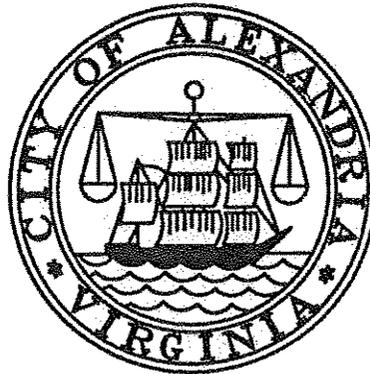


CITY OF ALEXANDRIA, VIRGINIA  
DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES

**CSO Long Term Control Plan Summary  
and  
Post-Construction Monitoring**



**January 1999**

Greeley and Hansen  
8905 Presidential Parkway, Suite 230  
Upper Marlboro, MD 20772

CITY OF ALEXANDRIA, VIRGINIA  
DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES

**CSO Long Term Control Plan Summary  
and  
Post-Construction Monitoring**

Greeley and Hansen  
January 1999

**1.1 BACKGROUND**

Originally, much of the City of Alexandria, Virginia (City) was served by combined sewers. The City has separated most of the original system and today approximately 500 acres of the older southeastern section of the City continues to be served by combined sewers. The combined sewer area is shown on Figure 1 and combined sewer overflows (CSOs) can occur at three locations as follows:

- At the foot of Pendleton Street at Oronoco Bay
- At the foot of Royal Street at Hunting Creek
- Under Duke Street at Hooffs Run

In 1990 the City initiated a study of its combined sewer system (CSS). Based on the studies, the Virginia Department of Environmental Quality (DEQ) issued the City a VPDES permit for the CSS effective April 3, 1995. The DEQ found that the City's CSO discharges do not impair beneficial use of the receiving waters. The permit was issued after public notice produced no comments and requires the City to meet conditions as follows:

- Meet the technology based requirements of the United States Environmental Protection Agency's (USEPA) Combined Sewer Overflow Control Policy (April 1994). These requirements comprise EPA's "Nine Minimum Controls" to implement best management practices (BMPs) and minor structural improvements on combined sewer systems.
- Conduct in-stream monitoring for Hooffs Run to analyze for copper, zinc and hardness.
- Not later than January 1, 1997, submit a report documenting implementation of the Nine Minimum Controls as applicable to the City's CSS.

- Report annually on overflow occurrences employing the CSS hydraulic model together with a summary of CSS trunk sewer inspection and maintenance.
- Develop and submit to DEQ a post-construction water quality monitoring program.

Additionally, the permit requires development of a long-term control plan.

## 1.2 PLAN STATUS AND REMAINING ACTIVITIES

Current status of the requirements included in the City's VPDES permit are summarized as follows:

- The City has implemented the Nine Minimum Controls as applicable to the CSS and submitted the report which documents the implementation.
- DEQ approved a monitoring plan for Hooffs Run on September 15, 1997 and the City initiated monitoring. The first samples were obtained in December 1997, but the City encountered difficulties with procedures related to sample preparation and had to obtain additional equipment to properly prepare and filter samples at the site. Since then, sampling has been hampered by lack of rain. This activity will continue to completion.
- The City reports annually on overflows and inspection and maintenance of the CSS.
- In February 1998 the City held a public meeting to discuss long term control plan alternatives. Information compiled for this meeting is attached as Appendix No. 1. DEQ has accepted the City's studies and modeling results that accompanied the permit application. According to the permit fact sheet, the City's CSO discharges do not preclude attainment of existing water quality standards and, therefore, the long term control plan presented for public review and comment comprised continued implementation of the Nine Minimum Controls along with some potential enhancements. There were no significant public comments to the proposed long term control plan and responsiveness documentation is summarized in Appendix No. 2.

At this point, the monitoring, studies and public involvement conducted by the City and the findings and public review process made by DEQ in issuing the permit constitute development of a long term control plan for the City's CSS. Also, the City has moved forward and implemented the various Nine Minimum Controls which comprise the fundamental element of the long term control plan. Additionally, the several public meetings held to review what has become the City's long term CSO control plan and the

public review conducted as part of the VPDES permit issuance have already provided opportunities for public comment on the long term CSO control plan.

The City's long term CSO control plan comprises the following:

- Continued implementation of the Nine Minimum Controls (per 1997 documentation report).
- Provide to DEQ annual reports on overflows and inspection and maintenance of the CSS.
- Develop and submit to DEQ a post-construction monitoring program for the CSS.

Work remaining on the long term control plan comprises development and submission to DEQ of a post-construction water quality monitoring program. In accordance with the VPDES permit, DEQ will use the post-construction monitoring results to verify compliance with water quality standards and the protection of receiving stream beneficial uses, as well as to ascertain the effectiveness of the CSO controls.

### 1.3 PROPOSED MONITORING PLAN

There are two basic considerations to be addressed by post-construction monitoring as follows:

- First, the City's VPDES permit expires April 3, 2000 and information for the reissuance application must be received by DEQ not later than October 3, 1999. In this regard, the City should proceed to obtain current information on CSO quantities and characteristics for the permit reissuance application. This should include data from 1999 spring rain period.
- Second, development of a framework for monitoring under the reissued permit should be initiated and submitted to DEQ with the permit reissuance application.

A proposed plan for accomplishing the first consideration related to the long term control plan post-construction monitoring is summarized as follows:

- Install a continuous flow monitor and wet weather event sampling station on the Royal Street CSO outfall. This location was not included in the original monitoring and will provide information on discharges to Hunting Creek.

- Install a flow monitor on the discharge at Duke Street. This will provide flow information that can be used in conjunction with the Hooffs Run sampling information (which comprises sampling above and below the CSO discharge). The City will also use this monitor for continual data acquisition. This monitor is in the process of being installed and is expected to be operational by March 1999.

Monitoring these locations will provide information for three of the four potential CSO discharges and the information will be correlated with the CSS hydraulic and receiving water models to compare current information to the previously evaluated conditions. This will allow assessment of the CSO impacts on receiving waters using existing instream data, from the STORET program and other local monitoring programs (e.g. MWCOG data).

This approach will also identify whether or not additional instream monitoring should be conducted and if so, this can be made a part of the monitoring for the initial phase of the reissued permit.

Proposed monitoring for the Royal Street CSO outfall is summarized as follows:

- Initiate monitoring to obtain data during spring 1999 rain season.
- Try to obtain data from at least 8 wet weather events.
- Sample the first three hours of a wet weather event. This matches the original monitoring and average overflow duration identified in the annual reports for 1995, 1996 and 1997.

A sampling plan and protocol is summarized in Table 1. Substances selected are those of concern based on findings from the VPDES permit fact sheet. Information obtained and an assessment will be submitted to DEQ when completed and with the application for permit reissuance.

FIGURE 1

# CONTROL OF SOLID AND FLOATABLE MATERIALS FROM CSO's

## LEGEND



APPROXIMATE LOCATION OF RIVER FRONT CLEAN-UP PROGRAM



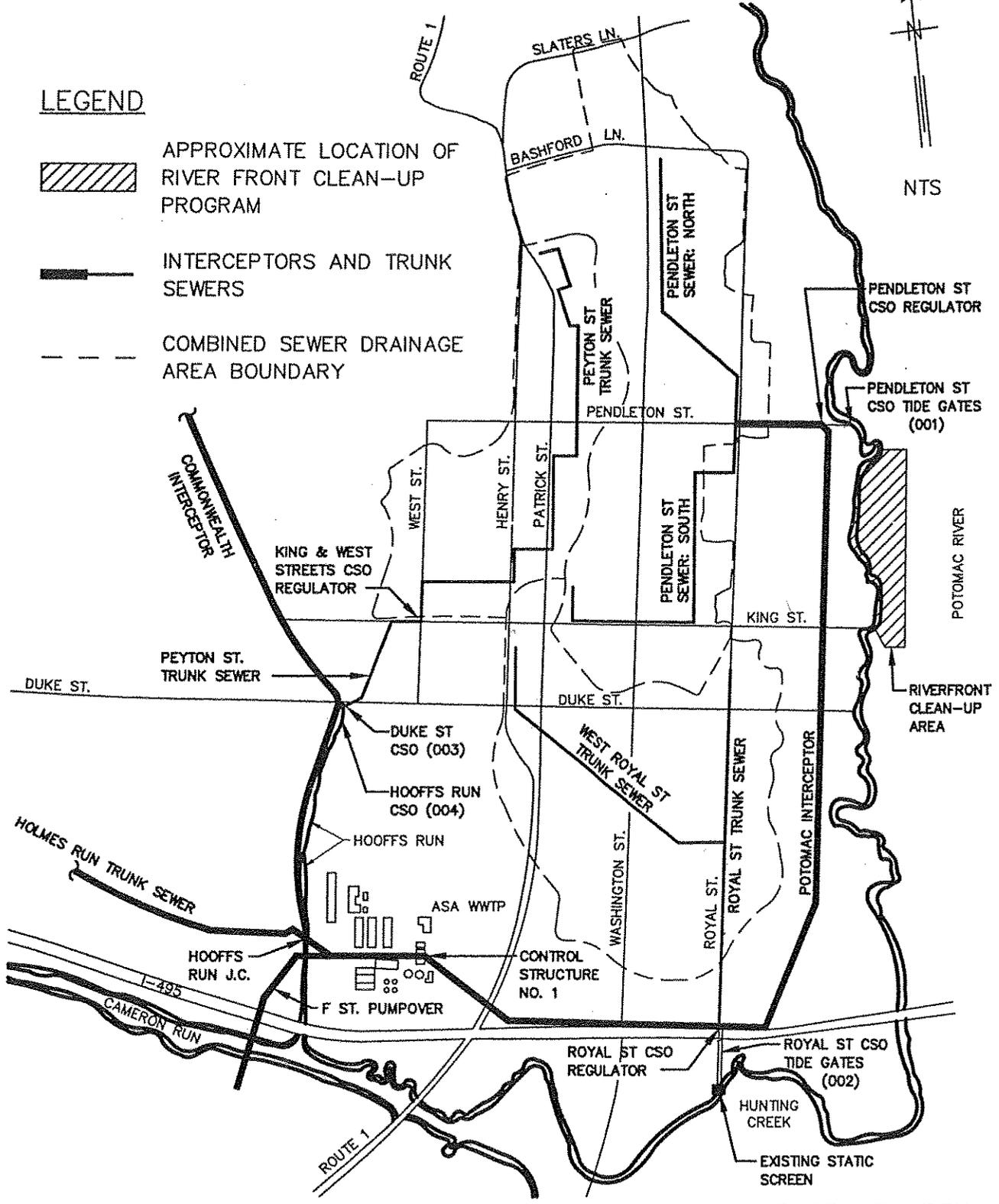
INTERCEPTORS AND TRUNK SEWERS



COMBINED SEWER DRAINAGE AREA BOUNDARY



NTS



FILE: K:\CADD\0573\106-01\VOOCRA3 SCALE: 1:11 09/29, 1995 at 11:58 \*R11 c2\*

GREELEY AND HANSEN

CITY OF ALEXANDRIA  
TRANSPORTATION AND ENVIRONMENTAL SERVICES  
CSO LONG TERM CONTROL PLAN  
JANUARY 1999

TABLE 1

## Royal Street CSO Post-Construction Monitoring

CSO Discharge Analyses and ProtocolA. ANALYSES

<u>Characteristic or Substance to be Analyzed</u>	<u>Form</u>	<u>Minimum Detection Limit (ug/l)<sup>(1)</sup></u>	<u>Remarks</u>
<b>I. <u>Conventional Characteristics</u></b>			
CBOD5	N/A	(2)	mg/l
Suspended solids	"	(2)	mg/l
Total phosphorous	"	(2)	mg/l
Ammonia	"	(2)	NH <sub>3</sub> -N (mg/l)
Hardness	"	(2)	as CaCO <sub>3</sub> (mg/l)
pH	"	(2)	Std. units
Fecal Coliform	"	(2)	#/100 ml
<b>II. <u>Metals</u></b>			
Antimony	(3)		
Arsenic	"	10.0	
Arsenic III	"	10.0	
Barium	"		
Cadmium	"	1.0	
Chromium III	"	10.0	
Chromium IV	"	10.0	
Copper	"	1.0	
Iron	"		
Lead	"	5.0	
Manganese	"		
Mercury	"	0.2	
Nickel	"	4.0	
Selenium	"	5.0	
Silver	"	0.2	
Zinc	"	10.0	

(1) Where a value is listed it refers to the limit under an approved U.S. EPA analytical method.

(2) Per established VPDES permit methods and procedures.

(3) Dissolved and total recoverable.

TABLE 1, continued

B. PROTOCOL

1. Characteristics and substances selected for analyses will be periodically reviewed as data are accumulated. Additions, deletions or other modifications may be made based on the data review.
2. Individual samples will be analyzed to the extent practicable to obtain time related discharge information. It may not be possible to sample and/or analyze for every characteristic or substance for every event. The overall objective is to obtain reliable and sufficient information.
3. Manual grab samples may be obtained from time to time for purposes of characterizing and/or verifying information obtained from automatic sampling.
4. Samples considered to be contaminated or otherwise unfit for analyses will not be analyzed. Test results suspected of being unreliable will not be reported and the circumstances explained.

CITY OF ALEXANDRIA, VIRGINIA  
DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES

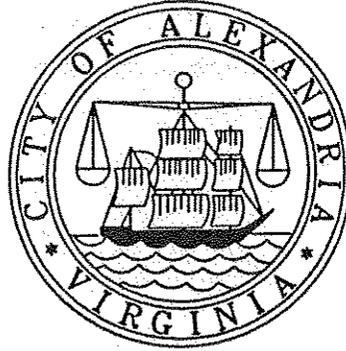
CSO Long Term Control Plan Summary  
and  
Post-Construction Monitoring

APPENDIX NO. 1

Public Meeting Information Document

Greeley and Hansen  
January 1999

City of Alexandria, Virginia  
Transportation and Environmental Services



**INFORMATION DOCUMENT FOR  
PUBLIC INFORMATION MEETING ON  
CITY OF ALEXANDRIA  
COMBINED SEWER OVERFLOW PROGRAM**

**Public Meeting: February 10, 1998 at 7:30 pm  
Room 2000, City Hall**

**January, 1998**

Greeley and Hansen  
8905 Presidential Parkway  
Upper Marlboro, MD 20772

City of Alexandria, Virginia  
Transportation and Environmental Services

**INFORMATION DOCUMENT FOR PUBLIC INFORMATION MEETING ON  
CITY OF ALEXANDRIA COMBINED SEWER OVERFLOW PROGRAM**

Greeley and Hansen  
January 1998

**BACKGROUND**

Many older cities in the United States are served by combined sewers. A combined sewer carries both sewage and runoff from storms. Modern practice is to build separate sewers for sewage and storm water. Approximately 500 acres of the older southeastern section of the City of Alexandria are served by combined sewers. The combined sewer area is shown on Figure 1, on page 3.

In a combined sewer system during dry weather conditions, the sewage from homes and businesses is taken to the sewage treatment plant operated by the Alexandria Sanitation Authority. There, the wastewater receives treatment to remove pollutants before being discharged to tidal water of the Potomac River at Hunting Creek.

When the capacity of a combined sewer is exceeded during storms, the excess flow which is a mixture of sewage and stormwater runoff is discharged to the Potomac River, Hunting Creek and Hoofs Run, which are tributaries of the river. The excess flow is called combined sewer overflow (CSO). Overflows can occur at the following three locations in the City:

- At the foot of Pendelton Street at Oronoco Bay
- At the foot of Royal Street at Hunting Creek
- Under Duke Street at Hooffs Run

The City has a Virginia Pollutant Discharge Elimination System (VPDES) permit, issued by the Virginia Department of Environmental Quality (DEQ), for the combined sewer system and has implemented a number of programs for controlling the combined sewer discharges. These programs have proven effective in minimizing any water quality impacts from the discharges.

**PUBLIC MEETING**

As part of long term planning, the City is also conducting studies to evaluate alternatives that may improve existing control programs. A meeting is being held to give the public an opportunity to review background information and provide comments on the alternatives being considered. The public meeting is scheduled for 7:30 pm, Tuesday, February 10, 1998 at Room 2000 in City Hall.

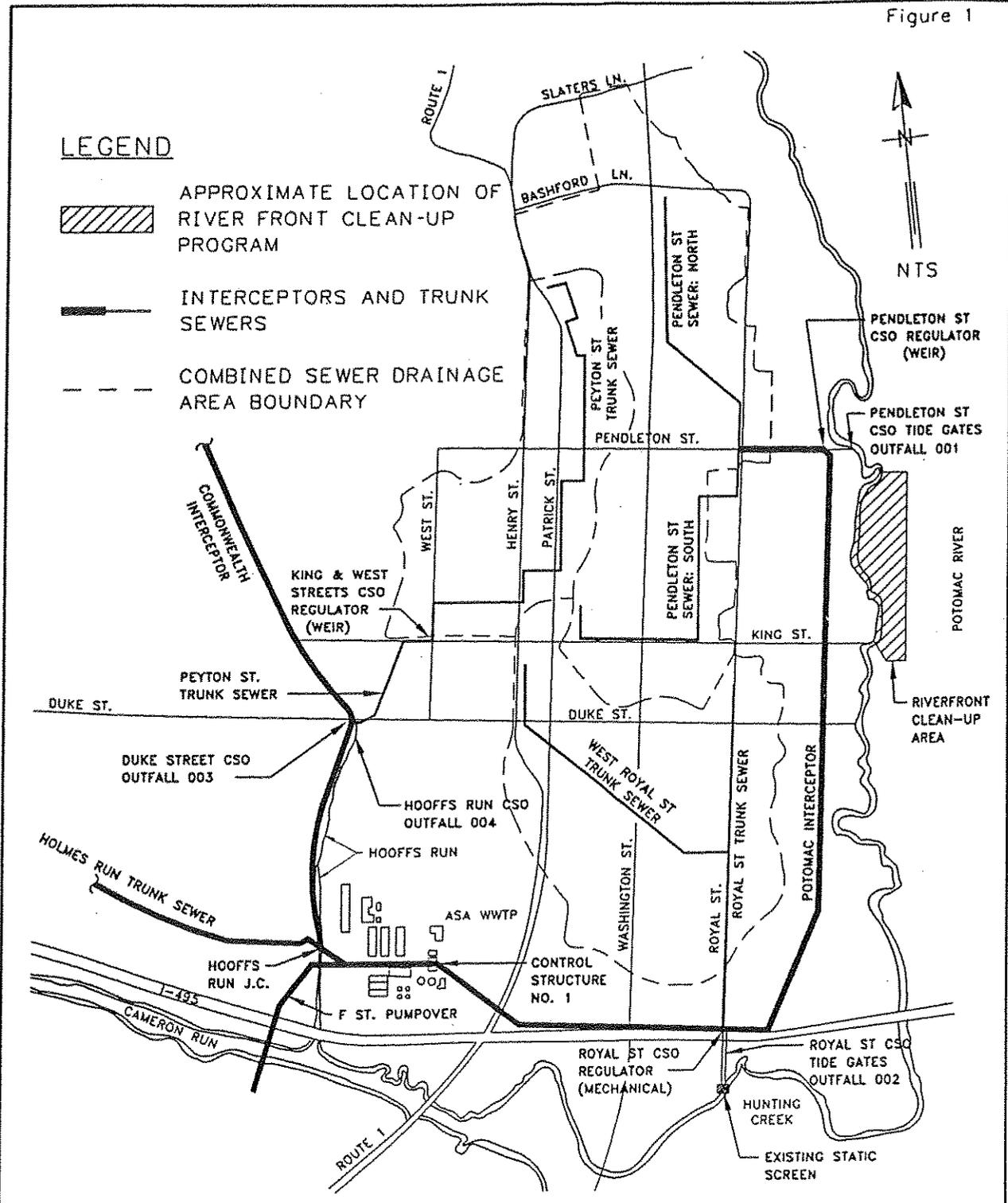
In order to give the public an opportunity to review relevant information prior to the public meeting, the City has placed this Information Document on reserve at three libraries in the City. This Information Document includes the following items which may be consulted for further information on the City's CSO Program:

- Program Review Document No. 4 - Development of Preliminary Alternatives and Selection of Final Alternatives  
This document is part of the text of a report that will be prepared on the studies and activities related to developing a control program for the City's combined sewer system. In addition to providing a background description of the CSO Program, the document describes preliminary alternatives considered to address CSOs and final alternatives to be implemented after obtaining public comment and approval of regulatory agencies.
- CSO System Annual Report No. 1 for 1995  
This is the first of a series of annual reports required by the City's VPDES Permit. The report summarizes the CSO overflows predicted for the year and describes the City's sewer inspection and maintenance program for the year.
- CSO System Annual Report No. 2 for 1996  
This is the second annual report, similar to that noted above for 1995. However, this report also includes a listing of the Nine Minimum Control Measures which have been implemented by the City. Implementation of the Nine Minimum Controls complies with the USEPA's Combined Sewer Overflow Policy.
- VPDES Permit and Fact Sheet  
This is a copy of the City's VPDES permit, and the permit Fact Sheet, which is a summary of pertinent information regarding the permit. Both the permit and Fact Sheet address the City's CSO's.

### FURTHER INFORMATION

Further information is available by calling Ronald E. Bizzarri at (301) 817-3700.

Figure 1



**ALEXANDRIA COMBINED SEWER SYSTEM**  
NOT TO SCALE

CITY OF ALEXANDRIA, VA  
DEPARTMENT OF TRANSPORTATION  
AND ENVIRONMENTAL SERVICES  
INFORMATION DOCUMENT  
JANUARY, 1998

J:\JOBS\ALEX\INF\PACI SCALE: 1:1 01/08, 1998 at 11:55 - \*13\_c4\*

GREELEY AND HANSEN

**City of Alexandria  
Transportation and Environmental Services**

**PROGRAM REVIEW DOCUMENT NO. 4**

**Chapter VI of Alexandria CSO Study Final Report  
"Development of Preliminary Alternatives and  
Selection of Final Alternatives"**

**October 1995**

**Greeley and Hansen  
in association with  
Limno-Tech, Inc.  
and  
Occoquan Watershed Monitoring Laboratory**

City of Alexandria  
Transportation and Environmental Services

PROGRAM REVIEW DOCUMENT NO. 4

Preface

This preliminary program review document comprises Chapter VI of the Alexandria CSO Study Final Report. The title of Chapter VI is "Development of Preliminary Alternatives and Selection of Final Alternatives". The outline of the entire Final Report is expected to be as follows:

Proposed Outline for Final Report

<u>Chapter</u>	<u>Description</u>
I.	Summary and Findings
II.	Introduction
III.	Basic Data
IV.	Flow Monitoring and Sampling Program
V.	Assessment of Existing Combined Sewer Overflow Impacts
VI.	Development of Preliminary Alternatives and Selection of Final Alternatives
VII.	Analysis of Final Alternatives
VIII.	Selected Plan
IX.	Implementation
X.	Public Participation Program
XI.	References

The chapter which is enclosed in a box is contained in this Program Review Document. Subsequent chapters will also be provided as Program Review Documents for review as the respective tasks are completed.

City of Alexandria  
Transportation and Environmental Services

PROGRAM REVIEW DOCUMENT NO. 4  
Chapter VI of CSO Study Final Report  
"Development of Preliminary Alternatives and  
Selection of Final Alternatives"

Table of Contents

Section

- A. INTRODUCTION
- B. SCREENING OF PRELIMINARY ALTERNATIVES
- C. FINAL ALTERNATIVES DEVELOPMENT
- D. SUMMARY
- E. REFERENCES

List of Tables

Table

- VI-1 Summary of Existing Nine Minimum Control Measures
- VI-2 CSO Control Technologies Screening Summary

List of Figures

Figure

- VI-1 Alexandria Combined Trunk Sewers and Interceptors
- VI-2 Hooded Catch Basin
- VI-3 Control of Solid and Floatable Materials in CSOs

City of Alexandria  
Transportation and Environmental Services

PROGRAM REVIEW DOCUMENT NO. 4  
Chapter VI of CSO Study Final Report  
"Development of Preliminary Alternatives and  
Selection of Final Alternatives"

A. INTRODUCTION

1. Background

The City of Alexandria, Virginia initiated a Combined Sewer Overflow (CSO) Study for its Combined Sewer System (CSS) in August 1990. An in-depth program for the characterization, monitoring, and modeling of the CSS was then developed and carried out. Based on the findings of these efforts, an assessment of the impact of CSO discharges on the receiving waters was performed using water quality models. The procedures and results of each task carried out are documented in detail in the previously issued Chapters III through V of this report<sup>1</sup>.

Based on the results of the study, the Virginia Department of Environmental Quality (DEQ) has found that the City's current CSO discharges to the Potomac River and Hunting Creek Embayment, which are shown in Figure VI-1, do not preclude attainment of existing water quality standards. These results indicate that the City's existing nine minimum control program, which is outlined in Table VI-1, is highly effective and adequately reduces CSO pollutant loads. The City, therefore, will use the "Demonstration" approach for the Pendleton Street and Royal Street CSOs to show that with refinement and improvement upon the nine minimum controls program already in place; it can continue to meet Water Quality Standards and enhance protection of designated uses of the receiving waters.

DEQ requires additional information on Hooffs Run in-stream conditions during wet weather events to complete their evaluation of the impacts from CSOs 003 and 004 on Hooffs Run. Therefore, alternatives for the CSOs discharging to Hooffs Run will be developed after the City completes an in-stream monitoring program and DEQ completes an analysis of the data collected.

2. Definition of Water Quality and CSO Control Goals

Based on the discussion above, the City of Alexandria's Water Quality and CSO Control Goals are as follows:

- 
- <sup>1</sup>
- Program Review Document No. 1, Chapter III "Basic Data", March 1993
  - Program Review Document No. 2, Chapter IV "Flow Monitoring and Sampling Program", March 1993
  - Program Review Document No. 3, Chapter V "Assessment of Existing Combined Sewer Overflow Impacts", March 1994

- Alexandria CSO pollutant loads will continue to not preclude the attainment of Water Quality Standards or the receiving waters' designated uses or contribute to their impairment.
- Improve the existing nine minimum control program.

## B. SCREENING OF PRELIMINARY ALTERNATIVES

### 1. Source Control

The City of Alexandria has already in effect a wide range of source control measures. These measures are as follows:

- Street sweeping
- Street Flushing (spray cleaning)
- Catch Basin cleaning
- Household Hazardous Waste Recycling Program
- Waste Oil and Antifreeze Recycling Referral Service
- Solid Waste Recycling Program
- Leaf Collection and Composting Program
- Conveniently placed waste disposal containers
- Pretreatment Program administered by Alexandria Sanitation Authority (ASA)
- Source Control Program for Auto Related Businesses based on Nationally recognized program developed in Santa Clara, CA
- Public Education materials

Additional source control alternatives to be considered are:

- Expanded Public Education Programs and
- Water Conservation

The City presently distributes public education materials on pollution prevention to new homeowner's associations. An expanded public education program, targeting a larger portion of the population, has the potential to decrease litter and increase public participation in existing source control measures such as household hazardous waste recycling. Therefore, this alternative merits further investigation.

Water conservation would reduce the dry weather sanitary flow. Dry weather flows are a small portion of the combined sewer flow causing overflows in Alexandria and therefore the effect of this activity would be of limited benefit during CSO occurrences. Moreover, it would decrease the velocity of flow in the Potomac Interceptor during dry weather, which is already sluggish, and possibly increase sediment deposition. Therefore, water conservation is not a viable alternative.

### 2. Collection System Controls

The City has already implemented extensive collection system controls into its existing CSO management program which are as follows:

- Infiltration/Inflow Control
  - Pendleton Street Tidegates were repaired to reduce inflow

- Rehabilitation of sewers using Insituform and other trenchless technologies
- Static Flow Control/In-line Storage
  - Installation of a 12" weir at the entrance to the 27" diameter Hooffs Run CSO outfall to reduce overflow occurrences
- Sewer Line Flushing
- Ongoing Program of Maintenance and Inspection
- Floatables Control
  - Hooded Catch Basin Outlets as shown in Figure VI-2
  - Static Screen at Royal Street CSO as shown in Figure VI-3

An additional collection system control alternative to be considered for floatables control is:

- Advanced Inspection of the CSS (targeting high litter areas)

### 3. Receiving Water Control Measures

The City operates a Riverfront Clean Up Program during the months of April through early October. A maintenance crew combs the shoreline by foot and by boat removing debris and floatable materials. Based on discussions with City personnel, it is estimated that substantial quantities of floatables and debris are collected as a result of this program. These materials are transported to the Alexandria/Arlington County Cogeneration Facility. This includes floatables that may originate from the Pendleton Street CSO in addition to debris from other sources. Figure VI-3 shows the reach of shoreline included in this program.

### 4. Selection of Control Measures

Based on the preliminary screening review, which is summarized in Table VI-1; an expanded public education program and advanced inspection of the CSS are selected for further investigation.

In addition, the City proposes to carry out an in-depth review of its current source and collection system controls to look for possible areas of improvement in frequency, methods, implementation, and documentation.

## C. FINAL ALTERNATIVES DEVELOPMENT

### 1. Expanded Public Education Program

The City will investigate enhancement of the existing public outreach effort to raise community awareness of and participation in its pollution prevention/source control programs. This effort could include development of education programs and informational brochures.

## 2. Advanced CSS Inspection

The City will investigate developing an inspection program targeting areas in the CSS near fast food establishments and convenience stores. If significant problem areas are identified, preventive measures such as inlet screens and hooded catch basin outlets can be implemented to improve source control. The public education program could also target these areas to increase public awareness.

## 3. Review of Existing Control Measures

The City proposes to perform an in-depth review of existing control measures. This review would evaluate the frequency, methods, coordination, implementation, and documentation of each control measure and recommend improvements based on the review findings.

### D. SUMMARY

The City of Alexandria has implemented a comprehensive set of CSO Control Measures. The characterization, monitoring and modeling programs previously carried out by the City indicate that its existing nine minimum control program effectively controls CSO pollutants loads to the Pendleton Street and Royal Street CSO outfalls. Therefore, the City proposes to build upon this program's success by reviewing for possible incorporation, the following final alternatives:

- Expanded Public Education Program
- Advanced Combined Sewer System Inspection, and
- Review of Existing Control Measures.

The City will present these alternatives in a public meeting to receive public input and then proceed with a detailed investigation.

### E. REFERENCES

U.S. Environmental Protection Agency (USEPA), 1994. "Combined Sewer Overflow (CSO) Control Policy", Washington, D.C.

U.S. Environmental Protection Agency (USEPA), 1995. "Combined Sewer Overflows: Guidance for Nine Minimum Controls", Washington, D.C.

U.S. Environmental Protection Agency (USEPA), 1995. "Combined Sewer Overflows: Guidance for Long-Term Control Plan", Washington, D.C.

Virginia Department of Environmental Quality (DEQ), 1995. "Alexandria Combined Sewer System VPDES Permit No. VA0087068", Woodbridge, VA.

