. (Ord. No. 4501, 10/13/07, Sec. 1)

Secs. 5-6-183 through 5-6-190 reserved.

SUBDIVISION G Administrative Enforcement Remedies

Sec. 5-6-191 Notice of violation.

A notice of violation is a written notice to a user by the engineer that the engineer has determined that the user has violated a pretreatment standard or another requirement of this division. Upon receipt of a notice of violation, the user shall inform the engineer of the reasons for the violation and the actions it intends to take to correct the violation, and shall proceed to undertake those actions and correct the violation. A notice of violation shall be sent by the engineer by certified mail, return receipt requested. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-192 Compliance meeting; compliance schedule.

(a) If, following the issuance of a notice under section 5-6-191, the user continues to violate provisions of this division, the engineer may issue a "Notice of Compliance Meeting" to the user which requires the user to attend a compliance meeting. Similarly, the engineer may require a user to attend a compliance meeting, without having first issued a notice under section 5-6-191, where the user's violations of this division are of significant magnitude or duration.

(b) Attendance at the compliance meeting is mandatory for the user, and failure to attend may result in an order for a show cause hearing or the filing of an action by the authority seeking remedies that are provided by this division and applicable federal, state and local laws.

(c) At the compliance meeting, the engineer may establish such procedures, investigations and studies as are deemed necessary to determine the cause of such violations and the actions that are required to correct them.

(d) At the compliance meeting, the engineer also may establish a compliance schedule that defines the actions to be taken by the user to determine the cause of the violations, or the actions that are to be taken to correct the violations, and the dates by which the actions are to be taken. A compliance schedule may be issued alone or may be incorporated into the user's wastewater discharge permit, an administrative order or another document. Failure to comply with the terms of the compliance schedule shall constitute a separate violation of this division, and may result in an order for a show cause hearing or the institution of a judicial action under subdivision H. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-193 Appearance before the authority.

(a) If a user fails to comply with the terms of a compliance schedule, or otherwise violates the provisions of this division, the engineer may issue a written "Appearance Before the Authority" notice that requires the user to attend a regular or special meeting of the authority to enable the authority to review and investigate the failure, as well as the user's noncompliance which gave rise to the compliance schedule.

(b) A notice issued by the engineer under subsection (a) is separate from, and may be issued independently of an administrative order issued under section 5-6-194 or an order to show cause issued under section 5-6-195. An appearance before the authority under this section is not a condition precedent for other enforcement action by the engineer or authority

(c) Failure of a user to appear before the authority as required by a notice issued under subsection (a) shall constitute a separate violation of this division, and may result in the institution of other administrative remedies under this subdivision or the institution of judicial actions under subdivision H. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-194 Administrative order.

(a) The authority may issue an administrative order to a user which has failed to comply with one or more of the terms of a compliance schedule issued under section 5-6-192. The order shall require that the user come into compliance with the compliance schedule within a specified period of time.

(b) In conjunction with the issuance of any administrative order, the authority may assess a charge against the user equal to the actual costs incurred by the authority in the course of investigating the user, determining its violations, and issuing the order.

(c) Failure of a user to comply with an administrative order issued under subsection (a) shall constitute a separate violation of this division, and may result in the institution of other administrative remedies under this subdivision or the institution of judicial actions under subdivision H. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-195 Order to show cause; show cause hearing.

(a) Notwithstanding any other provision in this subdivision, the authority may issue an order to any user which causes or allows an unauthorized discharge or otherwise violates this division that requires the user to show cause at a hearing before the authority why the authority should not revoke the user's permit or take other enforcement action against it. The order shall specify the date, time and place of the hearing.

(b) The order shall describe the user's noncompliance with its permit or with this division, shall state the action that the authority proposes the user to undertake to remedy its noncompliance, and shall direct the user to show cause before the authority why such action should not be taken.

(c) The authority shall cause the order to show cause to be mailed to the user by certified mail, return receipt requested.

(d) Following the show cause hearing, the authority may take such action as it deems appropriate, including but not limited to revocation of the user's permit, issuance of a written order that discharges be ceased immediately or after a specified period of time, and the initiation of one or more judicial actions under subdivision H. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-196 Termination of service; revocation of permits.

(a) Notwithstanding any other provision in this subdivision, if the engineer determines that a user's violation of any discharge limitations or standards or other requirements imposed on it by this division, or by a permit issued pursuant to this division, endangers the public health, presents an endangerment to the environment, interferes with the operation of the POTW or causes the authority to be in violation of its NPDES permit or any state permit issued to regulate the treatment of wastewater or the treatment or application of sludge, then the authority may, after providing notice to the user and an opportunity to rebut the engineer's determination, suspend

wastewater treatment service, including collection and treatment services, to the user.

(b) Notwithstanding any other provision in this subdivision, if the authority determines that a user's continued discharge into the collection system and the POTW will violate this division, federal, state or local law, or regulations and requirements issue pursuant to such law, then the authority, after providing notice to the user and an opportunity to rebut its determination, may revoke any permits issued to the user under the provisions of this article. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-197 Emergency suspensions.

(a) The engineer may immediately suspend a user's authorization to discharge into the POTW, after notice to the user, whenever such suspension is necessary to stop an actual or threatened discharge which reasonably appears to present or cause an imminent or substantial endangerment to the health or welfare of any person.

(b) The engineer may immediately suspend a user's authorization to discharge into the POTW, after notice to the user and an opportunity to respond, if the user's discharge threatens to interfere with the operation of the POTW, or presents, or may present a non-imminent substantial endangerment to the environment.

(c) Any user notified of a suspension of its authorization to discharge shall immediately stop or eliminate its discharging. In the event of a user's failure to immediately comply with a suspension order, the engineer may take such steps and measures as deemed necessary, including immediate severance of the sewer connection, to prevent or minimize damage to the POTW or its receiving stream, or endangerment to any individuals. Except where a notice of termination under section 5-6-196 has been instituted against the user, the engineer may allow the user to recommence its discharge when the user has demonstrated, to the satisfaction of the engineer, that the grounds for the suspension order have been eliminated.

(d) A user that is responsible, in whole or in part, for a discharge that presents imminent danger shall submit a detailed written statement, describing the causes of the harmful contribution and the measures taken to prevent any future occurrence to the engineer, prior to the date of any show cause or other hearing under this subdivision. (Ord. No. 4501, 10/13/07, Sec. 1)

Secs. 5-6-198 through 5-6-200 reserved.

SUBDIVISION H Judicial Enforcement Remedies

Sec. 5-6-201 Criminal penalties.

(a) The owner and the operator of any user which has violated any provision of this division, of a wastewater discharge permit, or of an order issued under this division, or any other pretreatment standard or requirement shall, upon conviction thereof, be punished by a fine of not more than $1,000 per day for each violation or be imprisoned for up to 60 days for each violation, or both. Where a monthly or other long-term average discharge limit has been violated, each day during the applicable monthly or other long-term period shall constitute a separate violation. Also, violations of different provisions of this division, of a discharge permit, or of an order, and violations of different requirements of a pretreatment standard, shall constitute separate violations.

(b) In addition to the criminal penalty provided in subsection (a), the city and the authority may commence an action against the owner and the operator in the Circuit Court of City of Alexandria for appropriate legal or equitable relief, including but not limited to injunctive under section 5-6-203 and monetary damages. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-202 Civil penalties.

(a) The owner and the operator of any user which has violated any provision of this division, of a wastewater discharge permit, or of an order issued hereunder, or any other pretreatment standard or requirement shall, in lieu of any criminal penalty, be liable for a civil penalty of up to $1,000 for each violation. An action seeking civil penalties may be filed by the city or the authority in the Circuit Court for the City of Alexandria. Where a monthly or other long-term average discharge limit has been violated, each day during the applicable monthly or other long-term period shall constitute a separate violation. Also, violations of different provisions of this division, of a discharge permit, or of an order, and violations of different requirements of a pretreatment standard, shall constitute separate violations.

(b) In determining the amount of the civil penalty to be assessed, the court shall take into account all relevant circumstances, including but not limited to the extent of harm caused by the violation, the magnitude and duration of the violation, the economic benefit gained by the user through its violation, the corrective actions taken by the user, the compliance history of the user, and any other factor as justice may require.

(c) In addition to the civil penalty provided in subsection (a), the city and the authority may commence an action against the owner and the operator in the Circuit Court of City of Alexandria for appropriate legal or equitable relief, including but not limited to injunctive under section 5-6-203 and monetary damages.

(d) The filing of a suit for civil penalties shall not be a prerequisite for taking or initiating any other enforcement action against a user; nor shall it be a bar against an action for injunctive relief under section 5-6-203. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-203 Injunctive relief.

When the director or the engineer determines that a user has violated, or continues to violate, any provision of this division, of a wastewater discharge permit, or of an order issued pursuant to this division, or any pretreatment standard or requirement, the city or the authority may petition the Circuit Court for the City of Alexandria for issuance of a temporary or permanent injunction, as appropriate, which restrains the owner and operator of the user, or compels the owner and operator to come into compliance with the provisions of this division, the user's wastewater discharge permit, the order issued to the user, or the other pretreatment standards or requirements, as the case may be, which the user has violated. The city and the authority may also seek appropriate legal and/or equitable relief, including a requirement for the user to conduct environmental remediation. A request for injunctive relief shall not be a bar against, or a prerequisite for, the taking of any other enforcement

action against a user. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-204 Remedies not exclusive.