City of Alexandria  
Transportation and Environmental Services

PROGRAM REVIEW DOCUMENT NO. 4  
Chapter VI of Alexandria CSO Study Final Report  
"Development of Preliminary Alternatives and  
Selection of Final Alternatives"

TABLE VI-1

Summary of Existing Nine Minimum Control Measures

MINIMUM CONTROL	CONTROL MEASURES IMPLEMENTED
Proper Operation and Maintenance	<ul style="list-style-type: none"> <li>• Established maintenance program for regulators</li> <li>• Repaired Pendleton Street tidegate</li> <li>• Inspection program for CSS</li> <li>• Sewer line flushing</li> </ul>
Maximum Use of Collection System for Storage	<ul style="list-style-type: none"> <li>• Repaired Pendleton Street tidegate</li> <li>• Installed 12" weir at Hooffs Run CSO outfall</li> <li>• Installation of Insituform to reduce inflow/ infiltration</li> </ul>
Review and Modify Pre-treatment Requirements	<ul style="list-style-type: none"> <li>• ASA administered Pretreatment Program</li> <li>• Source Control Program for Auto related Businesses</li> </ul>
Maximum Flow to the POTW for Treatment	<ul style="list-style-type: none"> <li>• Analyzed sewer system</li> <li>• ASA carrying out activities related to POTW</li> </ul>
Eliminate Dry Weather Overflows	<ul style="list-style-type: none"> <li>• Perform routine inspections</li> <li>• Clean and repair CSS on regular basis</li> </ul>
Control of Solid and Floatable Materials in CSOs	<ul style="list-style-type: none"> <li>• Static screen at Royal Street CSO outfall</li> <li>• Hooded catch basins and catch basin cleaning</li> <li>• Street sweeping and flushing</li> <li>• Solid waste collection and recycling</li> <li>• Leaf collection and composting</li> <li>• Skimming of floatables along riverfront by boat</li> </ul>
Pollution Prevention	<ul style="list-style-type: none"> <li>• Household Hazardous Waste Recycling Program</li> <li>• Waste Oil and Antifreeze Referral Service</li> </ul>
Public Notification	<ul style="list-style-type: none"> <li>• Signs are in the process of being made to post at all outfalls</li> </ul>
Monitoring	<ul style="list-style-type: none"> <li>• Monitoring efforts completed for Royal Street and Pendleton CSO outfalls</li> <li>• Additional monitoring on water quality of Hooffs Run being carried out</li> </ul>

City of Alexandria  
Transportation and Environmental Services

PROGRAM REVIEW DOCUMENT NO. 4  
Chapter VI of Alexandria CSO Study Final Report  
"Development of Preliminary Alternatives and  
Selection of Final Alternatives"

TABLE VI-2

CSO Control Technologies Screening Summary

CSO CONTROL TECHNOLOGY	ALREADY INPLACE/REVIEW FOR IMPROVEMENT	CONSIDER FOR USE	ELIMINATE FROM FURTHER CONSIDERATION
<b>SOURCE CONTROLS</b>			
Expanded Public Education Program		X	
Street Sweeping	X		
Street Flushing (spray cleaning)	X		
Catch Basin Cleaning	X		
Leaf Collection	X		
Household Hazardous Waste Recycling	X		
Waste Oil and Antifreeze Recycling	X		
Auto Related Business Source Control Program	X		
Water Conservation			X
<b>COLLECTION SYSTEM CONTROLS</b>			
Sewer Flushing	X		
Advanced System Inspection		X	
Static Flow Control/In-line Storage	X		
Infiltration/Inflow Reduction	X		
Ongoing Program of Maintenance and Inspection	X		
<b>FLOATABLES CONTROL</b>			
Hooded Catch Basin Outlets	X		
Static Screen	X		
Riverfront Clean Up Program	X		

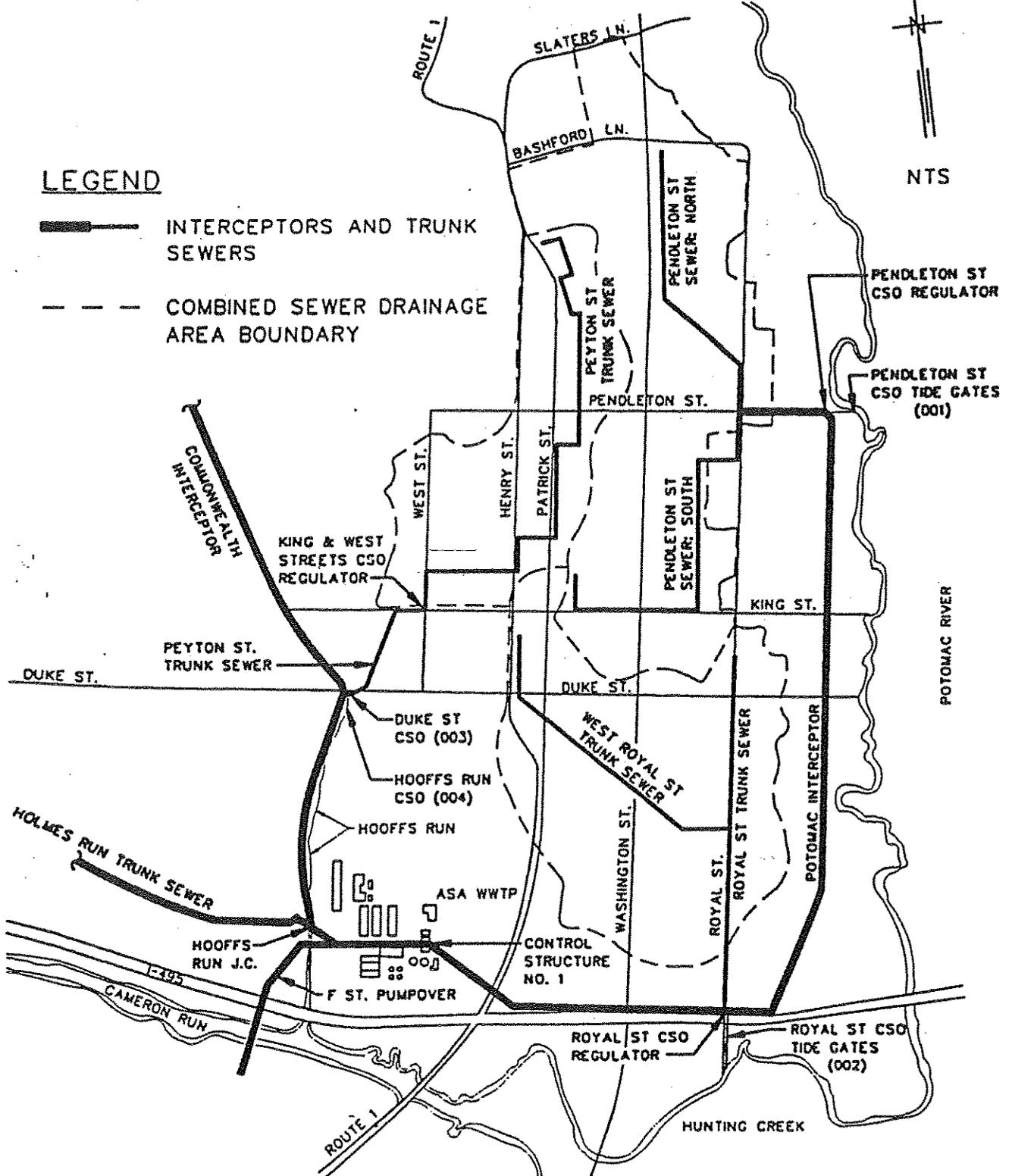
# ALEXANDRIA COMBINED TRUNK SEWERS AND INTERCEPTORS

## LEGEND

-  INTERCEPTORS AND TRUNK SEWERS
-  COMBINED SEWER DRAINAGE AREA BOUNDARY



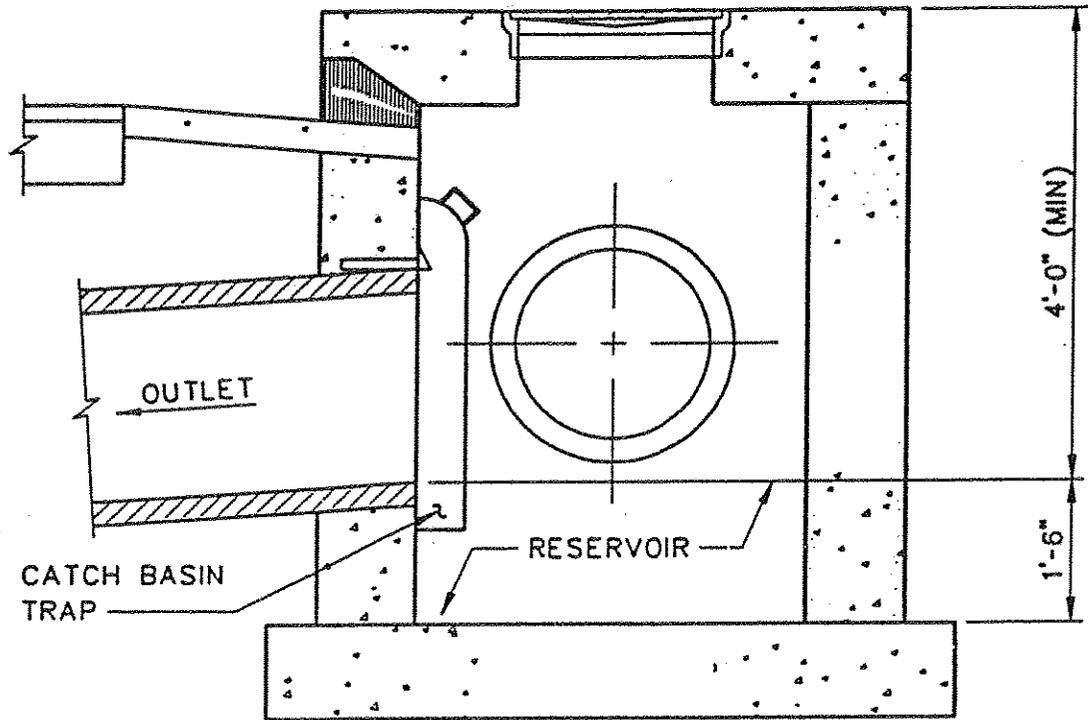
NTS



FILE: IV00GRA3 SCALE: 1:11 09/12, 1995 at 11:24 \*R11 c2\*

CITY OF ALEXANDRIA  
 TRANSPORTATION AND ENVIRONMENTAL SERVICES  
 COMBINED SEWER OVERFLOW STUDY  
 FINAL REPORT

GREELEY AND HANSEN



HOODED CATCH BASIN

NOT TO SCALE

NOTE:  
CITY OF ALEXANDRIA STANDARD DETAIL.

FILE: CAGVI-2 SCALE: 1:24: 09/15, 1995 at 15:52 •R11 c2•

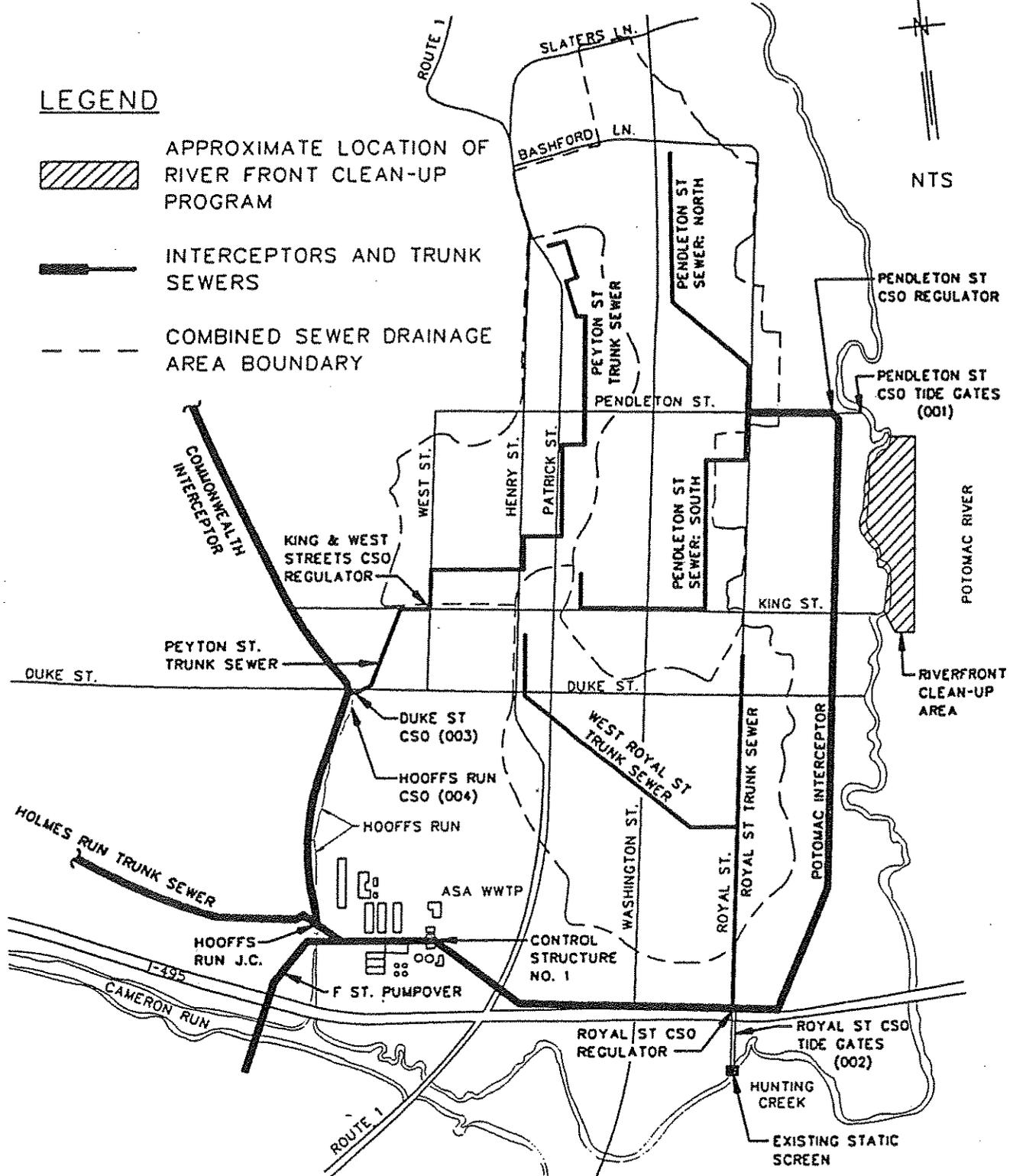
CITY OF ALEXANDRIA  
TRANSPORTATION AND ENVIRONMENTAL SERVICES  
COMBINED SEWER OVERFLOW STUDY  
FINAL REPORT

GREELEY AND HANSEN

# CONTROL OF SOLID AND FLOATABLE MATERIALS FROM CSO's

## LEGEND

-  APPROXIMATE LOCATION OF RIVER FRONT CLEAN-UP PROGRAM
-  INTERCEPTORS AND TRUNK SEWERS
-  COMBINED SEWER DRAINAGE AREA BOUNDARY



FILE: K:\CADD\0573\106-01\W00GRA3 SCALE: 1:11 09/29, 1995 at 11:58 \*R11 c2\*

CITY OF ALEXANDRIA  
TRANSPORTATION AND ENVIRONMENTAL SERVICES  
COMBINED SEWER OVERFLOW STUDY  
FINAL REPORT

GREELEY AND HANSEN

**City of Alexandria  
Transportation and Environmental Services**

**CSO SYSTEM ANNUAL REPORT NO. 1  
FOR  
1995**

**VPDES Permit No. VA0087068**

**March 1996**

**Greeley and Hansen  
in association with  
Limno-Tech, Inc.**

City of Alexandria  
Transportation and Environmental Services  
VPDES Permit No. VA0087068

CSO SYSTEM ANNUAL REPORT NO. 1  
FOR 1995

Greeley and Hansen  
March 1996

I. GENERAL

The Commonwealth of Virginia Department of Environmental Quality (DEQ) issued VPDES Permit No. VA0087068, with an effective date of April 3, 1995 to the City of Alexandria (City) for the City's Combined Sewer System (CSS).

Part I of the permit, Effluent Limitations and Monitoring Requirements, Item A.7. requires the City to submit to DEQ an annual report on Operation of the Combined Sewer System by March 31 of each year. The annual report is to include the following information:

- Based on model results, the number of overflow occurrences and duration of overflow occurrences for each Combined Sewer Overflow (CSO) outfall, including visual verification of overflow occurrences to the extent possible.
- Intensity, duration and total precipitation measured for storms predicted to have resulted in overflow occurrences.
- CSS trunk sewer system inspection and maintenance summary for the year.

This is the first CSS Annual Report for the City and summarizes information for the year 1995.

II. ALEXANDRIA COMBINED SEWER SYSTEM

The City's CSS comprises three combined sewer areas and four permitted CSO outfalls as shown on Figure II-1. The three combined sewer areas are served by the following combined trunk sewer systems:

- Pendleton Street Combined Trunk Sewer
- Royal Street Combined Trunk Sewer
- Peyton Street Combined Trunk Sewer

The following outfalls are point source discharges of combined sanitary sewage and storm sewer overflows connected to the City's CSS:

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

### III. CSO SYSTEM MODEL RESULTS FOR 1995

#### A. Model Description

The Sewer Overflow Model (SOM) was used to predict overflow occurrences for 1995 based on rainfall data from National Airport. The SOM is the model calibrated to the Alexandria CSS using actual measured storm event data. The SOM was described in Program Review Document No. 3, Chapter V of Alexandria CSO Study Final Report "Assessment of Existing Combined Sewer Overflow Impacts" dated March 1994.

#### B. Summary of 1995 Rainfall Data

Rainfall data from National Airport for 1995 is summarized as follows:

<u>Total Number of Storms</u>	<u>Total Rainfall (inches)</u>
95	39.81

#### C. Rainfall Data and Model Results for CSO Outfalls

Rainfall data and model results for 1995 are summarized in Tables III-1, III-2, III-3 and III-4 and as follow:

ALEXANDRIA CSS - 1995 RAINFALL AND OVERFLOW MODEL SUMMARY					
CSO Outfall Number	Description	Rainfall Data for Storms Resulting in Overflows		Annual Volume of Overflow (MG)	Annual Duration of Overflow (Hrs.)
		Number of Storms (Occurrences)	Total Rainfall (inches)		
001	Pendleton St.	35	32.23	48.71	95
002	Royal St.	54	37.53	61.19	230
003	Duke St.	30	29.44	21.44	69
004	Hooffs Run	0	N/A	0	0

The foregoing summary indicates that, on average, about 3.2 MG was discharged from the CSS during each overflow event and each overflow occurrence had an average duration of about 4.3 hours.

#### D. Visual Verification

Visual verification of overflows has been difficult due to storm events occurring at night or after working hours and personnel safety concerns. In the coming year, the City plans to increase visual monitoring of the combined sewer outfall locations.

Visual verification of discharge at CSO outfalls was documented for the storm event on November 14, 1995 as follows:

Outfall No.	Location	Discharge	Time
001	Pendleton Street CSO	Yes	3:50 p.m.
002	Royal Street CSO	Yes	3:35 p.m.
003	Duke Street CSO	Not Accessible	-----
004	Hooffs Run CSO	Yes	4:10 p.m.

The modeled rainfall does not predict an overflow at Outfall 004 (Hooffs Run CSO) for the November 14, 1995 storm. As presented in Program Review Document No. 3, the SOM does not include backwater effects from downstream separate sewer system pipes because capacity has been determined to be adequate for flow rates estimated for the separate sewer system. The visual verification of a discharge for the November 14, 1995 storm could be an indication that downstream hydraulic conditions on that date may have had the potential to contribute to an overflow occurrence at Outfall 004, or some unusual condition within the combined sewer resulted in the discharge observed.

#### IV. CSO TRUNK SEWER SYSTEM INSPECTION AND MAINTENANCE

##### A. General

The City has practiced sewer system preventive and corrective maintenance for many years. The focus on preventive maintenance has helped to reduce the need for corrective and emergency maintenance. This also ensures that maximum hydraulic capacity is available to minimize frequency and duration of overflows during wet weather events. Historically, problems that have been experienced in the City's CSS have occurred in the smaller local sewers upstream of the trunk sewers. For this reason, preventive maintenance efforts have are concentrated in those areas which have had problems in the past. Preventive maintenance required for the CSS trunk sewers has mostly involved visual inspection and some T.V. inspection work. Partial line blockages due to debris are very rare and sediment accumulations have not been found to be significant in the trunk sewers. Program evaluation for this year has shown a need to improve documentation and to formalize schedules and procedures already in

place. Improved documentation will assist in overall program planning and management and can lead to improved efficiency and cost control.

Program Review Document No. 4, Chapter VI of Alexandria CSO Study Final Report "Development of Preliminary Alternatives and Selection of Final Alternatives" submitted to DEQ in October, 1995 outlines the City's proposed CSO control alternatives. As presented in Program Review Document No. 4, characterization, monitoring and modeling programs previously carried out by the City indicate the effectiveness of the City's nine minimum controls program. The City's nine minimum control measures are summarized in Table IV-1. As shown in Table IV-1, some of the facilities are owned, operated and maintained by the Alexandria Sanitation Authority (ASA) under a separate VPDES permit. The City intends to continue to build upon the program's success by continuing to review, improve and expand existing programs.

**B. Preventive Maintenance Program**

A review of the CSS Trunk Sewer preventive maintenance program is summarized as follows:

Maintenance Item	Description	Frequency
Catch Basin Cleaning	Removal of debris from catch basins to prevent entry to sewer system	Critical Areas - Weekly Non-critical Areas - 2 to 3 times/year
Flush Sewer Siphons	Flushing of sewer siphons to ensure hydraulic capacity is available	Weekly
Flush Trunk Sewers	Flushing of trunk sewers to maintain hydraulic capacity	Each section 1/year
Visual Inspection	Visual inspection of CSS trunk sewers	Annually

**C. Summary**

As discussed, the inspection and maintenance review indicates a need to improve on recordkeeping. Standardized procedures and report forms are being developed by the City to improve the program documentation.

Table IV-1  
1995 CSS Report

Summary of Nine Minimum Control Measures

MINIMUM CONTROL	CONTROL MEASURES IMPLEMENTED
Proper Operation and Maintenance	<ul style="list-style-type: none"> <li>• CSO regulators<sup>(1)</sup></li> <li>• CSO tidegates<sup>(1)</sup></li> <li>• Inspection program for CSS</li> <li>• Sewer line flushing</li> </ul>
Maximize Use of Collection System for Storage	<ul style="list-style-type: none"> <li>• CSO regulator controls</li> <li>• Installed 12" weir at Hooffs Run CSO outfall</li> <li>• Installation of Insituform to reduce inflow/infiltration</li> </ul>
Review and Modify Pre-treatment Requirements	<ul style="list-style-type: none"> <li>• Pretreatment Program<sup>(2)</sup></li> <li>• Source Control Program for Auto related Businesses</li> </ul>
Maximize Flow to the POTW for Treatment	<ul style="list-style-type: none"> <li>• Analyzed sewer system</li> <li>• Treatment rates at POTW are increased during wet weather events<sup>(1)</sup></li> </ul>
Eliminate Dry Weather Overflows	<ul style="list-style-type: none"> <li>• Perform routine inspections</li> <li>• Clean and repair CSS on regular basis</li> </ul>
Control of Solid and Floatable Materials in CSOs	<ul style="list-style-type: none"> <li>• Static screen at Royal Street CSO outfall<sup>(1)</sup></li> <li>• Hooded catch basins and catch basin cleaning</li> <li>• Street sweeping and flushing</li> <li>• Solid waste collection and recycling</li> <li>• Leaf collection and composting</li> <li>• Skimming of floatables along riverfront by boat</li> </ul>
Pollution Prevention	<ul style="list-style-type: none"> <li>• Household Hazardous Waste Recycling Program</li> <li>• Waste Oil and Antifreeze Referral Service</li> </ul>
Public Notification	<ul style="list-style-type: none"> <li>• Signs are in the process of being made to post at all CSO outfalls</li> </ul>
Monitoring	<ul style="list-style-type: none"> <li>• Monitoring efforts completed for Royal Street and Pendleton CSO outfalls</li> <li>• Additional monitoring on water quality in Hooffs Run being carried out</li> </ul>

(1) Owned, operated and maintained by Alexandria Sanitation Authority (ASA)  
 (2) Administered by ASA

**Table III-1: CSO Outfall 001, Pendleton Street - 1995 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.)
6-Jan	1.07	10	0.20	0.502	6
15-Jan	0.41	8	0.15	0.103	1
20-Jan	1.28	14	0.73	2.745	4
4-Feb	0.59	6	0.11	0.193	3
8-Mar	1.98	15	0.34	2.885	9
12-Apr	0.69	4	0.36	0.745	2
24-Apr	0.34	4	0.17	0.090	1
30-Apr	0.63	9	0.27	0.293	1
10-May	0.94	7	0.58	1.686	2
14-May	0.50	5	0.28	0.357	2
18-May	0.30	1	0.30	0.150	1
19-May	0.44	6	0.20	0.280	1
25-May	0.72	4	0.57	1.410	2
11-Jun	0.45	6	0.24	0.293	1
12-Jun	0.37	4	0.18	0.030	1
24-Jun	1.05	8	0.59	1.681	2
6-Jul	1.03	5	0.72	2.465	2
21-Jul	1.60	5	0.83	5.072	3
5-Aug	0.42	5	0.32	0.333	2
6-Aug	0.46	9	0.15	0.071	1
9-Sep	0.94	4	0.82	2.121	2
16-Sep	1.17	14	0.18	0.300	5
22-Sep	0.76	5	0.68	1.661	2
5-Oct	1.24	15	0.49	1.680	3
5-Oct	0.88	2	0.74	2.661	2
14-Oct	3.36	21	0.75	8.647	10
21-Oct	1.93	16	0.66	5.212	5
27-Oct	1.19	12	0.38	1.228	4
11-Nov	1.15	6	0.60	2.399	4
14-Nov	1.37	29	0.16	0.311	3
28-Nov	0.36	15	0.06	0.517	2
29-Nov	0.58	7	0.20	0.160	1
10-Dec	0.28	1	0.28	0.202	2
16-Dec	0.66	10	0.15	0.005	1
19-Dec	1.09	26	0.28	0.222	2

**LIMNO-TECH, INC.  
GREELEY AND HANSEN**

**Table III-1: CSO Outfall 001, Pendleton Street - 1995 Rainfall and  
Overflow Model Summary (con't)**

**Summary for Outfall 001**

<b>Number of Occurrences:</b>	<b>35</b>
<b>Volume (MG):</b>	<b>48.71</b>
<b>Duration (hrs.):</b>	<b>95</b>
<b>Total Rainfall Causing Overflow (in):</b>	<b>32.23</b>

**LIMNO-TECH, INC.  
GREELEY AND HANSEN**

**Table III-2: CSO Outfall 002, Royal Street - 1995 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.)
6-Jan	1.07	10	0.20	1.610	9
15-Jan	0.41	8	0.15	0.392	3
19-Jan	1.28	14	0.73	2.838	7
28-Jan	0.28	5	0.11	0.270	3
4-Feb	0.59	6	0.15	0.834	5
15-Feb	0.49	38	0.09	0.139	2
27-Feb	0.63	15	0.10	0.420	10
8-Mar	1.98	15	0.34	3.749	12
12-Apr	0.69	4	0.36	1.026	4
24-Apr	0.34	4	0.17	0.370	2
30-Apr	0.63	9	0.27	0.710	5
2-May	0.42	10	0.10	0.188	4
10-May	0.94	7	0.58	1.584	2
14-May	0.50	5	0.28	0.618	3
18-May	0.30	1	0.30	0.436	2
19-May	0.44	6	0.20	0.486	2
25-May	0.72	4	0.57	1.348	2
28-May	0.35	14	0.09	0.171	3
29-May	0.14	2	0.13	0.056	1
3-Jun	0.18	2	0.16	0.116	1
11-Jun	0.45	6	0.24	0.478	2
12-Jun	0.37	4	0.18	0.373	3
24-Jun	1.05	8	0.59	1.831	6
1-Jul	0.33	4	0.19	0.219	4
6-Jul	1.03	5	0.72	2.139	3
10-Jul	0.14	2	0.10	0.009	1
11-Jul	0.22	1	0.22	0.221	2
21-Jul	1.60	5	0.83	4.530	4
23-Jul	0.14	2	0.10	0.009	1
27-Jul	0.26	2	0.18	0.260	2
5-Aug	0.42	5	0.32	0.570	2
6-Aug	0.46	9	0.15	0.328	3
9-Sep	0.94	4	0.82	1.845	3
16-Sep	1.17	14	0.18	1.380	10
22-Sep	0.76	5	0.68	1.512	2
25-Sep	0.31	11	0.09	0.104	2
26-Sep	0.22	5	0.10	0.093	1
5-Oct	1.24	15	0.49	2.021	9
5-Oct	0.88	2	0.74	2.444	3
14-Oct	3.36	21	0.75	8.768	15

**LIMNO-TECH, INC.  
GREELEY AND HANSEN**

**Table III-2: CSO Outfall 002, Royal Street - 1995 Rainfall and Overflow Model Summary (con't)**

Date of Overflow	Storm Total (in.)	Duration of Storm (hrs.)	Maximum Storm Intensity (in./hr.)	Volume of Overflow (MG)	Duration of Overflow (hrs.)
21-Oct	1.93	16	0.66	5.125	8
27-Oct	1.19	12	0.38	1.744	7
1-Nov	0.33	20	0.06	0.035	1
3-Nov	0.12	6	0.07	0.017	1
7-Nov	0.30	11	0.06	0.035	1
11-Nov	1.15	6	0.60	2.476	6
14-Nov	1.37	29	0.16	1.472	13
23-Nov	0.36	15	0.06	0.072	4
28-Nov	0.43	4	0.29	0.698	2
29-Nov	0.58	7	0.20	0.703	6
10-Dec	0.28	1	0.28	0.486	2
16-Dec	0.66	10	0.15	0.753	8
19-Dec	0.28	1	0.28	0.603	4
19-Dec	0.82	26	0.11	0.479	7

**Summary for Outfall 002**

<b>Number of Occurrences:</b>	54
<b>Volume (MG):</b>	61.193
<b>Duration (hrs.):</b>	230
<b>Total Rainfall Causing Overflow (in.):</b>	37.53

**LIMNO-TECH, INC.  
GREELEY AND HANSEN**

**Table III-3: CSO Outfall 003, Duke Street - 1995 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.)
6-Jan	0.71	7	0.20	0.003	1
7-Jan	0.36	3	0.20	0.031	1
20-Jan	1.28	14	0.73	1.309	2
8-Mar	1.98	15	0.34	1.011	7
13-Apr	0.69	4	0.36	0.292	2
24-Apr	0.34	4	0.17	0.021	1
30-Apr	0.63	9	0.27	0.088	1
11-May	0.94	7	0.58	0.761	2
14-May	0.50	5	0.28	0.097	2
19-May	0.44	6	0.20	0.121	1
25-May	0.72	4	0.57	0.571	2
12-Jun	0.45	6	0.24	0.1	1
24-Jun	1.05	8	0.59	0.73	2
6-Jul	1.03	5	0.72	1.117	2
21-Jul	1.60	5	0.83	2.641	3
6-Aug	0.42	5	0.32	0.106	1
10-Sep	0.94	4	0.82	0.91	2
17-Sep	1.17	14	0.18	0.042	1
22-Sep	0.76	5	0.68	0.669	2
5-Oct	1.24	15	0.49	0.79	2
6-Oct	0.88	2	0.74	1.34	2
14-Oct	3.36	21	0.75	4.26	10
21-Oct	1.93	16	0.66	2.702	5
27-Oct	1.19	12	0.38	0.413	3
12-Nov	1.15	6	0.60	1.037	4
14-Nov	1.37	29	0.16	0.031	2
28-Nov	0.36	15	0.06	0.138	2
29-Nov	0.58	7	0.20	0.016	1
10-Dec	0.28	1	0.28	0.047	1
19-Dec	1.09	26	0.28	0.047	1

**Summary for Outfall 003**

Number of Occurrences:	30
Volume (MG):	21.441
Duration (hrs.):	69
Total Rainfall Causing Overflow (in):	29.44

**LIMNO-TECH, INC.  
GREELEY AND HANSEN**

**Table III-4: CSO Outfall 004, Hooff's Run - 1995 Rainfall and Overflow Model Summary**

<u>Date of Overflow</u>	<u>Storm Total (in.)</u>	<u>Duration of Storm (hrs.)</u>	<u>Maximum Storm Intensity (in./hr.)</u>	<u>Volume of Overflow (MG)</u>	<u>Duration of Overflow (hrs.)</u>
-------------------------	--------------------------	---------------------------------	--	--------------------------------	------------------------------------

*NO OVERFLOWS PREDICTED FOR 1995*

**Summary for Outfall 004**

<b>Number of Occurrences:</b>	<b>0</b>
<b>Volume (MG):</b>	<b>0.000</b>
<b>Duration (hrs.):</b>	<b>0</b>
<b>Total Rainfall Causing Overflow (in):</b>	<b>0.00</b>

**LIMNO-TECH, INC.  
GREELEY AND HANSEN**

City of Alexandria, Virginia  
Transportation and Environmental Services

**CSO SYSTEM ANNUAL REPORT NO. 2  
FOR 1996**

**VPDES Permit No. VA0087068**

**March 1997**

**Greeley and Hansen  
in association with  
Limno-Tech, Inc.**

City of Alexandria, Virginia  
Transportation and Environmental Services  
VPDES Permit No. VA0087068

***CSO SYSTEM ANNUAL REPORT NO. 2  
FOR 1996***

Greeley and Hansen  
March 1997

**I. GENERAL**

The Commonwealth of Virginia Department of Environmental Quality (DEQ) issued VPDES Permit No. VA0087068, with an effective date of April 3, 1995 to the City of Alexandria (City) for the City's Combined Sewer System (CSS).

Part I of the permit, Effluent Limitations and Monitoring Requirements, Item A.7. requires the City to submit to DEQ an annual report on Operation of the Combined Sewer System by March 31 of each year. The annual report is to include the following information:

- Based on model results, the number of overflow occurrences and duration of overflow occurrences for each Combined Sewer Overflow (CSO) outfall, including visual verification of overflow occurrences to the extent possible.
- Intensity, duration and total precipitation measured for storms predicted to have resulted in overflow occurrences.
- CSS trunk sewer system inspection and maintenance summary for the year.

This is the second CSS Annual Report for the City and summarizes information for the year 1996.

**II. ALEXANDRIA COMBINED SEWER SYSTEM**

The City's CSS comprises three combined sewer areas and four permitted CSO outfalls as shown on Figure II-1. The three combined sewer areas are served by the following combined trunk sewer systems:

- Pendleton Street Combined Trunk Sewer
- Royal Street Combined Trunk Sewer
- Peyton Street Combined Trunk Sewer

The following outfalls are point source discharges of combined sanitary sewage and storm sewer overflows connected to the City's CSS:

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

### III. CSO SYSTEM MODEL RESULTS FOR 1996

#### A. Model Description

The Sewer Overflow Model (SOM) was used to predict overflow occurrences for 1995 based on rainfall data from National Airport. The SOM is the model calibrated to the Alexandria CSS using actual measured storm event data. The SOM was described in Program Review Document No. 3, Chapter V of Alexandria CSO Study Final Report "Assessment of Existing Combined Sewer Overflow Impacts" dated March 1994.

#### B. Summary of 1996 Rainfall Data

Rainfall data from National Airport for 1996 is summarized as follows:

Total Number of	Total Rainfall
<u>Storms</u>	<u>(inches)</u>
104	51.02

### C. Rainfall Data and Model Results for CSO Outfalls

Rainfall data and model results for 1996 are summarized in Tables III-1, III-2, III-3 and III-4 and as follows:

<b>ALEXANDRIA CSS - 1996 RAINFALL AND OVERFLOW MODEL SUMMARY</b>					
<b>CSO Outfall Number</b>	<b>Description</b>	<b>Rainfall Data for Storms Resulting in Overflows</b>		<b>Annual Volume of Overflow (MG)</b>	<b>Annual Duration of Overflow (Hrs.)</b>
		<b>Number of Storms (Occurrences)</b>	<b>Total Rainfall (inches)</b>		
001	Pendleton St.	42	38.54	53.75	120
002	Royal St.	79	48.51	71.64	323
003	Duke St.	36	34.56	22.74	101
004	Hooffs Run	0	N/A	0	0

The foregoing summary indicates that, on average, about 2.8 MG was discharged from the CSS during each overflow event and each overflow occurrence had an average duration of about 3.2 hours.

### D. Visual Verification

In 1996, the City initiated a program to visually monitor the four combined sewer outfalls. The program includes periodic visual inspection of the outfalls during wet weather events. An inspection is initiated when flow rates at the wastewater treatment plan (Alexandria Sanitation Authority WWTP) reach 75 mgd.

One dry weather overflow was reported in 1996 due to debris blockage. The report is included as Appendix III-1. No unusual wet weather overflows were reported.

Visual verification could be improved by maintaining a log of inspection. A suggested format is included as Table III-5.

## IV. CSO TRUNK SEWER SYSTEM INSPECTION AND MAINTENANCE

### A. General

The City has practiced sewer system preventive and corrective maintenance for many years. The focus on preventive maintenance has helped to reduce the need for corrective and emergency maintenance. This also ensures that maximum hydraulic capacity is available to minimize frequency and duration of overflows during wet weather events. Historically, problems that have been experienced in the City's CSS have occurred in the smaller local sewers upstream of the trunk sewers. For this reason, preventive maintenance efforts are concentrated in those area which have had problems in the past. Preventive maintenance required for the CSS trunk sewers has involved visual inspection, flushing and T.V. inspection

work. Partial line blockages due to debris are very rare and sediment accumulations have not been found to be significant in the trunk sewers. In 1996, the City improved documentation and formalized schedules and procedures for preventive maintenance activities. Appendix IV-1 contains logs for 1996 activities. A new T.V. truck is being purchased to augment existing equipment.

In December 1996, the City submitted a documentation report on nine minimum controls for the CSS as required by the VPDES permit. The program being implemented by the City is summarized in Table IV-1.

The City intends to continue to build upon the program's success and continues to review, improve and expand existing programs and documentation.

**B. Preventive Maintenance Program**

A review of the CSS Trunk Sewer preventive maintenance program is summarized as follows:

Maintenance Item	Description	Frequency
Catch Basin Cleaning	Removal of debris from catch basins to prevent entry to sewer system	Critical Areas - Weekly, Non-critical Areas - 2 to 3 times/year
Flush Sewer Siphons	Flushing of sewer siphons to ensure hydraulic capacity is available	Weekly
Flush Trunk Sewers	Flushing of trunk sewers to maintain hydraulic capacity	New schedule for weekly, monthly and 3 and 6 mo. program
Visual Inspection	Visual inspection of CSS trunk sewers	Annually, New T.V. Truck being purchased

**C. Summary**

The City has formalized record keeping of the preventive maintenance program and maintains standard procedures and report forms. Visual inspection record keeping could be improved by maintaining a log of visual inspections.