The remedies provided for in this division are not exclusive. The city and the authority, and their authorized personnel, may take any other available enforcement actions against a noncompliant user. (Ord. No. 4501, 10/13/07, Sec. 1)

Secs. 5-6-205—5-6-210 reserved.

SUBDIVISION I Fees and Charges

Sec. 5-6-211 Fees and charges; meters.

(a) An industrial user seeking a wastewater discharge permit shall pay an application fee of $100 before its application will be processed.

(b) The holder of a wastewater discharge permit shall pay a fee to the authority to offset the authority's costs in administering the wastewater discharge permit system. The fee shall be $500 for each year of the term of the permit. The fee shall be paid in full prior to the issuance of the permit. A fee of $100 shall be assessed for any revisions to a discharge permit.

(c) Each industrial user shall pay the chemical and biological monitoring costs actually incurred by the authority as required by the user's permit. Payment of these costs shall be made within 30 days of written notice by the authority.

(d) Sewer use charges may be established by city council by resolution. Such charges shall be assessed against users and shall be based on wastewater volume and strength, as determined by metering, sampling and laboratory analysis of user discharges into the POTW. For purposes of this subsection:

(i) The volume of wastewater discharged by a user into the POTW shall be based on the metered water consumption of the user, as shown in records maintained by Virginia American Water Company ("VAWC"). However, if a user which purchases water from VAWC considers that significant quantities of that water are not being discharged into the POTW, the user may request that the billings be based upon metered wastewater quantities. If the user's request is approved by the authority, the user may then provide and maintain, at its own expense, a meter acceptable to the authority for measurement of the quantities of wastewater discharged. The meter shall be accessible for inspection by the authority at all times and shall be maintained to produce an accurate record of the true quantities of wastewater discharged.

(ii) Whenever a user obtains any part of its water supply from sources other than VAWC, the user shall provide and maintain wastewater meters which will produce an accurate record of the true quantities of wastewater discharged into the POTW. However, in lieu of a wastewater meter, a

user may utilize a water meter on its input water line if approved by the authority, in which case the readings from that meter shall be used to calculate the volume of wastewater flow that is to be used in computing charges.

(iii) No user may utilize an internal water meter to meter a portion of its total water use that either is or is not ultimately tributary to the sewer system as an alternative to a wastewater meter.

(e) All costs of meter installation, calibration and maintenance shall be borne by the user. The type of meter used by a user shall be acceptable to the authority. Meters shall be accessible at all times for inspection by the authority.

(f) In addition to the fees and charges established by or pursuant to this section, city council may, by resolution, establish and adjust other fees and charges to recover the costs that are incurred in the administration of this division.

(g) Fees and charges established pursuant to this section shall not preclude any other fees or charges established pursuant to or under other sections of this code. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-212 Attorneys' fees and costs; referrals.

(a) The city and the authority may recover reasonable attorneys' fees, court costs and other expenses associated with an enforcement activity that is taken under this division, including sampling and monitoring expenses.

(b) The engineer will refer any suspicious circumstances which may require an investigation to the city attorney. All criminal investigations will be referred to the commonwealth's attorney. (Ord. No. 4501, 10/13/07, Sec. 1)

Secs. 5-6-213 through 5-6-220 reserved.

SUBDIVISION J Miscellaneous Provisions

Sec. 5-6-221 Confidential information.

Information and data on a user obtained from reports, surveys, wastewater discharge permit applications, wastewater discharge permits and monitoring programs, and from the authority's inspection and sampling activities, shall be available to the public without restriction, unless the user specifically requests, and is able to demonstrate to the satisfaction of the authority, that the release of such information would divulge information, processes, or methods of production entitled to protection as trade secrets under applicable law. Any such request for confidentiality must be asserted at the time the user submits the information or data. When requested and demonstrated by

the user furnishing a report that such information should be held confidential, the portion of a report which might disclose trade secrets or secret processes shall not be made available for inspection by the public, but shall be made available immediately, upon the request of governmental agencies for uses related to the NPDES program or pretreatment program, and enforcement proceedings involving the person furnishing the report. Wastewater constituents and characteristics and other "effluent data" as defined by 40 C.F.R. 2.302 will not be recognized as confidential information and will be available to the public without restriction. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-222 Annual notice of significant noncompliance.

The engineer shall publish at least annually, in a newspaper of general circulation that provides meaningful public notice within the jurisdictions served by the authority, a list of the industrial users which, during the previous 12 months, were in significant noncompliance with applicable pretreatment standards and requirements imposed by this division. A user shall, for purposes of this section, be in significant noncompliance for any of the following reasons:

(1) chronic violations of wastewater discharge limits, defined as those in which 66 percent or more of all the measurements taken during a six-month period exceed, by any magnitude, a numeric pretreatment standard or requirement, including instantaneous limits, as defined by section 5-6-102

(2) technical review criteria ("TRC") violations, defined here as those in which 33 percent or more of all the measurements for each pollutant parameter taken during a six-month period equal or exceed the product of the numeric pretreatment standard or requirement, including instantaneous limits, as defined in section 5-6-102; multiplied by the applicable TRC (1.4 for conventional pollutants and 1.2 for all other pollutants, except pH);

(3) any other violation of a pretreatment standard or requirement as term average, that the authority determines has caused, alone or in combination with other discharges, interference or pass through, including endangering the health of the general public or authority personnel;

(4) any discharge of one or more pollutants that has caused imminent danger to human health, welfare or the environment or has resulted in the authority's exercise of its emergency authority under 40 C.F.R. 403.8(f)(1)(vi)(B) to halt or prevent such discharge;

(5) failure to meet, within 90 days after the scheduled date, a compliance milestone, contained in a wastewater discharge permit or an enforcement order, for starting construction or attaining final compliance;

(6) failure to provide, within 45 days after its due date, any report required by this ordinance, such as a baseline monitoring report, a 90-day compliance report, a periodic self-monitoring report, or a report on compliance with a compliance schedule;

(7) failure to report noncompliance in a timely and accurate manner; and

(8) any violation or group of violations, which may include a violation of Best Management Practices, of this division that the authority determines has or will adversely affect the operation or implementation of the local pretreatment program. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-223 Severability.

In the case of an inconsistency or conflict between a provision in this division and a provision set out elsewhere in this code, the provision of this division shall control. (Ord. No. 4501, 10/13/07, Sec. 1)

Sec. 5-6-224 Method of storm and subsoil water disposal.

(a) Buildings shall have drainage provision for conveying storm water from roofs, paved areas and areaway drains, subsoil water, condensate, cooling water, etc., on the premise to a public storm sewer: except that where a public storm sewer is not available, an approved method of disposal shall be provided to the satisfaction of the director of transportation and environmental services. The director of transportation and environmental services may permit alternative means of disposal if the director deems the proposed alternative method to provide an environmental benefit to the city and the director determines that no nuisance will be created on any adjacent property or within the public right-of-way. Alternative methods of disposal may include, but are not limited to, onsite surface discharge, onsite infiltration and onsite detention in the form of a rain barrel or cistern. The director may require additional supporting information such as geotechnical or other engineering analyses. Direct discharge of roof drains within the public right-of-way may be permitted at the director's discretion. Direct discharge of ground water to gutters in the public right-of-way may be permitted at the director's discretion when a public storm sewer is not available.

(b) Availability.

(1) For a one- and two-family dwelling, a public storm sewer shall be deemed available when such sewer is within 100 feet of the premises on which the dwelling is located, measured along a street, and a connection may be made lawfully thereto.

(2) For any other buildings, a public storm sewer shall be deemed available when such sewer is within 500 feet of the premises on which the building is located, measured along a street, and a connection may be made lawfully thereto.

(c) Area drains are prohibited from entering septic tanks or public or private sewer systems unless specifically approved in writing by the director of transportation and environmental services.

(d) Prior to the issuance of any building permit for any proposed improvement to real property involving (1) the construction of a new home (2) construction of an addition to an existing home where either (A) the addition exceeds the area of the existing building footprint by 100 percent or more; or (B) the construction of the addition results in less than 50 percent of the existing first floor exterior walls, in their entirety, remaining; (3) changes to the existing grade elevation of one foot or greater; (4) changes to existing drainage patterns; or (5) land disturbance of 2,500 square feet or greater, a grading and drainage plan prepared by a professional engineer or land surveyor licensed by the Commonwealth of Virginia shall be submitted for review and approval by the director of transportation and environmental services or deputy director/city engineer. Such plan shall demonstrate that post-development drainage will have no greater impact on adjacent or down-stream property than pre-development conditions. The requirements for such plans, including without limitation form, content, methods of calculation, and procedures for review and approval, shall be established by regulations promulgated by the director of transportation and environmental services. A plan review fee in the amount of $500 shall accompany such plan, except that in instances where the proposed improvement is already subject to the erosion and sediment control requirements set forth in section 5-4-1 et seq. of this code, and a fee has already been paid pursuant to those requirements, no additional fee shall be required. No building permit for improvements subject to this subsection shall be issued until after the grading and drainage plan has been approved. When a grading and drainage plan is required pursuant to subsections (d)(2), (3) or (4) hereof, the requirement may be waived by the director of transportation and environmental services or his designee when such a waiver is requested by the property owner and such request is accompanied by sufficient information to demonstrate to the satisfaction of the director or deputy director/city engineer, in his or her reasonable engineering discretion, that no adverse drainage impacts to abutting or adjacent property will occur as a result of the proposed

construction. The director shall promulgate rules and regulations for the application, consideration, grant or denial of such waiver requests, including without limitation rules and regulations specifying the minimum information required for applications, and reasonable criteria and standards for the consideration of such requests. The decision on such requests shall be in writing, and shall state the grounds thereof. The decision to grant or deny a waiver request is committee to the discretion of the director or deputy director/city engineer, and shall not be subject to judicial review.

(e) Grading plans will be considered valid for a term of 36 months from the date of approval. A request to extend the validity of a grading plan must be submitted in writing to the director of transportation and environmental services a minimum of 60 days prior to expiration with a $100 fee. The director will determine if additional modifications or a new grading plan submission is required.

(f) Any change to an approved grading plan requires that an amended grading plan be filed and that the amended grading plan be reviewed and approved, pursuant to the provisions of this section 5-6-224(d). The director of transportation and environmental services may allow minor modifications without an amended grading plan. (Ord. No. 4659, 5/15/10, Sec. 8; Ord. No. 4800, 4/13/13, Sec. 1)

Sec. 5-6-225 Violations and penalties.

(a) A violation of any section or provision of this article shall be a civil violation that shall be enforced through the levying of a civil penalty, pursuant to section 1-1-11 of this code, of $100 for a person's first violation and of $150 for each subsequent violation of the same section or provision. Each day during which a violation exists shall constitute a separate violation. However, a series of violations arising from the same operative set of facts shall not give rise to the levying of a civil penalty more frequently than once in any 10-day period, and shall not result in civil penalties exceeding a total of $3,000.

(b) In addition to the foregoing penalties, in the event that any person obtains a building permit based on representations that exempt the proposed construction from the grading and drainage plan requirements of section 5-6-224, and those representations prove to be incorrect, the director of transportation and environmental services or his designee may issue a written order stopping all work at the site until such time as a grading and drainage plan has been submitted for review and approved pursuant to section 5-6-224

(c) A violation of any section or provision of this article may, in addition to and notwithstanding the penalty provided for in subsection (a) or (b), be restrained, prohibited or enjoined by appropriate proceedings in a court of competent jurisdiction. (Ord. No. 4659, 5/15/10, Sec. 8)

APPENDIX H:
DWO INSPECTION FORMS FOR YEAR 2013

FORM D

City of Alexandria, Virginia
Transportation & Environmental Services

CSO Outfall Dry Weather Overflow Inspection Log

Outfall No. 001 **at** PENDLETON ST.

4/17/12	JJH	NO		
5/17/12	JJH	NO		
5/31/12	JJH	NO		
6/8/12	JJH	NO		
6/25/12	JJH	NO		
7/18/12	JJH	NO		
7/30/12	JJH	NO		
8/13/12	JJH	NO		
8/24/12	JEM	N		
9/17/12	JJH	NO		
9/24/12	JJH	NO		
10/15/12	JJH	NO		
10/22/12	JJH	NO		
11/12/12	JJH	NO		
11/26/12	JJH	NO		
12/12/12	JJH	NO		
12/26/12	JJH	NO		
1/22/13	JJH	NO		
1/30/13	JJH	NO		
2/7/13	JJH	NO		
2/22/13	JJH	NO		

EDULE:

Inspect each outfall twice a month to ensure that no dry weather flows are occurring.

FORM D

City of Alexandria, Virginia
Transportation & Environmental Services

CSO Outfall Dry Weather Overflow Inspection Log

Outfall No. 001 **at** PENDLETON ST

3/8/13	JJH	NO		
3/29/13	JJH	NO		
4/19/13	JJH	NO		
4/26/13	JJH	NO		
5/23/13	JJH	NO		
5/30/13	JJH	NO		
6/4/13	JJH	NO		
6/20/13	JJH	NO		
7/17/13	JJH	NO		
7/25/13	JJH	NO		
8/12/13	JJH	NO		
8/22/13	JJH	NO		
9/20/13	JJH	NO		
9/27/13	JJH	NO		
10/17/13	JJH	NO		
10/25/13	JJH	NO		
11/6/13	JJH	NO		
11/19/13	JJH	NO		
12/13/13	JJH	NO		
12/19/13	JJH	NO		
1/9/14	JJH	NO		

EDULE:

Inspect each outfall twice a month to ensure that no dry weather flows are occurring.

FORM D

City of Alexandria, Virginia
Transportation & Environmental Services

CSO Outfall Dry Weather Overflow Inspection Log

Outfall No. 002 **at** ROYAL ST.

4/17/12	JJH	NO		
5/17/12	JJH	NO		
5/31/12	JJH	NO		
6/8/12	JJH	NO		
6/28/12	JJH	NO		
7/18/12	JJH	NO		
7/30/12	JJH	NO		
[illegible]/13/12	JJH	NO		
8/24/12	JEM	N		
9/[illegible]/12	JJH	NO		
9/24/12	JJH	NO		
10/15/12	JJH	NO		
10/22/12	JJH	NO		
11/12/12	JJH	NO		
11/26/12	JJH	NO		
12/12/12	JJH	NO		
12/26/12	JJH	NO		
1/22/13	JJH	NO		
1/30/13	JJH	NO		
2/7/13	JJH	NO		
2/22/13	JJH	NO		

EDULE:

Inspect each outfall twice a month to ensure that no dry weather flows are occurring.

FORM D

City of Alexandria, Virginia
Transportation & Environmental Services

CSO Outfall Dry Weather Overflow Inspection Log

Outfall No. 002 **at** ROYAL ST.

3/8/13	JJH	NO		
3/29/13	JJH	NO		
4/19/13	JJH	NO		
4/26/13	JJH	NO		
5/23/13	JJH	NO		
5/30/13	JJH	NO		
6/4/13	JJH	NO		
6/26/13	JJH	NO		
7/17/13	JJH	NO		
7/25/13	JJH	NO		
8/12/13	JJH	NO		
8/22/13	JJH	NO		
9/20/13	JJH	NO		
9/27/13	JJH	NO		
10/17/13	JJH	NO		
10/25/13	JJH	NO		
11/6/13	JJH	NO		
11/19/13	JJH	NO		
12/13/13	JJH	NO		
12/19/13	JJH	NO		
1/9/14	JJH	NO		

EDULE:

Inspect each outfall twice a month to ensure that no dry weather flows are occurring.

FORM D

City of Alexandria, Virginia
Transportation & Environmental Services

CSO Outfall Dry Weather Overflow Inspection Log

Outfall No. 003 **at** KING ST. / WEST ST.

4/17/12	JJH	NO		
5/17/12	JJH	NO		
5/31/12	JJH	NO		
6/8/12	JJH	NO		
6/25/12	JJH	NO		
7/18/12	JJH	NO		
7/30/12	JJH	NO		
8/13/12	JJH	NO		
8/24/12	JEM	N		
9/17/12	JJH	NO		
9/24/12	JJH	NO		
10/15/12	JJH	NO		
10/22/12	JJH	NO		
11/12/12	JJH	NO		
11/26/12	JJH	NO		
12/12/12	JJH	NO		
12/26/12	JJH	NO		
1/22/13	JJH	NO		
1/30/13	JJH	NO		
2/7/13	JJH	NO		
2/22/13	JJH	NO		

SCHEDULE:

Inspect each outfall twice a month to ensure that no dry weather flows are occurring.

FORM D

City of Alexandria, Virginia
Transportation & Environmental Services

CSO Outfall Dry Weather Overflow Inspection Log

Outfall No. 003 **at** KING ST. / WEST ST.

3/8/13	JJH	NO		
3/29/13	JJH	NO		
4/19/13	JJH	NO		
4/26/13	JJH	NO		
5/23/13	JJH	NO		
5/30/13	JJH	NO		
6/4/13	JJH	NO		
6/20/13	JJH	NO		
7/17/13	JJH	NO		
7/25/13	JJH	NO		
8/12/13	JJH	NO		
8/22/13	JJH	NO		
9/20/13	JJH	NO		
9/27/13	JJH	NO		
10/17/13	JJH	NO		
10/25/13	JJH	NO		
11/6/13	JJH	NO		
11/19/13	JJH	NO		
12/13/13	JJH	NO		
12/19/13	JJH	NO		
1/9/14	JJH	NO		

SCHEDULE:

Inspect each outfall twice a month to ensure that no dry weather flows are occurring.

FORM D

City of Alexandria, Virginia
Transportation & Environmental Services

CSO Outfall Dry Weather Overflow Inspection Log

Outfall No. 004 **at** JAMIESON AVE / HOOFF'S RUN

4/17/12	JJH	NO		
5/17/12	JJH	NO		
5/31/12	JJH	NO		
6/8/12	JJH	NO		
6/25/12	JJH	NO		
7/19/12	JJH	NO		
7/30/12	JJH	NO		
8/8/12	JJH	NO		
8/24/12	JEM	N		
9/17/12	JJH	NO		
9/24/12	JJH	NO		
10/15/12	JJH	NO		
10/22/12	JJH	NO		
11/12/12	JJH	NO		
11/26/12	JJH	NO		
12/12/12	JJH	NO		
12/26/12	JJH	NO		
1/22/13	JJH	NO		
1/30/13	JJH	NO		
2/7/13	JJH	NO		
2/22/13	JJH	NO		

SCHEDULE:

Inspect each outfall twice a month to ensure that no dry weather flows are occurring.