Figure II-1

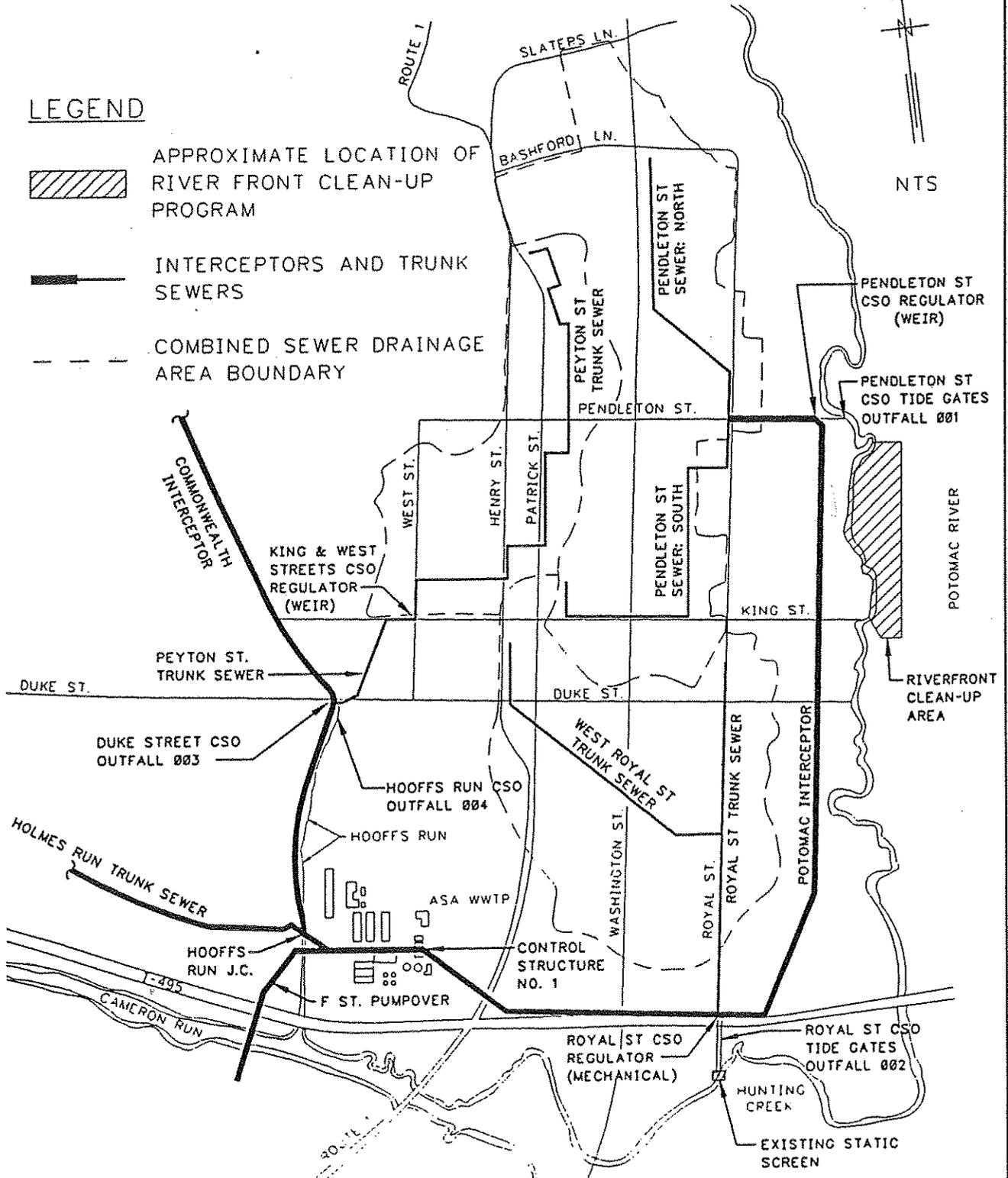
# ALEXANDRIA COMBINED TRUNK SEWERS AND INTERCEPTORS

## LEGEND

-  APPROXIMATE LOCATION OF RIVER FRONT CLEAN-UP PROGRAM
-  INTERCEPTORS AND TRUNK SEWERS
-  COMBINED SEWER DRAINAGE AREA BOUNDARY



NTS



FILE: C:\OLSTARW\INBOX\FICII-01 SCALE: 1:1 03/25, 1997 of 11:34 - \*13\_c4\*

GREELEY AND HANSEN

CITY OF ALEXANDRIA  
 TRANSPORTATION AND ENVIRONMENTAL SERVICES  
 COMBINED SEWER SYSTEM  
 1996 ANNUAL REPORT

**Table III-1: CSO Outfall 001, Pendleton Street - 1996 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.)
2-Jan	1.18	24	0.21	0.193	2
19-Jan	0.76	5	0.60	1.742	2
19-Mar	1.01	7	0.59	1.937	4
28-Mar	1.38	28	0.12	0.016	1
1-Apr	0.95	22	0.17	0.118	1
15-Apr	1.10	15	0.34	0.862	4
30-Apr	0.55	10	0.21	0.348	2
4-May	0.85	4	0.52	1.692	2
5-May	0.76	5	0.29	0.720	3
9-May	0.46	13	0.17	0.005	1
11-May	0.39	6	0.19	0.226	1
21-May	0.53	5	0.43	0.781	2
29-May	0.35	7	0.19	0.046	1
9-Jun	0.38	5	0.18	0.107	1
18-Jun	0.75	2	0.72	1.740	2
20-Jun	0.27	2	0.19	0.004	1
20-Jun	0.34	1	0.34	0.246	2
24-Jun	0.74	5	0.63	1.305	2
30-Jun	0.27	7	0.15	0.020	1
9-Jul	0.54	2	0.45	0.838	2
13-Jul	1.68	24	0.32	1.617	4
19-Jul	1.15	16	0.87	2.798	2
26-Jul	1.15	5	0.47	2.617	3
6-Aug	0.29	2	0.24	0.127	1
12-Aug	1.74	14	0.33	2.425	7
16-Aug	0.52	2	0.37	0.677	2
4-Sep	1.83	7	1.34	5.997	4
6-Sep	1.55	13	0.48	2.997	7
11-Sep	1.15	12	0.39	1.410	3
13-Sep	0.82	4	0.42	1.095	3
16-Sep	0.48	11	0.17	0.039	2
17-Sep	0.44	3	0.24	0.429	1
22-Sep	0.63	5	0.20	0.528	3
28-Sep	0.64	6	0.28	0.705	2
8-Oct	1.49	16	0.34	1.632	7
18-Oct	1.75	19	0.36	3.281	6

**LIMNO-TECH, INC.  
GREELEY AND HANSEN**

**Table III-2: CSO Outfall 002, Royal Street - 1996 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.)
2-Jan	0.77	16	0.11	0.765	9
2-Jan	0.43	12	0.21	0.474	2
7-Jan	1.46	37	0.11	0.959	19
9-Jan	0.26	6	0.07	0.142	3
12-Jan	0.43	9	0.09	0.315	7
19-Jan	0.76	5	0.60	1.572	2
24-Jan	0.20	3	0.11	0.199	2
27-Jan	0.39	12	0.10	0.237	4
27-Jan	0.17	4	0.11	0.152	2
2-Feb	0.23	6	0.06	0.077	3
2-Feb	0.54	13	0.10	0.370	6
8-Feb	0.15	5	0.05	0.045	2
20-Feb	0.38	9	0.08	0.239	6
21-Feb	0.13	4	0.06	0.042	2
22-Feb	0.11	4	0.07	0.028	2
6-Mar	0.46	13	0.08	0.198	7
7-Mar	0.37	7	0.12	0.329	3
19-Mar	1.01	7	0.59	2.050	4
28-Mar	1.20	21	0.12	1.292	13
29-Mar	0.18	6	0.06	0.036	1
1-Apr	0.95	22	0.17	0.725	8
9-Apr	0.37	16	0.04	0.007	2
15-Apr	1.10	15	0.34	1.412	8
23-Apr	0.13	2	0.12	0.060	1
30-Apr	0.55	10	0.21	0.660	3
4-May	0.85	4	0.52	1.599	3
5-May	0.76	5	0.29	1.183	5
7-May	0.47	14	0.06	0.048	3
8-May	0.46	13	0.17	0.276	3
11-May	0.39	6	0.19	0.407	3
16-May	0.32	9	0.07	0.052	2
21-May	0.53	5	0.43	0.889	2
27-May	0.25	6	0.06	0.074	2
28-May	0.19	7	0.07	0.021	1
29-May	0.35	7	0.19	0.297	4
4-Jun	0.20	6	0.12	0.064	2

**LIMNO-TECH, INC.  
GREELEY AND HANSEN**

**Table III-2: CSO Outfall 002, Royal Street - 1996 Rainfall and  
Overflow Model Summary (con't)**

Date of Overflow	Storm Total (in.)	Duration of Storm (hrs.)	Maximum Storm Intensity (in./hr.)	Volume of Overflow (MG)	Duration of Overflow (hrs.)
9-Jun	0.38	5	0.18	0.345	3
18-Jun	0.75	2	0.72	1.544	2
19-Jun	0.15	2	0.12	0.068	1
20-Jun	0.27	2	0.19	0.289	2
20-Jun	0.34	1	0.34	0.521	2
24-Jun	0.74	5	0.63	1.237	2
30-Jun	0.27	7	0.15	0.203	1
3-Jul	0.18	3	0.08	0.034	1
9-Jul	0.54	2	0.45	0.948	2
12-Jul	0.15	3	0.13	0.056	1
12-Jul	1.53	16	0.32	2.31	10
18-Jul	0.29	9	0.15	0.1	1
19-Jul	1.15	16	0.87	2.492	5
26-Jul	1.15	5	0.47	2.42	3
29-Jul	0.20	5	0.11	0.02	1
30-Jul	0.15	3	0.07	0.009	1
6-Aug	0.29	2	0.24	0.353	2
12-Aug	1.74	14	0.33	3.112	9
16-Aug	0.52	2	0.37	0.846	2
3-Sep	0.17	1	0.17	0.11	2
4-Sep	1.83	7	1.34	5.565	6
6-Sep	1.55	13	0.48	3.514	7
11-Sep	1.15	12	0.39	1.809	7
13-Sep	0.82	4	0.42	1.363	5
16-Sep	0.48	11	0.17	0.363	2
17-Sep	0.44	3	0.24	0.685	3
22-Sep	0.63	5	0.20	0.889	4
28-Sep	0.64	6	0.28	0.893	3
2-Oct	0.39	7	0.11	0.358	4
8-Oct	1.49	16	0.34	2.519	10
9-Oct	0.28	7	0.07	0.156	3
18-Oct	0.13	2	0.10	0.026	1
18-Oct	1.62	14	0.36	3.683	8
8-Nov	2.57	14	0.65	7.713	10
26-Nov	0.62	11	0.20	0.594	5
30-Nov	0.27	12	0.06	0.044	2

**LIMNO-TECH, INC.  
GREELEY AND HANSEN**

**Table III-2: CSO Outfall 002, Royal Street - 1996 Rainfall and  
Overflow Model Summary (con't)**

Date of Overflow	Storm Total (in.)	Duration of Storm (hrs.)	Maximum Storm Intensity (in./hr.)	Volume of Overflow (MG)	Duration of Overflow (hrs.)
1-Dec	0.81	12	0.15	0.943	7
2-Dec	0.56	10	0.25	0.635	3
5-Dec	0.94	7	0.34	1.615	6
7-Dec	0.47	10	0.08	0.353	6
13-Dec	1.91	18	0.26	3.477	13
19-Dec	0.26	12	0.05	0.032	2
24-Dec	0.19	5	0.07	0.104	2

**Summary for Outfall 002**

<b>Number of Occurrences:</b>	<b>79</b>
<b>Volume (MG):</b>	<b>71.645</b>
<b>Duration (hrs.):</b>	<b>323</b>
<b>Total Rainfall Causing Overflow (in):</b>	<b>48.51</b>

**LIMNO-TECH, INC.  
GREELEY AND HANSEN**

**Table III-3: CSO Outfall 003, Duke Street - 1996 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.)
3-Jan	0.41	9	0.21	0.033	1
19-Jan	0.76	5	0.60	0.718	2
19-Mar	1.01	7	0.59	0.740	4
2-Apr	0.95	22	0.17	0.020	1
16-Apr	1.10	15	0.34	0.240	3
30-Apr	0.55	10	0.21	0.112	1
5-May	0.85	4	0.52	0.732	2
6-May	0.76	5	0.29	0.253	1
11-May	0.39	6	0.19	0.072	1
22-May	0.53	5	0.43	0.266	2
9-Jun	0.38	5	0.18	0.024	1
18-Jun	0.75	2	0.72	0.698	2
21-Jun	0.34	1	0.34	0.034	2
24-Jun	0.74	5	0.63	0.476	2
9-Jul	0.54	2	0.45	0.312	2
13-Jul	1.68	24	0.32	0.624	4
19-Jul	1.15	16	0.87	1.402	2
26-Jul	1.15	5	0.47	1.183	3
6-Aug	0.29	2	0.24	0.013	1
12-Aug	1.74	14	0.33	0.911	7
16-Aug	0.52	2	0.37	0.255	2
4-Sep	1.83	7	1.34	3.244	4
6-Sep	1.55	13	0.48	1.391	6
11-Sep	1.15	12	0.39	0.554	3
13-Sep	0.82	4	0.42	0.386	3
17-Sep	0.44	3	0.24	0.164	1
22-Sep	0.63	5	0.20	0.111	2
29-Sep	0.64	6	0.28	0.212	2
8-Oct	1.49	16	0.34	0.541	4
19-Oct	1.75	19	0.36	1.481	6
8-Nov	2.57	14	0.65	4.122	8
26-Nov	0.62	11	0.20	0.036	1
1-Dec	1.07	25	0.15	0.014	2
2-Dec	0.56	10	0.25	0.098	2
6-Dec	0.94	7	0.34	0.432	3
13-Dec	1.91	18	0.26	0.841	8

**LIMNO-TECH, INC.  
GREELEY AND HANSEN**

**Table III-3: CSO Outfall 003, Duke Street - 1996 Rainfall and Overflow  
Model Summary**

**Summary for Outfall 003**

<b>Number of Occurrences:</b>	<b>36</b>
<b>Volume (MG):</b>	<b>22.745</b>
<b>Duration (hrs.):</b>	<b>101</b>
<b>Total Rainfall Causing Overflow (in):</b>	<b>34.56</b>

**LIMNO-TECH, INC.  
GREELEY AND HANSEN**



**Table IV-1  
Summary of Nine Minimum Control Measures**

MINIMUM CONTROL	CONTROL MEASURES IMPLEMENTED
Proper Operation and Maintenance	<ul style="list-style-type: none"> <li>• CSO control structures (e.g. regulators and tidegates) inspected and PM'd. once per week</li> <li>• Static screen inspected, screenings removed and PM'd. weekly</li> <li>• Regular program of sewer flushing</li> <li>• Regular program of TV inspection</li> <li>• Regular annual catch basin cleaning program.</li> </ul>
Maximize Use of Collection System for Storage	<ul style="list-style-type: none"> <li>• CSO diversion controls set to optimize storage in trunk system</li> <li>• Completed several sewer relining projects to reduce I/I</li> <li>• CSS fills to level of lowest overflow storing flow in excess of DWF</li> <li>• Tide gates adjusted and repairs made to control tidal intrusion</li> <li>• Onsite stormwater retention required in combined sewer area</li> </ul>
Review and Modify Pre-treatment Requirements	<ul style="list-style-type: none"> <li>• Pretreatment ordinance and program in effect</li> <li>• CSO monitoring, modeling and analysis does not show any impacts that might be attributed to nondomestic sources</li> <li>• No significant industrial users located within the CSS</li> </ul>
Maximize Flow to the POTW for Treatment	<ul style="list-style-type: none"> <li>• Treatment rates at POTW are increased during wet weather events</li> </ul>
Eliminate Dry Weather Overflows (DWOs)	<ul style="list-style-type: none"> <li>• Combined sewer diversion system design has capacity to convey in excess of 3 times DWF to WWTP</li> <li>• Diversion facilities inspected regularly and PM'd to insure they are in proper working order</li> <li>• City maintains a 24-hour on-call team responsible to respond to reported DWOs</li> </ul>
Control of Solid and Floatable Materials in CSOs	<ul style="list-style-type: none"> <li>• Regulate sewer flushing to prevent buildup of solids</li> <li>• Installation of a static screen at the Royal Street CSO</li> <li>• Use of hooded catch basins to retain solids and floatables</li> <li>• Regular leaf season pickup</li> <li>• Regular catch basins cleaning</li> <li>• Regular litter cleanup program</li> <li>• Regular street cleaning program</li> </ul>
Pollution Prevention	<ul style="list-style-type: none"> <li>• Pretreatment program includes awareness programs that encourage industrial waste reduction through recycling and improved housekeeping</li> <li>• Regular street cleaning and litter control</li> <li>• Hazardous waste recycling program</li> <li>• General recycling and solid waste control programs</li> <li>• BMPs for Automotive Related Industries</li> <li>• Leaf collection citywide in fall</li> <li>• Ordinances and enforcement designed to prohibit entrance of any substances that may impair or damage the function and performance of collection and treatment systems</li> </ul>
Public Notification	<ul style="list-style-type: none"> <li>• Erected public notice signs at CSO locations</li> <li>• Public information bulletin available</li> <li>• A public meeting has been held to provide the public information and obtain public input on the CSS, CSOs and control program</li> </ul>
Monitoring	<ul style="list-style-type: none"> <li>• City monitors the CSS in accordance with requirements of its VPDES permit Part I.A.7.</li> </ul>



City of Alexandria, Virginia

Transportation & Environmental Services

P. O. Box 178

Alexandria, Virginia 22313



Construction & Inspection  
703-838-4324

Engineering  
703-838-4320

Street Lights  
703-838-4721

Site Plan  
703-838-4318

September 4, 1996

Mr. Lalit K. Sharma, P.E.  
Northern Regional Office  
Department of Environmental Quality  
1549 Old Bridge Road  
Suite 108  
Woodbridge, Virginia 22192



RE: VPDES Permit No. VA0087068  
Alexandria Combined Sewer System, City of Alexandria

Dear Mr. Sharma:

As reported in our telephone conversation on August 30 1996 a blockage of the CSO Sewer System at Outfall 003 Under Duke Street resulted in a dry weather discharge. Our Sewer Maintenance Division removed a plastic trash bag full of beer cans and other debris from the pipe. This blockage caused sewage to flow into Hoofs Run. When the bag was removed the dry weather flow was restored to the appropriate sanitary sewer and the discharge to Hoofs Run ceased. Our engineering and maintenance staff intend to meet this week to discuss this incident and to determine if any actions may be taken to reduce the possibility of a future occurrence. If you should have any questions or comments regarding this matter please contact me at 519-3400, extension 188.

Sincerely,  
*Larry Gavan*  
Larry Gavan  
Environmental Scientist

cc: Thomas F. O'Kane, Jr., Director, T.E.S. Dept.  
Warren Bell, Deputy Director of Engineering, T.E.S. Dept.  
Sam Navatta, Deputy Director of Operations, T.E.S. Dept.  
Mohammad Halim, Division Chief of Engineering, T.E.S. Dept.  
George Bohr, Design Engineer, T.E.S. Dept.  
Ron Royston, Superintendent of Sewers, T.E.S. Dept.

**City of Alexandria, Virginia  
Transportation and Environmental Services**

**CSO SYSTEM ANNUAL REPORT NO. 2  
FOR 1996**

**VPDES Permit No. VA0087068**

**APPENDIX IV-1**

# 1996 Grease Trap Flushing

12-98  
#196

WEST END -- GREASE SPOTS

- ✓ 1. Paxton St. at Hardees
- ✓ 2. Shooter McGee off Duke St. service road
- ✓ 3. Reynolds St. off Duke St., at 7-11 & Pizza Hut, check
- ✓ 4. Walker St. at car dealer, coming from Mexican Restaurant
- ✓ 5. S. Pickett St. at laundry
- ✓ 6. Eisenhower Ave. at rear of incinerator
- ✓ 7. Rayburn Ave. off Beauregard St., coming from Carnegie's Restaurant
- ✓ 8. S. Jordan St., line in front of the 7-11
- ✓ 9. Line in alley behind Fox Chase (2 lines)
- ✓ 10. Vermont Ave. & Gordon St., in manhole where Vermont Ave. flow is restricted
- ✓ 11. 40 S. Ingram St. to Duke St.
- ✓ 12. Hill Top & Carlisle Dr., clear manhole & run flat line

NORTH END -- ARLANDRIA

- ✓ 1. ✓ Reed Ave. at McDonald's, also siphon off Mark Dr. alley
- ✓ 2. ✓ 18" line on Four Mile Rd. to Old Dominion & the siphons
- ✓ 3. ✓ 5 W. Glendale St., lateral coming into the manhole at Glendale St. & Braddock Rd.
- ✓ 4. 4107 Mt. Vernon Ave., in front of Duron Paint Store

1. Introduction  
2. Background  
3. Methodology  
4. Results  
5. Discussion  
6. Conclusion  
7. References  
8. Appendix  
9. Glossary  
10. Index

WEST END -- GREASE SPOTS

- ✓ 1. Paxton St. at Hardees
- ✓ 2. Shooter McGee off Duke St. service road
- ✓ 3. Reynolds St. off Duke St., at 7-11 & Pizza Hut, check
- ✓ 4. Walker St. at car dealer, coming from Mexican Restaurant
- ✓ 5. S. Pickett St. at laundry
- ✓ 6. Eisenhower Ave. at rear of incinerator
- ✓ 7. Rayburn Ave. off Beauregard St., coming from Carnegie's Restaurant
- ✓ 8. S. Jordan St., line in front of the 7-11
- ✓ 9. Line in alley behind Fox Chase (2 lines)
- ✓ 10. Vermont Ave. & Gordon St., in manhole where Vermont Ave. flow is restricted
- ✓ 11. 40 S. Ingram St. to Duke St.
- ✓ 12. Hill Top & Carlisle Dr., clear manhole & run flat line

NORTH END -- ARLANDRIA

- ✓ 1. Reed Ave. at McDonald's, also siphon off Mark Dr. alley
- ✓ 2. 18" line on Four Mile Rd. to Old Dominion & the siphons
- ✓ 3. 5 W. Glendale St., lateral coming into the manhole at Glendale St. & Braddock Rd.
- ✓ 4. 4107 Mt. Vernon Ave., in front of Duron Paint Store

COMPLETE

5-30 -96

WEST END -- GREASE SPOTS

- ✓ 1. Paxton St. at Hardees
- ✓ 2. Shooter McGee off Duke St. service road
- ✓ 3. Reynolds St. off Duke St., at 7-11 & Pizza Hut, check
- ✓ 4. Walker St. at car dealer, coming from Mexican Restaurant
- ✓ 5. S. Pickett St. at laundry
- ✓ 6. Eisenhower Ave. at rear of incinerator
- ✓ 7. Rayburn Ave. off Beauregard St., coming from Carnegie's Restaurant
- ✓ 8. S. Jordan St., line in front of the 7-11
- ✓ 9. Line in alley behind Fox Chase (2 lines)
- ✓ 10. Vermont Ave. & Gordon St., in manhole where Vermont Ave. flow is restricted
- ✓ 11. 40 S. Ingram St. to Duke St.
- ✓ 12. Hill Top & Carlisle Dr., clear manhole & run flat line

NORTH END -- ARLANDRIA

- ✓ 1. Reed Ave. at McDonald's, also siphon off Mark Dr. alley
- ✓ 2. 18" line on Four Mile Rd. to Old Dominion & the siphons
- ✓ 3. 5 W. Glendale St., lateral coming into the manhole at Glendale St. & Braddock Rd.
- ✓ 4. 4107 Mt. Vernon Ave., in front of Duron Paint Store

West End - grease spots

- ① PAXTON ST. @ HARDEES
- ② SHOOTER McCee off DUKE ST SERVICE ROAD
- ③ REYNOLDS ST. off DUKE - @ 7-11 + PIZZA HUT - CHECK -
- ④ WALKER ST @ CAR DEALER COMING FROM MEXICAN REST.
- ⑤ So PICKETT @ LAUNDRY
- ⑥ EISENHOWER AVE @ REAR OF IXGENERATOR
- ⑦ RAYBURN off BEAUREGARD COMING FROM CARNEGIE'S REST.
- ⑧ So Jordan line in front of the 7-11  
line in alley behind Fox Chase (2 lines)
- ⑨ Vermont + Jordan - in MH where Vermont flow is restricted -

NORTH END - ARLANDRIA -

- Reed AVE @ McDONALDS ALSO SIPHON OFF MARK DR ALLEY.
- ⑩ 18" line off 4 mile RD TO OLD DOMINION + THE SIPHONS
- ⑪ #5 West Blendle - lateral comes into MH. at Blendle + Buddock
- ⑫ 4107 Mt Vernon in front of Dura Paint Store

West End additions

- ⑬ 40 So Ingram to Duke St
- ⑭ 72 Hill top + Carlyle clear MH. + run <sup>flat</sup> line

WEST END -- GREASE SPOTS *lmo*

1. Paxton St. at Hardees *8-1-96*
2. Shooter McGee off Duke St. service road
3. Reynolds St. off Duke St., at 7-11 & Pizza Hut, check *8-6-96*
4. Walker St. at car dealer, coming from Mexican Restaurant *8-6-96*
5. S. Pickett St. at laundry *car parked in 8-7-96 8-12-96 P.*
6. Eisenhower Ave. at rear of incinerator *8-1-96*
7. Rayburn Ave. off Beauregard St., coming from Carnegie's Restaurant *8-2-96*
8. S. Jordan St., line in front of the 7-11 *8-5-96*
9. Line in alley behind Fox Chase (2 lines) *8-6-96*
10. Vermont Ave. & Gordon St., in manhole where Vermont Ave. flow is restricted - *start at Ted's + Arthur's 8-7-96*
11. 40 S. Ingram St. to Duke St. *8-3-96*
12. Hill Top & Carlisle Dr., clear manhole & run flat line *8-8-96*

NORTH END -- ARLANDRIA *lmo*

1. Reed Ave. at McDonald's, also siphon off Mark Dr. alley *7/30/96*
2. 18" line on Four Mile Rd. to Old Dominion & the siphons *7/30/96*
3. 5 W. Glendale St., lateral coming into the manhole at Glendale St. & Braddock Rd. *7/30/96*
4. 4107 Mt. Vernon Ave., in front of Duron Paint Store *7/30/96*

WEST END -- GREASE SPOTS

- 5-96 ① Paxton St. at Hardees 300' + 40' + 200' + 500'
- 1-17-96 2. Shooter McGee off Duke St. service road 300' SW + 500' S + 700' N + 2155' + 42'
- 5-96 ② Reynolds St. off Duke St., at 7-11 & Pizza Hut, check 300'
- 5-96 ④ Walker St. at car dealer, coming from Mexican Restaurant 100' + 250' + 50'
- 5-96 ⑤ S. Pickett St. at laundry 225' + 60' + 300' / 325' + 350' - 215' + 950'
- 5-96 ⑥ Eisenhower Ave. at rear of incinerator 850' + 750' + (100 9-6-96)
- 9-17-167. Rayburn Ave. off Beauregard St., coming from Carnegie's Restaurant 400' N + 300' E + 300' N + 500' + 600' N + 600' N + 200' E + 250' E + 200' S + 100' S
- \* ✓ 8. S. Jordan St., line in front of the 7-11 9-4-96
- ⑨ Line in alley behind Fox Chase (2 lines) 100' N + 250' W + 250' N + 300' E + 500' W + 300' N + 250' N + 500' E - Duke St
10. Vermont Ave. & Gordon St., in manhole where Vermont Ave. flow is restricted 300' + 250' W + 100' N + 300' N + 300' N + 250' N
11. 40 S. Ingram St. to Duke St. 450' N + 350' W + ~~200' + 200' + 200'~~ 500' W + 300' W
- ⑫ Hill Top & Carlisle Dr., clear manhole & run flat line 9-16-96 200'

NORTH END -- ARLANDRIA

1. Reed Ave. at McDonald's, also siphon off Mark Dr. alley 8-29-96 400' - 350'
2. 18" line on Four Mile Rd. to Old Dominion & the siphons 400' - 200' - 10' 8-24-96
3. 5 W. Glendale St., lateral coming into the manhole at Glendale St. & Braddock Rd.
4. 4107 Mt. Vernon Ave., in front of Duron Paint Store, 8-29-96 20' 21' - 10'

WEST END -- GREASE SPOTS

- ✓ 1. Paxton St. at Hardees 10/17/96
- ✓ 2. Shooter McGee off Duke St. service road 10/17/96
- ✓ 3. Reynolds St. off Duke St., at 7-11 & Pizza Hut, check 10-8-96 250'
- ✓ 4. Walker St. at car dealer, coming from Mexican Restaurant 10/16/96
- ✓ 5. S. Pickett St. at laundry 10-8-96 - 250'; 175'
- ✓ 6. Eisenhower Ave. at rear of incinerator 400 FT. + 350 + 700  
650 FT.
- ✓ 7. Rayburn Ave. off Beauregard St., coming from Carnegie's Restaurant 10/21/96
- ✓ 8. S. Jordan St., line in front of the 7-11
- ✓ 9. Line in alley behind Fox Chase (2 lines) 10-8-96  
300' - 325' - 150' - 250 - 325
- ✓ 10. Vermont Ave. & Gordon St., in manhole where Vermont Ave. flow is restricted 10/14/96
- ✓ 11. 40 S. Ingram St. to Duke St. 10/14/96
- ✓ 12. Hill Top & Carlisle Dr., clear manhole & run flat line 250

NORTH END -- ARLANDRIA

- ✓ 1. Reed Ave. at McDonald's, also siphon off Mark Dr. alley
- ✓ 2. 18" line on Four Mile Rd. to Old Dominion & the siphons 10/10/96
- ✓ 3. 5 W. Glendale St., lateral coming into the manhole at Glendale St. & Braddock Rd. 10/21/96
- ✓ 4. 4107 Mt. Vernon Ave., in front of Duron Paint Store 10-10-96

WEST END -- GREASE SPOTS

- ~~1.~~ Paxton St. at Hardees <sup>11/21/96 300<sup>ft</sup> + 50<sup>ft</sup> + 300<sup>ft</sup> + 500<sup>ft</sup> + 300<sup>ft</sup> + 400<sup>ft</sup> + 800<sup>ft</sup> + 275<sup>ft</sup> + 500<sup>ft</sup></sup>
- ~~2.~~ Shooter McGee off Duke St. service road <sup>11/21/96</sup>
- ~~3.~~ Reynolds St. off Duke St., at 7-11 & Pizza Hut, check <sup>11/5/96 300<sup>ft</sup></sup>
- ~~4.~~ Walker St. at car dealer, coming from Mexican Restaurant <sup>11/5/96 150<sup>ft</sup> + 200<sup>ft</sup> + 400<sup>ft</sup> + 400<sup>ft</sup></sup>
- ~~5.~~ S. Pickett St. at laundry <sup>11/5/96 150<sup>ft</sup></sup>
- ~~6.~~ Eisenhower Ave. at rear of incinerator <sup>11/19/96 400<sup>ft</sup> + 800<sup>ft</sup> + 300<sup>ft</sup> + 600<sup>ft</sup> + 600<sup>ft</sup> + 200<sup>ft</sup></sup>
- ~~7.~~ Rayburn Ave. off Beauvegard St., coming from Carnegie's Restaurant <sup>11/7/96 500<sup>ft</sup> + 400<sup>ft</sup> + 300<sup>ft</sup> + 900<sup>ft</sup> + 150<sup>ft</sup></sup>
- ~~8.~~ S. Jordan St., line in front of the 7-11 <sup>11/18/96 200<sup>ft</sup> + 275<sup>ft</sup> + 400<sup>ft</sup> + 400<sup>ft</sup></sup>
- ~~9.~~ Line in alley behind Fox Chase (2 lines) <sup>11/20/96 300<sup>ft</sup> + 300<sup>ft</sup> + 150<sup>ft</sup> + 200<sup>ft</sup></sup>
- ~~10.~~ Vermont Ave. & Gordon St., in manhole where Vermont Ave. flow is restricted <sup>11/18/96 600<sup>ft</sup> + 500<sup>ft</sup> + 300<sup>ft</sup> + 200<sup>ft</sup> + 275<sup>ft</sup> + 400<sup>ft</sup> + 300<sup>ft</sup> + 175<sup>ft</sup> + 300<sup>ft</sup></sup>
- ~~11.~~ 40 S. Ingram St. to Duke St. <sup>11/15/96 600<sup>ft</sup> + 400<sup>ft</sup></sup>
- ~~12.~~ Hill Top & Carlisle Dr., clear manhole & run flat line <sup>11/21/96 250<sup>ft</sup></sup>

Down 10.00

NORTH END -- ARLANDRIA

- ~~1.~~ Reed Ave. at McDonald's, also siphon off Mark Dr. alley <sup>11/5/96 300<sup>ft</sup></sup>
- ~~2.~~ 18" line on Four Mile Rd. to Old Dominion & the siphons <sup>11/5/96 500<sup>ft</sup></sup>
- ~~3.~~ 5 W. Glendale St., lateral coming into the manhole at Glendale St. & Braddock Rd. <sup>11/5/96 200<sup>ft</sup></sup>
- ~~4.~~ 4107 Mt Vernon Ave., in front of Duron Paint Store <sup>11/21/96</sup>

WEST END -- GREASE SPOTS

1. ~~12/12/96~~ 300 FT + 100 FT + 400 FT + 175 FT + 250 FT  
Paxton St. at Hardees
2. ~~12/11/96~~ 300 FT + 600 FT + 275 FT + 500 FT  
Shooter McGee off Duke St. service road
3. ~~12/11/96~~  
Reynolds St. off Duke St., at 7-11 & Pizza Hut, check
4. Walker St. at car dealer, coming from Mexican Restaurant
5. S. Pickett St. at laundry
6. ~~12/12/96~~ 300 FT + 800 FT + 500 FT + 800 FT + 500 FT + 600 FT  
Eisenhower Ave. at rear of incinerator
7. ~~12/11/96~~  
Rayburn Ave. off Beauregard St., coming from Carnegie's Restaurant
8. ~~12/10/96~~ 150 FT + 300 FT + 450 FT + 450 FT  
S. Jordan St., line in front of the 7-11
9. ~~12/12/96~~  
Line in alley behind Fox Chase (2 lines)
10. Vermont Ave. & Gordon St., in manhole where Vermont Ave. flow is restricted
11. ~~12/10/96~~ 800 FT + 260 FT + 200 FT + 600 FT + 500 FT + 300 FT + 150 FT + 700 FT  
40 S. Ingram St. to Duke St. 500 FT + 300 FT
12. Hill Top & Carlisle Dr., clear manhole & run flat line

NORTH END -- ARLANDRIA

1. ~~12/11/96~~ 600 FT  
Reed Ave. at McDonald's, also siphon off Mark Dr. alley
2. ~~12/11/96~~ 800 FT + 100 FT  
18" line on Four Mile Rd. to Old Dominion & the siphons
3. 5 W. Glendale St., lateral coming into the manhole at Glendale St. & Braddock Rd.
4. ~~12/11/96~~  
4107 Mt. Vernon Ave., in front of Duron Paint Store

Driver John Dyanham

WEST END -- GREASE SPOTS

1. Paxton St. at Hardees

2-26 2. Shooter McGee off Duke St. service road  $325 + 500 + 400 + 300 + 250 + 350$

3. Reynolds St. off Duke St., at 7-11 & Pizza Hut, check

4. Walker St. at car dealer, coming from Mexican Restaurant

12-26-5. S. Pickett St. at laundry (BENIGALS)

6. Eisenhower Ave. at rear of incinerator

7. Rayburn Ave. off Beauregard St., coming from Carnegie's Restaurant

8. S. Jordan St., line in front of the 7-11

9. Line in alley behind Fox Chase (2 lines)

10. Vermont Ave. & Gordon St., in manhole where Vermont Ave. flow is restricted

11. 40 S. Ingram St. to Duke St.