FORM D

City of Alexandria, Virginia
Transportation & Environmental Services

CSO Outfall Dry Weather Overflow Inspection Log

Outfall No. 004 **at** JAMIESON AVE. / HOOFFS RUN

3/8/13	JJH	NO		
3/29/13	JJH	NO		
4/19/13	JJH	NO		
4/26/13	JJH	NO		
5/23/13	JJH	NO		
5/30/13	JJH	NO		
6/4/13	JJH	NO		
6/26/13	JJH	NO		
7/17/13	JJH	NO		
7/25/13	JJH	NO		
8/12/13	JJH	NO		
8/22/13	JJH	NO		
9/20/13	JJH	NO		
9/27/13	JJH	NO		
10/17/13	JJH	NO		
10/25/13	JJH	NO		
11/6/13	JJH	NO		
11/19/13	JJH	NO		
12/13/13	JJH	NO		
12/19/13	JJH	NO		
1/9/14	JJH	NO		

EDULE:

Inspect each outfall twice a month to ensure that no dry weather flows are occurring.

APPENDIX I:
RECORD OF STREET SWEEPING

Date	Sweeping Zone Cleaned	Type of Cleaning (Truck or Hand)	Estimated Linear Miles Cleaned	Comments/Unusual Problems
1/1/2013	None			Holiday
1/2/2013	1,2	4213	11	No Parking
1/3/2013	1,2	4213	11	No Parking
1/4/2013	None			N/A
1/5/2013	None			Weekend
1/6/2013	None			Weekend
1/7/2013	1,2	4213	13	No Parking
1/8/2013	1,2	4213	14	No Parking
1/9/2013	3,4	4213	11	No Parking
1/10/2013	3,4	4213	14	No Parking
1/11/2013	None			N/A
1/12/2013	None			Weekend
1/13/2013	None			Weekend
1/14/2013		4213	11	No Parking
1/15/2013		4213	11	No Parking
1/16/2013	1,2	4213	8	No Parking
1/17/2013	1,2	4213	12	No Parking
1/18/2013	None			N/A
1/19/2013	None			Weekend
1/20/2013	None			Weekend
1/21/2013	None			Holiday
1/22/2013		4213	11	No Parking
1/23/2013	1,2	4213	13	No Parking
1/24/2013	1,2	4213	12	No Parking
1/25/2013	None			N/A
1/26/2013	None			Weekend
1/27/2013	None			Weekend
1/28/2013		4213	12	No Parking
1/29/2013		4213	13	No Parking
1/30/2013	1,2	4213	11	No Parking
1/31/2013	1,2	4213	10	No Parking
Total Miles:				**198**

Date	Sweeping Zone Cleaned	Type of Cleaning (Truck or Hand)	Estimated Linear Miles Cleaned	Comments/Unusual Problems
2/1/2013	None			N/A
2/2/2013	None			Weekend
2/3/2013	None			Weekend
2/4/2013		4213	12	No Parking
2/5/2013		4213	11	No Parking
2/6/2013	1,2	4213	13	No Parking
2/7/2013	1,2	4213	12	No Parking
2/8/2013	None			N/A
2/9/2013	None			Weekend
2/10/2013	None			Weekend
2/11/2013		4213	12	No Parking
2/12/2013		4213	12	No Parking
2/13/2013		4213	14	No Parking
2/14/2013	1,2	4213	13	No Parking
2/15/2013	None			N/A
2/16/2013	None			Weekend
2/17/2013	None			Weekend
2/18/2013				Holiday
2/19/2013		4213	11	No Parking
2/20/2013		4213	12	No Parking
2/21/2013	1,2	4213	12	No Parking
2/22/2013	None			N/A
2/23/2013	None			Weekend
2/24/2013	None			Weekend
2/25/2013		4213	11	No Parking
2/26/2013		4213	12	No Parking
2/27/2013	1,2	4213	11	No Parking
2/28/2013	1,2	4213	5	No Parking
Total Miles:				**173**

Date	Sweeping Zone Cleaned	Type of Cleaning (Truck or Hand)	Estimated Linear Miles Cleaned	Comments/Unusual Problems
3/1/2013	1,2	4213, 4216	22	Sweeping
3/2/2013	None			Weekend
3/3/2013	None			Weekend
3/4/2013		4213, 4216	22	No Parking /Sweeping
3/5/2013	All	4213, 4216	24	No Parking /Sweeping
3/6/2013	All	4213, 4216	23	No Parking /Sweeping
3/7/2013	All	4213, 4216	22	No Parking /Sweeping
3/8/2013	All	4213, 4216	21	Sweeping
3/9/2013	None			Weekend
3/10/2013	None			Weekend
3/11/2013		4213, 4216	25	No Parking /Sweeping
3/12/2013	All	4213, 4216	23	No Parking /Sweeping
3/13/2013	All	4213, 4216	21	No Parking /Sweeping
3/14/2013	All	4213, 4216	20	No Parking /Sweeping
3/15/2013	All	4213, 4216	17	Sweeping
3/16/2013	None			Weekend
3/17/2013	None			Weekend
3/18/2013		4213, 4216	25	No Parking /Sweeping
3/19/2013	All	4213, 4216	25	No Parking /Sweeping
3/20/2013	All	4213, 4216	26	No Parking /Sweeping
3/21/2013	All	4213, 4216	22	No Parking /Sweeping
3/22/2013	All	4213, 4216	21	Sweeping
3/23/2013	None			Weekend
3/24/2013	None			Weekend
3/25/2013		4213, 4216	21	No Parking /Sweeping
3/26/2013	All	4213, 4216	21	No Parking /Sweeping
3/27/2013	All	4213, 4216	14	No Parking /Sweeping
3/28/2013	All	4213, 4216	9	No Parking /Sweeping
3/29/2013	All	4213, 4216	13	Sweeping
3/30/2013	None			Weekend
3/31/2013	None			Weekend
Total Miles:				**437**

Date	Sweeping Zone Cleaned	Type of Cleaning (Truck or Hand)	Estimated Linear Miles Cleaned	Comments/Unusual Problems
4/1/2013		4213, 4216	33	No Parking /Sweeping
4/2/2013		4213, 4216	27	No Parking /Sweeping
4/3/2013		4213, 4216	21	No Parking /Sweeping
4/4/2013		4213, 4216	23	No Parking /Sweeping
4/5/2013		4213, 4216	30	Sweeping
4/6/2013	None			Weekend
4/7/2013	None			Weekend
4/8/2013		4213, 4216	21	No Parking /Sweeping
4/9/2013		4213, 4216	17	No Parking /Sweeping
4/10/2013		4213, 4216	12	No Parking /Sweeping
4/11/2013		4213, 4216	12	No Parking /Sweeping
4/12/2013		4213, 4216	10	Sweeping
4/13/2013	None			Weekend
4/14/2013	None			Weekend
4/15/2013		4213, 4216	13	No Parking /Sweeping
4/16/2013		4213, 4216	27	No Parking /Sweeping
4/17/2013		4213, 4216	22	No Parking /Sweeping
4/18/2013		4213, 4216	32	No Parking /Sweeping
4/19/2013		4213, 4216	29	Sweeping
4/20/2013	None			Weekend
4/21/2013	None			Weekend
4/22/2013		4213, 4216	26	No Parking /Sweeping
4/23/2013		4213, 4216	31	No Parking /Sweeping
4/24/2013		4213, 4216	17	No Parking /Sweeping
4/25/2013		4213, 4216	24	No Parking /Sweeping
4/26/2013		4213, 4216	21	Sweeping
4/27/2013	None			Weekend
4/28/2013	None			Weekend
4/29/2013		4213, 4216	30	No Parking /Sweeping
4/30/2013		4213, 4216	12	No Parking /Sweeping
Total Miles:				**490**

Date	Sweeping Zone Cleaned	Type of Cleaning (Truck or Hand)	Estimated Linear Miles Cleaned	Comments/Unusual Problems
5/1/2013	All	4213, 4216	37	No Parking/ Sweeping/ Night Sweeping
5/2/2013	All	4213, 4216	29	No Parking/ Sweeping/ Night Sweeping
5/3/2013	All	4213, 4216	32	Sweeping/ Night Sweeping
5/4/2013	None			Weekend
5/5/2013	None			Weekend
5/6/2013		4213, 4216	32	No Parking/ Sweeping/ Night Sweeping
5/7/2013	All	4213, 4216	41	No Parking/ Sweeping/ Night Sweeping
5/8/2013	All	4213, 4216	43	No Parking/ Sweeping/ Night Sweeping
5/9/2013	All	4213, 4216	24	No Parking/ Sweeping/ Night Sweeping
5/10/2013	All	4213, 4216	44	Sweeping/ Night Sweeping
5/11/2013	None			Weekend
5/12/2013	None			Weekend
5/13/2013		4213, 4216	26	No Parking/ Sweeping/ Night Sweeping
5/14/2013	All	4213, 4216	39	No Parking/ Sweeping/ Night Sweeping
5/15/2013	All	4213, 4216	25	No Parking/ Sweeping/ Night Sweeping
5/16/2013	All	4213, 4216	28	No Parking/ Sweeping/ Night Sweeping
5/17/2013	All	4213, 4216	26	No Parking/ Sweeping/ Night Sweeping
5/18/2013	None			Weekend
5/19/2013	None			Weekend
5/20/2013		4213, 4216		No Parking/ Sweeping/ Night Sweeping
5/21/2013	All	4213, 4216	32	No Parking/ Sweeping/ Night Sweeping
5/22/2013	All	4213, 4216	39	No Parking/ Sweeping/ Night Sweeping
5/23/2013	All	4213, 4216	37	No Parking/ Sweeping/ Night Sweeping
5/24/2013	All	4213, 4216	34	Sweeping/ Night Sweeping
5/25/2013	None			Weekend
5/26/2013	None			Weekend
5/27/2013	None			Holiday
5/28/2013		4213, 4216	37	No Parking/ Sweeping/ Night Sweeping
5/29/2013	All	4213, 4216	38	No Parking/ Sweeping/ Night Sweeping
5/30/2013	All	4213, 4216	37	No Parking/ Sweeping/ Night Sweeping
5/31/2013	All	4213, 4216	48	Sweeping/ Night Sweeping
Total Miles:				**728**

Date	Sweeping Zone Cleaned	Type of Cleaning (Truck or Hand)	Estimated Linear Miles Cleaned	Comments/Unusual Problems
6/1/2013	None			Weekend
6/2/2013	None			Weekend
6/3/2013		4213, 4216	43	No Parking/ Sweeping/ Night Sweeping
6/4/2013	All	4213, 4216	32	No Parking/ Sweeping/ Night Sweeping
6/5/2013	All	4213, 4216	35	No Parking/ Sweeping/ Night Sweeping
6/6/2013	All	4213, 4216	24	No Parking/ Sweeping/ Night Sweeping
6/7/2013	All	4213, 4216	35	Sweeping/ Night Sweeping
6/8/2013	None			Weekend
6/9/2013	None			Weekend
6/10/2013		4213, 4216	45	No Parking/ Sweeping/ Night Sweeping
6/11/2013	All	4213, 4216	37	No Parking/ Sweeping/ Night Sweeping
6/12/2013	All	4213, 4216	32	No Parking/ Sweeping/ Night Sweeping
6/13/2013	All	4213, 4216	21	No Parking/ Sweeping/ Night Sweeping
6/14/2013	All	4213, 4216	43	Sweeping/ Night Sweeping
6/15/2013	None			Weekend
6/16/2013	None			Weekend
6/17/2013	All	4213, 4216	34	No Parking/ Sweeping/ Night Sweeping
6/18/2013	All	4213, 4216	44	No Parking/ Sweeping/ Night Sweeping
6/19/2013	All	4213, 4216	32	No Parking/ Sweeping/ Night Sweeping
6/20/2013	All	4213, 4216	33	No Parking/ Sweeping/ Night Sweeping
6/21/2013	All	4213, 4216	34	Sweeping/ Night Sweeping
6/22/2013	None			Weekend
6/23/2013	None			Weekend
6/24/2013		4213, 4216	45	No Parking/ Sweeping/ Night Sweeping
6/25/2013	All	4213, 4216	37	No Parking/ Sweeping/ Night Sweeping
6/26/2013	All	4213, 4216	17	No Parking/ Sweeping/ Night Sweeping
6/27/2013	All	4213, 4216	19	No Parking/ Sweeping/ Night Sweeping
6/28/2013	All	4213, 4216	12	Sweeping/ Night Sweeping
6/29/2013	None			Weekend
6/30/2013	None			Weekend
Total Miles:				**654**

Date	Sweeping Zone Cleaned	Type of Cleaning (Truck or Hand)	Estimated Linear Miles Cleaned	Comments/Unusual Problems
7/1/2013	All	4213, 4216, 4215	17	No Parking/ Sweeping/ Night Sweeping
7/2/2013	All	4213, 4216, 4215	16	No Parking/ Sweeping/ Night Sweeping
7/3/2013	All	4213, 4216, 4215	18	No Parking/ Sweeping/ Night Sweeping
7/4/2013	Holiday	4213, 4216, 4215	17	No Parking/ Sweeping/ Night Sweeping
7/5/2013	None	4213, 4216, 4215	28	No Parking/ Sweeping/ Night Sweeping
7/6/2013	None			Weekend
7/7/2013	None			Weekend
7/8/2013	All	4213, 4216, 4215	12	No Parking/ Sweeping/ Night Sweeping
7/9/2013	All	4213, 4216, 4215	23	No Parking/ Sweeping/ Night Sweeping
7/10/2013	All	4213, 4216, 4215	28	No Parking/ Sweeping/ Night Sweeping
7/11/2013	All	4213, 4216, 4215	25	No Parking/ Sweeping/ Night Sweeping
7/12/2013	All	4213, 4216, 4215	25	No Parking/ Sweeping/ Night Sweeping
7/13/2013	None			Weekend
7/14/2013	None			Weekend
7/15/2013	All	4213, 4216, 4215	23	No Parking/ Sweeping/ Night Sweeping
7/16/2013	All	4213, 4216, 4215	24	No Parking/ Sweeping/ Night Sweeping
7/17/2013	All	4213, 4216, 4215	18	No Parking/ Sweeping/ Night Sweeping
7/18/2013	All	4213, 4216, 4215	19	No Parking/ Sweeping/ Night Sweeping
7/19/2013	All	4213, 4216, 4215	8	No Parking/ Sweeping/ Night Sweeping
7/20/2013	None			Weekend
7/21/2013	None			Weekend
7/22/2013	All	4213, 4216, 4215	12	No Parking/ Sweeping/ Night Sweeping
7/23/2013	All	4213, 4216, 4215	14	No Parking/ Sweeping/ Night Sweeping
7/24/2013	All	4213, 4216, 4215	20	No Parking/ Sweeping/ Night Sweeping
7/25/2013	All	4213, 4216, 4215	21	No Parking/ Sweeping/ Night Sweeping
7/26/2013	All	4213, 4216, 4215	21	No Parking/ Sweeping/ Night Sweeping
7/27/2013	None			Weekend
7/28/2013	None			Weekend
7/29/2013	All	4213, 4216, 4215	17	No Parking/ Sweeping/ Night Sweeping
7/30/2013	All	4213, 4216, 4215	14	No Parking/ Sweeping/ Night Sweeping
7/31/2013	All	4213, 4216, 4215	17	No Parking/ Sweeping/ Night Sweeping
Total Miles:				**437**

Date	Sweeping Zone Cleaned	Type of Cleaning (Truck or Hand)	Estimated Linear Miles Cleaned	Comments/Unusual Problems
8/1/2013	All	4213, 4216, 4215	27	No Parking/ Sweeping/ Night Sweeping
8/2/2013	All	4213, 4216, 4215	38	No Parking/ Sweeping/ Night Sweeping
8/3/2013	None			Weekend
8/4/2013	None			Weekend
8/5/2013	All	4213, 4216, 4215	23	No Parking/ Sweeping/ Night Sweeping
8/6/2013	All	4213, 4216, 4215	25	No Parking/ Sweeping/ Night Sweeping
8/7/2013	All	4213, 4216, 4215	23	No Parking/ Sweeping/ Night Sweeping
8/8/2013	All	4213, 4216, 4215	39	No Parking/ Sweeping/ Night Sweeping
8/9/2013	All	4213, 4216, 4215	29	No Parking/ Sweeping/ Night Sweeping
8/10/2013	None			Weekend
8/11/2013	None			Weekend
8/12/2013	All	4213, 4216, 4215	37	No Parking/ Sweeping/ Night Sweeping
8/13/2013	All	4213, 4216, 4215	24	No Parking/ Sweeping/ Night Sweeping
8/14/2013	All	4213, 4216, 4215	32	No Parking/ Sweeping/ Night Sweeping
8/15/2013	All	4213, 4216, 4215	39	No Parking/ Sweeping/ Night Sweeping
8/16/2013	All	4213, 4216, 4215	39	No Parking/ Sweeping/ Night Sweeping
8/17/2013	None			Weekend
8/18/2013	None			Weekend
8/19/2013	All	4213, 4216, 4215	25	No Parking/ Sweeping/ Night Sweeping
8/20/2013	All	4213, 4216, 4215	28	No Parking/ Sweeping/ Night Sweeping
8/21/2013	All	4213, 4216, 4215	20	No Parking/ Sweeping/ Night Sweeping
8/22/2013	All	4213, 4216, 4215	28	No Parking/ Sweeping/ Night Sweeping
8/23/2013	All	4213, 4216, 4215	35	No Parking/ Sweeping/ Night Sweeping
8/24/2013	None			Weekend
8/25/2013	None			Weekend
8/26/2013	All	4213, 4216, 4215	36	No Parking/ Sweeping/ Night Sweeping
8/27/2013	All	4213, 4216, 4215	34	No Parking/ Sweeping/ Night Sweeping
8/28/2013	All	4213, 4216, 4215	32	No Parking/ Sweeping/ Night Sweeping
8/29/2013	All	4213, 4216, 4215	41	No Parking/ Sweeping/ Night Sweeping
8/30/2013	All	4213, 4216, 4215	28	No Parking/ Sweeping/ Night Sweeping
8/31/2013	None			Weekend
Total Miles:				**682**