12. Hill Top & Carlisle Dr., clear manhole & run flat line

NORTH END -- ARLANDRIA

1. Reed Ave. at McDonald's, also siphon off Mark Dr. alley

2. 18" line on Four Mile Rd. to Old Dominion & the siphons

3. 5 W. Glendale St., lateral coming into the manhole at Glendale St. & Braddock Rd.

4. 4107 Mt. Vernon Ave., in front of Duron Paint Store

OLD TOWN -- GREASE SPOTS

12-95

- ✓ 1. 100 Blk. King St., alley, siphon at Boat Club
- ✓ 2. Ramsey alley, Fairfax St. to Union St. & Union St. to river
- ✓ 3. 200 Blk. N. Lee St. at Cameron St. & at alley
- ✓ 4. Prince St. & Strand St., need no parking sign
- ✓ 5. St. Asaph St., alley behind Sutton Place shopping center
- ✓ 6. St. Asaph St. at Giant Food
- ✓ 7. 2nd St. in parking lot behind apartments, rear of Old Colony Inn
8. Janney's Ln. at Taylor Run, check
- ✓ 9. 100 Blk. Queen St., manhole at Queen St. & Union St.
- ✓ 10. Diagonal Rd., lines coming from Joe Thiesman's
- ✓ 11. 100 Blk. S. Fayette St., manhole in street
- ✓ 12. 500 Blk. S. Columbus St. at Williams Sandwich Shop
13. 5 W. Glendale St., lateral coming into the manhole
- ✓ 14. Thompson's alley, west side of Union St. coming from Chart House restaurant
- ✓ 15. 107 S. St. Asaph St., line in alley beside Portner's Restaurant
- ✓ 16. King St. at Woodbine Retirement Home to the siphon at Janney's Ln.
- ✓ 17. Laterals at Christ Church on N. Washington St., behind the backflow
- ✓ 18. Laterals at 510 Cameron St. & at 215 N. Pitt St.

COMPLETE 3-96

OLD TOWN -- GREASE SPOTS

- 3-7-96 1. 100 Blk. King St., alley, siphon at Boat Club
- 3-22-96 2. Ramsey alley, Fairfax St. to Union St. & Union St. to river
- 3-22-96 3. 200 Blk. N. Lee St. at Cameron St. & at alley
- 3-22-96 4. Prince St. & Strand St., need no parking sign
- 3-22-96 5. St. Asaph St., alley behind Sutton Place shopping center
- 3-13-96 6. St. Asaph St. at Giant Food
- 3-9-96 7. 2nd St. in parking lot behind apartments, rear of Old Colony Inn
8. Janney's Ln. at Taylor Run, check
- 3-1-96 9. 100 Blk. Queen St., manhole at Queen St. & Union St.
- 3-4-96 10. Diagonal Rd., lines coming from Joe Thiesman's
- 3-14-96 11. 100 Blk. S. Fayette St., manhole in street
- 3-20-96 12. 500 Blk. S. Columbus St. at Williams Sandwich Shop
- 3-1-96 13. 5 W. Glendale St., lateral coming into the manhole
- 3-22-96 14. Thompson's alley, west side of Union St. coming from Chart House restaurant
- 3-14-96 15. 107 S. St. Asaph St., line in alley beside Portner's Restaurant
- 3-21-96 16. King St. at Woodbine Retirement Home to the siphon at Janney's Ln.
- 3-22-96 17. Laterals at Christ Church on N. Washington St., behind the backflow
- 4-2-96 18. Laterals at 510 Cameron St. & at 215 N. Pitt St. 3-27-96

7-96  
OLD TOWN -- GREASE SPOTS

- ✓1. 100 Blk. King St., alley, siphon at Boat Club
- ✓2. Ramsey alley, Fairfax St. to Union St. & Union St. to river
- ✓3. 200 Blk. N. Lee St. at Cameron St. & at alley
- ✓4. Prince St. & Strand St., need no parking sign
- ✓5. St. Asaph St., alley behind Sutton Place shopping center
- ✓6. St. Asaph St. at Giant Food
7. 2nd St. in parking lot behind apartments, rear of Old Colony Inn
- ✓8. Janney's Ln. at Taylor Run, check
- ✓9. 100 Blk. Queen St., manhole at Queen St. & Union St.
- ✓10. Diagonal Rd., lines coming from Joe Thiesman's
- ✓11. 100 Blk. S. Fayette St., manhole in street
12. 500 Blk. S. Columbus St. at Williams Sandwich Shop
- ✓13. 5 W. Glendale St., lateral coming into the manhole
- ✓14. Thompson's alley, west side of Union St. coming from Chart House restaurant
- ✓15. 107 S. St. Asaph St., line in alley beside Portner's Restaurant
- ✓16. King St. at Woodbine Retirement Home to the siphon at Janney's Ln.
- ✓17. Laterals at Christ Church on N. Washington St., behind the backflow
- ✓18. Laterals at 510 Cameron St. & at 215 N. Pitt St.

COMPLETE

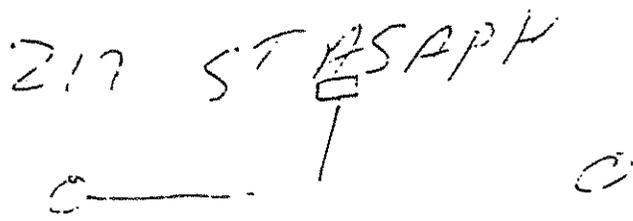
5-30-96

OLD TOWN -- GREASE SPOTS

- ✓1. 100 Blk. King St., alley, siphon at Boat Club
- ✓2. Ramsey alley, Fairfax St. to Union St. & Union St. to river
- ✓3. 200 Blk. N. Lee St. at Cameron St. & at alley
- ✓4. Prince St. & Strand St., need no parking sign
- ✓5. St. Asaph St., alley behind Sutton Place shopping center
- ✓6. St. Asaph St. at Giant Food
- ✓7. 2nd St. in parking lot behind apartments, rear of Old Colony Inn
8. Janney's Ln. at Taylor Run, check
- ✓9. 100 Blk. Queen St., manhole at Queen St. & Union St.
- ✓10. Diagonal Rd., lines coming from Joe Thiesman's
- ✓11. 100 Blk. S. Fayette St., manhole in street
- ✓12. 500 Blk. S. Columbus St. at Williams Sandwich Shop
- ✓13. 5 W. Glendale St., lateral coming into the manhole
- ✓14. Thompson's alley, west side of Union St. coming from Chart House restaurant
- ✓15. 107 S. St. Asaph St., line in alley beside Portner's Restaurant
- ✓16. King St. at Woodbine Retirement Home to the siphon at Janney's Ln.
- ✓17. Laterals at Christ Church on N. Washington St., behind the backflow
- ✓18. Laterals at 510 Cameron St. & at 215 N. Pitt St.

OLD TOWN -- GREASE SPOTS - 1 *nr.*

- 1. 100 Blk. King St., alley, siphon at Boat Club  
*+ in alley So. Side beside ice cream parlor - notify owner of ice cream parlor.*
- 2. Ramsey alley, Fairfax St. to Union St. & Union St. to river
- 3. 200 Blk. N. Lee St. at Cameron St. & at alley
- 24-94. 4. Prince St. & Strand St., need no parking sign *Flush 150'*
- 25-95. 5. St. Asaph St., alley behind Sutton Place shopping center *350' Flush*
- 25-96. 6. St. Asaph St. at Giant Food *150'*
- 25-97. 7. 2nd St. in parking lot behind apartments, rear of Old Colony Inn *600'*
- 25-98. 8. Janney's Ln. at Taylor Run, check *600'*
- 25-99. 9. 100 Blk. Queen St., manhole at Queen St. & Union St. *250' Flush*
- 10. Diagonal Rd., lines coming from Joe Thiesman's
- 25-910. 11. 100 Blk. S. Fayette St., manhole in street
- 25-911. 12. 500 Blk. S. Columbus St. at Williams Sandwich Shop
- 25-912. 13. 5 W. Glendale St., lateral coming into the manhole
- 25-913. 14. Thompson's alley, west side of Union St. coming from Chart House restaurant
- 25-914. 15. 107 S. St. Asaph St., line in alley beside Portner's Restaurant *350'*
- 25-915. 16. King St. at Woodbine Retirement Home to the siphon at Janney's Ln. *7/20/71*
- 25-916. 17. Laterals at Christ Church on N. Washington St., behind the backflow *7-24-91*
- 25-917. 18. Laterals at 510 Cameron St. & at 215 N. Pitt St.
- 25-918. 19. " at 180 Cambridge *7/30/71*



*Sist Completed*

OLD TOWN -- GREASE SPOTS

- ~~1.~~ 100 Blk. King St., alley, siphon at Boat Club 100'
- ~~2.~~ Ramsey alley, Fairfax St. to Union St. & Union St. to river 225' + 200'
- ~~3.~~ 200 Blk. N. Lee St. at Cameron St. & at alley 300' + 100' + 150' + 100' + 250'
- ~~4.~~ Prince St. & Strand St., need no parking sign 120' + 120'
- ~~5.~~ St. Asaph St., alley behind Sutton Place shopping center 10/10/96
- ~~6.~~ St. Asaph St. at Giant Food 70' + 125'
- ~~N.S. 7.~~ 2nd St. in parking lot behind apartments, rear of Old Colony Inn 100' + 600'
- ~~8.~~ Janney's Ln. at Taylor Run, check 10/15/96
- ~~9.~~ 100 Blk. Queen St., manhole at Queen St. & Union St. 300'
- ~~10.~~ Diagonal Rd., lines coming from Joe Thiesman's 800' + 100' x 2
- ~~11.~~ 100 Blk. S. Fayette St., manhole in street
- ~~12.~~ 500 Blk. S. Columbus St. at Williams Sandwich Shop 300'
- ~~13.~~ 5 W. Glendale St., lateral coming into the manhole
- ~~14.~~ Thompson's alley, west side of Union St. coming from Chart House restaurant 350'
- ~~15.~~ 107 S. St. Asaph St., line in alley beside Portner's 10-9-96 Restaurant
- ~~16.~~ King St. at Woodbine Retirement Home to the siphon at Janney's Ln. 10-14
- ~~17.~~ Laterals at Christ Church on N. Washington St., behind the backflow
- ~~18.~~ Laterals at 510 Cameron St. & at 215 N. Pitt St. 10/15
- ~~19.~~ 112 King in alley 70' in alley Behind 10/10/96  
Beside the store said NOT to do it till 100'

OLD TOWN -- GREASE SPOTS

3. ~~X~~. 100 Blk. King St., alley, siphon at Boat Club <sup>10/30/96 100<sup>ft</sup> + 75<sup>ft</sup> 100<sup>ft</sup></sup>
4. ~~X~~. Ramsey alley, Fairfax St. to Union St. & Union St. to river <sup>10/30/96 200<sup>ft</sup></sup>
5. ~~X~~. 200 Blk. N. Lee St. at Cameron St. & at alley <sup>10/30/96 125<sup>ft</sup> + 115<sup>ft</sup> + 200<sup>ft</sup> + 300<sup>ft</sup></sup>
1. ~~X~~. Prince St. & Strand St., need no parking sign <sup>10/30/96 150<sup>ft</sup> + 200<sup>ft</sup></sup>
8. ~~X~~. St. Asaph St., alley behind Sutton Place shopping center <sup>10/31/96 275<sup>ft</sup></sup>
9. ~~X~~. St. Asaph St. at Giant Food <sup>10/31/96 115<sup>ft</sup></sup>
7. ~~X~~. 2nd St. in parking lot behind apartments, rear of Old Colony Inn <sup>10/31/96 225<sup>ft</sup></sup>  
House #604 Broken Line Between 2 Men in Lcs Talk to 317#
12. ~~X~~. Janney's Ln. at Taylor Run, check
6. ~~X~~. 100 Blk. Queen St., manhole at Queen St. & Union St. <sup>10/31/96 250<sup>ft</sup></sup>
18. ~~X~~. Diagonal Rd., lines coming from Joe Thiesman's <sup>10/31/96 400<sup>ft</sup></sup>
11. ~~X~~. 100 Blk. S. Fayette St., manhole in street <sup>10/31/96 175<sup>ft</sup></sup>
10. ~~X~~. 500 Blk. S. Columbus St. at Williams Sandwich Shop <sup>10/31/96 300<sup>ft</sup></sup>
16. ~~X~~. 5 W. Glendale St., lateral coming into the manhole <sup>11/4/96 40<sup>ft</sup></sup>
2. ~~X~~ (14). Thompson's alley, west side of Union St. coming from Chart House restaurant
15. ~~X~~. 107 S. St. Asaph St., line in alley beside Portner's Restaurant <sup>11/4/96 115<sup>ft</sup></sup>
17. ~~X~~. King St. at Woodbine Retirement Home to the siphon at Janney's Ln. <sup>11/4/96 300<sup>ft</sup> + 300<sup>ft</sup> + 350<sup>ft</sup> + 300<sup>ft</sup></sup>
14. ~~X~~. Laterals at Christ Church on N. Washington St., behind the backflow <sup>20<sup>ft</sup> 11/4/96</sup>
13. ~~X~~. Laterals at 510 Cameron St. & at 215 N. Pitt St. <sup>11/4/96 15<sup>ft</sup> + 15<sup>ft</sup></sup>
2. ~~X~~. King & Union Alley at Ice cream store <sup>10/30/96 100<sup>ft</sup> + 100<sup>ft</sup></sup>

OLD TOWN -- GREASE SPOTS

1. 100 Blk. King St., alley, siphon at Boat Club <sup>12/4/96 150ft. + 75ft.</sup>
2. Ramsey alley, Fairfax St. to Union St. & Union St. to river <sup>12/5/96 400ft. + 200ft.</sup>
3. 200 Blk. N. Lee St. at Cameron St. & at alley <sup>12/4/96 150ft. + 100ft. + 150ft. + 200ft. + 150ft. + 200ft. + 250ft.</sup>
4. Prince St. & Strand St., need no parking sign <sup>12/6/96 100ft. + 100ft.</sup>
5. St. Asaph St., alley behind Sutton Place shopping center <sup>12/4/96 300ft.</sup>
6. St. Asaph St. at Giant Food <sup>12/5/96 60ft. + 100ft.</sup>
7. 2nd St. in parking lot behind apartments, rear of Old Colony Inn <sup>12/5/96 200ft. + 500ft.</sup>
8. Janney's Ln. at Taylor Run, check
9. 100 Blk. Queen St., manhole at Queen St. & Union St. <sup>12/4/96 200ft.</sup>
10. Diagonal Rd., lines coming from Joe Thiesman's <sup>12/10/96 850ft.</sup>
11. 100 Blk. S. Fayette St., manhole in street <sup>12/10/96 180ft.</sup>
12. 500 Blk. S. Columbus St. at Williams Sandwich Shop <sup>12/5/96 300ft.</sup>
13. 5 W. Glendale St., lateral coming into the manhole
14. Thompson's alley, west side of Union St. coming from Chart House restaurant <sup>12/4/96 250ft.</sup>
15. 107 S. St. Asaph St., line in alley beside Portner's Restaurant <sup>12/4/96 150ft.</sup>
16. King St. at Woodbine Retirement Home to the siphon at Janney's Ln.
17. Laterals at Christ Church on N. Washington St., behind the backflow <sup>12/5/96</sup>
18. Laterals at 510 Cameron St. at 215 N. Pitt St. <sup>12/5/96</sup>
19. Ice cream store off King St. in alley <sup>12/5/96 Flush 100ft. + 250ft.</sup>
20. Cameron + Pitt St. at shoe store <sup>12/12/96 90ft. + 90ft. + 10ft. + 90ft. + 150ft.</sup>

# 1996 Weekly Siphon Flushing

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 2 - 9 - 96

FOREMAN: I. D. L. V. C. F. X

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	UFC	2-9-96
S. Royal & Franklin Streets	UFC	2-9-96
S. Pitt & Franklin Streets	UFC	2-9-96
Strand & King Streets	UFC	2-9-96
N. Patrick & Madison Streets	UFC	2-9-96
Second Street & Colonial Avenue	UFC	2-9-96
301 Mt. Vernon Avenue		
Rosemont Avenue & Hooffs Run ✓	I D L	2-9-96
Mt. Vernon Avenue & Hooffs Run ✓	I D L	2-9-96
400 Timber Branch Parkway ✓	I D L	2-9-96
W. Braddock Road & Hancock Avenue ✓	I D L	2-9-96
Oxford & Mt. Vernon Avenues ✓	I D L	2-9-96
Herbert Street & Mt. Vernon Avenue ✓	I D L	2-9-96
W. Glebe Road & Commonwealth Avenue ✓	I D L	2-9-96
153 Dale Street (in alley) ✓	I D L	2-9-96
100 N. West Street	UFC	2-9-96
E. Taylor Run & Janneys Lane	UFC	2-9-96
5219 Holmes Run Parkway	UFC	
Holmes Run Creek		
King Street & Commonwealth Avenue		
Russell Road & Summers Drive ✓	I D L	2-9-96
1516 Commonwealth Avenue (in alley) ✓	I D L	2-9-96
305 E. Mason Avenue ✓	I D L	2-9-96
Four Mile Road & Old Dominion Blvd. ✓	I D L	2-9-96

LOCATIONDRIVER'S  
INITIALSDATE

200 S. Henry Street	UFC	2-9-96
800 S. Payne Street	UFC	2-9-96
3600 Commonwealth Avenue ✓	EDI	2-9-96
3500 Old Dominion Boulevard ✓	EDI	2-9-96
Park Center Drive	UFC	2-8-96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 3-29-96

FOREMAN: J. S. D. R. Davila Leon

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street ✓	IDL	3-29-96
S. Royal & Franklin Streets ✓	IDL	3-29-96
S. Pitt & Franklin Streets ✓	IDL	3-29-96
Strand & King Streets ✓	IDL	3-29-96
N. Patrick & Madison Streets	—	—
Second Street & Colonial Avenue ✓	IDL	3-29-96
301 Mt. Vernon Avenue X	—	—
Rosemont Avenue & Hooffs Run ✓	IDL	3-29-96
Mt. Vernon Avenue & Hooffs Run ✓	IDL	3-29-96
400 Timber Branch Parkway ✓	IDL	3-29-96
W. Braddock Road & Hancock Avenue ✓	IDL	3-29-96
Oxford & Mt. Vernon Avenues ✓	IDL	3-29-96
Herbert Street & Mt. Vernon Avenue ✓	IDL	3-29-96
W. Glebe Road & Commonwealth Avenue ✓	IDL	3-29-96
153 Dale Street (in alley)	—	—
100 N. West Street X	—	—
E. Taylor Run & Janneys Lane ✓	IDL	3-29-96
5219 Holmes Run Parkway ✓	IDL	3-29-96
Holmes Run Creek X	—	—
King Street & Commonwealth Avenue X	—	—
Russell Road & Summers Drive ✓	IDL	3-29-96
1516 Commonwealth Avenue (in alley) ✓	IDL	3-29-96
305 E. Mason Avenue ✓	IDL	3-29-96
Four Mile Road & Old Dominion Blvd. ✓	IDL	3-29-96

LOCATION

DRIVER'S  
INITIALS

DATE

200 S. Henry Street	X	—	—
800 S. Payne Street	X	—	—
3600 Commonwealth Avenue	✓	TDL	3-29-96
3500 Old Dominion Boulevard	✓	TDL	3-29-96
Park Center Drive	X	—	—

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 4-96 & 4-26-96

FOREMAN: VERNON COLTRANE

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	V.F.C.	4-26-96
S. Royal & Franklin Streets	V.F.C.	4-26-96
S. Pitt & Franklin Streets	V.F.C.	4-26-96
Strand & King Streets	V.F.C.	4-26-96
N. Patrick & Madison Streets	V.F.C.	4-26-96
Second Street & Colonial Avenue	V.F.C.	4-26-96
301 Mt. Vernon Avenue	—	—
Rosemont Avenue & Hooffs Run		
Mt. Vernon Avenue & Hooffs Run		
400 Timber Branch Parkway		
W. Braddock Road & Hancock Avenue	VA	4-29-96
Oxford & Mt. Vernon Avenues	VA	4-29-96
Herbert Street & Mt. Vernon Avenue	VA	4-29-96
W. Glebe Road & Commonwealth Avenue	VA	4-29-96
153 Dale Street (in alley)	V.A.	4-29-96
100 N. West Street	V.F.C.	4-26-96
E. Taylor Run & Janneys Lane	VA	4-29-96
5219 Holmes Run Parkway	VA	4-29-96
Holmes Run Creek	VA	4-29-96
King Street & Commonwealth Avenue	—	—
Russell Road & Summers Drive	VA	4-29-96
1516 Commonwealth Avenue (in alley)	VA	4-29-96
305 E. Mason Avenue		
Four Mile Road & Old Dominion Blvd.		

LOCATIONDRIVER'S  
INITIALSDATE

200 S. Henry Street	UFC.	4-26-96
800 S. Payne Street	UFC.	4-26-96
3600 Commonwealth Avenue	UFC.	4-26-96
3500 Old Dominion Boulevard	UFC.	4-26-96
Park Center Drive	UFC.	4-26-96
Pendleton Jorjoco	UFC.	4-26-96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 5-3-96

FOREMAN: VERNON COLFAX

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>	
900 S. Royal Street	UFC	5-3-96	5-13
S. Royal & Franklin Streets	UFC	5-3-96	5-13
S. Pitt & Franklin Streets	UFC	5-3-96	5-13
Strand & King Streets	UFC	5-3-96	5-13
N. Patrick & Madison Streets	UFC	5-3-96	5-13
Second Street & Colonial Avenue	UFC	5-3-96	5-13
301 Mt. Vernon Avenue	—	—	—
Rosemont Avenue & Hooffs Run	UFC	5-3-96	5-10
Mt. Vernon Avenue & Hooffs Run	UFC	5-3-96	5-10
400 Timber Branch Parkway	UFC	5-3-96	5-13
W. Braddock Road & Hancock Avenue	UFC	5-3-96	5-10
Oxford & Mt. Vernon Avenues	UFC	5-3-96	5-10
Herbert Street & Mt. Vernon Avenue	UFC	5-3-96	5-10
W. Glebe Road & Commonwealth Avenue	UFC	5-3-96	5-10
153 Dale Street (in alley)	UFC	—	5-13
100 N. West Street	UFC	5-3-96	5-13
E. Taylor Run & Janneys Lane	UFC	—	
5219 Holmes Run Parkway	UFC	—	
Holmes Run Creek	UFC	—	
King Street & Commonwealth Avenue	UFC	<del>5-3-96</del>	—
Russell Road & Summers Drive	UFC	5-3-96	5-13
1516 Commonwealth Avenue (in alley)	UFC	5-3-96	5-13
305 E. Mason Avenue	UFC	5-3-96	5-10
Four Mile Road & Old Dominion Blvd.	UFC	5-3-96	5-13

LOCATION

DRIVER'S INITIALS

DATE

200 S. Henry Street	VFC	5-3-96	5-13-9
800 S. Payne Street	VFC	5-3-96	5-13-9
3600 Commonwealth Avenue	VFC	5-3-96	5-13-9
3500 Old Dominion Boulevard	VFC	5-3-96	5-13-9
Park Center Drive	VFC	5-3-96	5-13-9
ORNDORFF & PENDELTON	VFC	5-3-96	5-13-9

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 5-17-96

FOREMAN: Vernon ColFacil

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	UFC	5-17-96
S. Royal & Franklin Streets	UFC	5-17-96
S. Pitt & Franklin Streets	UFC	5-17-96
Strand & King Streets	UFC	5-17-96
N. Patrick & Madison Streets	UFC	5-17-96
Second Street & Colonial Avenue	UFC	5-17-96
301 Mt. Vernon Avenue		
Rosemont Avenue & Hooffs Run	UFC	5-17-96
Mt. Vernon Avenue & Hooffs Run	UFC	5-17-96
400 Timber Branch Parkway	UFC	5-17-96
W. Braddock Road & Hancock Avenue	UFC	5-17-96
Oxford & Mt. Vernon Avenues	UFC	5-17-96
Herbert Street & Mt. Vernon Avenue	UFC	5-17-96
W. Glebe Road & Commonwealth Avenue	UFC	5-17-96
153 Dale Street (in alley)	UFC	5-17-96
100 N. West Street	UFC	5-17-96
E. Taylor Run & Janneys Lane	UFC	5-17-96
5219 Holmes Run Parkway	UFC	5-17-96
Holmes Run Creek	UFC	5-17-96
King Street & Commonwealth Avenue		
Russell Road & Summers Drive	UFC	5-17-96
1516 Commonwealth Avenue (in alley)	UFC	5-17-96
305 E. Mason Avenue	UFC	5-17-96
Four Mile Road & Old Dominion Blvd.	UFC	5-17-96

LOCATION

DRIVER'S  
INITIALS

DATE

200 S. Henry Street	VFC	5-17-96
800 S. Payne Street	VFC	5-17-96
3600 Commonwealth Avenue	VFC	5-17-96
3500 Old Dominion Boulevard	VFC	5-17-96
Park Center Drive	VFC	5-
ORNDORF PARK & PENDELTON	VFC	5-17-96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 5-24 -96 & 5-31 -96 FOREMAN: V. COLFACK

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>	
900 S. Royal Street	UFC	5-24-96	5-31-96
S. Royal & Franklin Streets	UFC	5-24-96	5-31-96
S. Pitt & Franklin Streets	UFC	5-24-96	5-31-96
Strand & King Streets	UFC	5-24-96	5-31-96
N. Patrick & Madison Streets	UFC	5-24-96	5-31-96
Second Street & Colonial Avenue	UFC	5-24-96	5-31-96
301 Mt. Vernon Avenue	UFC	_____	
Rosemont Avenue & Hooffs Run	UFC	5-24-96	5-31-96
Mt. Vernon Avenue & Hooffs Run	UFC	5-24-96	5-31-96
400 Timber Branch Parkway	UFC	5-24-96	5-31-96
W. Braddock Road & Hancock Avenue	UFC	5-24-96	5-31-96
Oxford & Mt. Vernon Avenues	UFC	5-24-96	5-31-96
Herbert Street & Mt. Vernon Avenue	UFC	5-24-96	5-31-96
W. Glebe Road & Commonwealth Avenue	UFC	5-24-96	5-31-96
153 Dale Street (in alley)	UFC		
100 N. West Street	UFC	5-24-96	5-31-96
E. Taylor Run & Janneys Lane	UFC	5-24-96	
5219 Holmes Run Parkway	UFC	_____	6-3-96
Holmes Run Creek	UFC	_____	6-3-96
King Street & Commonwealth Avenue	UFC	_____	
Russell Road & Summers Drive	UFC	5-24-96	5-31-96
1516 Commonwealth Avenue (in alley)	UFC	5-24-96	5-31-96
305 E. Mason Avenue	UFC	5-24-96	6-3-96
Four Mile Road & Old Dominion Blvd.	UFC	5-24-96	5-31-96

LOCATION

DRIVER'S INITIALS

DATE

200 S. Henry Street	Ufc	5-24-96	5-31-96
800 S. Payne Street	Ufc	5-24-96	5-31-96
3600 Commonwealth Avenue	Ufc	5-24-96	
3500 Old Dominion Boulevard	Ufc	5-24-96	5-31-96
Park Center Drive	Ufc	5-24-96	
Pennington-Jordan Park	Ufc	5-24-96	

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 6. 14. 96.

FOREMAN: ESIDRO Davila Leon

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street ✓	EDL	6. 14. 96
S. Royal & Franklin Streets ✓	EDL	6. 14. 96
S. Pitt & Franklin Streets ✓	EDL	6. 14. 96
Strand & King Streets ✓	EDL	6. 14. 96
N. Patrick & Madison Streets	EDL	6. 14. 96
Second Street & Colonial Avenue ✓	EDL	6. 14. 96
301 Mt. Vernon Avenue X	X	X
Rosemont Avenue & Hooffs Run ✓	E.D.L	6. 14. 96
Mt. Vernon Avenue & Hooffs Run ✓	E.D.L	6. 14. 96
400 Timber Branch Parkway ✓	E.D.L	6. 14. 96
W. Braddock Road & Hancock Avenue ✓	E.D.L	6. 14. 96
Oxford & Mt. Vernon Avenues ✓	E.D.L	6. 14. 96
Herbert Street & Mt. Vernon Avenue ✓	E.D.L	6. 14. 96
W. Glebe Road & Commonwealth Avenue ✓	E.D.L	6. 14. 96
153 Dale Street (in alley)	TDL	6. 14. 96
100 N. West Street X	X	X
E. Taylor Run & Janneys Lane ✓	EDL	6. 14. 96
5219 Holmes Run Parkway ✓	EDL	6. 14. 96
Holmes Run Creek ✓	EDL	6. 14. 96
King Street & Commonwealth Avenue X	EDL	6. 14. 96
Russell Road & Summers Drive ✓	EDL	6. 14. 96
1516 Commonwealth Avenue (in alley) ✓	EDL	6. 14. 96
305 E. Mason Avenue ✓	EDL	6. 14. 96
Four Mile Road & Old Dominion Blvd. ✓	EDL	6. 14. 96

LOCATION

DRIVER'S  
INITIALS

DATE

200 S. Henry Street	X	<del>6-14-96</del>
800 S. Payne Street	X	X
3600 Commonwealth Avenue ✓	IDL	6-14-96
3500 Old Dominion Boulevard ✓	IDL	6-14-96
Park Center Drive X		

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 6: 21 96

FOREMAN: T D L - V.C.F.

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street		
S. Royal & Franklin Streets		
S. Pitt & Franklin Streets		
Strand & King Streets		
N. Patrick & Madison Streets		
Second Street & Colonial Avenue		
301 Mt. Vernon Avenue X		
Rosemont Avenue & Hooffs Run ✓	T D L	6. 21. 96
Mt. Vernon Avenue & Hooffs Run ✓	T D L	6. 21. 96
400 Timber Branch Parkway ✓	I D L	6. 21. 96
W. Braddock Road & Hancock Avenue ✓	I D L	6. 21. 96
Oxford & Mt. Vernon Avenues ✓	I D L	6. 21. 96
Herbert Street & Mt. Vernon Avenue ✓	T D L	6. 21. 96
W. Glebe Road & Commonwealth Avenue ✓	I D L	6. 21. 96
153 Dale Street (in alley) ✓	I D L	6. 21. 96
100 N. West Street	X	
E. Taylor Run & Janneys Lane ✓	I D L	6. 21. 96
5219 Holmes Run Parkway ✓	I D L	6. 21. 96
Holmes Run Creek ✗	X	
King Street & Commonwealth Avenue X	X	
Russell Road & Summers Drive ✓	I D L	6. 21. 96
1516 Commonwealth Avenue (in alley) ✓	I D L	6. 21. 96
305 E. Mason Avenue ✓	I D L	6. 21. 96
Four Mile Road & Old Dominion Blvd. ✓	T D L	6. 21. 96

LOCATION

DRIVER'S  
INITIALS

DATE

200 S. Henry Street		
800 S. Payne Street		
3600 Commonwealth Avenue		
3500 Old Dominion Boulevard	TDL	6-21-96
Park Center Drive	TDL	6-28-96
	<del>TDL</del>	<del>6-28-96</del>

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 6.27.96

FOREMAN: ESIDRO-Davita-Lech

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street ✓	EDL	
S. Royal & Franklin Streets ✓	EDL	
S. Pitt & Franklin Streets ✓	EDL	
Strand & King Streets ✓	EDL	
N. Patrick & Madison Streets ✓	EDL	
Second Street & Colonial Avenue ✓	EDL	
301 Mt. Vernon Avenue X	X	
Rosemont Avenue & Hooffs Run ✓	EDL	
Mt. Vernon Avenue & Hooffs Run ✓	EDL	
400 Timber Branch Parkway ✓	EDL	
W. Braddock Road & Hancock Avenue ✓	EDL	
Oxford & Mt. Vernon Avenues ✓	EDL	
Herbert Street & Mt. Vernon Avenue ✓	EDL	
W. Glebe Road & Commonwealth Avenue ✓	EDL	
153 Dale Street (in alley) ✓	EDL	
100 N. West Street X	EX	
E. Taylor Run & Janneys Lane ✓	EDL	
5219 Holmes Run Parkway ✓	EDL	
Holmes Run Creek ✓	EDL	
King Street & Commonwealth Avenue X	X	
Russell Road & Summers Drive ✓ X	EDL	
1516 Commonwealth Avenue (in alley) ✓	EDL	
305 E. Mason Avenue ✓	EDL	
Four Mile Road & Old Dominion Blvd. ✓	EDL	

LOCATION

DRIVER'S  
INITIALS

DATE

200 S. Henry Street	✓	IDL	
800 S. Payne Street	✓	IDL	
3600 Commonwealth Avenue	✓	IDL	
3500 Old Dominion Boulevard	✓	IDL	
Park Center Drive	X	X	

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 7. 18. 96

FOREMAN: E. D. McDeville

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street ✓		
S. Royal & Franklin Streets ✓		
S. Pitt & Franklin Streets ✓		
Strand & King Streets ✓		
N. Patrick & Madison Streets ✓		
Second Street & Colonial Avenue ✓		
301 Mt. Vernon Avenue ✓		
Rosemont Avenue & Hooffs Run ✓		
Mt. Vernon Avenue & Hooffs Run ✓		
400 Timber Branch Parkway ✓		
W. Braddock Road & Hancock Avenue ✓		
Oxford & Mt. Vernon Avenues ✓		
Herbert Street & Mt. Vernon Avenue ✓		
W. Glebe Road & Commonwealth Avenue ✓		
153 Dale Street (in alley) ✓		
100 N. West Street ✓		
E. Taylor Run & Janneys Lane ✓		
5219 Holmes Run Parkway ✓		
Holmes Run Creek ✓		
King Street & Commonwealth Avenue ✓		
Russell Road & Summers Drive ✓		
1516 Commonwealth Avenue (in alley) ✓		
305 E. Mason Avenue ✓		
Four Mile Road & Old Dominion Blvd. ✓		

LOCATION

DRIVER'S  
INITIALS

DATE

200 S. Henry Street		
800 S. Payne Street		
3600 Commonwealth Avenue		
3500 Old Dominion Boulevard		
Park Center Drive		

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: \_\_\_\_\_

FOREMAN: \_\_\_\_\_

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
✓ 900 S. Royal Street	JHB	7-26-96
✓ S. Royal & Franklin Streets	JAB	7-26-96
✓ S. Pitt & Franklin Streets	JPR	7-26-96
✓ Strand & King Streets	JHB	7-26-96
✓ N. Patrick & Madison Streets	JHB	7-26-96
✓ Second Street & Colonial Avenue	JHB	7-26-96
✓ 301 Mt. Vernon Avenue	JHB	7/28/96
✓ Rosemont Avenue & Hooffs Run	JHB	7-29-96
✓ Mt. Vernon Avenue & Hooffs Run	JHB	7/27/96
✓ 400 Timber Branch Parkway	JAB	7-29-96
✓ W. Braddock Road & Hancock Avenue	JHB	7-26-96
✓ Oxford & Mt. Vernon Avenues	JHB	7-28-96
✓ Herbert Street & <del>Mt. Vernon Avenue</del> Commonwealth Ave	JAB	7-26-96
W. Glebe Road & Commonwealth Avenue	JAB	7-26-96
✓ 153 Dale Street (in alley)	JAB	7-26-96
✓ 100 N. West Street	CA JHB	7-26-96
✓ E. Taylor Run & Janneys Lane	JHB	7-29-96
5219 Holmes Run Parkway		
Holmes Run Creek		
✓ King Street & Commonwealth Avenue	JHB	7-29-96
✓ Russell Road & Summers Drive	JHB	7-29-96
1516 Commonwealth Avenue (in alley)	JHB	7-26-96
305 E. Mason Avenue	JHB	7-26-96
Four Mile Road & Old Dominion Blvd. CARON IT 7-26-96	JHB	7-29-96

LOCATION

DRIVER'S INITIALS

DATE

✓ 200 S. Henry Street	JAB	7-26-96
800 S. Payne Street		
✓ 3600 Commonwealth Avenue	JAB	7-26-96
* 3500 Old Dominion Boulevard	JAB	7-26-96
✓ Park Center Drive	TONY	7/30/96

✓ 2003LR Pendleton St.