Date	Sweeping Zone Cleaned	Type of Cleaning (Truck or Hand)	Estimated Linear Miles Cleaned	Comments/Unusual Problems
9/1/2013	Weekend			Weekend
9/2/2013	Holiday		16	None
9/3/2013	All	4213, 4216	19	No Parking/ Sweeping/ Night Sweeping
9/4/2013	All	4213, 4216	18	No Parking/ Sweeping/ Night Sweeping
9/5/2013	All	4213, 4216	17	No Parking/ Sweeping/ Night Sweeping
9/6/2013	All	4213, 4216	13	No Parking/ Sweeping/ Night Sweeping
9/7/2013	None			Weekend
9/8/2013	None			Weekend
9/9/2013	All	4213, 4216	15	No Parking/ Sweeping/ Night Sweeping
9/10/2013	All	4213, 4216	11	No Parking/ Sweeping/ Night Sweeping
9/11/2013	All	4213, 4216	32	No Parking/ Sweeping/ Night Sweeping
9/12/2013	All	4213, 4216	31	No Parking/ Sweeping/ Night Sweeping
9/13/2013	All	4213, 4216	33	No Parking/ Sweeping/ Night Sweeping
9/14/2013	None			Weekend
9/15/2013	None			Weekend
9/16/2013	All	4213, 4216	28	No Parking/ Sweeping/ Night Sweeping
9/17/2013	All	4213, 4216	24	No Parking/ Sweeping/ Night Sweeping
9/18/2013	All	4213, 4216	25	No Parking/ Sweeping/ Night Sweeping
9/19/2013	All	4213, 4216	18	No Parking/ Sweeping/ Night Sweeping
9/20/2013	All	4213, 4216	27	No Parking/ Sweeping/ Night Sweeping
9/21/2013	None			Weekend
9/22/2013	None			Weekend
9/23/2013	All	4213, 4216	21	No Parking/ Sweeping/ Night Sweeping
9/24/2013	All	4213, 4216	38	No Parking/ Sweeping/ Night Sweeping
9/25/2013	All	4213, 4216	40	No Parking/ Sweeping/ Night Sweeping
9/26/2013	All	4213, 4216	43	No Parking/ Sweeping/ Night Sweeping
9/27/2013	All	4213, 4216	34	No Parking/ Sweeping/ Night Sweeping
9/28/2013	None			Weekend
9/29/2013	None			Weekend
9/30/2013	All	4213, 4216	38	No Parking/ Sweeping/ Night Sweeping
Total Miles:				**541**

Date	Sweeping Zone Cleaned	Type of Cleaning (Truck or Hand)	Estimated Linear Miles Cleaned	Comments/Unusual Problems
10/1/2013	All	4213, 4216	18	No Parking/ Sweeping
10/2/2013	All	4213, 4216	17	No Parking/ Sweeping
10/3/2013	All	4213, 4216	13	No Parking/ Sweeping
10/4/2013	All	4213, 4216	17	No Parking/ Sweeping
10/5/2013	None			Weekend
10/6/2013	None			Weekend
10/7/2013	All	4213, 4216	15	No Parking/ Sweeping
10/8/2013	All	4213, 4216	16	No Parking/ Sweeping
10/9/2013	All	4213, 4216	28	No Parking/ Sweeping
10/10/2013	All	4213, 4216	30	No Parking/ Sweeping
10/11/2013	All	4213, 4216	21	No Parking/ Sweeping
10/12/2013	None			Weekend
10/13/2013	None			Weekend
10/14/2013	Holiday	4213, 4216	30	None
10/15/2013	All	4213, 4216	38	No Parking/ Sweeping
10/16/2013	All	4213, 4216	40	No Parking/ Sweeping
10/17/2013	All	4213, 4216	32	No Parking/ Sweeping
10/18/2013	All	4213, 4216	28	No Parking/ Sweeping
10/19/2013	None			Weekend
10/20/2013	None			Weekend
10/21/2013	All	4213, 4216	29	No Parking/ Sweeping
10/22/2013	All	4213, 4216	37	No Parking/ Sweeping
10/23/2013	All	4213, 4216	15	No Parking/ Sweeping
10/24/2013	All	4213, 4216	16	No Parking/ Sweeping
10/25/2013	All	4213, 4216	11	No Parking/ Sweeping
10/26/2013	None			Weekend
10/27/2013	None			Weekend
10/28/2013	1,2,3	4216	13	No Parking
10/29/2013	1,2	4216	12	No Parking
10/30/2013	3,4	4216	11	No Parking
10/31/2013	1,2	4216	15	No Parking
Total Miles:				**502**

Date	Sweeping Zone Cleaned	Type of Cleaning (Truck or Hand)	Estimated Linear Miles Cleaned	Comments/Unusual Problems
11/1/2013	3,4	4216	13	No Parking
11/2/2013	None			Weekend
11/3/2013	None			Weekend
11/4/2013		4216	15	No Parking
11/5/2013		4216	13	No Parking
11/6/2013		4216	13	No Parking
11/7/2013		4216	16	No Parking
11/8/2013		4216	14	No Parking
11/9/2013	None			Weekend
11/10/2013	None			Weekend
11/11/2013		4216	12	No Parking
11/12/2013		4216	15	No Parking
11/13/2013		4216	16	No Parking
11/14/2013		4216	14	No Parking
11/15/2013		4216	13	No Parking
11/16/2013	None			Weekend
11/17/2013	None			Weekend
11/18/2013		4216	10	No Parking
11/19/2013		4216	12	No Parking
11/20/2013		4216	12	No Parking
11/21/2013		4216	13	No Parking
11/22/2013		4216	12	No Parking
11/23/2013	None			Weekend
11/24/2013	None			Weekend
11/25/2013		4216	8	No Parking
11/26/2013		4216	10	No Parking
11/27/2013		4216	13	No Parking
11/28/2013	Holiday			None
11/29/2013	Holiday			None
11/30/2013	None			Weekend
Total Miles:				**244**

Date	Sweeping Zone Cleaned	Type of Cleaning (Truck or Hand)	Estimated Linear Miles Cleaned	Comments/Unusual Problems
12/1/2013	Weekend			Weekend
12/2/2013		4216	12	No Parking
12/3/2013		4216	13	No Parking
12/4/2013		4216	13	No Parking
12/5/2013		4216	12	No Parking
12/6/2013		4216	13	No Parking
12/7/2013	None			Weekend
12/8/2013	None			Weekend
12/9/2013		4216	15	No Parking
12/10/2013		4216	17	No Parking
12/11/2013		4216	12	No Parking
12/12/2013		4216	13	No Parking
12/13/2013		4216	15	No Parking
12/14/2013	None			Weekend
12/15/2013	None			Weekend
12/16/2013		4216	17	No Parking
12/17/2013		4216	11	No Parking
12/18/2013		4216	8	No Parking
12/19/2013		4216	13	No Parking
12/20/2013		4216	14	No Parking
12/21/2013	None			Weekend
12/22/2013	None			Weekend
12/23/2013		4216	12	No Parking
12/24/2013		4216	10	No Parking
12/25/2013	Holiday			None
12/26/2013		4216	14	No Parking
12/27/2013		4216	9	No Parking
12/28/2013	None			Weekend
12/29/2013	None			Weekend
12/30/2013		4216	9	No Parking
12/31/2013		4216	7	No Parking
Total Miles:				**259**
YTD:				**5,255**

APPENDIX J:
RECORD OF CSS TRUNK SEWER FLUSHING

FORM E

Record of CSS Trunk Sewer Flushing

City of Alexandria, Virginia
Transportation & Environmental Services

1. Location of Sewer (Street): As listed below from the one month maintenance list
2. Began Flushing at (Name Cross Street or Other Feature): one set up for each sewer as listed
3. Ended Flushing at (Name Cross Street or Other Feature): _____
4. Length Flushed (Feet) as listed for each location
5. Date Flushing Performed: listed below
6. Flushing Performed by: Flippo Construction, Unit 4470
   - ☐ City, Name Crew _____
   - ☐ Contractor, Name Flippo Hydro Jet Contract Crew
7. Name of Person Preparing Report: Melvin Entwisle Jr

Locations & Footage:
St. Asaph St at the rear 600 Blk. of Franklin St in the alley- 300'
500 Blk. 1st St at St Asaph St in front of Giant food store- 325'
2nd St & Pitt St to East Abingdon Dr. and in the parking lot at the rear of Old Colonial Inn- 1100'
500 Blk. of S. Columbus St. from the manhole at Wilkes St.- 360'
In the alley adjacent to the restaurant at 107 S. St. Asaph St- 125'
From Cameron St in the alley behind Gadsby's Tavern- 200'
From the intersection of N. St Asaph St & Montgomery St to 100' west on Montgomery St
Intersection of Pitt St & 2nd St north on Pitt St- 285'
Intersection of 2nd St and Royal St going west on 2nd St to Pitt St 500'
Dates:

January 2013	July - August 2013
February - March 2013	September 2013
April 2013	October - December 2013
May - June 2013	

FORM E

Record of CSS Trunk Sewer Flushing

City of Alexandria, Virginia
Transportation & Environmental Services

1. Location of Sewer (Street): As listed on the weekly siphon list
2. Began Flushing at (Name Cross Street or Other Feature): one set up for each siphon as listed
3. Ended Flushing at (Name Cross Street or Other Feature): _____
4. Length Flushed (Feet) as listed for each location
5. Date Flushing Performed: listed below
6. Flushing Performed by: Flippo Construction, Unit 4470
   - ☐ City, Name Crew _____
   - ☐ Contractor, Name Flippo Hydro Jet Contract Crew
7. Name of Person Preparing Report: Melvin Entwisle Jr