JAB 7-26-96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 7-31-96

FOREMAN: L.S.D.K. Hinkle LC 011

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street ✓	LDL	7-31-96
S. Royal & Franklin Streets ✓		
S. Pitt & Franklin Streets ✓		
Strand & King Streets ✓		
N. Patrick & Madison Streets X		
Second Street & Colonial Avenue ✓		
301 Mt. Vernon Avenue X		
Rosemont Avenue & Hooffs Run ✓		
Mt. Vernon Avenue & Hooffs Run ✓		
400 Timber Branch Parkway ✓		
W. Braddock Road & Hancock Avenue ✓		
Oxford & Mt. Vernon Avenues ✓		
Herbert Street & Mt. Vernon Avenue ✓		
W. Glebe Road & Commonwealth Avenue ✓		
153 Dale Street (in alley) ✓		
100 N. West Street X		
E. Taylor Run & Janneys Lane ✓		
5219 Holmes Run Parkway <del>✓</del> did not do this sheet		
Holmes Run Creek <del>✓</del> completed		
King Street & Commonwealth Avenue X		
Russell Road & Summers Drive ✓		
1516 Commonwealth Avenue (in alley) ✓		
305 E. Mason Avenue ✓		
Four Mile Road & Old Dominion Blvd. ✓	LDL	

LOCATION

DRIVER'S  
INITIALS

DATE

200 S. Henry Street ✓	I.D.L.	
800 S. Payne Street X	X	
3600 Commonwealth Avenue ✓	I.D.L.	
3500 Old Dominion Boulevard ✓	I.D.L.	
Park Center Drive X	.4	

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 8. 27 - 96

FOREMAN: T. S. [unclear]

LOCATION	DRIVER'S INITIALS	DATE
900 S. Royal Street ✓	I DL	8/27/96
S. Royal & Franklin Streets ✓	✓	✓
S. Pitt & Franklin Streets ✓	✓	✓
Strand & King Streets ✓	✓	✓
N. Patrick & Madison Streets	✓	✓
Second Street & Colonial Avenue ✓	✓	✓
301 Mt. Vernon Avenue X	✓	✓
Rosemont Avenue & Hooffs Run ✓	✓	✓
Mt. Vernon Avenue & Hooffs Run /	✓	✓
400 Timber Branch Parkway ✓	✓	✓
W. Braddock Road & Hancock Avenue ✓	✓	✓
Oxford & Mt. Vernon Avenues ✓	✓	✓
Herbert Street & Mt. Vernon Avenue ✓	✓	✓
W. Glebe Road & Commonwealth Avenue ✓	✓	✓
153 Dale Street (in alley) ✓	✓	✓
100 N. West Street X	✓	✓
E. Taylor Run & Janneys Lane ✓	✓	✓
5219 Holmes Run Parkway ✓	✓	✓
Holmes Run Creek ✓	✓	✓
King Street & Commonwealth Avenue ✓	✓	✓
Russell Road & Summers Drive ✓	✓	✓
1516 Commonwealth Avenue (in alley) ✓	✓	✓
305 E. Mason Avenue ✓	✓	✓
Four Mile Road & Old Dominion Blvd. ✓	I DL	8. 27. 96

LOCATIONDRIVER'S  
INITIALSDATE

200 S. Henry Street ✓	TDL	6-7-96
800 S. Payne Street ✓	X	X
3600 Commonwealth Avenue ✓	TDL	8-7-96
3500 Old Dominion Boulevard ✓	TDL	8-7-96
Park Center Drive X	X	X

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: \_\_\_\_\_

FOREMAN: \_\_\_\_\_

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	JHB	8-9-96
S. Royal & Franklin Streets	JHB	8-9-96
S. Pitt & Franklin Streets	JHB	8-9-96
Strand & King Streets	JHB	8-9-96
N. Patrick & Madison Streets	JHB	8-9-96
Second Street & Colonial Avenue	JHB	8-9-96
301 Mt. Vernon Avenue	/	
Rosemont Avenue & Hooffs Run	JHB	8-12-96
Mt. Vernon Avenue & Hooffs Run	JHB	8-12-96
400 Timber Branch Parkway	JHB	8-12-96
W. Braddock Road & Hancock Avenue	JHB	8-9-96
Oxford & Mt. Vernon Avenues	JHB	8-9-96
Herbert Street & Mt. Vernon Avenue	JHB	8-9-96
W. Glebe Road & Commonwealth Avenue	JHB	8-12-96
153 Dale Street (in alley)	JHB	8-12-96
100 N. West Street	JHB	8-9-96
E. Taylor Run & Janneys Lane	JHB	8-12-96
5219 Holmes Run Parkway	JHB	8-12-96
Holmes Run Creek	JHB	8-12-96
King Street & Commonwealth Avenue	JHB	8-9-96
Russell Road & Summers Drive	JHB	8-12-96
1516 Commonwealth Avenue (in alley)	JHB	8-5-96
305 E. Mason Avenue	JHB	8-9-96
Four Mile Road & Old Dominion Blvd.	JHB	8-9-96

AK  
on 11/12/96

LOCATION

DRIVER'S INITIALS

DATE

200 S. Henry Street	JHS	8-19-76
800 S. Payne Street	JHS	8-19-76
3600 Commonwealth Avenue	JHS	8-19-76
3500 Old Dominion Boulevard	JHS	8-12-76
Park Center Drive	JHS	8-2-76

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 8-16-96

FOREMAN: John Brennan

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
✓ 900 S. Royal Street	JHB	8-16-96
✓ S. Royal & Franklin Streets	JHB	8-16-96
✓ S. Pitt & Franklin Streets	JHB	8-16-96
✓ Strand & King Streets	JHB	8-16-96
✓ N. Patrick & Madison Streets	JHB	8-16-96
✓ Second Street & Colonial Avenue	JHB	8-16-96
✓ 301 Mt. Vernon Avenue	JHB <i>OK: do not flush</i>	8-16-96
✓ Rosemont Avenue & Hooffs Run	JHB	8-16-96
✓ Mt. Vernon Avenue & Hooffs Run	JHB	8-16-96
✓ 400 Timber Branch Parkway	JHB	8-16-96
✓ W. Braddock Road & Hancock Avenue	JHB	8-16-96
✓ Oxford & Mt. Vernon Avenues	JHB	8-16-96
✓ Herbert Street & Mt. Vernon Avenue	JHB	8-16-96
✓ W. Glebe Road & Commonwealth Avenue	JHB	8-16-96
✓ 153 Dale Street (in alley)	JHB	8-16-96
✓ 100 N. West Street	JHB	8-16-96
✓ E. Taylor Run & Janneys Lane	JHB	8-16-96
✓ 5219 Holmes Run Parkway	JHB	8-16-96
✓ Holmes Run Creek	JHB	8-16-96
King Street & Commonwealth Avenue		
✓ Russell Road & Summers Drive	JHB	8-16-96
✓ 1516 Commonwealth Avenue (in alley)	JHB	8-16-96
✓ 305 E. Mason Avenue	JHB	8-16-96
Four Mile Road & Old Dominion Blvd.	JHB	8-19-96

CAR ON IT 8-16

LOCATION

DRIVER'S  
INITIALS

DATE

✓ 200 S. Henry Street	JAS	4-16-96
✓ 800 S. Payne Street	JAS	4-16-96
✓ 3600 Commonwealth Avenue	JAS	4-16-96
✓ 3500 Old Dominion Boulevard	JAS	4-16-96
✓ 0 Park Center Drive	JAS	4-16-96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 8-23-96

FOREMAN: John Brandan

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
✓ 900 S. Royal Street	JHB	8-23-96
✓ S. Royal & Franklin Streets	JHB	8-23-96
✓ S. Pitt & Franklin Streets	JHB	8-23-96
✓ Strand & King Streets	JHB	8-23-96
✓ N. Patrick & Madison Streets	JHB	8-23-96
✓ Second Street & Colonial Avenue	JHB	8-23-96
301 Mt. Vernon Avenue		
✓ Rosemont Avenue & Hooffs Run	JHB	8-23-96
✓ Mt. Vernon Avenue & Hooffs Run	JHB	8-23-96
✓ 400 Timber Branch Parkway	JHB	8-23-96
✓ W. Braddock Road & Hancock Avenue	JHB	8-23-96
✓ Oxford & Mt. Vernon Avenues	JHB	8-23-96
✓ Herbert Street & Mt. Vernon Avenue	JHB	8-26-96
✓ W. Glebe Road & Commonwealth Avenue	JHB	8-26-96
✓ 153 Dale Street (in alley)	JHB	8-23-96
✓ 100 N. West Street	JHB	8-23-96
✓ E. Taylor Run & Janneys Lane	JHB	8-23-96
✓ 5219 Holmes Run Parkway	JHB	8-26-96
✓ Holmes Run Creek	JHB	8-23-96
King Street & Commonwealth Avenue		
✓ Russell Road & Summers Drive	JHB	8-23-96
✓ 1516 Commonwealth Avenue (in alley)	JHB	8-23-96
✓ 305 E. Mason Avenue	JHB	8-23-96
✓ Four Mile Road & Old Dominion Blvd.	JHB	8-23-96

CAP  
on it  
82396

LOCATION

DRIVER'S INITIALS

DATE

✓ 200 S. Henry Street	JDB	8-23-96
✓ 800 S. Payne Street	JDB	8-23-96
2 ✓ 3600 Commonwealth Avenue	JDB	8-26-96
✓ 3500 Old Dominion Boulevard	JDB	8-23-96
✓ Park Center Drive	JDB	8-26-96
✓ Pendleton & N. FAIRFAX	JDB	8-23-96

→ TRUCK ON I-77 HE WAY WAITED 15 min 2:00 PM

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 8-30-96

FOREMAN: Al Herbert Brown

LOCATION

DRIVER'S INITIALS

DATE

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	JHB	8-30-96
S. Royal & Franklin Streets	JHB	8-30-96
S. Pitt & Franklin Streets	JHB	8-30-96
Strand & King Streets	JHB	8-30-96
N. Patrick & Madison Streets	JHB	8-30-96
Second Street & Colonial Avenue	JHB	8-30-96
301 Mt. Vernon Avenue	JHB	9-3-96
Rosemont Avenue & Hooffs Run	JHB	9-3-96
Mt. Vernon Avenue & Hooffs Run	JHB	9-30-
400 Timber Branch Parkway	JHB	8-30-96
W. Braddock Road & Hancock Avenue	JHB	8-30-96
Oxford & Mt. Vernon Avenues	JHB	9-3-96
Herbert Street & Mt. Vernon Avenue	JHB	8-30
W. Glebe Road & Commonwealth Avenue	JHB	8-30
153 Dale Street (in alley)	JHB	8-30
100 N. West Street	JHB	8-30
E. Taylor Run & Janneys Lane	JHB	9-3
5219 Holmes Run Parkway	JHB	9-3
Holmes Run Creek	JHB	9-3
King Street & Commonwealth Avenue		
Russell Road & Summers Drive	JHB	8-30-96
1516 Commonwealth Avenue (in alley)	JHB	8-30-96
305 E. Mason Avenue	JHB	9-30-96
Four Mile Road & Old Dominion Blvd.	JHB	8-30
5420 N Morgan	JHB	8-30

8-30  
9-3

WASH  
FISH  
L. FILE

LOCATION

DRIVER'S INITIALS

DATE

200 S. Henry Street	JWB	8-30-98
800 S. Payne Street	JWB	8-30-98
3600 Commonwealth Avenue	JWB	8-30-98
3500 Old Dominion Boulevard	JWB	8-30-98
Park Center Drive 8-30 CAR in way	JWB	<del>8-30</del> 9.3

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 9-9-96

FOREMAN: JAS RAMBER

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street ✓	JNB	9-9-96
S. Royal & Franklin Streets ✓	JNB	9-9-96
S. Pitt & Franklin Streets ✓	JNB	9-9-96
Strand & King Streets <sup>H<sub>2</sub>O under</sup> ✓ 9-9-96	JNB	9-10-96
N. Patrick & Madison Streets		
Second Street & Colonial Avenue ✓	JAD	9-9-96
301 Mt. Vernon Avenue	JNB	9-9-96
Rosemont Avenue & Hooffs Run.	JNB	9-17-96
Mt. Vernon Avenue & Hooffs Run ✓		
400 Timber Branch Parkway ✓		
W. Braddock Road & Hancock Avenue ✓		
Oxford & Mt. Vernon Avenues ✓	JNB	9-9-96
Herbert Street & Mt. Vernon Avenue		
W. Glebe Road & Commonwealth Avenue		
153 Dale Street (in alley)		
100 N. West Street ✓ <sup>CK</sup>	JNB	9-9-96
E. Taylor Run & Janneys Lane ✓		
5219 Holmes Run Parkway ✓		
Holmes Run Creek ✓		
King Street & Commonwealth Avenue		
Russell Road & Summers Drive ✓		
1516 Commonwealth Avenue (in alley) ✓		
305 E. Mason Avenue ✓	JNB	9-9-96
Four Mile Road & Old Dominion Blvd. ✓	JNB	9-9-96

LOCATION

DRIVER'S  
INITIALS

DATE

200 S. Henry Street	JH3	9-9-92
800 S. Payne Street	JH3	9-11-92
3600 Commonwealth Avenue	JH3	9-11-96
3500 Old Dominion Boulevard	JH3	9-11-96
Park Center Drive	JH3	9-11-96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 9-13-96

FOREMAN: Edward Acwoods  
John H Braham Sr.  
 DRIVER'S INITIALS      DATE

LOCATION      INITIALS      DATE

900 S. Royal Street	EA	9-13-96
S. Royal & Franklin Streets	EA	9-13-96
S. Pitt & Franklin Streets	EA	9-13-96
Strand & King Streets	EA	9-13-96
N. Patrick & Madison Streets	EA	9-13-96
Second Street & Colonial Avenue	EA	9-13-96
301 Mt. Vernon Avenue	JKB	9-16-96
Rosemont Avenue & Hooffs Run	JKB	9-16-96
Mt. Vernon Avenue & Hooffs Run	JKB	9-16-96
400 Timber Branch Parkway	JKB	9-16-96
W. Braddock Road & Hancock Avenue	JKB	9-16-96
Oxford & Mt. Vernon Avenues	EA	9-13-96
Herbert Street & Mt. Vernon Avenue	EA	9-13-96
W. Glebe Road & Commonwealth Avenue	EA	9-13-96
153 Dale Street (in alley)	JKB	9-16-96
100 N. West Street	EA	9-13-96
E. Taylor Run & Janneys Lane	JKB	9-16-96
5219 Holmes Run Parkway	JKB	9-16-96
Holmes Run Creek	JKB	9-16-96
King Street & Commonwealth Avenue	EA	9-13-96
Russell Road & Summers Drive	JKB	9-16-96
1516 Commonwealth Avenue (in alley)	JKB	9-16-96
305 E. Mason Avenue	EA	9-13-96
Four Mile Road & Old Dominion Blvd.	JKB	9-16-96

LOCATIONDRIVER'S  
INITIALSDATE

200 S. Henry Street	EA	9-13-96
800 S. Payne Street	EA	9-13-96
3600 Commonwealth Avenue	JAB	9-16-96
3500 Old Dominion Boulevard	JAB	9-16-96
Park Center Drive	JAB	9-16-96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 9-20-96

FOREMAN: JOHN BRUNHAM

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	JHB	9-29-96
S. Royal & Franklin Streets	JHB	9-29-96
S. Pitt & Franklin Streets	JHB	9-29-96
Strand & King Streets	JHB	9-29-96
N. Patrick & Madison Streets	JHB	9-29-96
Second Street & Colonial Avenue	JHB	9-20-96
301 Mt. Vernon Avenue	JHB	9-20-96
Rosemont Avenue & Hooffs Run	JHB	9-20-96
Mt. Vernon Avenue & Hooffs Run	JHB	9-20-96
400 Timber Branch Parkway	JHB	9-20-96
W. Braddock Road & Hancock Avenue	JHB	9-20-96
Oxford & Mt. Vernon Avenues	JHB	9-20-96
Herbert Street & Mt. Vernon Avenue	JHB	9-20-96
W. Glebe Road & Commonwealth Avenue	JHB	9-20-96
153 Dale Street (in alley)	JHB	9-20-96
100 N. West Street	JHB	9-20-96
E. Taylor Run & Janneys Lane	JHB	9-20-96
5219 Holmes Run Parkway	JHB	9-20-96
Holmes Run Creek	JHB	9-20-96
King Street & Commonwealth Avenue		
Russell Road & Summers Drive	JHB	9-29-96
1516 Commonwealth Avenue (in alley)	JHB	9-29-96
305 E. Mason Avenue	JHB	9-20-96
Four Mile Road & Old Dominion Blvd.		

LOCATION

DRIVER'S INITIALS

DATE

200 S. Henry Street	JHB	9-2-96
800 S. Payne Street	JHB	9-20-96
3600 Commonwealth Avenue	JHB	9-20-96
3500 Old Dominion Boulevard	JHB	9-29-96
Park Center Drive	JHB	9-20-96



LOCATION

DRIVER'S  
INITIALS

DATE

200 S. Henry Street	JHB	9-27-96
800 S. Payne Street	JHB	9-27-96
3600 Commonwealth Avenue	JHB	9-27-96
3500 Old Dominion Boulevard	JHB	9-27-96
Park Center Drive	JHB	9-27-96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 10-4-96

FOREMAN: BRIAN AAR-JOLE

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	10-4-96	JH3
S. Royal & Franklin Streets	10-4-96	JH3
S. Pitt & Franklin Streets	10-4-96	JH3
Strand & King Streets	10-4-96	JH3
N. Patrick & Madison Streets	10-4-96	JH3
Second Street & Colonial Avenue	10-4-96	JH3
301 Mt. Vernon Avenue	10-4-96	JH3
Rosemont Avenue & Hooffs Run	10-4-96	JH3
Mt. Vernon Avenue & Hooffs Run	10-4-96	JH3
400 Timber Branch Parkway	10-4-96	JH3
W. Braddock Road & Hancock Avenue	10-4-96	JH3
Oxford & Mt. Vernon Avenues	10-4-96	JH3
Herbert Street & Mt. Vernon Avenue	10-4-96	JH3
W. Glebe Road & Commonwealth Avenue	10-4-96	JH3
153 Dale Street (in alley)	10-4-96	JH3
100 N. West Street	10-4-96	JH3
E. Taylor Run & Janneys Lane	10-4-96	JH3
5219 Holmes Run Parkway	10-7-96	JH3
Holmes Run Creek	10-7-96	JH3
King Street & Commonwealth Avenue		
Russell Road & Summers Drive	10-4-96	JH3
1516 Commonwealth Avenue (in alley)	10-4-96	JH3
305 E. Mason Avenue	10-4-96	JH3
Four Mile Road & Old Dominion Blvd.		
Four Mile Road + Old Dominion Blvd 1 Old Pk	10-4-96	JH3

CAR  
0-11103  
1032

LOCATION

DRIVER'S  
INITIALS

DATE

<del>200 S. Henry Street</del>	JH	10 4 96
<del>800 S. Payne Street</del>	JH	10 4 96
<del>3600 Commonwealth Avenue</del>	JH	10 4 96
<del>3500 Old Dominion Boulevard</del>	JH	10-7-96
<del>Park Center Drive</del>	JH	10-7-96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 10/11/96

FOREMAN: John Delavender

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	JRD	10/11/96
X S. Royal & Franklin Streets T/K in way	JRD	
S. Pitt & Franklin Streets	JRD	10/11/96
Strand & King Streets	JRD	10/11/96
N. Patrick & Madison Streets	JRD	10/11/96
Second Street & Colonial Avenue	JRD	10/11/96
301 Mt. Vernon Avenue	JRD	10/11/96
Rosemont Avenue & Hooffs Run	JRD	10/11/96
Mt. Vernon Avenue & Hooffs Run	JRD	10/11/96
400 Timber Branch Parkway	JRD	10/11/96
W. Braddock Road & Hancock Avenue	JRD	10/11/96
Oxford & Mt. Vernon Avenues	JRD	10/11/96
Herbert Street & Mt. Vernon Avenue	JRD	10/11/96
W. Glebe Road & Commonwealth Avenue	JRD	10/11/96
X 153 Dale Street (in alley)	JRD	10/14/96
✓ 100 N. West Street	JRD	10/11/96
E. Taylor Run & Janneys Lane	JRD	10/14/96
<del>5219 Holmes Run Parkway</del>	<del>JRD</del>	<del>10/14/96</del>
Holmes Run Creek	JRD	10/14/96
X King Street & Commonwealth Avenue	JRD	
Russell Road & Summers Drive	JRD	10/14/96
1516 Commonwealth Avenue (in alley)	JRD	10/14/96
✓ 305 E. Mason Avenue	JRD	10/11/96
X Four Mile Road & Old Dominion Blvd. Car park	JRD	

LOCATION

DRIVER'S INITIALS

DATE

200 S. Henry Street	JRD	10/11/96
800 S. Payne Street	JRD	10/11/96
3600 Commonwealth Avenue	JRD	10/11/96
3500 Old Dominion Boulevard	JRD	10/14/96
Park Center Drive	JRD	10/14/96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: ~~10/18/96~~

FOREMAN: John Deleva

10/18/96

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	JR	10/18/96
S. Royal & Franklin Streets	JR	10/18/96
S. Pitt & Franklin Streets	JR	10/18/96
Strand & King Streets	JR	10/18/96
N. Patrick & Madison Streets	JR	10/18/96
Second Street & Colonial Avenue	JR	10/18/96
301 Mt. Vernon Avenue	JR	10/21/96
Rosemont Avenue & Hooffs Run	JR	10/18/96
Mt. Vernon Avenue & Hooffs Run	JR	10/18/96
400 Timber Branch Parkway	JR	10/18/96
W. Braddock Road & Hancock Avenue	JR	10/18/96
Oxford & Mt. Vernon Avenues	JR	10/18/96
Herbert Street & Mt. Vernon Avenue	JR	10/18/96
W. Glebe Road & Commonwealth Avenue	JR	10/18/96
153 Dale Street (in alley)	JR	10/18/96
100 N. West Street	JR	10/18/96
E. Taylor Run & Janneys Lane	JR	10/21/96
5219 Holmes Run Parkway	JR	10/18/96
Holmes Run Creek	JR	10/18/96
<del>King Street &amp; Commonwealth Avenue</del>	<del>N/A</del>	<del>N/A</del>
Russell Road & Summers Drive	JR	10/18/96
1516 Commonwealth Avenue (in alley)	JR	10/18/96
305 E. Mason Avenue	JR	10/18/96
Four Mile Road & Old Dominion Blvd.	JR	10/18/96

LOCATION

DRIVER'S INITIALS

DATE

200 S. Henry Street	<i>[Signature]</i>	10/18/96
800 S. Payne Street	<i>[Signature]</i>	10/18/96
3600 Commonwealth Avenue	<i>[Signature]</i>	10/18/96
3500 Old Dominion Boulevard	<i>[Signature]</i>	10/18/96
Park Center Drive	<i>[Signature]</i>	10/21/96

~~Patricia St.~~  
Montgomery Park St.



WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 11/8/96

FOREMAN: [Signature]

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	J.P.D.	11/12/96
S. Royal & Franklin Streets	J.P.D.	11/12/96
S. Pitt & Franklin Streets	J.P.D.	11/12/96
Strand & King Streets	J.P.D.	11/12/96
N. Patrick & Madison Streets	J.P.D.	11/13/96
Second Street & Colonial Avenue	J.P.D.	11/13/96
301 Mt. Vernon Avenue	J.P.D.	11/8/96
Rosemont Avenue & Hooffs Run		
Mt. Vernon Avenue & Hooffs Run		
400 Timber Branch Parkway		
W. Braddock Road & Hancock Avenue		
Oxford & Mt. Vernon Avenues		
Herbert Street & Mt. Vernon Avenue		
W. Glebe Road & Commonwealth Avenue		
153 Dale Street (in alley)		
100 N. West Street	J.P.D.	11/8/96
E. Taylor Run & Janneys Lane		
5219 Holmes Run Parkway	J.P.D.	11/13/96
Holmes Run Creek		
King Street & Commonwealth Avenue		
Russell Road & Summers Drive		
1516 Commonwealth Avenue (in alley)		
305 E. Mason Avenue	J.P.D.	11/8/96
Four Mile Road & Old Dominion Blvd.	J.P.D.	11/8/96

LOCATION

DRIVER'S  
INITIALS

DATE

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
200 S. Henry Street		
800 S. Payne Street	JAD	11/13/96
3600 Commonwealth Avenue		
3500 Old Dominion Boulevard		
Park Center Drive		

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: ~~11/15/96~~ ~~11/15/96~~ ~~11/15/96~~

FOREMAN: F. S. J. J. C. Davidson

11-15-96

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street ✓	IDL	11-15-96
S. Royal & Franklin Streets ✓	IDL	11-15-96
S. Pitt & Franklin Streets ✓	IDL	11-15-96
Strand & King Streets ✓	IDL	11-15-96
N. Patrick & Madison Streets X	X	X
Second Street & Colonial Avenue ✓	IDL	11-15-96
301 Mt. Vernon Avenue X	X	X
Rosemont Avenue & Hooffs Run ✓	IDL	11-15-96
Mt. Vernon Avenue & Hooffs Run ✓	IDL	11-15-96
400 Timber Branch Parkway ✓	IDL	11-15-96
W. Braddock Road & Hancock Avenue ✓	IDL	11-15-96
Oxford & Mt. Vernon Avenues ✓	IDL	11-15-96
Herbert Street & Mt. Vernon Avenue ✓	IDL	11-15-96
W. Glebe Road & Commonwealth Avenue ✓	IDL	11-15-96
153 Dale Street (in alley) X	X	X
100 N. West Street X	X	X
E. Taylor Run & Janneys Lane ✓	IDL	11-15-96
5219 Holmes Run Parkway ✓	IDL	11-15-96
Holmes Run Creek ✓	IDL	11-15-96
King Street & Commonwealth Avenue X	X	X
Russell Road & Summers Drive ✓	IDL	11-15-96
1516 Commonwealth Avenue (in alley) ✓	IDL	11-15-96
305 E. Mason Avenue ✓	IDL	11-15-96
Four Mile Road & Old Dominion Blvd. ✓	IDL	11-15-96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 11/23/96

FOREMAN: [Signature]

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	[Signature]	11/22/96
S. Royal & Franklin Streets	[Signature]	11/22/96
S. Pitt & Franklin Streets	[Signature]	11/22/96
Strand & King Streets	[Signature]	11/23/96
N. Patrick & Madison Streets	[Signature]	11/22/96
Second Street & Colonial Avenue	[Signature]	11/22/96
301 Mt. Vernon Avenue	[Signature]	11/22/96
Rosemont Avenue & Hooffs Run	[Signature]	11/22/96
Mt. Vernon Avenue & Hooffs Run	[Signature]	11/22/96
400 Timber Branch Parkway	[Signature]	11/22/96
W. Braddock Road & Hancock Avenue	[Signature]	11/22/96
Oxford & Mt. Vernon Avenues	[Signature]	11/22/96
Herbert Street & <del>Mt. Vernon Avenue</del> Commonwealth Ave	[Signature]	11/22/96
W. Glebe Road & Commonwealth Avenue	[Signature]	11/22/96
153 Dale Street (in alley)	[Signature]	11/22/96
100 N. West Street	[Signature]	11/22/96
E. Taylor Run & Janneys Lane	[Signature]	11/22/96
5219 Holmes Run Parkway	[Signature]	11/22/96
Holmes Run Creek	[Signature]	11/22/96
King Street & Commonwealth Avenue	N/A	N/A
Russell Road & Summers Drive	[Signature]	11/22/96
1516 Commonwealth Avenue (in alley)	[Signature]	11/22/96
305 E. Mason Avenue	[Signature]	11/22/96
Four Mile Road & Old Dominion Blvd.	[Signature]	11/22/96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 12/2/96

FOREMAN: [Signature]

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	[Signature]	12/2/96
S. Royal & Franklin Streets	[Signature]	12/2/96
S. Pitt & Franklin Streets	[Signature]	12/2/96
Strand & King Streets	[Signature]	12/2/96
N. Patrick & Madison Streets	[Signature]	12/2/96
Second Street & Colonial Avenue	[Signature]	12/2/96
301 Mt. Vernon Avenue	[Signature]	12/2/96
Rosemont Avenue & Hooffs Run	[Signature]	12/2/96
Mt. Vernon Avenue & Hooffs Run	[Signature]	12/2/96
400 Timber Branch Parkway	[Signature]	12/2/96
W. Braddock Road & Hancock Avenue	[Signature]	12/2/96
Oxford & Mt. Vernon Avenues	[Signature]	12/3/96
Herbert Street & Mt. Vernon Avenue	[Signature]	12/3/96
W. Glebe Road & Commonwealth Avenue	[Signature]	12/3/96
153 Dale Street (in alley)	[Signature]	12/3/96
100 N. West Street	[Signature]	12/2/96
E. Taylor Run & Janneys Lane	[Signature]	12/3/96
5219 Holmes Run Parkway	[Signature]	12/2/96
Holmes Run Creek	[Signature]	12/2/96
King Street & Commonwealth Avenue	NA	N/A
Russell Road & Summers Drive	[Signature]	12/2/96
1516 Commonwealth Avenue (in alley)	[Signature]	12/2/96
305 E. Mason Avenue	[Signature]	12/2/96
Four Mile Road & Old Dominion Blvd.	[Signature]	<del>12/3/96</del>

LOCATION

DRIVER'S  
INITIALS

DATE

200 S. Henry Street	<i>[Signature]</i>	12/2/96
800 S. Payne Street	<i>[Signature]</i>	12/2/96
3600 Commonwealth Avenue	<i>[Signature]</i>	12/3/96
3500 Old Dominion Boulevard	<i>[Signature]</i>	12/3/96
Park Center Drive	<i>[Signature]</i>	12/3/96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 12/6/96 Fri

FOREMAN: *John D. [Signature]*

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	<i>JRD</i>	12/6/96
S. Royal & Franklin Streets	<i>JRD</i>	12/6/96
S. Pitt & Franklin Streets	<i>JRD</i>	12/6/96
Strand & King Streets	<i>JRD</i>	12/5/96
N. Patrick & Madison Streets	<i>JRD</i>	12/6/96
Second Street & Colonial Avenue	<i>JRD</i>	12/6/96
301 Mt. Vernon Avenue	<i>JRD</i>	12/9/96
Rosemont Avenue & Hooffs Run <i>Left Line Brake</i>	<i>JRD</i>	12/9/96
Mt. Vernon Avenue & Hooffs Run <i>Brake Line</i>	<i>JRD</i>	12/9/96
400 Timber Branch Parkway	<i>JRD</i>	12/9/96
W. Braddock Road & Hancock Avenue	<i>JRD</i>	12/9/96
Oxford & Mt. Vernon Avenues	<i>JRD</i>	12/9/96
Herbert Street & <del>Mt. Vernon Avenue</del> <i>Commonwealth</i>	<i>JRD</i>	12/9/96
W. Glebe Road & Commonwealth Avenue	<i>JRD</i>	12/9/96
153 Dale Street (in alley)	<i>JRD</i>	12/6/96
100 N. West Street	<i>JRD</i>	12/6/96
E. Taylor Run & Janneys Lane	<i>JRD</i>	12/6/96
5219 Holmes Run Parkway	<i>JRD</i>	12/9/96
Holmes Run Creek		
King Street & Commonwealth Avenue	<i>N/A</i>	<i>N/A</i>
Russell Road & Summers Drive	<i>JRD</i>	12/9/96
1516 Commonwealth Avenue (in alley)	<i>JRD</i>	12/9/96
305 E. Mason Avenue	<i>JRD</i>	12/9/96
Four Mile Road & Old Dominion Blvd.	<i>JRD</i>	12/6/96

LOCATION

DRIVER'S  
INITIALS

DATE

200 S. Henry Street	JLD	12/10/96
800 S. Payne Street	JLD	12/6/96
3600 Commonwealth Avenue	JLD	12/9/96
3500 Old Dominion Boulevard	JLD	12/6/96
Park Center Drive	JLD	12/9/96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 12/16/96

FOREMAN: [Signature]

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	JRD	12/16/96
S. Royal & Franklin Streets	JRD	12/16/96
S. Pitt & Franklin Streets	JRD	12/16/96
Strand & King Streets	JRD	12/16/96
N. Patrick & Madison Streets	JRD	12/16/96
Second Street & Colonial Avenue	JRD	12/16/96
301 Mt. Vernon Avenue	JRD	12/16/96
Rosemont Avenue & Hooffs Run	JRD	12/16/96
Mt. Vernon Avenue & Hooffs Run	JRD	12/16/96
400 Timber Branch Parkway	JRD	12/16/96
W. Braddock Road & Hancock Avenue	JRD	12/16/96
Oxford & Mt. Vernon Avenues	JRD	12/16/96
Herbert Street & <del>Mt. Vernon Avenue</del> Commonwealth Ave	JRD	12/16/96
W. Glebe Road & <del>Commonwealth Avenue</del> <del>Commonwealth Avenue</del>	JRD	12/16/96
153 Dale Street (in alley)	JRD	12/16/96
100 N. West Street	JRD	12/16/96
E. Taylor Run & Janneys Lane	JRD	12/16/96
5219 Holmes Run Parkway	JRD	12/16/96
Holmes Run Creek	JRD	12/16/96
King Street & Commonwealth Avenue	N/A	N/A
Russell Road & Summers Drive	JRD	12/16/96
1516 Commonwealth Avenue (in alley)	JRD	12/16/96
305 E. Mason Avenue	JRD	12/16/96
Four Mile Road & Old Dominion Blvd.	car parked in way	

APPROVED TO BE WORKER AND REGISTERED DRIVER

LOCATION

DRIVER'S INITIALS

DATE

200 S. Henry Street	JRD	12/16/96
800 S. Payne Street	JRD	12/14/96
3600 Commonwealth Avenue	JRD	12/16/96
3500 Old Dominion Boulevard	JRD	12/16/96
Park Center Drive	JRD	12/16/96

WEEKLY CHECKLIST FOR SIPHONS TO BE CLEANED

DATE: 12-26-96

FOREMAN: John H Brantum

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
900 S. Royal Street	JHB	12-27-96
S. Royal & Franklin Streets	JHB	12-27-96
S. Pitt & Franklin Streets	JHB	12-27-96
Strand & King Streets	JHB	12-26-96
N. Patrick & Madison Streets	JHB	12-26-96
Second Street & Colonial Avenue	JHB	12-26-96
301 Mt. Vernon Avenue <sup>prov. 12-27-96</sup> <sub>12-26-96</sub> <sup>BAR ON IT</sup>		
Rosemont Avenue & Hooffs Run	JHB	12-26-96
Mt. Vernon Avenue & Hooffs Run	JHB	12-26-96
400 Timber Branch Parkway	JHB	12-26-96
W. Braddock Road & Hancock Avenue	JHB	12-26-96
Oxford & Mt. Vernon Avenues	JHB	12-26-96
Herbert Street & Mt. Vernon Avenue	JHB	12-26-96
W. Glebe Road & Commonwealth Avenue	JHB	12-26-96
153 Dale Street (in alley)	JHB	12-27-96
100 N. West Street	JHB	12-27-96
E. Taylor Run & Janneys Lane	JHB	12-27-96
5219 Holmes Run Parkway <sup>12-27-96</sup> <sub>12-26-96</sub> <sup>to wet</sup>		
Holmes Run Creek	JHB	12-27-96
King Street & Commonwealth Avenue		
Russell Road & Summers Drive	JHB	12-26-96
1516 Commonwealth Avenue (in alley)	JHB	12-26-96
305 E. Mason Avenue	JHB	12-26-96
Four Mile Road & Old Dominion Blvd.	JHB	12-26-96

DRIVER'S  
INITIALS

DATE

LOCATION

<u>LOCATION</u>	<u>DRIVER'S INITIALS</u>	<u>DATE</u>
200 S. Henry Street	JHB	12-29-96
800 S. Payne Street	JHB	12-27-96
3600 Commonwealth Avenue	JHB	12-27-96
3500 Old Dominion Boulevard	JHB	12-26-96
Park Center Drive	JHB	12-27-96

# 1996 - 3 Month Sewer Flushing

## SEWER INSPECTIONS

### THREE MONTH LIST

1. Southern Towers
2. Jamestown Village
3. Pelham St. at private swimming pool.
4. Crestview Apts.-check line from Wendy's and from Friendly's.
5. Southport Apts.-off Edsall Rd.
6. Park Center Dr. at Copeland's Restaurant.
7. Newport Villate Apts.-Braddock Rd.
8. Alexandria Hospital to Jordan St.
9. Behind Giant Store off Braddock Rd. at Bradlee Shopping Center.
10. Safeway off Mt. Vernon Ave. at Glebe Road.
11. Landover Apts. off Landover Rd.
12. Tennessee Ave. & Landover Rd. behind townhouses.
13. Braddock Rd. & West St. behind shops & townhouses.
14. Gordon & Vermont, bad M.H. construction.
15. McDonald's at Duke St. & Wheeler.
16. 1100 block First St. at Fayette-serving Hardee's.
17. Duke & Peyton-M.H. bad construction.
18. Seminary Plaza-Seminary Hills.
19. Iverson & N. Jordan.
20. Hunter's Run Apts.
21. Landmark Shopping Center, rear & front..
22. 2209 King St.-flush lateral from cleanout in front yard to main.
23. Calvery Shopping Center, on Mt. Vernon Ave.

1-9622-96

3 Mo. List

- 1-96 Southern Towers
- 1-96 JAMES TOWN VILLAGE
- 2-96 PELHAM ST AT PRIVATE SWIMMING POOL.
- 1-96 Crest View APTS check line at Winkys
- 1-96 \*South Port APTS off ~~Duke~~ EDSELL RD
- 1-96 PARK CENTER DR @ COPELANDS RESTAURANT
- 1-96 New Port Village - BRADDOCK RD.
- 1-96 ALEXANDRIA HOSPITAL TO JORDAN ST.
- 1-96 BEHIND FOX CHASE off DUKE ST, also on Jordan @ Fox Chase
- 1-96 BEHIND GIANT STORE off BRADDOCK RD @ BRADLEE STOPPING CENTER
- 1-96 KING & PEYTON - BAD MH. CONSTRUCTION.
- 1-96 DUKE & DANGERFIELD - BAD MH. CONSTRUCTION.
- 2-96 SAFEWAY off MT VERNON AVE @ GLEBERD
- 1-96 LANDOVER APTS off LANDOVER RD
- 1-96 TENNESSEE AVE & LANDOVER RD BEHIND TOWN HOUSES
- 1-96 BRADDOCK RD & WEST ST. BEHIND SHOPS & TOWN HOUSES
- 1-96 GORDON & VERMONT BAD MH. CONSTRUCTION
- 1-96 McDONALD @ DUKE ST + WHEELER
- 1-96 100 BLK FIRST ST. @ FAYETTE SERVING HARDEC'S
- 1-96 DUKE + PEYTON - MH. BAD CONSTRUCTION
- 1-96 SEMINARY PLAZA - SEMINARI HILLS
- 1-96 JEREM + N JORDAN
- 1-96 522 Hunters Run Apartments
- 1-96 Paul Mark Shopping Center - near + front
- 1-96 300 BLK MADISON
- 1-96 LORÉON FRENCH

COMPLETE 6-96

3 Mo. List

✓ SOUTHERN TOWERS

✓ JAMES TOWN VILLAGE

✓ PELHAM ST AT PRIVATE SWIMMING POOL

<sup>UNIT 322</sup> ✓ CRESTVIEW APTS check line at Windy's

<sup>322 UNIT</sup> ✓ SOUTH PORT APTS off ~~Duke~~ EDSELL RD

✓ PARK CENTER DR @ COPELANDS RESTAURANT

✓ NEW PORT VILLAGE - BRADDOCK RD 6-5 + 66-96

✓ ALEXANDRIA HOSTAL TO JORDAN ST.

✓ BEHIND FOX CHASE off DUKE ST, also on Jordan @ ~~4th~~ Chase

✓ BEHIND GIANT STORE off BRADDOCK RD @ BRADLEE SHOPPING CENTER

✓ KING & PEYTON - BAD MH. CONSTRUCTION.

✓ DUKE + DANGERFIELD - BAD MH. CONSTRUCTION.

✓ SADEWAY off MT VERNON AVE @ GLEBERD

✓ LANDOVER APTS off LANDOVER RD

✓ TENNESSE AVE & LANDOVER RD BEHIND TOWN HOUSES

✓ BRADDOCK RD + WEST ST. BEHIND SHOPS & TOWN HOUSES

✓ GORDON + VERMONT BAD MH. CONSTRUCTION

✓ MCDONALD @ DUKE ST + WHEELER

✓ 2100 BLK FIRST ST. @ FAYETTE SERVING HARDEC'S

✓ DUKE + PEYTON - MH. BAD CONSTRUCTION

✓ SEMINARY PLAZA - SEMINARY HILLS

✓ QUEEN + JORDAN

✓ HUNTERS RUN APARTMENTS

✓ HEDMARK SHOPPING CENTER - near + front



James Town 9-26-96 - 200' + 225' + 200' + 225' + 150'  
200' + 225' + 125' + 150' + 150' + 100' + 75' 3 times - 50' 2 times  
200' End AT Holmes Run For 50' 2 times

Chestnut APT 9-26-96 - 150' + 250' + 425'  
men working in road 10-1-96 450' + 300' - 100' + 50' + 50'  
350' + 70' 3 times need to check line AT Friendly Run  
325' + 500' 3 times to get gravel out end AT V&A Dam AT  
GIANT

South Point APTS 115' + 600' + 100' + 325' + 225' 10-1-96

Hunter Run 25' 2 times in line Run 2 times  
CALL 325' + 322' ~~will~~ AND TR + CUT R108g  
300' + 325' ~~the~~

Southern Towers 300' + 800' + 650' 2 times - + 340'  
100' 2 times

## SEWER INSPECTIONS

### SIX MONTH LIST

1. Main line at rear of 100 & 200 blocks East Taylor Run (beside termite company).
2. Main beside Telegraph Interchange.
3. Main line at Moncure from Robinson Court.
4. Mill Road beside Homless Shelter.
5. 600 block S. Wasnington St.--10" combo starting at Franklin and running to Gibbon.
6. Tower 2000 at Quantrell Avenue -- 2 lines.

COMPLETE 3-96 NEED TO FLUSH MILL LIND  
6 month list

✓ Sewer laterals at Cambridge Rd.

✓ 2-27-96 5-10 ~~Cambridge St.~~ moved to monthly list  
Main line at rear of 100+200 Bldgs East Taylor River (beside terrace)

✓ Main beside telegraph interchange

✓ Main line at Monroe from Zolnerian Court

✓ Mill Rd beside Homeless Shelter HAVE TO GO BACK WITH ~~9-10-96~~ 12-5-01 T.

✓ 600 Bldg Washington St - 10" comb starting at Franklin run to Ribbon

# 1996 Flap Gate Inspection

12621

FLAP GATE INSPECTION

110101  
update copy please  
make entries if appropriate  
state. *slut*

1-90

LOCATION	INSPECTOR	
3901 Mt. Vernon Avenue	<i>UFC</i>	<i>1-17-96</i>
3901 A Mt. Vernon Avenue	<i>UFC</i>	<i>1-17-96</i>
3901 B Mt. Vernon Avenue	<i>UFC</i>	
3903 Mt. Vernon Avenue	<i>UFC</i>	
3910 Bruce Street	<i>UFC</i>	
3912 Bruce Street		
3914 Bruce Street		
3916 Bruce Street		
3917 Bruce Street		
3915 Bruce Street		
3913 Bruce Street		
13 E. Mason Avenue		
13 A. E. Mason Avenue		
15 E. Mason Avenue		
15 A. E. Mason Avenue		
17 E. Mason Avenue		<i>1-17-96</i>
Luray Avenue and Hancock Avenue.		<i>1-18-96</i>
6 W. Luray Avenue		
10 W. Luray Avenue		
1300 Hancock Avenue		
113 E. Monroe Avenue		
100 E. Monroe Avenue		
102 E. Monroe Avenue		
106 E. Monroe Avenue		
200 E. Monroe Avenue		
202 E. Monroe Avenue		
1604 Mt. Vernon Avenue		
1606 Mt. Vernon Avenue		
1608 Mt. Vernon Avenue		
305 W. Glendale Avenue		
311 Summers Drive		
307 Summers Drive		
9 W. Chaoman Street		
9 A W. Chaoman Street		
11 W. Chaoman Street		
11 A W. Chaoman Street		<i>1-18-96</i>

*NEED NEW GATE SOON  
188*

*100 W. Luray @ side of church*



FLAP GATE INSPECTION

5/18/84 H/9/96  
 Update copy please  
 make entries at appropriate  
 scale. HHH

Isidoro Davila

LOCATION	INSPECTOR	
3901 Mt. Vernon Avenue ✓	Isidoro Davila - L	4-8-96
3901 A Mt. Vernon Avenue ✓	Isidoro Davila - L	4-8-96
3901 B Mt. Vernon Avenue ✓	Isidoro Davila - L	4-8-96
3903 Mt. Vernon Avenue ✓	Isidoro Davila - L	4-8-96
3910 Bruce Street ✓	Isidoro Davila - L	4-8-96
3912 Bruce Street ✓	Isidoro Davila - L	4-8-96
3914 Bruce Street ✓	Isidoro Davila - L	4-8-96
3916 Bruce Street ✓	Isidoro Davila - L	4-8-96
3917 Bruce Street ✓	Isidoro Davila - L	4-8-96
3915 Bruce Street ✓	Isidoro Davila - L	4-8-96
3913 Bruce Street ✓	Isidoro Davila - L	4-8-96
13 E. Mason Avenue ✓	Isidoro Davila - L	4-8-96
13 A. E. Mason Avenue ✓	Isidoro Davila - L	4-8-96
15 E. Mason Avenue ✓	Isidoro Davila - L	4-8-96
15 A. E. Mason Avenue ✓	Isidoro Davila - L	4-8-96
17 E. Mason Avenue ✓	Isidoro Davila - L	4-8-96
Luray Avenue and Hancock Avenue ✓	Isidoro Davila - L	4-8-96
6 W. Luray Avenue ✓	Isidoro Davila - L	4-8-96
10 W. Luray Avenue ✓	Isidoro Davila - L	4-8-96
1300 Hancock Avenue ✓	Isidoro Davila - L	4-8-96
113 E. Monroe Avenue ✓	Isidoro Davila - L	4-8-96
100 E. Monroe Avenue ✓	Isidoro Davila - L	4-8-96
102 E. Monroe Avenue ✓	Isidoro Davila - L	4-8-96
106 E. Monroe Avenue ✓	Isidoro Davila - L	4-8-96
200 E. Monroe Avenue ✓	Isidoro Davila - L	4-8-96
202 E. Monroe Avenue ✓	Isidoro Davila - L	4-8-96
1604 Mt. Vernon Avenue ✓	Isidoro Davila - L	4-8-96
1606 Mt. Vernon Avenue ✓	Isidoro Davila - L	4-8-96
1608 Mt. Vernon Avenue ✓	Isidoro Davila - L	4-8-96
305 W. Glendale Avenue ✓	Isidoro Davila - L	4-8-96
311 Summers Drive ✓	Isidoro Davila - L	4-8-96
307 Summers Drive ✓	Isidoro Davila - L	4-8-96
9 W. Chaoman Street ✓	Isidoro Davila - L	4-8-96
9 A W. Chaoman Street ✓	Isidoro Davila - L	4-8-96
11 W. Chaoman Street ✓	Isidoro Davila - L	4-8-96
11 A W. Chaoman Street ✓	Isidoro Davila - L	4-8-96

side of church



FLAP GATE INSPECTION

5/18/84

update copy please  
make entries at appropriate  
space. *HLW*

LOCATION	INSPECTOR	
3901 Mt. Vernon Avenue <i>clean + lube</i>	Tony Andrade	4-26
3901 A Mt. Vernon Avenue <i>" "</i>	" "	4-26
3901 B Mt. Vernon Avenue <i>" "</i>	" "	4-26
3903 Mt. Vernon Avenue <i>" "</i>	" "	4-26
3910 Bruce Street <i>clean + lube</i>	Tony Andrade	4-26
3912 Bruce Street <i>clean + flush + lube</i>	" "	4-26
3914 Bruce Street <i>clean + flush + lube</i>	" "	4-26
3916 Bruce Street <i>clean + lube</i>	Tony Andrade	4-26
3917 Bruce Street <i>clean + lube</i>	" "	4-26
3915 Bruce Street <i>clean + lube + flush</i>	" "	4-26
3913 Bruce Street <i>clean + lube + flush</i>	" "	4-26
13 E. Mason Avenue <i>clean</i>	" "	4-27
13 A. E. Mason Avenue <i>clean</i>	" "	4-27
15 E. Mason Avenue <i>clean</i>	" "	4-27
15 A. E. Mason Avenue <i>clean</i>	" "	4-27
17 E. Mason Avenue <i>clean</i>	" "	4-27
Luray Avenue and Hancock Avenue <i>clean</i>	" "	4-27
6 W. Luray Avenue <i>clean</i>	" "	4-27
10 W. Luray Avenue <i>clean</i>	" "	4-27
1300 Hancock Avenue <i>clean</i>	" "	4-27
113 E. Monroe Avenue <i>clean + ch</i>	Tony Andrade	4-27
100 E. Monroe Avenue <i>clean + lube + flush</i>	Tony Andrade	4-27
102 E. Monroe Avenue <i>clean</i>	Tony Andrade	4-27
106 E. Monroe Avenue <i>clean</i>	" "	4-27
200 E. Monroe Avenue	" "	4-27
202 E. Monroe Avenue	" "	4-27
1604 Mt. Vernon Avenue <i>clean - lube</i>	" "	4-28
1606 Mt. Vernon Avenue <i>clean</i>	CAN NOT FIND	4-28
1608 Mt. Vernon Avenue	CAN NOT FIND	4-28
305 W. Glendale Avenue <i>clean + lube</i>	" "	4-28
311 Summers Drive <i>clean + lube</i>	" "	4-28
307 Summers Drive <i>clean</i>	" "	4-28
9 W. Chapman Street <i>clean + lube</i>	Tony Andrade	4-26
9 A W. Chapman Street <i>clean</i>	" "	4-26
11 W. Chapman Street	" "	4-26
11 A W. Chapman Street	" "	4-26

100 W Luray @ side of church *clean + lube* Tony Andrade 4-28 ✓  
 service 11:00 am - see M14 -



# VPDES PERMIT AND FACT SHEET



APR - 5 1995

# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

Peter W. Schmidt  
Director

Northern Regional Office  
1549 Old Bridge Road, Suite 108  
Woodbridge, Virginia 22192  
(703) 490-8922

April 3, 1995

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Thomas F. O'Kane  
Director, Department of Transportation & Environmental Services  
City of Alexandria  
301 King Street, Room 4100  
Alexandria, Virginia 22313

Re: VPDES Permit No. VA0087068, VPDES Permit Issuance,  
Alexandria Combined Sewer System, City of Alexandria

Dear Mr. O'Kane:

The Director has approved the enclosed effluent limitations and monitoring requirements for the above-referenced permit. This approval is in accordance with the enclosed memorandum.

Your permit is also enclosed. In accordance with the permit, you are required to submit annual reports to:

Department of Environmental Quality  
Northern Regional Office  
1549 Old Bridge Road, Suite 108  
Woodbridge, VA 22192

The first annual report for the period beginning with the permit effective date and ending December 31, 1995, is due by March 31, 1996.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty (30) days from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Department of Environmental Quality. In the event that this decision is served on you by mail, three days are added to that period.

VPDES Permit No. VA0087068  
Alexandria Combined Sewer System  
Page -2-

Alternatively, any owner under Sections 62.1-44.16, 62.1-44.17, and 62.1-44.19 of the State Water Control Law aggrieved by any action of the Board taken without a formal hearing, or by inaction of the Board, may demand in writing a formal hearing of such owner's grievance, provided a petition requesting such hearing is filed with the Board. Said petition must meet the requirements set forth in Section 1.23(b) of the Board's Procedural Rule No. 1. In cases involving actions of the Board, such petition must be filed within thirty days after notice of such action is mailed to such owner by certified mail.

If you have any questions, please do not hesitate to contact us.

Sincerely,



Alan L. Laubscher  
Regional Permit Manager

Enclosure: Memorandum  
VPDES Permit No. VA0087068

cc: DEQ-Water, OWRM  
EPA, Region III-3WM53  
Department of Health - Culpeper  
Department of Health - Richmond  
S. Hetrick, VRO  
Water Resources Development, NRO  
M. Oakley, Greeley & Hansen Engineers, 5711 Allentown Road,  
Suite 302, Camp Springs, Maryland 20746

**MEMORANDUM**

**DEPARTMENT OF ENVIRONMENTAL QUALITY**

**Northern Regional Office**

1549 Old Bridge Road, Suite 108

Woodbridge, Virginia 22192

(703) 490-8922

SUBJECT: Issuance of VPDES Permit No. VA0087068,  
Alexandria Combined Sewer System, City of Alexandria

TO: Peter W. Schmidt, Director

FROM: Alan L. Laubscher, Regional Permit Manager, NRO 

DATE: April 3, 1995

COPIES: OWRM, VDH-Culpeper, VDH-Richmond, EPA Region III,  
Alexandria Combined Sewer System

Legal Name of Owner: City of Alexandria

Application Submitted By: Michele R. Evans, Acting City Manager

Application Date: The initial application was received on  
December 19, 1990. Additional  
information was received on  
August 12, 1991, August 25, 1993, and  
March 14, 1994. Date of complete  
application: October 3, 1991.

Type of Discharge: Existing Municipal-Sewage Discharge

Wastewater Treatment  
Facilities: There is no treatment of the combined  
sewage overflows.

Receiving Stream: Stream: Oronoco Bay, Hooffs Run,  
Hunting Creek  
Basin: Potomac River  
Subbasin: Potomac River  
Section: 6, 7  
Class: II, III  
Special Standards: b, f

Public Notice: The application and draft permit have  
received public notice in accordance  
with the Permit Regulation and no  
comments were received.

Planning:

This discharge is not mentioned in existing Board adopted water quality management planning documents applicable to the 303(e) Potomac Water Quality Management Plan, but the discharge will be included in the updated water quality management plan.

EPA Comments:

EPA has no objections to the adequacy of the draft permit.

COE Comments:

No comments were received.

VDH Comments:

The Virginia Department of Health has concurred with the issuance of this permit.

Adjacent State Comments:

No comments received.

Previous Board Action:

There have been no previous Board actions.

Staff Comments:

The discharge is not controversial.

Permit issuance was delayed due to the complex and unique issues associated with the combined sewer overflows. Additionally, the City of Alexandria completed a characterization of the quantity and quality of the CSO overflows during the issuance process. The U.S. EPA also published a revised CSO Control Policy in April 1994. The draft permit was modified to reflect the EPA control policy as well as progress made by the City in addressing combined sewer overflows.

The staff believes that the attached effluent limitations will maintain the Water Quality Standards adopted by the Board.

Basis for Effluent Limits:

The effluent limitations are based on Water Quality Standards and the U.S. EPA Combined Sewer Overflow Control Policy (April 1994).

STAFF RECOMMENDATIONS:

The staff recommends that the Director:

1. Approve the attached effluent limitations and monitoring requirements.
2. Issue VPDES Permit No. VA0087068.

APPROVED:

*Gregory J. Clayton*  
for Director

DATE:

April 3, 1995



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

Permit No. VA0087068

Effective Date: April 3, 1995

Expiration Date: April 3, 2000

### AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM

AND

### THE VIRGINIA STATE WATER CONTROL LAW

In compliance with the provisions of the Clean Water Act as amended and pursuant to the State Water Control Law and regulations adopted pursuant thereto, the following owner is authorized to discharge in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in this permit.

Owner: City of Alexandria

Facility Name: Alexandria Combined Sewer System

City: Alexandria

County: N/A

Facility Location: The combined sewer system serves a 540 acre area of Alexandria bounded by the railroad to the west, the Potomac River to the east, I-95 to the south, and Slater's Lane to the north.

The owner is authorized to discharge to the following receiving streams:

Stream: Oronoco Bay, Hunting Creek, Hooffs Run  
River Basin: Potomac River  
River Subbasin: Potomac River  
Section: 6, 7  
Class: II, III  
Special Standards: b, f

The authorized discharge shall be in accordance with this cover page, Part I - Effluent Limitations and Monitoring Requirements, Part II - Monitoring and Reporting Requirements, and Part III - Management Requirements, as set forth herein.

*Suzanne Clayton*  
for Director, Department of Environmental Quality

*April 3, 1995*

Date

A. Effluent Limitations and Monitoring Requirements

1. The following outfalls are recognized as point source discharges of combined sanitary and storm sewer overflows operated by the permittee, or connected to the permittee's combined sewer system.

001: Pendleton Street CSO

Location: East end of Pendleton Street  
Receiving Stream: Oronoco Bay; River Basin: Potomac River; Section: 6; Class: II; Special Standards: b,f

002: Royal Street CSO

Location: South end of Royal Street  
Receiving Stream: Hunting Creek; River Basin: Potomac River; Section: 6; Class: II; Special Standards: b,f

003: Duke Street CSO

Location: Under Duke Street at crossing of Hooffs Run  
Receiving Stream: Hooffs Run; River Basin: Potomac River; Section: 7; Class: III; Special Standards: b

004: Hooffs Run CSO

Location: Approximately fifty yards south of Duke Street, along east stream bank  
Receiving Stream: Hooffs Run; River Basin: Potomac River; Section: 7; Class: III; Special Standards: b

During the period beginning with the permit effective date and lasting until the permit expiration date, the permittee is authorized to discharge from the above combined sewer overflow points. Such discharges shall be limited and conditioned by the permittee as specified in Part I.A. 2 - 6.

Consistent with CWA Section 301(b)(1)(C), the permittee must not discharge in excess of any limitation necessary to meet water quality standards established pursuant to State law.

2. There shall be no discharge during dry weather flow conditions. Dry weather flow conditions shall mean the flow in a combined sewer that results from sanitary sewage, industrial wastewater, and infiltration/inflow, with no contribution from stormwater runoff or stormwater induced infiltration. Wet weather flow conditions shall mean the flow in a combined sewer including stormwater runoff and/or stormwater induced infiltration.
3. The permittee shall eliminate wet weather flow discharges from all CSO outfalls to the greatest extent practicable by delivering all flows to the treatment plant within the constraints of the capacity and practicable operation of the CSO trunk sewer system and the treatment plant.
4. The permittee shall maximize use of the combined sewer system for storage.

5. The permittee shall take steps to minimize the impact of nondomestic discharges from combined sewer overflows.
6. The permittee shall employ proper O&M practices for the combined sewer system. Such practices shall, as a minimum, include:
  - a. Scheduled inspection and cleaning of the trunk combined sewers to ensure that accumulation of solids does not reduce the trunk combined sewer system storage capacity, nor cause obstructions which result in overflows.
  - b. Control of solids and floatable materials in CSO discharges via a regular catch basin and street cleaning program in areas tributary to combined sewers. The permittee may consider installation of entrapment and baffling devices to reduce discharges of solids and floatable materials.
  - c. Scheduled inspection of the CSO trunk sewer system regulation facilities to ensure that such facilities are in good working order and adjusted to minimize overflows.
7. The permittee shall submit an annual report by March 31 of each year to the Department of Environmental Quality, Northern Regional Office, covering the following information:
  - a. Modeled results of the number of occurrences and the duration of overflow occurrences for each CSO outfall, including visual verification of overflow occurrences to the extent practicable;
  - b. Measured storm event data (intensity, duration, total precipitation) for storms predicted to result in overflow occurrences;
  - c. A summary of CSO trunk sewer system inspection and maintenance conducted during the preceding twelve month period

The first annual report will be due by March 31, 1996 and shall cover the period beginning with the permit effective date and ending on December 31, 1995. Subsequent annual reports shall cover successive calendar years and shall be submitted within successive 12 month periods of the first report's due date.

B. Combined Sewer Overflow Control Program

1. The permittee must develop a long-term CSO control program designed to meet one of the following criteria:
  - a. An average of four overflow events per year; or
  - b. Elimination or capture for treatment of no less than 85% by volume of the combined sewage collected in the combined sewer system during precipitation events on a system-wide annual average basis; or
  - c. Elimination or removal of no less than the mass of pollutants identified as causing water quality impairment through the sewer system characterization, monitoring and modeling effort for the volumes that would be eliminated or captured for treatment under paragraph I.B.1.b above; or
  - d. Demonstrate that the selected control program, though not meeting any one of the criteria specified in Part I.B.1.a-c, is adequate to meet the water quality-based requirements of the Clean Water Act. To be a successful demonstration, the permittee must demonstrate each of the following:
    - i. The selected control program is adequate to meet Water Quality Standards (WQS) and protect designated uses, unless WQS or uses cannot be met as a result of natural background conditions or pollution sources other than CSOs;
    - ii. The CSO discharges remaining after implementation of the control program will not preclude the attainment of WQS or the receiving waters' designated uses or contribute to their impairment;
    - iii. The control program will provide the maximum pollution reduction benefits reasonably attainable; and
    - iv. The control program is designed to allow cost effective expansion or cost effective retrofitting if additional controls are subsequently determined to be necessary to meet WQS or designated uses.

2. The permittee shall accomplish the development of a long-term CSO control program according to the following schedule:
- |  |   |
|--|---|
| a. Submit a preliminary evaluation of engineering alternatives   | Within six months of the effective date of the permit   |
| b. Hold a public meeting to discuss/receive comment on the identified program options  | Within four months of DEQ comment on the preliminary evaluation   |
| c. Submit a detailed evaluation of the control options, including selection of a preferred control option and associated implementation schedule | Within six months of the public meeting of I.B.2.b.   |
| d. Hold a public hearing on the final CSO control option 7.15.99   | Within four months of DEQ comment on the selected control program and implementation schedule                                       |
| e. Submit a final report identifying the control program selected and a schedule for implementation of the program 12.15.99                      | Within six months following the public hearing of I.B.2.d., but <u>not later than 3 years</u> from the effective date of the permit |

If DEQ comments under I.B.2.b. and/or I.B.2.d. are not provided to the permittee within 3 months, the deadline under I.B.2.e. will be extended by the amount of time exceeding 3 months.

C. Other Requirements and Special Conditions

1. The permittee in accordance with the Sewerage Regulations shall obtain a Certificate to Construct (CTC) and a Certificate to Operate (CTO) from the Department of Environmental Quality prior to, respectively, constructing and operating combined trunk sewer collection and treatment facilities.
2. This permit may be modified or alternatively revoked and reissued to comply with any State or Federal Law or Regulation that addresses Combined Sewer Overflows which is promulgated subsequent to the effective date of this permit. In addition, upon satisfactory completion of the Long-Term CSO Control Plan, the permit may be modified, or revoked and reissued, to require implementation of the selected CSO controls.
3. No new combined sewers shall be built outside of the presently existing combined sewer service areas of the City. This requirement shall not be construed to prevent the connection of new sanitary sewers to combined sewers within the existing combined sewer service area for the purpose of conveying sewage to the treatment plant. No new connections shall be made to the combined sewers where those connections would cause overflows during dry-weather flow conditions.
4. Within 60 days of notification by the Department of Environmental Quality Northern Regional Office, the permittee must submit a revised draft of the City's sewer ordinance to include the following: prohibition of dry weather overflows; prohibition of the construction of new combined sewers outside of the presently existing combined sewer service areas of the City; prohibition of new inflow sources into sanitary sewers tributary to the combined system; and prohibition of motor oil and excessive grease into the sewer system. A schedule for promulgating sewer ordinance revisions must also be submitted.
5. The permittee shall develop and implement a pollution prevention program focused on reducing the impact of CSOs on receiving waters no later than January 1, 1997.
6. The permittee shall implement a public notification program to inform citizens of when and where CSOs occur. The program must include a feature that will advise persons of the conditions that may be expected to cause the occurrence of CSOs and the nature and duration of conditions that are potentially harmful for users of receiving waters due to CSOs. The public notification program must be implemented no later than January 1, 1997.

7. The permittee shall develop and submit to the DEQ, Northern Regional Office, an in-stream monitoring plan for Hooffs Run within three months of the permit effective date. The purpose of the plan shall be to evaluate the impact of the Hooffs Run CSOs on the receiving stream water quality during CSO events. The plan must specify the sampling locations (to include at least one upstream and one downstream sampling location), the list of pollutants to be analyzed (at a minimum to include copper and zinc), and the sample type and frequency. Within three months of DEQ approval, the permittee must implement the Hooffs Run monitoring plan.
8. The permittee must develop and submit to the DEQ, Northern Regional Office, a post-construction water quality monitoring program for review and approval along with the final report identifying the long-term CSO control plan selected by the City. DEQ will use the results of the post-construction monitoring program to verify compliance with water quality standards and the protection of receiving stream beneficial uses, as well as to ascertain the effectiveness of the CSO controls.
9. No later than January 1, 1997, the permittee must submit to the DEQ, Northern Regional Office, a report documenting the implementation of the requirements listed in Part I.A.2-7 and Part I.C.5-6 of this VPDES permit.

## MONITORING AND REPORTING

### A. Sampling and Analysis Methods

1. Samples and measurements taken as required by this permit shall be representative of the volume and nature of the monitored activity.
2. Unless otherwise specified in the permit all sample preservation methods, maximum holding times and analysis methods for pollutants shall comply with requirements set forth in Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act as published in the Federal Register (40 CFR Part 136).
3. The sampling and analysis program to demonstrate compliance with the permit shall at a minimum, conform to Part I of this permit.
4. The permittee shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals that will ensure accuracy of measurements.

### B. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

1. The date, exact place and time of sampling or measurements;
2. The person(s) who performed the sampling or measurements;
3. The dates analyses were performed;
4. The person(s) who performed each analysis;
5. The analytical techniques or methods used; and
6. The results of such analyses and measurements.

### C. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for three (3) years from the date of the sample, measurement, report or application. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the Director, Department of Environmental Quality.

D. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the monitoring report. Such increased frequency shall also be reported.

E. Water Quality Monitoring

The Director, Department of Environmental Quality may require every permittee to furnish such plans, specifications, or other pertinent information as may be necessary to determine the effect of the pollutant(s) on the water quality or to ensure pollution of State waters does not occur or such information as may be necessary to accomplish the purposes of the Virginia State Water Control Law, Clean Water Act or the State Water Control Board's Permit Regulation.

The permittee shall obtain and report such information if requested by the Director, Department of Environmental Quality. Such information shall be subject to inspection by authorized State and Federal representatives and shall be submitted with such frequency and in such detail as requested by the Director, Department of Environmental Quality.

F. Reporting Requirements

1. The permittee shall submit to the Department of Environmental Quality, Northern Regional Office, at the following address by the 10th of each month for the preceding month's performance, an original monitoring report. In addition, a monthly report covering the facility's general operational data may be required. If this report is required, the permittee will be so notified.

Send report to: Department of Environmental Quality  
Northern Regional Office  
1549 Old Bridge Road, Suite 108  
Woodbridge, Virginia 22192

2. If, for any reason, the permittee does not comply with one or more limitations, standards, monitoring or management requirements specified in this permit, the permittee shall submit to the Department of Environmental Quality, Northern Regional Office, with the monitoring report at least the following information:
  - a. A description and cause of noncompliance;
  - b. The period of noncompliance, including exact dates and times and/or the anticipated time when the noncompliance will cease; and

F. Reporting Requirements - Continued

2. c. Actions taken or to be taken to reduce, eliminate, and prevent recurrence of the noncompliance.

Whenever such noncompliance may adversely affect State waters or may endanger public health, the permittee shall submit the above required information by oral report within 24 hours from the time the permittee becomes aware of the circumstances and by written report within five days. The Department of Environmental Quality, Northern Regional Office, Director may waive the written report requirement on a case by case basis if the oral report has been received within 24 hours and no adverse impact on State waters has been reported.

3. The permittee shall report any unpermitted, unusual or extraordinary discharge which enters or could be expected to enter State waters. The permittee shall provide information specified in Part II.F.2.a-c. regarding each such discharge immediately, that is as quickly as possible upon discovery, however, in no case later than 24 hours. A written submission covering these points shall be provided within five days of the time the permittee becomes aware of the circumstances covered by this paragraph.