Locations & Footage:	Dates:		
2nd & Colonial Ave- 50'	January 4, 2013	May 24, 2013	October 11, 2013
Pitt St & Franklin St- 60'	January 11, 2013	May 31, 2013	October 18, 2013
Green St & S. Royal St- 208'	January 18, 2013	June 27, 2013	October 25, 2013
N. Patrick St & Madison St- 50'	January 25, 2013	June 14, 2013	November 1, 2013
S. Royal St & Franklin St - 90'	February 1, 2013	June 21, 2013	November 8, 2013
208 S. Henry St- 50'	February 8, 2013	June 28, 2013	November 15, 2013
	February 15, 2013	July 5, 2013	November 22, 2013
	February 22, 2013	July 12, 2013	November 27, 2013
	March 1, 2013	July 19, 2013	December 6, 2013
	March 8, 2013	July 26, 2013	December 13, 2013
	March 15, 2013	August 2, 2013	December 20, 2013
	March 22, 2013	August 9, 2013	December 27, 2013
	March 29, 2013	August 16, 2013	
	April 5, 2013	August 23, 2013	
	April 12, 2013	August 30, 2013	
	April 19, 2013	September 6, 2013	
	April 26, 2013	September 13, 2013	
	May 6, 2013	September 20, 2013	
	May 10, 2013	September 27, 2013	
	May 17, 2013	October 4, 2013	

APPENDIX K:
RECORD OF CATCH BASIN CLEANING

City of Alexandria
Department of Transportation & Environmental Services
Maintenance Division
CATCH BASIN & INLET CLEANING WORK ORDER

Work Order Number: 30788

Job Type: Clean

Work Order Status: CLOSED

WO Initiated Date:	12/13/2012 7:23:22 AM
Supervisor:	
Assigned To:	ENTWISLE, MELVIN B
Completed By:	ENTWISLE, MELVIN B
Closed By:	ENTWISLE, MELVIN B

Projected Start Date:	12/13/2012
Projected Finish Date:	12/13/2012
Actual Start Date:	12/13/2012
Actual Finish Date:	1/23/2013
Closed Date:	2/7/2013 10:13:22 AM

Address:	ZONE 1
General Location:	BETWEEN N. WASHINGTON ST. & WEST ST. BETWEEN KING ST. & SLATERS LN.

Instructions:

Comments:

By ENTWISLE, MELVIN B: 2/7/2013 10:09:10 AM Flippo unit 4490 cleaned and inspected all catch basins and inlets.

Number of Structures Cleaned

Storm Catch Basin ID
000372CB
000374CB
000376CB
000390CB
000391CB

Storm Inlet ID
005213IN
005208IN
005209IN
005210IN
005222IN
005223IN
005224IN
005214IN
005215IN
005216IN
005228IN
005222IN
005234IN
005235IN
005294IN
005295IN
005296IN
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007188IN
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007191IN
007193IN
007194IN

007182IN
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007210IN
007211IN
007200IN
007201IN
007202IN
007203IN
007204IN
007205IN
007206IN
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007843IN
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008050IN
008051IN
008052IN
008053IN

Combined Catch Basin ID
000005SCCB
000006SCCB
000007SCCB
000008SCCB
000013SCCB

000014SCCB
000015SCCB
000023SCCB
000026SCCB
000036SCCB
000037SCCB
000038SCCB
000039SCCB
000041SCCB
000042SCCB
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000155SCCB
000156SCCB
000179SCCB
000184SCCB

Combined Inlet ID
000031SCIN
000036SCIN
000048SCIN
000049SCIN
000050SCIN
000051SCIN
000052SCIN
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000902SCIN

City of Alexandria
Department of Transportation & Environmental Services
Maintenance Division
CATCH BASIN & INLET CLEANING WORK ORDER

Work Order Number: 38774

Job Type: Clean

Work Order Status: CLOSED

WO Initiated Date:	6/6/2013 8:15:48 AM
Supervisor:	
Assigned To:	ENTWISLE, MELVIN B
Completed By:	ENTWISLE, MELVIN B
Closed By:	ENTWISLE, MELVIN B

Projected Start Date:	6/14/2013
Projected Finish Date:	8/1/2013
Actual Start Date:	6/14/2013
Actual Finish Date:	8/1/2013
Closed Date:	8/13/2013 10:45:02 AM

Address:	ZONE 1 SOUTH END
General Location:	BETWEEN S. WASHINGTON ST & S. UNION ST. BETWEEN KING ST & GREEN ST

Instructions:

Check the structure if cleaned. Note any structure defects that require attention next to the structurenumber in the list.

Comments:

By ENTWISLE, MELVIN B: 8/13/2013 10:13:51 AM Flippo unit 4490 cleaned and inspected all catch basins and inlets.

Number of Structures Cleaned

Storm Catch Basin ID
000392CB
000393CB
000394CB
000395CB
000454CB
000455CB
000456CB

Storm Inlet ID
004431IN
005301IN
005304IN
005305IN
005311IN
005312IN
005313IN
005314IN
005315IN
005316IN
005317IN
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005411IN
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007279IN
007280IN
007302IN
007308IN
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007315IN
007316IN
007318IN
007319IN
007320IN
007322IN
007323IN
007324IN
007325IN
007326IN

007327IN
007328IN
007329IN

Combined Catch Basin ID
000109SCCB
000110SCCB
000111SCCB
000112SCCB
000113SCCB
000114SCCB
000117SCCB
000127SCCB
000128SCCB
000129SCCB
000130SCCB
000131SCCB
000132SCCB
000133SCCB
000135SCCB
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000173SCCB
000174SCCB
000175SCCB
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000177SCCB
000178SCCB

Combined Inlet ID
000135SCIN
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APPENDIX L:
LEAF COLLECTION PROGRAM

Leaf Vacuuming

Rake leaves out the day before your Collection Starts dates.

HOW TO PREPARE

- Rake leaves into piles at the street curb. This enables crews to move more quickly and efficiently.
- Remove stones, litter, branches or other debris. These items can damage our equipment and hurt our workers.
- Avoid placing leaves in front of storm drains or water meter covers.
- Move parked cars off leaf piles.
- Do not rake leaves into alleys or service roads.

Please Remember

Dates are subject to change due to weather conditions

LEAF VACUUMING SCHEDULE

Zone 1

	Collection Starts
1st Pass	November 13
2nd Pass	December 4
3rd Pass	December 23

Zone 2

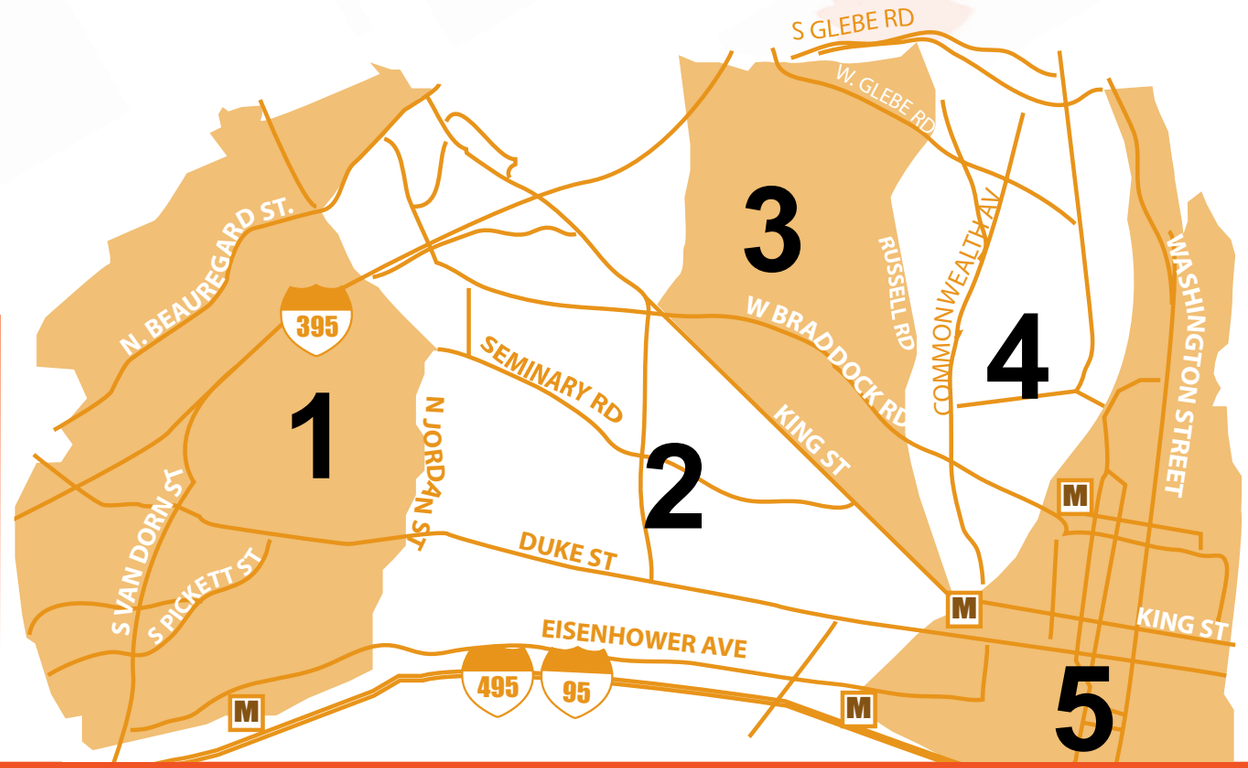
	Collection Starts
1st Pass	October 28
2nd Pass	November 18
3rd Pass	December 09