Unusual or extraordinary discharge would include but not be limited to (1) unplanned bypasses, (2) upsets, (3) spillage of materials resulting directly or indirectly from processing operations or pollutant management activities, (4) breakdown of processing or accessory equipment, (5) failure of or taking out of service, sewage or industrial waste treatment facilities, auxiliary facilities or pollutant management activities, or (6) flooding or other acts of nature.

If the Northern Regional Office cannot be reached, the Department of Environmental Quality maintains a 24-hour telephone service in Richmond (804) 527-5200 to which the report required above is to be made.

## MANAGEMENT REQUIREMENTS

A. Change in Discharge or Management of Pollutants

1. Any permittee proposing a new discharge or the management of additional pollutants shall submit a permit application at least 180 days prior to commencing erection, construction, or expansion or employment of new pollutant management activities or processes at any facility. There shall be no commencement of treatment or management of pollutants activities until issuance of a permit.
2. All discharges or pollutant management activities authorized by this permit shall be made in accordance with the terms and conditions of the permit. The permittee shall submit a new application 180 days prior to all expansions, production increases, or process modifications, that will result in new or increased pollutants. The discharge or management of any pollutant more frequently than, or at a level greater than that identified and authorized by this permit, shall constitute a violation of the terms and conditions of this permit.
3. The permittee shall promptly provide written notice of the following:
  - a. Any new introduction of pollutant(s), into treatment works or pollutant management activities which represents a significant increase in the discharge or management of pollutant(s) which may interfere with, pass through, or otherwise be incompatible with such works or activities, from an establishment, treatment works, or discharge(s), if such establishment, treatment works, or discharge(s) were discharging or has the potential to discharge pollutants to State waters; and,
  - b. Any substantial change, whether permanent or temporary, in the volume or character of pollutants being introduced into such treatment works by an establishment, treatment works, pollutant management activities, or discharge(s) that was introducing pollutants into such treatment works at the time of issuance of the permit.
  - c. Any reason to believe that any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

A. Change in Discharge or Management of Pollutants - Continued

3. c. (1) One hundred micrograms per liter (100  $\mu\text{g}/\text{l}$ );
- (2) Two hundred micrograms per liter (200  $\mu\text{g}/\text{l}$ ) for acrolein and acrylonitrile; five hundred micrograms per liter (500  $\mu\text{g}/\text{l}$ ) for 2, 4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1  $\text{mg}/\text{l}$ ) for antimony;
- (3) Five times the maximum concentration value reported for the pollutant in the permit application; or
- (4) The level established in accordance with regulation under Section 307(a) of the Act and accepted by the Director, Department of Environmental Quality.
- d. Any activity has occurred or will occur which would result in any discharge on a non-routine or infrequent basis of a toxic pollutant which is not limited in the permit if that discharge will exceed the highest of the following "notification levels":
- (1) Five hundred micrograms per liter (500  $\mu\text{g}/\text{l}$ );
- (2) One milligram per liter (1  $\text{mg}/\text{l}$ ) for antimony;
- (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application;
- (4) The level established by the Director, Department of Environmental Quality.

Such notice shall include information on: (1) the characteristics and quantity of pollutants to be introduced into or from such treatment works or pollutant management activities; (2) any anticipated impact of such change in the quantity and characteristics of the pollutants to be discharged from such treatment works or pollutants managed at a pollutant management activity; and (3) any additional information that may be required by the Director, Department of Environmental Quality.

B. Operator Requirements

1. If specified in Part I of this permit, the permittee shall employ or contract at least one operator who holds a current wastewater license appropriate for the permitted facility or the pollutant management activity.
2. The permittee shall notify the Department of Environmental Quality, Northern Regional Office, in writing whenever he is not complying, or has grounds for anticipating he will not comply with the requirements in the above paragraph. The notification shall include a statement of reasons and a prompt schedule for achieving compliance.

C. Treatment Works Operation and Quality Control

1. Design and operation of facilities and/or treatment works and disposal of all wastes shall be in accordance with the application filed with the Department of Environmental Quality and in conformity with the conceptual design, or the plans, specifications, and/or other supporting data approved by the Director, Department of Environmental Quality. The approval of the treatment works conceptual design or the plans and specifications does not relieve the permittee of the responsibility of designing and operating the facility in a reliable and consistent manner to meet the facility performance requirements in the permit. If facility deficiencies, design and/or operational, are identified in the future which could affect the facility performance or reliability, it is the responsibility of the permittee to correct such deficiencies.
2. All waste collection, control, treatment, management of pollutant activities and disposal facilities shall be operated in a manner consistent with the following:
  - a. At all times, all facilities and pollutant management activities shall be operated in accordance with the terms and conditions of the Certificate To Operate (CTO) and/or approved Operation and Maintenance (O&M) Manual, if applicable, and in a prudent and workmanlike manner so as to minimize upsets and discharges of excessive pollutants to State waters.
  - b. The permittee shall provide an adequate operating staff which is duly qualified to carry out the operation, maintenance and testing functions required to ensure compliance with the conditions of this permit.
  - c. Maintenance of treatment facilities or pollutant management activities shall be carried out in such a manner that the monitoring and/or limitation requirements are not violated.
  - d. Collected sludges shall be stored in such a manner as to prevent entry of those wastes (or runoff from the wastes) into State waters, and disposed of in accordance with this permit or plans approved by the Director, Department of Environmental Quality.

D. Adverse Impact

The permittee shall take all feasible steps to minimize any adverse impact to State waters resulting from noncompliance with any limitation(s) and/or conditions specified in this permit, and shall perform and report such accelerated or additional monitoring as is necessary to determine the nature and impact of the noncomplying limitation(s) and/or conditions.

G. Bypassing - Continued

2. Unplanned Bypass - If an unplanned bypass occurs, the permittee shall notify the Department of Environmental Quality, Northern Regional Office, as soon as possible, but in no case later than 24 hours, and shall take steps to halt the bypass as early as possible. This notification will be a condition for defense to an enforcement action that an unplanned bypass met the conditions in Part III.G.1. above and in light of the information reasonably available to the owner at the time of the bypass.

H. Conditions Necessary to Demonstrate an Upset

A permittee may claim an upset as an affirmative defense to an action brought for noncompliance for only technology-based effluent limitations. In order to establish an affirmative defense of upset, the permittee shall present properly signed, contemporaneous operating logs or other relevant evidence that shows:

1. That an upset occurred and that the cause can be identified;
2. The facility permitted herein was at the time being operated efficiently and in compliance with proper operation and maintenance procedures;
3. The permittee submitted a notification of noncompliance as required by Part II.F. above; and
4. The permittee took all reasonable steps to minimize or correct any adverse impact to State waters resulting from noncompliance with the permit.

I. Compliance With State and Federal Law

Compliance with this permit during its term constitutes compliance with the State Water Control Law and the Clean Water Act except for any toxic standard imposed under Section 307(a) of the Clean Water Act.

Nothing in this permit shall be construed to preclude the institution of any legal action under, or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any other State law or regulation or under authority preserved by Section 510 of the Clean Water Act.

J. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or Local Laws or regulations.

K. Severability

The provisions of this permit are severable.

L. Duty to Reapply

At least 180 days before the expiration date of this permit, unless permission for a later date has been granted by the Director, Department of Environmental Quality, the permittee shall submit a new application for a permit.

M. Right of Entry

The permittee shall allow authorized State and Federal representatives, upon the presentation of credentials:

1. To enter upon the permittee's premises on which the establishment, treatment works, pollutant management activities, or discharge(s) is located or in which any records are required to be kept under the terms and conditions of this permit;
2. To have access to inspect and copy at reasonable times any records required to be kept under the terms and conditions of this permit;
3. To inspect at reasonable times any monitoring equipment or monitoring method required in this permit;
4. To sample at reasonable times any waste stream, discharge, process stream, raw material or by-product, and,
5. To inspect at reasonable times any collection, treatment, pollutant management activities or discharge facilities required under this permit.

For purposes of this section, the time for inspection shall be deemed reasonable during regular business hours, and whenever the facility is discharging or involved in managing pollutants. Nothing contained herein shall make an inspection time unreasonable during an emergency.

N. Transferability of Permits

This permit may be transferred to another person by a permittee if:

1. The current owner notifies the Department of Environmental Quality, Northern Regional Office, thirty (30) days in advance of the proposed transfer of the title to the facility or property;

N. Transferability of Permits - Continued

2. The notice to the Department of Environmental Quality, Northern Regional Office, includes a written agreement between the existing and proposed new owner containing a specific date of transfer of permit responsibility, coverage and liability between them; and
3. The Department of Environmental Quality does not within the 30-day time period notify the existing owner and the proposed owner of the State Water Control Board's intent to modify or revoke and reissue the permit.

Such a transferred permit shall, as of the date of the transfer, be as fully effective as if it had been issued directly to the new permittee.

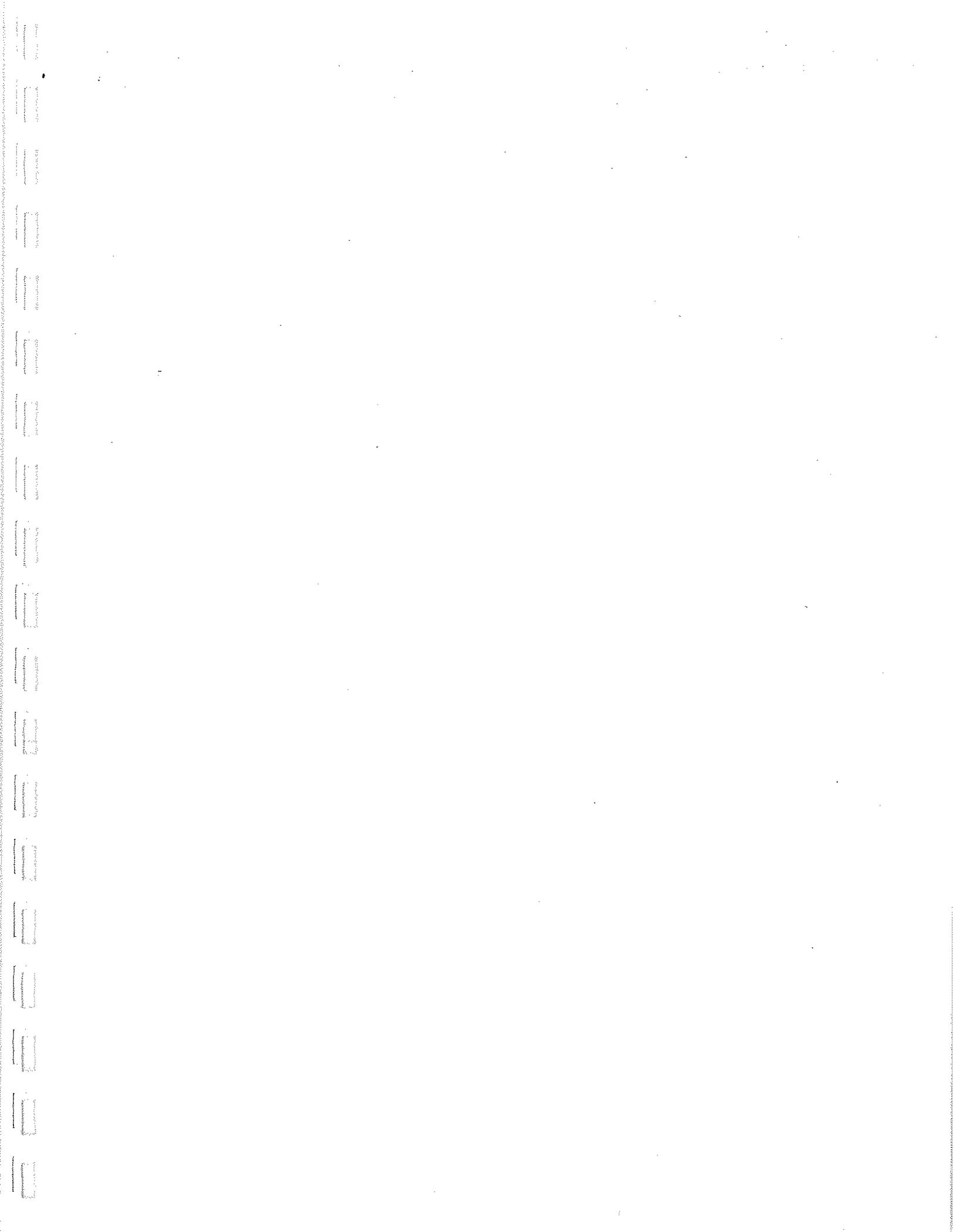
O. Public Access to Information

All information pertaining to permit processing or in reference to any source of discharge of any pollutant, shall be available to the public, unless the information has been identified by the applicant as a trade secret, of which the effluent data remains open public information. All information claimed confidential must be identified as such at the time of submission to the Department of Environmental Quality and/or EPA. Otherwise, all information will be made available to the public. Notwithstanding the foregoing, any supplemental information that the Department of Environmental Quality may obtain from filings made under the Virginia Toxics Substance Information Act (TSIA) shall be subject to the confidentiality requirements of TSIA.

P. Permit Modification

The permit may be modified when any of the following developments occur:

1. When additions or alterations have been made to the affected facility which require the application of permit conditions that differ from those of the existing permit or are absent from it;
2. When new information becomes available about the operation, pollutant management activity or discharge covered by this permit which was not available at permit issuance and would have justified the application of different permit conditions at the time of permit issuance;
3. When a change is made in the promulgated standards or regulations on which the permit was based;



P. Permit Modification - Continued

4. When it becomes necessary to change final dates in compliance schedules due to circumstances over which the permittee has little or no control such as acts of God, materials shortages, etc. However, in no case may a compliance schedule be modified to extend beyond any applicable statutory deadline of the Clean Water Act;
5. When a variance is requested and after the granting of the variance by EPA;
6. When an effluent standard or prohibition for a toxic pollutant must be incorporated in the permit in accordance with provisions of Section 307(a) of the Clean Water Act;
7. When changes occur which are subject to "Reopener Clauses" in the permit;
8. When the permittee requests the Director, Department of Environmental Quality to allow "net limitations" to take into account pollutants in the permittee's intake water and the Director, Department of Environmental Quality agrees to allow the use of net limitations;
9. When changes occur in the development and implementation of a pretreatment program;
10. When the level of discharge of or management of a pollutant not limited in the permit exceeds applicable Water Quality Standards or the level which can be achieved by technology-based treatment requirements appropriate to the permittee;
11. When the permittee begins or expects to begin to use or manufacture any toxic pollutant not reported in the application; and
12. When other States were not notified of the change in the permit and their waters may be affected by the discharge.

Q. Permit Termination

After public notice and opportunity for a hearing, the permit may be terminated on any of the following grounds:

1. The permittee has violated any regulation or order of the State Water Control Board, any condition of a permit, any provision of the Law, or any order of a court, where such violation results in a release of harmful substances into the environment or poses a substantial threat of release of harmful substances into the environment or presents a hazard to human health or the violation is representative of a pattern of serious or

Q. Permit Termination - Continued

1. repeated violations which in the opinion of the State Water Control Board, demonstrates the permittee's disregard for or inability to comply with applicable laws, regulations or requirements;
2. The permittee has failed to disclose fully all relevant material facts or has misrepresented a material fact in applying for a permit, or in any other report or document required under applicable laws or regulations;
3. The activity for which the permit was issued endangers human health or the environment and can be regulated to acceptable levels by modification or termination of the permit; or
4. There exists a material change in the basis on which the permit was issued that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit necessary to protect human health or the environment.

R. Civil and Criminal Liability

Except as provided in permit conditions on "bypassing" (Part III.G.), and "upset" (Part III.H.) nothing in this permit shall be construed to relieve the permittee from civil and criminal penalties for noncompliance.

S. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Clean Water Act or Sections 62.1-44.34:14 through 62.1-44.34:23 of the Law.

T. Unauthorized Discharge of Pollutants

Except in compliance with this permit, it shall be unlawful for any permittee to:

1. Discharge into State waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances, or
2. Otherwise alter the physical, chemical or biological properties of such State waters and make them detrimental to the public health, or to animal or aquatic life, or to the uses of such waters for domestic or industrial consumption, or for recreation, or for other uses.

VPDES PERMIT PROGRAM FACT SHEET

This document gives pertinent information concerning the VPDES permit listed below. This permit is being processed as a Major, municipal permit. The process consists of: establishing limitations and monitoring requirements for combined sewer overflows (CSO) and establishing a schedule for development of a long-term CSO control program.

1. Facility Name and Address: SIC Code: 4952

Alexandria Combined Sewer System  
Alexandria Department of Transportation & Environmental Services  
301 King Street, Room 4100  
Alexandria, Virginia 22313

Location: The combined sewer system serves a 540 acre area of Alexandria bounded by the railroad to the west, the Potomac River to the east, I-95 to the south, and Slater's Lane to the north.

2. Permit No. VA0087068 Expiration Date: N/A, Issuance

3. Owner Contact: Name: Thomas F. O'Kane, Jr.  
Title: Director  
Telephone No.: (703)838-4966

4. Permit Drafted By: Jennie Dollard Date: December 6, 1994  
DEQ Regional Office: NRO Revised: January 23, 1995

5. Receiving Waters Classification: SEE ITEM 13

Receiving Stream: Oronoco Bay, Hunting Creek, Hooffs Run  
Basin: Potomac River  
Subbasin: Potomac River  
Section: 6, 7 Class: II, III  
Special Standards: b, f

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

<input checked="" type="checkbox"/> State Water Control Law	<input type="checkbox"/> EPA Guidelines
<input checked="" type="checkbox"/> Clean Water Act	<input checked="" type="checkbox"/> Water Quality Standards
<input checked="" type="checkbox"/> Permit Regulation (SWCB VPDES Regulation)	<input checked="" type="checkbox"/> Other (explain)
<input checked="" type="checkbox"/> EPA NPDES Regulation (Federal Register)	<u>CSO Control Policy</u>

7. Licensed Operator Requirements: None

8. Reliability Class: N/A

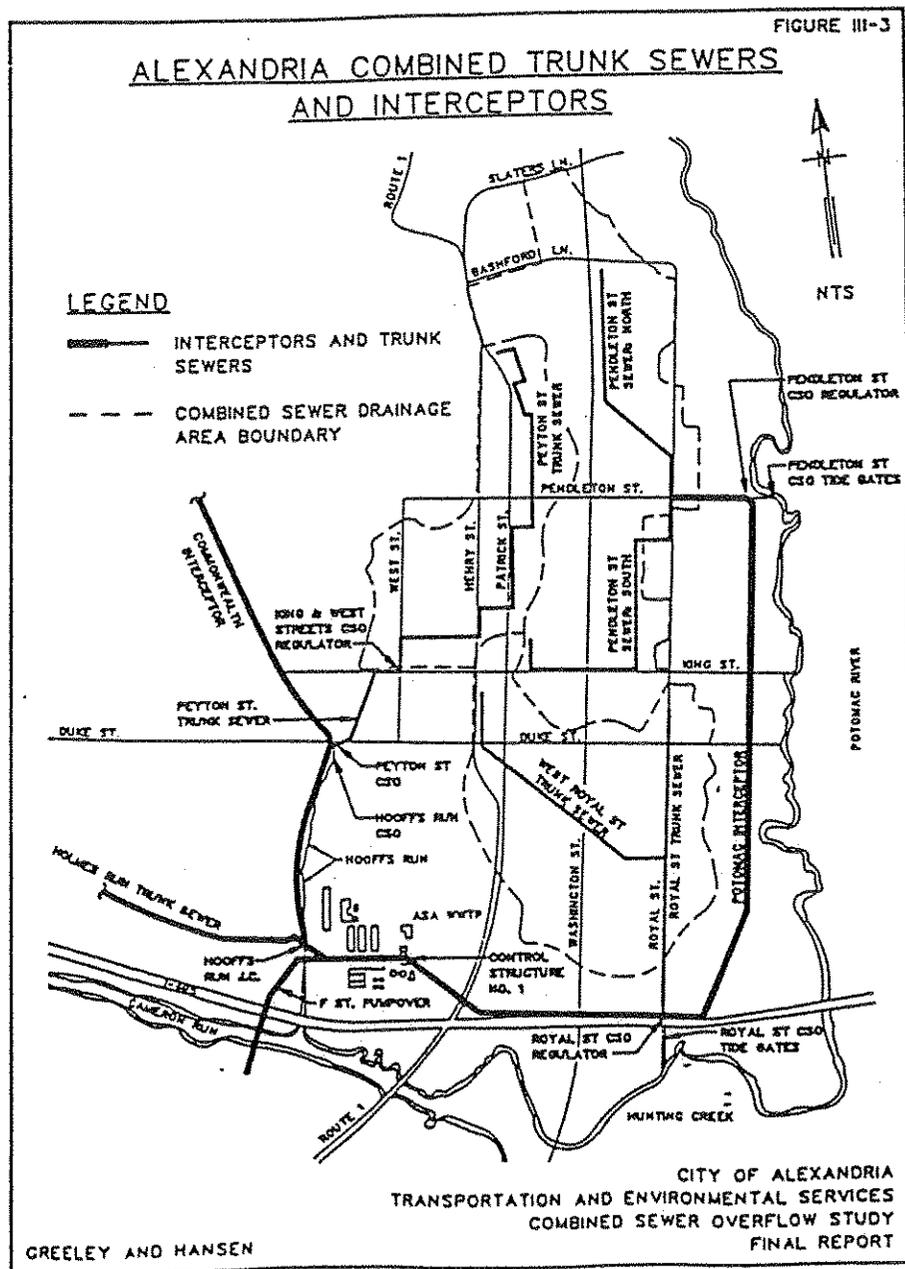
9. Permit Characterization:

<input type="checkbox"/> Private	<input type="checkbox"/> Effluent Limited
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited
<input type="checkbox"/> State	<input type="checkbox"/> Toxics Monitoring Program Required
<input type="checkbox"/> POTW	<input type="checkbox"/> Pretreatment Program Required
<input checked="" type="checkbox"/> Municipal	<input checked="" type="checkbox"/> Possible Interstate Effect
	<input type="checkbox"/> Compliance Schedule Required
	<input type="checkbox"/> Interim Limits in Permit
	<input type="checkbox"/> Interim Limits in Other Document

10. Attach a Schematic of Wastewater Treatment System(s), and provide a general description of the production cycle(s) and activities of the facility.

Alexandria's combined sewer system serves the area of the city bounded by the railroad to the west, the Potomac River to the east, I-95 to the south and Slater's Lane to the north. The area totals approximately 540 acres. Land use within the combined sewer service area is primarily residential and commercial. A diagram of the combined sewer system (Figure III-3 from the Alexandria CSO Study Final Report) is reproduced below. Dry weather flows are routed to the Alexandria Sanitation Authority wastewater treatment plant. During wet weather, combined sanitary wastewater and storm water runoff in excess of the sewer capacity will overflow to State waters in four locations. The City manages a street sweeping and sewer flushing program to reduce the amount of accumulated materials discharged to State waters during overflow events. Outfalls 001 and 002 are inspected once per week, and any debris accumulated within the tide gate chamber is removed. A coarse screen has been installed in the tide gate chamber of Outfall 002.

FIGURE 1: ALEXANDRIA COMBINED SEWER SYSTEM



11. Discharge(s) Location Description: Provide USGS Topo which indicates the discharge location, significant dischargers to the receiving stream, water intakes, and other items of interest.

Name of Topo: USGS Topographic Map - Alexandria quadrangle (See Figure 2)

Significant Discharges

Alexandria Sanitation Authority STP (VPDES Permit No. VA0025160)  
 Receiving Stream: Hunting Creek  
 Major, municipal discharge

Virginia Concrete Company (VPDES Permit No. VA0075108)  
 Receiving Stream: Hooffs Run  
 Minor, industrial discharge

Ambient Water Quality Monitoring Station  
 Hunting Creek at G.W. Parkway (HUT)

12. Discharge Description:

<u>Outfall</u>	<u>Source</u>	<u>Treatment</u>	<u>Flow (Annual Avg.)</u>	<u>No. of Overflow Events</u>
001	CSO	None	48.2 MG	88
002	CSO	Coarse Screen	51.5 MG	74
003	CSO	None	14.7 MG	29
004	CSO	None		0

\*MG = million gallons

The City of Alexandria conducted a sewer system flow monitoring and sampling program during 1991 and 1992. A complete description of the program is included as Chapter IV of the Alexandria CSO Study Final Report. Sewer system flow data and rainfall data were used to calibrate the Sewer Overflow Model (SOM). The SOM calibration and predicted overflow model results are discussed in Chapter V of the Alexandria CSO Study Final Report. The annual average flows and number of overflow events for each combined sewer overflow presented above were estimated using the calibrated SOM and representative six-year rainfall period. The annual average overflow volume for each source is approximately 40 - 50% of the volume initially estimated on the City's permit application.

13. Receiving Waters Information: Attach any memoranda or other information which helped to develop permit conditions, i.e., PReP complaints, special water quality studies, biological and/or chemical data, etc..

Receiving Waters Classification: Potomac River Basin, Potomac River Subbasin

<u>Receiving Stream</u>	<u>Section</u>	<u>Class</u>	<u>Special Standards</u>	<u>Outfall(s)</u>
Oronoco Bay	6	II	b, f	001
Hunting Creek	6	II	b, f	002
Hooffs Run	7	III	b	003, 004

Class II waters are estuarine. Class III waters are non-tidal waters located within the Coastal and Piedmont zones. Water quality standards for pH and dissolved oxygen are the same for these two classes of receiving streams. The water quality standard for pH is a range of 6.0 - 9.0. The water quality standards for dissolved oxygen are 4.0 mg/l absolute minimum and 5.0 mg/l daily average minimum. Class III waters also have a water quality standard for temperature (32°C maximum).

Special Standard b (Potomac Embayment Standards) establishes performance standards for sewage treatment plant effluents discharging into Potomac River embayments in Virginia from Jones Point to the Route 301 Bridge. The Potomac Embayment Standards are not applicable to the discharge of combined sanitary wastewater and storm water from combined sewer overflows.

Special Standard f (Potomac Enforcement Conference) establishes load limitations and performance requirements for specific wastewater treatment facilities. The Potomac Enforcement Conference limitations are not applicable to the combined sewer overflows.

Ambient water quality monitoring data: There were no ambient water quality monitoring data available for Hooffs Run. The Department of Environmental Quality monitors water quality in Hunting Creek at the George Washington Parkway on a monthly basis. Temperature, pH, fecal coliform, and dissolved oxygen data are plotted in the following figures.

FIGURE 3

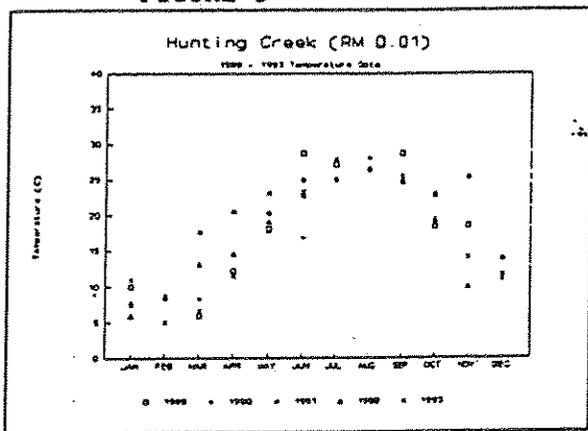


FIGURE 4

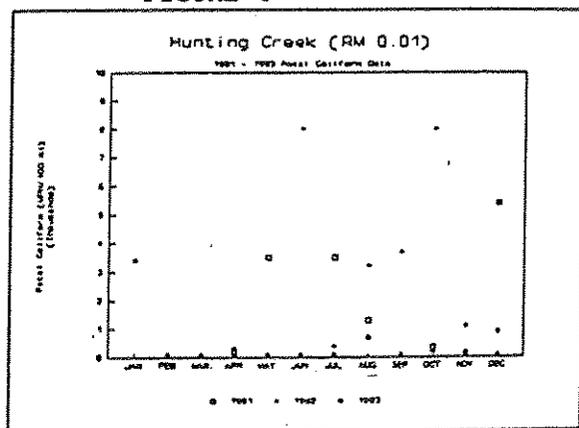


FIGURE 5

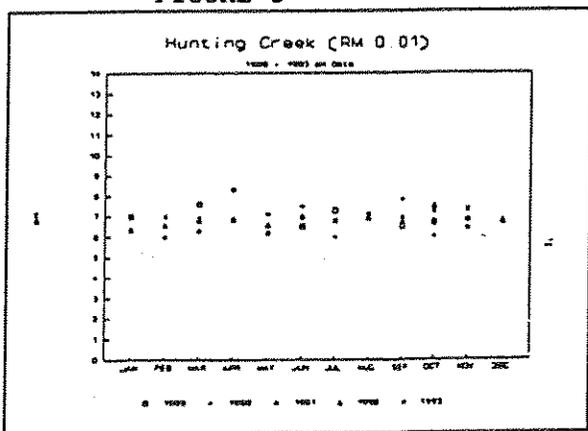
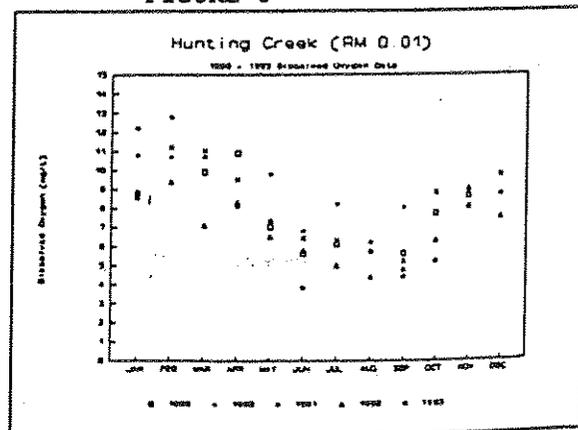


FIGURE 6



The Virginia Water Quality Assessment for 1994, 305(b) Report to EPA and Congress (April 1994) listed 1.15 square miles of the Hunting Creek estuary as partially supporting the aquatic life use designation based on the available ambient water quality monitoring data. The Alexandria Sanitation Authority Sewage Treatment Plant and the City of Alexandria Combined Sewer Overflows are considered point sources of pollutants impacting the waterbody. Impacts to the Potomac River from the Pendleton Street overflow were not assessed since the Potomac River is not Virginia waters.

Though ambient water quality data for Hooffs Run are not available, a review of the Pollution Response reports indicates that wet weather overflows occurred from the combined sewer system into Hooffs Run during periods of significant rainfall [See Alexandria Sanitation Authority notification letters dated March 28, 1989; May 9, 1989; October 24, 1990; and January 15, 1991.] Several dry weather overflows were also reported (PC#83-304 and ASA 9/24/91 notification letter) and determined to be caused by line blockages. In September 1991, a monthly preventive maintenance program (high pressure cleaning) was initiated for the line from the city sewer at Duke Street into the Commonwealth Interceptor to prevent additional problems with dry weather overflows.

14. Effluent Screening: The 1991-1992 sewer system flow monitoring and sampling program included sampling of combined sewer overflows at two locations. Samples were collected from the Pendleton Street Regulator (001) and the King and West Street Regulator (003) from fifteen separate storm events. Samples were collected throughout the first three hours of an overflow event. Samples were collected every 10 minutes for the first hour, every 20 minutes for the second hour and every 30 minutes for the third hour. Characteristics of the storm events sampled are summarized below:

TABLE 1: CSO Storm Event Characteristics

Date(s) of Storm	Total Rainfall (in.)	Duration (hrs.)	Time since prior storm event (days)
5/6/91	0.71	2	0.25
5/17/91	0.32	1	3.04
5/27/91	0.39	1	8.42
7/2/91	0.32	2	9.25
3/6-7/92	0.88	19	9.54
3/25-26/92	1.85	24	3.21
4/16/92	0.08	2	4.79
4/21/92	0.15	2	2.66
4/21-22/92	1.38	20	0.29
4/22/92	0.07	1	0.25
4/24/92	0.33	2	2.00
4/26/92	0.64	10	1.46
5/7-8/92	0.90	22	11.25
5/15/92	0.43	6	6.83
5/30-31/92	1.75	23	3.63

Samples were analyzed for Five-Day Biochemical Oxygen Demand (BOD<sub>5</sub>), Total Suspended Solids (TSS), Temperature, pH, Hardness, Total Phosphorus, Orthophosphate Phosphorus, Total Nitrogen, Ammonia Nitrogen, Total Kjeldahl Nitrogen, Inorganic (Nitrite + Nitrate) Nitrogen, Chemical Oxygen Demand (COD), Total Organic Carbon (TOC), Oil & Grease, Turbidity, Fecal Coliform, Fecal Streptococcus, Cyanide, Phenol, Mercury, Silver, Cadmium, Chromium, Copper, Lead, Nickel, and Zinc. Metals analyses for both the extractable (total) and soluble (dissolved) fractions were completed. The sampling data are presented in Chapter IV of the Alexandria CSO Study Final Report. Sampling results are summarized on the following page.

TABLE 2: CSO Pollutant Characteristics

Pollutant	King & West Street Regulator			Pendleton Street Regulator		
	Average	Minimum	Maximum	Average	Minimum	Maximum
BOD <sub>5</sub> (mg/l)	51.2	3.5	126	46.6	11.0	313
TSS (mg/l)	150.9	35	492	110.5	14	608
Total P (mg/l)	1.20	0.20	4.64	1.03	0.39	4.36
Ortho-P (mg/l)	0.30	0.08	1.37	0.29	0.08	0.86
Total N (mg/l)	10.14	3.33	59.5	8.79	2.62	50.8
TKN (mg/l)	9.37	2.86	58.6	8.30	2.11	50.6
NH <sub>3</sub> -N (mg/l)	1.75	0.36	5.11	1.17	0.37	2.85
NO <sub>2</sub> +NO <sub>3</sub> -N (mg/l)	0.77	0.01	2.09	0.49	0.01	0.88
COD (mg/l)	156.7	ND	571	154.0	36.2	704
TOC (mg/l)	20.5	6.4	51.0	17.8	5.6	77.2
O&G (mg/l)	13.0	2.0	23.0	10.7	4.3	38.0
Turbidity (NTU)	34.9	15	70	26.3	10	65
Fecal Coliform (MPN/100 ml)		130,000	> 1.6x10 <sup>6</sup>		80,000	> 160,000
Fecal Strep (MPN/100 ml)		30,000	> 1.6x10 <sup>6</sup>		13,000	240,000
Mercury (µg/l)	2.7	ND (0.2)	7.3	15.4	ND (0.2)	57
Phenol (µg/l)	8.9	ND (5)	25	-----	28	28
Cadmium (ug/l)						
- total	-----	ND (2)	15	-----	ND (2)	20
- dissolved	-----	ND (2)	4	-----	ND (2)	3
Chromium (ug/l)						
- total	-----	ND (5)	99	-----	ND (5)	138
- dissolved	-----	ND (5)	54	-----	ND (5)	96
Copper (ug/l)						
- total	56.3	28	135	79.3	26	325
- dissolved	13.1	ND (10)	31	17.5	ND (10)	60
Lead (ug/l)						
- total	-----	ND (50)	365	-----	ND (50)	430
Zinc (ug/l)						
- total	296	110	680	328	127	1410
- dissolved	85	22	217	92	30	256

Cyanide, dissolved silver, dissolved nickel and dissolved lead were not detected in any of the stormwater samples. Total recoverable silver was detected in only one sample (out of 81 analyses). Total recoverable nickel was detected in only eight samples (out of 82 analyses).