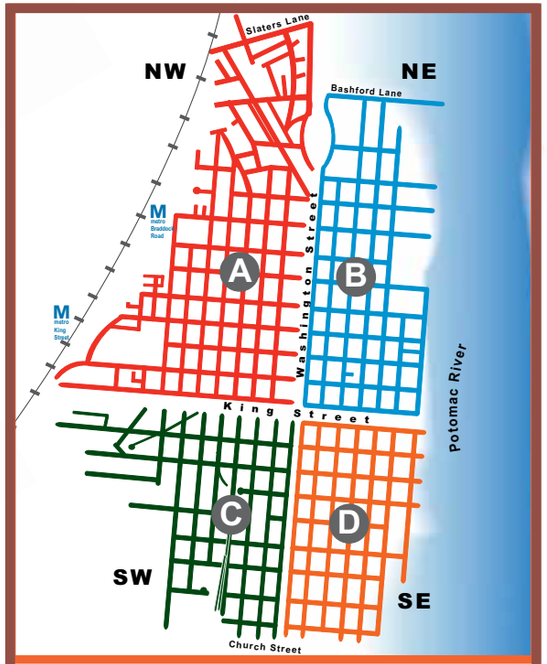
Zone 3

	Collection Starts
1st Pass	October 31
2nd Pass	November 22
3rd Pass	December 13

Zone 4

	Collection Starts
1st Pass	November 7
2nd Pass	November 29
3rd Pass	December 18





Zone 5 - Old Town

Section A

	Collection Starts
1st Pass	October 28
2nd Pass	November 18
3rd Pass	December 9

Section B

	Collection Starts
1st Pass	October 31
2nd Pass	November 22
3rd Pass	December 13

Section C

	Collection Starts
1st Pass	November 7
2nd Pass	November 29
3rd Pass	December 18

Section D

	Collection Starts
1st Pass	November 13
2nd Pass	December 4
3rd Pass	December 23

Leaf Bag Collection

Bags are collected curbside one business day after your regular refuse collection day. Leaf bag collection runs from October 28 through December 27.

HOW TO PREPARE

- Use free City bags. Using paper bags allows the City to recycle leaves into mulch. Leaves in plastic bags will be thrown away as trash at the Covanta Energy-from-Waste plant.
- Remove dirt, stones, litter, and other debris from leaves before placing in bags.

Free City leaf bags are available starting October 15 at the following locations:

Limit of 15 bags per visit. (Residents only)

City Hall:
301 King Street
Monday –Friday, 7am – 8pm

Field Office City of Alexandria:
2900 Business Center Drive
Monday – Saturday, 8am – 5pm

Charles Barrett Recreation Center:
1115 Martha Custis Drive
Monday – Friday, 2pm – 6pm

City Leaf Bag locations continued:

William Ramsay Recreation Center:
5650 Sanger Avenue
Monday – Friday, 9am – 9pm
Saturday, 9am – 11pm
Sunday, 1pm – 5pm

Mount Vernon Recreation Center:
2701 Commonwealth Avenue
Monday – Friday, 9am – 9pm
Saturday, 9am – 6pm

Compost Leaves at Home

Composting takes advantage of nature's recycling to make a valuable organic supplement. Check at your local hardware store to purchase a compost bin.

For more information visit:

alexandriava.gov/LeafCollection
Leaf Collection Hotline: 703.746.LEAF (5323)
City Customer Service: 703.746.HELP (4357)
Sign up today for Recycling & Solid Waste updates at alexandriava.gov/eNews

Like us on Facebook: TES/AlexandriaVA

Presort Standard
U.S. Postage
PAID
Permit # 2782
Merrifield, VA

City of Alexandria
Transportation and Environmental Services
Solid Waste Division
2900 Business Center Drive
Alexandria, VA 22314

Printed on Recycled Paper
50% Post Consumer Waste

READY, RAKE, RECYCLE!

Leaf Collection Schedule

Collection Begins October 28, 2013

Eco-City Alexandria

APPENDIX M:
CSO OUTFALL SIGNAGE

Public Notice Sign at Pendleton Street Outfall

Public Notice Sign at Royal Street Outfall

Public Notice Sign at Duke Street and Hoofs Run Outfall

APPENDIX N:
COMBINED SEWER SYSTEM BROCHURE

Combined Sewer Overflow Locations & Drainage Areas

The oldest section of the City of Alexandria is serviced by a Combined Sewer System (CSS) that comprises approximately 540 acres (0.8 square miles) of the City. The CSS area is divided into three drainage areas or "sewersheds" as indicated on the map below. There are a total of four CSO outfalls that serve these sewersheds. The map also shows the location of the outfalls.

During wet weather, the City is authorized to discharge overflows through these outfalls under a Virginia Pollutant Discharge Elimination System (VPDES) permit issued by the Virginia Department of Environmental Quality (DEQ).

It is unlawful for anyone to:

- **Construct any new combined sewer, or any extension of a combined sewer, inside or outside of the CSS service area of the City (Sec. 5-6-40 (a)1).**
- **Connect any new inflow source other than sewage disposal permitted into a sanitary sewer which is a tributary to the CSS (Sec. 5-6-40 (a)2).**

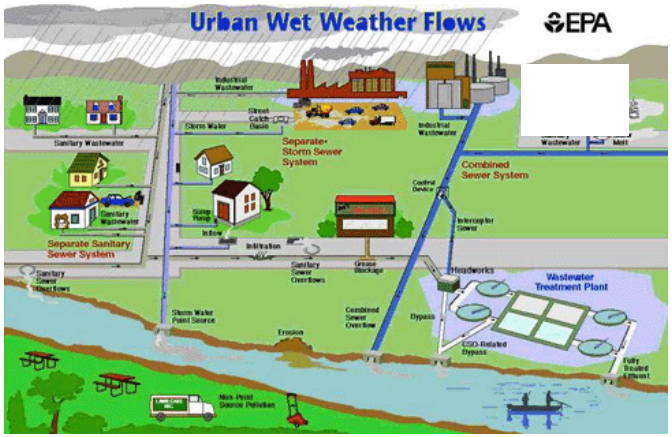
For further information about the City's combined sewer system, contact the City of Alexandria's Division of Environmental Quality at 703.838.4334 or visit http://alexandriava.gov/tes/DEQ/watershed_management_home.html

Information on Alexandria's Combined Sewer System

There are two types of storm sewer systems in the City of Alexandria – a combined sewer system, and a separate sewer system.

- Separate sewer systems consist of two pipes. One pipe conveys stormwater runoff from storm drains to local waterways. The other pipe conveys sanitary sewage to a local wastewater treatment plant.
- Combined sewer systems (CSS) have only one pipe which conveys both sewage and stormwater to a local wastewater treatment plant.

Many older cities in the United States are served by combined sewers. Such sewers, during wet weather and when the wastewater treatment plant can not handle the flows, discharge excess flows into local waterways.



Source U.S. EPA

City of Alexandria's Combined Sewer System Overflow Control Program

What is Combined Sewer Overflow?

During dry weather conditions, the sewage from homes and businesses is taken to the wastewater treatment plant operated by the Alexandria Sanitation Authority. There, the wastewater is treated to remove pollutants before being discharged to the Potomac River.

During periods of heavy rainfall or snowmelt, wastewater volume in a combined sewer system can exceed the capacity of the sewer system or treatment plant. To prevent flooding and damage to the system, combined sewer systems are designed to overflow occasionally and discharge excess wastewater directly to nearby streams, rivers, or other water bodies. The excess flow is called combined sewer overflow (CSO). In Alexandria, overflows discharge into the Potomac River, Hunting Creek, and Hooff's Run.

Hooff's Run outfall

City staff inspecting the Pendleton Street outfall

What is the City Doing?

In order to continually control CSO discharges, the City has implemented a number of programs ranging from weekly inspections to regular sewer and street cleaning and litter control. These programs have proven effective in minimizing any water quality impacts from CSOs.

The City has also posted signs at each CSO outfall stating that persons should avoid contact with the water in the vicinity of the outfall during or after a heavy or long wet weather event.

The City of Alexandria has implemented the EPA's Nine Minimum Controls, which are technology-based measures designed to reduce the number of CSOs and improve the water quality. The Nine Minimum Controls are listed in the table below along with a brief description of the actions taken by the City.

Notice sign at Royal Street outfall

Pendleton Street outfall

The City and the Virginia Department of Environmental Quality have conducted extensive studies and continually monitor the City's combined sewer system. These studies have shown that there are only a few occasions when the overflows might contribute to reducing water quality conditions.

	Nine Minimum Controls	Actions
1	Proper operation and regular maintenance programs for the sewer system and the CSOs	- Regular sewer flushing - Regular CCTV inspection of sewers - Regular catch basin cleaning program
2	Maximum use of the collection system for storage	- Sewer relining projects to reduce inflow and infiltration - Onsite stormwater retention required for new development
3	Control of non-domestic discharges	-Alexandria Sanitation Authority administers an industrial pretreatment program under its VA Pollutant Discharge Elimination System permit
4	Maximize flow to the local wastewater treatment plant	-Diversion facilities inspected regularly inspected and maintained
5	Prohibit CSOs during dry weather	- Regular inspections - 24 hour on-call response team for reported dry weather overflows
6	Control of solid and floatable materials in CSOs	- Regular sewer flushing and catch basin cleaning - Use of hooded catch basins - Regular leaf season pickup, street cleaning program, stream cleanups
7	Pollution Prevention	- Recycling and Industrial waste reduction - Best Management Practices for auto-related industries
8	Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts	- Posted signs at outfalls - Public information bulletin available
9	Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls	- Monitoring program for the CSS in accordance with the City's VPDES permit