The dissolved metals data were used to evaluate potential toxic impacts to aquatic life. The impact of Alexandria's CSOs on dissolved oxygen conditions, nutrient enrichment, and fecal coliform levels within the receiving streams was also evaluated.

Since the combined sewer overflow discharges are intermittent and of short duration, the aquatic life chronic toxicity and human health standards for toxic pollutants are not applicable. Wasteload allocations for the dissolved metals considered present in the combined sewer overflows (Cd, Cr(III), Cu, and Zn) were developed from the aquatic life acute toxicity standards. During a combined sewer overflow event, it was assumed that the overflow constitutes less than 50% of the combined instream flow. The acute wasteload allocations were set equal to two times the acute water quality standard to protect against lethality within the initial dilution zone. Based on the City of Alexandria's CSO pollutant characterization data, the Alexandria CSO's exceed the allowable wasteload allocation for copper and zinc within Hooff's Run. The CSO's are within the allowable wasteload allocations for the Potomac embayments. The wasteload allocation analyses are included as Attachment 1.

Chapter V of the Alexandria CSO Study Final Report describes the two water quality models used for evaluating impacts to the Potomac River and Hunting Creek embayments from the combined sewer overflows. Impacts to the Potomac River were estimated using the Dynamic Estuary Model (DEM). DEM was chosen because it has been used to model Potomac River water quality on other projects, particularly the District of Columbia CSO Study (O'Brien & Gere, 1983), and the Potomac River Dissolved Oxygen Study (Metropolitan Washington Area Council of Governments, 1987). Impacts to the Hunting Creek embayments were estimated using the Tidal Prism Model developed by the Virginia Institute of Marine Science. TPM has been applied to the embayment, most recently in a 1987 Wasteload Allocation Study for the Hunting Creek Embayment conducted by the Northern Virginia Planning District Commission.

Alexandria CSO's were predicted to cause less than a 0.1 mg/l depression in dissolved oxygen in both the Potomac River and Hunting Creek embayment. This incremental effect is negligible compared to the natural fluctuation of dissolved oxygen levels within surface waters. Point source loads of total phosphorus (358,000 lbs/yr) and total nitrogen (9,252,000 lbs/yr) were obtained from Actions and Options for Virginia's Potomac Basin Tributary Nutrient Reduction Strategy (October 1994). Nutrient contributions from the Alexandria CSO's were estimated using the annual average CSO volume predicted by the Sewer Overflow Model and the average nutrient concentrations observed in the overflows during the sampling program. Nutrient loads from the Alexandria CSO's (1,000 lbs/yr phosphorus; 9000 lbs/yr nitrogen) represent less than 0.5% of the estimated Virginia point source annual loads to the Potomac embayments. The Tidal Prism Model predicted that chlorophyll-a concentrations within the Hunting Creek embayment were virtually the same with or without the Hooffs Run and Royal Street combined sewer overflows.

The Pendleton Street CSO into Oronoco Bay was predicted to exceed a fecal coliform count of 1,000 colonies per 100 ml less than 1% of the time in the Potomac River off of Oronoco Bay. The Hooffs Run and Royal Street overflows were predicted to exceed a fecal coliform count of 1,000 colonies per 100 ml approximately 3.5% of the time at both the confluence of Hooffs Run with Hunting Creek and at the mouth of the Hunting Creek embayment. Due to the intermittent and short duration of the combined sewer overflows, it is likely that the monthly average fecal coliform standard (MPN = 200/100 ml as a geometric mean) would be maintained. DEQ interprets the fecal coliform water quality standard to mean that both the monthly average and maximum values would have to be exceeded for the standard to be violated. The maximum value would only be exceeded under wet weather conditions and as such would not impair any beneficial use of the waterbody.

15. Effluent Limitations:

No discharge during dry weather flow conditions: Dry weather flow is defined as the flow in a combined sewer that results from domestic sewage, industrial wastes, and groundwater infiltration, with no contribution from stormwater runoff or stormwater induced infiltration. CSO discharges during dry weather are primarily discharges of raw, untreated sewage. The Combined Sewer Overflow Control Policy issued by EPA's Office of Water (April 1994) requires the prohibition of dry weather discharges from CSO's.

Maximize flow to the WWTP: The Combined Sewer Overflow Control Policy requires maximization of flow to the POTW as a minimum technology-based limitation. Maximizing flow to the POTW during wet weather events minimizes the volume of untreated sewage discharged to State waters.

Maximize use of the combined sewer system for storage: The Combined Sewer Overflow Control Policy requires maximization of the combined sewer system for storage as a minimum technology-based limitation.

Minimize impacts from nondomestic discharges: The Combined Sewer Overflow Control Policy requires the review and modification of pretreatment requirements to assure CSO impacts due to nondomestic sources are minimized. The pretreatment program for the Alexandria STP is managed by the Alexandria Sanitation Authority. There are currently no significant industrial users located within the City's combined sewer service area. A statement simply requiring the City to minimize the impacts from nondomestic sources on combined sewer overflows will be included to address the CSO Control Policy requirement.

Combined sewer system operations & maintenance: The Combined Sewer Overflow Control Policy requires proper operation and maintenance for the sewer system and combined sewer overflows as a minimum technology-based limitation. The three items specifically mentioned within the permit represent DEQ's opinion of additional minimum technology-based requirements. Proper maintenance of the overflow regulators is essential to preventing dry weather overflows. Floating materials and bulk solids present in CSO discharges are objectionable for aesthetic reasons. The CSO Control Policy lists the control of solid and floatable materials in CSO discharges as a minimum technology-based limitation that should be included in all permits for CSO discharges. EPA Region III guidance suggests that floatable materials may be minimized by regular street cleaning and installation of screens on CSO's. Regular street cleaning during dry weather periods will remove street debris which otherwise would be carried through the combined sewer system during a storm event. Screening of the CSO discharges would physically prevent the discharge of bulk solids accumulated within the collection system that are flushed during a storm event. The City of Alexandria has already implemented a street cleaning and flushing program to reduce the amount of pollutants discharged during overflow events.

Annual report: Information on the predicted number and duration of overflow occurrences, as well as information on measured storm events predicted to result in overflows, will be used to evaluate the City's progress in controlling CSO discharges. The Department may also use this information to reevaluate water quality impacts to the receiving streams. Visual verification of overflow occurrences, to the extent practicable, is also required. The annual report must also document the City's compliance with the minimum technology-based requirements for CSO control.

16. Special Conditions: Give a brief rationale for any special conditions contained in the permit.

**Combined Sewer Overflow Control Program:** The management program requires the selection and implementation of a final control option designed to comply with water quality standards and minimum technology requirements. The schedule for selecting and implementing a long-term control option is based on the City's own schedule submitted as part of their CSO Study plan and EPA's CSO control policy. The U.S. EPA CSO Control Policy states that permittees should develop and submit a long-term CSO control plan as soon as practicable, but generally within two years after the effective date of the NPDES permit provision. The long-term CSO control plan design criteria are based on EPA's "presumption" approach for determining compliance with the water quality-based requirements of the Clean Water Act. The permittee is also provided the option to demonstrate that their selected control program, though not meeting the criteria of the "presumption" approach, is adequate to meet the water quality-based requirements of the Clean Water Act.

**Certificate to Operate/Certificate to Construct:** The permit requires that the permittee obtain a Certificate to Construct (CTC) and a Certificate to Operate (CTO) prior to constructing and operating wastewater collection or treatment facilities, respectively. The requirement is consistent with Section 2.10 of the Sewerage Regulations (effective February 1, 1977), adopted jointly by the Department of Health and State Water Control Board.

**Reopener Clause:** This special condition allows for permit modification (or revocation and reissuance) should EPA or the Department of Environmental Quality establish additional minimum technology-based control requirements for combined sewer overflows. The permit may also be modified (or revoked and reissued) to incorporate water quality-based limitations based on the results of the water quality impacts assessment, or to require implementation of the CSO controls identified in the long-term CSO control plan adopted by the City.

**Prohibition of new combined sewer construction:** This special condition prohibits the construction of combined sewers outside the existing combined sewer service area. New sanitary connections to combined sewers are not prohibited, as long as the new connections will not cause overflows during dry weather flow conditions.

**Sewer Ordinance Review:** The EPA Region III Guidance on NPDES Permit Conditions for CSO Control Measures requires that the municipality's sewer use ordinance ensure the prohibition of (1) dry weather overflows, (2) construction of new combined sewers, (3) inflow sources into sanitary sewers tributary to the combined system, and (4) motor oil and excessive grease into the sewer system. The City has recently submitted their sewer ordinance for review under the Board's pretreatment program. Staff will review the ordinance with respect to the above four prohibited items. If modifications to the ordinance are necessary, the permittee will be notified in writing. The permittee will have 60 days from the date of notification to submit a revised draft sewer ordinance. Staff believe that 60 days is adequate for the city to prepare a revised sewer ordinance if requested. Note that the sewer ordinance revision need only be completed and submitted if requested by the Department of Environmental Quality Northern Regional Office.

**Pollution Prevention Program:** The EPA CSO Control Policy lists the development and implementation of a pollution prevention program as one of the nine minimum controls for combined sewer systems. The program should focus on reducing the impact to receiving waters from CSO discharges. The U.S. EPA CSO Control Policy requires that the nine minimum controls be implemented, and that the permitting authority receive documentation that the controls are implemented no later than January 1, 1997.

**Public Notification of CSO Events:** Public notification of CSO occurrences and impacts is another one of the nine minimum controls listed in the April 1994 EPA CSO Control Policy. The permittee will be required to develop and implement a public notification process no later than January 1, 1997. The public notification process must include a mechanism to alert persons of the occurrence of CSOs and a system to determine the nature and duration of conditions that are potentially harmful for users of receiving waters due to CSOs.

**In-Stream Monitoring Program:** Based on a comparison of CSO discharge data with the in-stream water quality standards, the Hooffs Run CSOs appear to exceed the water-quality based wasteload allocations for copper and zinc. However, this comparison does not account for the site-specific wet weather impacts from CSOs. Hooffs Run also receives a large amount of urban runoff from upstream drainage areas. The permittee will be allowed to develop an in-stream monitoring program for copper and zinc, to include upstream and downstream monitoring of Hooffs Run during overflow events. The Hooffs Run monitoring plan must be submitted within three months of the permit effective date to the Northern Regional Office for review and approval. The permittee must implement the Hooffs Run monitoring program within three months of DEQ approval.

**Post-Construction Monitoring Program:** The permittee will also be required to develop a post-construction (post-implementation of long-term CSO control plan) water quality monitoring program. The purpose of the water quality monitoring program will be to verify compliance with water quality standards and the protection of receiving stream beneficial uses, as well as to ascertain the effectiveness of the CSO controls. The water quality monitoring program must be submitted to the Northern Regional Office for review and approval along with the final report identifying the long-term CSO control plan selected by the City.

**Documentation of Implementation of Technology-Based Controls:** The U.S. EPA CSO Policy (April 1994) specified nine minimum technology-based controls to be implemented by all combined sewer systems. These nine controls are included in the proposed VPDES permit under Part I.A.2-7 and Part I.C.5-6. The CSO Policy also requires the permittee to provide documentation of implementation of these nine controls to the permitting authority no later than January 1, 1997.

17. List the type and quantity of wastes, fluids, or pollutants being stored at this facility. Briefly describe the storage facilities and list, if any, measures taken to prevent the stored material from reaching State waters.

The combined sewer collection system conveys wastewater to the wastewater treatment facility. There is no material storage, other than sewer carrying capacity, within the collection system.

18. Table VI is to be used to record changes in the permit (1) from the previously issued permit and/or (2) during the permit processing period.

The City of Alexandria does not currently have a permit for the combined sewer overflows. All limitations, monitoring requirements, and special conditions were developed during the permit issuance process.

ATTACHMENT 1

EVALUATION OF METALS TOXICITY IN ALEXANDRIA COMBINED SEWER OVERFLOWS

The City of Alexandria's sewer system sampling program showed that cadmium, copper, chromium, and zinc were present in the combined sewer overflows. The Virginia Department of Environmental Quality has established water quality standards for these pollutants. Only the water quality standards for the protection of aquatic life from acutely toxic effects are applicable since the CSO discharges are intermittent. The water quality standards for these metals are dependent on receiving stream hardness. A default hardness value of 50 mg/l as CaCO<sub>3</sub> was assumed for the Class III receiving stream (Hooffs Run). A hardness value of 100 mg/l as CaCO<sub>3</sub> was assumed for the Class II receiving streams (Oronoco Bay and Hunting Creek). Ambient hardness data available for Hunting Creek and the Potomac River show mean hardness values approximately equal to 100 mg/l as CaCO<sub>3</sub>. The applicable water quality standards are:

<u>Pollutant</u>	<u>Hooffs Run</u>	<u>Potomac River and Hunting Creek</u>
Cadmium	1.79 µg/l	3.92 µg/l
Chromium (III)	984 µg/l	1736 µg/l
Copper	9.22 µg/l	17.7 µg/l
Zinc	65 µg/l	117 µg/l

Since the receiving stream is assumed to be stream dominated during overflow events (instream waste concentration < 50%), the allowable wasteload allocation for the overflows is limited to two times the water quality standard to guard against lethality to aquatic organisms in the initial mixing zone. The dissolved metals data provided from the City's sampling program were evaluated to determine if the allowable wasteload allocations were likely to be exceeded. Levels of zinc and copper present in the combined sewer overflows exceed the allowable wasteload allocation for Hooffs Run. The wasteload allocations for copper and zinc in Hunting Creek and Oronoco Bay are not exceeded. The wasteload allocations for cadmium and chromium are not exceeded in Hooffs Run, Hunting Creek, and Oronoco Bay. The data analysis results are attached.









The statistics for Chromium (III) are:

Number of values = 82  
Quantification level = 5  
Number ( quantification = 62  
Expected value = 9.453113  
Variance = 281.0556  
C.V. = 1.77346  
97th percentile = 45.59626  
Statistics used = delta lognormal

The WLAs for Chromium (III) are:

Acute WLA = 1970  
Chronic WLA = ----  
Human Health WLA = ----

The limits are based on acute toxicity and 1 samples/month.

NO LIMIT NEEDED FOR Chromium (III)

DATA

52

54

7

26

9

7

6

12

(5

(5

(5

(5

(5

(5

6

5

(5

(5

(5

(5

(5

(5

(5

(5

(5

(5

96

75

60

15

5

11

8

10

(5

(5

(5

(5

(5

(5

(5

(



Chromium (III)

The statistics for Chromium (III) are:

Number of values = 82  
Quantification level = 5  
Number ( quantification = 62  
Expected value = 9.453113  
Variance = 281.4556  
C.V. = 1.77346  
97th percentile = 45.59626  
Statistics used = delta lognormal

The WLAs for Chromium (III) are:

Acute WLA = 3470  
Chronic WLA = ----  
Human Health WLA = ----

The limits are based on acute toxicity and 1 samples/month.

NO LIMIT NEEDED FOR Chromium (III)

DATA

52  
54  
7  
26  
9  
7  
6  
12  
<5  
<5  
<5  
<5  
<5  
<5  
6  
5  
<5  
<5  
<5  
<5  
<5  
<5  
<5  
<5  
<5  
96  
75  
60  
15  
5  
11  
8  
10  
<5  
<5  
<5  
<5  
<5  
"



The statistics for Copper are:

Number of values = 82  
Quantification level = 10  
Number ( quantification) = 26  
Expected value = 16.37535  
Variance = 57.69638  
C.V. = .4638565  
97th percentile = 34.81181  
Statistics used = delta lognormal

The WLAs for Copper are:

Acute WLA = 18.4  
Chronic WLA = ----  
Human Health WLA = ----

The limits are based on acute toxicity and 1 samples/month.

Maximum daily limit = 18.4  
Average monthly limit = 18.4

It is recommended that only the maximum daily limit be used.

DATA

12  
13  
16  
16  
17  
(10  
(10  
(10  
(10  
31  
18  
13  
16  
20  
28  
25  
18  
21  
21  
21  
22  
8  
8  
6  
7  
6  
7  
7  
8  
9  
6  
9  
10  
22  
9  
14  
23  
10  
10



# Copper

## The statistics for Copper are:

Number of values = 82  
Quantification level = 10  
Number ( quantification) = 26  
Expected value = 16.37535  
Variance = 57.69638  
C.V. = .4638565  
97th percentile = 34.81181  
Statistic used = delta lognormal

## The MLAs for Copper are:

Acute WLA = 35.4  
Chronic WLA = ----  
Human Health WLA = ----

The limits are based on acute toxicity and 1 samples/month.

## NO LIMIT NEEDED FOR Copper

### DATA

12  
13  
16  
16  
17  
<10  
<10  
<10  
<10  
31  
18  
13  
16  
20  
28  
25  
18  
21  
21  
21  
22  
8  
8  
6  
7  
6  
7  
7  
8  
9  
6  
9  
10  
22  
9  
14  
23  
10  
18  
24  
..

14  
16  
12  
10  
25  
36  
37  
23  
20  
(10  
26  
20  
32  
60  
20  
12  
23  
18  
16  
14  
10  
12  
16  
12  
10  
4  
35  
18  
12  
9  
16  
18  
7  
8  
4  
4  
12  
12

The statistics for Zinc are:

Number of values = 82  
Quantification level = 20  
Number ( quantification = 0  
Expected value = 88.48971  
Variance = 1954.611  
C.V. = .4996172  
97th percentile = 192.3672  
Statistic used = lognormal

The WLAs for Zinc are:

Acute WLA = 130  
Chronic WLA = ----  
Human Health WLA = ----

The limits are based on acute toxicity and 1 samples/month.

Maximum daily limit = 130  
Average monthly limit = 130

It is recommended that only the maximum daily limit be used.

DATA

33  
22  
37  
48  
49  
57  
65  
63  
51  
111  
94  
80  
125  
144  
238  
70  
34  
87  
217  
158  
141  
68  
73  
58  
67  
56  
64  
85  
52  
47  
105  
96  
88  
110  
58  
108  
141  
60  
174

37  
35  
116  
56  
47  
64  
63  
102  
116  
112  
120  
117  
75  
256  
153  
205  
110  
67  
96  
68  
64  
54  
61  
53  
78  
76  
61  
30  
138  
92  
88  
138  
91  
105  
62  
77  
63  
70  
107  
78

# Zinc

The statistics for Zinc are:

Number of values	=	82
Quantification level	=	20
Number ( quantification	=	0
Expected value	=	88.48971
Variance	=	1954.611
C.V.	=	.4996172
97th percentile	=	192.3672
Statistics used	=	lognormal

The WLAs for Zinc are:

Acute WLA	=	234
Chronic WLA	=	----
Human Health WLA	=	----

The limits are based on acute toxicity and 1 samples/month.

NO LIMIT NEEDED FOR Zinc

## DATA

33  
22  
37  
48  
49  
57  
65  
63  
51  
111  
94  
86  
125  
144  
238  
70  
34  
87  
217  
158  
141  
68  
73  
58  
67  
56  
64  
85  
52  
47  
105  
96  
88  
110  
58  
108  
141  
60  
124

115  
50  
47  
64  
63  
102  
116  
112  
120  
117  
75  
256  
153  
205  
110  
67  
96  
68  
64  
54  
61  
53  
78  
76  
61  
30  
138  
92  
88  
138  
91  
105  
62  
77  
63  
70  
107  
78

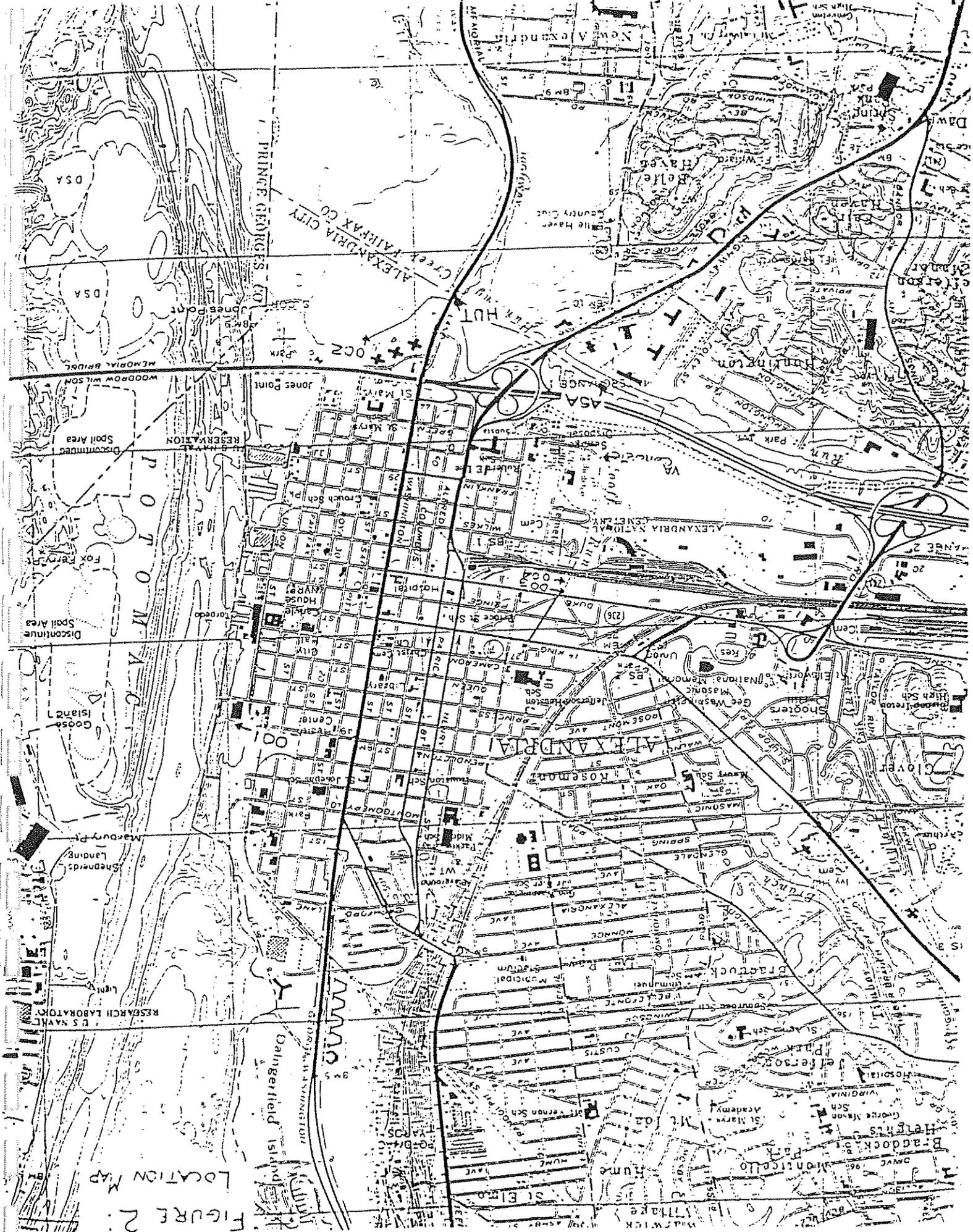


FIGURE 2:  
LOCATION MAP

CITY OF ALEXANDRIA, VIRGINIA  
DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES

CSO Long Term Control Plan Summary  
and  
Post-Construction Monitoring

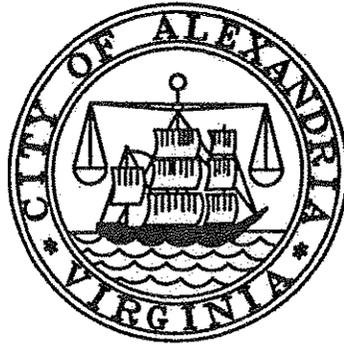
APPENDIX NO. 2

Public Meeting Responsiveness Summary

Greeley and Hansen  
January 1999

City of Alexandria, Virginia  
Transportation and Environmental Services  
Alexandria, Virginia

**Combined Sewer Overflow Program  
Public Participation Program**



**Responsiveness Summary For  
Public Meeting No. 2  
February 10, 1998**

**March, 1998**

Greeley and Hansen  
8905 Presidential Parkway  
Upper Marlboro, MD 20772

City of Alexandria  
Transportation and Environmental Services  
Alexandria, Virginia

Combined Sewer Overflow Program  
Public Participation Program

*Responsiveness Summary For  
Public Meeting No. 2  
February 10, 1998*

Greeley and Hansen  
March 1998

**1. INTRODUCTION**

The City of Alexandria, Virginia initiated a Combined Sewer Overflow (CSO) Study for its Combined Sewer System (CSS) in August 1990. As part of the CSO Study, the second of two scheduled public meetings was held on Tuesday, February 10, 1998. The purpose of the meeting was to provide the public with an opportunity to review recent studies and background information, and to obtain public comment on alternatives being considered to improve the City's CSO Program.

**2. GENERAL INFORMATION ON THE CSO STUDY**

The principal objectives of the Alexandria Combined Sewer Overflow Study are to develop a plan to correct or minimize, to the extent practicable, the aesthetic, public health, and water quality impacts on the Potomac River caused by Alexandria's combined sewer overflows.

The following tasks comprise the Work Plan, which was developed to meet the objectives of the study:

- National Pollutant Discharge Elimination System Permit (NPDES) Development for Alexandria CSOs
- CSO and Sewer System Monitoring
- Assessment of CSO Impacts
- Development and Evaluation of Engineering Alternatives
- Final Report
- Public Participation Program

The first public meeting was held on February 28, 1991. It was an introductory meeting designed to present the background, objectives, work plan and timetable of the study and to obtain public comments. Since the first public meeting, the City has completed many items of the work plan, including the following: issuance of a VPDES Permit by DEQ in April 1995, CSO and Sewer System Monitoring, and Assessment of CSO Impacts. In addition, the City has developed preliminary and final alternatives for the City's CSO Control Plan. Public Meeting No. 2 was conducted at this stage to obtain public comment on the alternatives under consideration.

### **3. NOTIFICATION AND INFORMATION AVAILABLE FOR PUBLIC MEETING NO. 2**

The following notifications and information were made available prior to the public meeting. Copies of the newspaper advertisement and Internet web page are included in Appendix A.

- a. Newspaper: Public Meeting No. 2 was advertised in a legal notice placed in the Alexandria Gazette on January 22, 1998.
- b. Internet: A press release advertising Public Meeting No 2 was placed on the City's Web site (<http://ci.alexandria.va.us>).
- c. Public Information Depository: An Information Document was prepared and placed on reserve at the following Alexandria public libraries prior to the public meeting:
  - Barrett Library at 717 Queen Street
  - Burke Library at 4701 Seminary Road
  - Duncan Library at 2501 Commonwealth Avenue

The Information Document included the following documents:

- "Program Review Document No. 4 - Development of Preliminary Alternatives and Selection of Final Alternatives"
- "CSO System Annual Report No. 1 for 1995"
- "CSO System Annual Report No. 2 for 1996"
- "VPDES Permit and Fact Sheet"

Information concerning the public information depository was included in the legal notice.

#### **4. MEETING PRESENTATION AND ATTENDANCE**

Mr. Larry Gavan, City of Alexandria Environmental Scientist, began the meeting with introductory statements and an outline of the presentation. Mr. Ronald E. Bizzarri of Greeley and Hansen described the combined sewer system, the background of the CSO Program, CSO control measures implemented by the City, and alternative enhancements under consideration by the City.

A total of five people, including the presenters noted above, attended the public meeting. The attendance list and the presentation handout are attached in Appendix B.

#### **5. QUESTIONS RAISED BY THE PUBLIC**

Question No. 1: How far does the CSO area extend west of Route 1?

Response: North of King Street, the CSO drainage area extends to approximately West Street. South of King Street, the CSO area extends to approximately Henry Street.

Question No. 2: How is sewer flushing done?

Response: Roads are flushed using trucks which blow water at high pressure onto the road surface to move materials toward catch basins. Catch basins remove many of the floatables in the flushing water. The flushing water and any materials not retained by the catch basins are conveyed by the sewer system to the wastewater treatment plant (WWTP) for treatment. Sewers are flushed using specialized equipment designed to reach into the sewers themselves via manholes. Flushing of both roads and sewers is done during dry weather conditions so the WWTP has adequate capacity to treat the flushing water.

Question No. 3: How does the City review contributors to the Combined Sewer System (CSS)? Does the City look at the number of new development units?

Response: The City looks at new development plans and requests for building permits to determine if they will affect the CSS. This has occurred since approximately 1991 when the City began the Combined Sewer Overflow Study. Impacts on the CSS are more a function of the difference between the impervious area before and after development as opposed to the number of housing units. Increases in impervious area tend to increase runoff, thereby increasing the amount of rainwater the CSS must handle. Generally, developments in the CSS which would increase runoff are required to install storm water controls such as detention basins to reduce their impact on the CSS.

Question No 4:

Does the tidal nature of the Potomac River affect the water quality in the area?

Response:

In general, the tidal activity promotes mixing which tends to improve water quality in the vicinity of the CSO discharge locations.

Question No. 5:

Is evidence of overflows such as paper and debris observable at the Pendleton Street outfall? Large quantities of these items used to be visible there in the past.

Response:

The City has visited the outfall in both wet and dry weather conditions and has not observed substantial quantities of trash or debris associated with the outfall. This may be attributable to the City's increased operation and maintenance efforts which aim to keep floatable materials out of the combined sewer system. Examples include the City's increased maintenance associated with street cleaning, sewer cleaning to remove sediment and the use of hooded catch basins. In addition, the Royal Street diversion structure has a screen which limits the discharge of floatables. Also, the WWTP treats the first flush of combined sewage/runoff from storms. This first flush contains a large part of the floatable materials and debris.

Question No. 6:

What is the pretreatment program?

Response:

The pretreatment program is administered by the Alexandria Sanitation Authority (ASA). Under the pretreatment program, the ASA issues permits to sewer system users such as auto repair shops, dry cleaners, metal finishing, photo processors, etc. who have the potential to discharge material which may be harmful to the WWTP or which may not be treatable by the WWTP. None of these types of users are located in the CSS.

Question No. 7:

What does it mean to maximize flow to the ASA WWTP during wet weather?

Response:

During normal dry weather conditions, the ASA WWTP treats approximately 35 to 40 million gallons per day (mgd). During wet weather events, when there is a mixture of sanitary flow and runoff, the WWTP is operated to treat approximately 90 to 100 mgd. By increasing the flow treated during wet weather conditions, the WWTP treats a substantial portion of the CSO which would otherwise overflow to the river.

**Question No. 8:** Does the effort to increase the amount of green space (pervious land) have merit? Can the City require existing facilities in the CSS to install detention ponds to reduce runoff?

**Response:** Increasing the amount of pervious land decreases runoff, thereby decreasing the combined sewer overflow. Regarding retrofitting existing facilities, the City has no authority to require retrofit unless there is a significant redevelopment on an existing facility. The City can regulate new development in the CSS.

**Question No. 9:** Will there be any recommendations for retrofitting or rework of the sewer system?

**Response:** The next step is for the City is to review the approaches and options for CSO control enhancements, and to present the proposed enhancements to the Department of Environmental Quality (DEQ). After that, a public meeting will be held to obtain public comment on the final CSO Control Plan.

No additional written comments on Public Meeting No. 2 were received prior to March 3, 1998.

## **6. ADDITIONAL REVIEW AND COMMENTS**

Subsequent to the meeting, the City advised attendees that written comments would be received until March 31, 1998 by way of the notice in Appendix C.

Prior to the meeting, a comment was received by the Alexandria Sanitation Authority from a citizen. The comment is attached as Appendix D.

**Responsiveness Summary For  
Public Meeting No. 2  
February 10, 1998**

**APPENDIX A**

**Public Notifications**

ALEX. GAZETTE  
JAN. 22, 1998

82 LEGAL NOTICES



PUBLIC INFORMATION MEETING  
CITY OF ALEXANDRIA  
COMBINED SEWER PROGRAM  
7:30 P.M.

Tuesday, February 10, 1998

Room 2000, City Hall

About 500 acres of the older southeastern section of the City are served by combined sewers. When the capacity of a combined sewer is exceeded during rainstorms, the excess flow which is a mixture of sewage and storm water runoff is discharged to the Potomac River, Hunting Creek, and Hooffs Run which are tributaries of the river. Overflows can occur at three locations: at the foot of Pendleton Street at Oronoco Bay; at the foot of Royal Street at Hunting Creek; and under Duke Street at Hooffs Run. The City has a VPDES permit issued by the Virginia Department of Environmental Quality (DEQ), for the combined sewer system and has implemented a number of programs for controlling the combined sewer discharges. These programs have proven effective in minimizing any water quality impacts from the discharges. As part of long term planning, the City is also conducting studies to evaluate alternatives that may improve existing control programs. This meeting is being held to give the public an opportunity to review background information and provide comments on the alternatives being considered. Information about the program is on reserve at these Alexandria Public Libraries: Barrett Library at 717 Queen Street, Burke Library at 444 Seminary Road, and Duncan Library at 2501 Commonwealth Avenue. Further information is available by calling 301-617-3700.

**CITY OF ALEXANDRIA, VIRGINIA -- PRESS RELEASE****DATE:** January 27, 1998**FOR IMMEDIATE RELEASE****CONTACT:**

Tom Brannan, Assistant City Manager

(703) 838-4300

**Alexandria to Hold Public Information Meeting on Combined Sewer Overflow Program**

The City of Alexandria staff and its consulting firm Greeley and Hansen will convene a public meeting at 7:30 p.m. on Tuesday, February 10, to share with citizens the latest information on the City's on-going efforts to improve its Combined Sewers Overflow (CSO) Program. The meeting will be held in Room 2000 of City Hall, 301 King Street.

This meeting will provide the public with an opportunity to review recent studies and background information and to provide comments on alternatives being considered to improve the City's current CSO Program. To enhance the effectiveness of the CSO Program, the City is interested in obtaining public comment on three proposed alternatives: an expanded public education program, a review of existing pollution control measures, and an advanced program for combined sewer system inspection.

Portions of Alexandria, like many of the nation's older cities, are served by sewer systems that carry both sewage and stormwater runoff. Approximately 500 acres in the Old Town area east of U.S. Route 1 are served by combined sewers. The modern engineering practice is to build separate sewer systems for stormwater and for sewage. Some localities have separated their combined sewers, but such projects are very costly and highly disruptive to established and in many cases historic neighborhoods and commercial districts.

During dry weather periods in the area of the City served by combined sewers, sewage from homes and businesses flows to the Alexandria Sanitation Authority's sewage treatment plant, where it is treated to remove pollutants before being discharged into tidal waters of the Potomac River at Hunting Creek. During major storm events, when the combined flows of sewage and stormwater exceed the capacity of the sewer system, the excess flow is discharged to the Potomac River and to Hunting Creek and Hooffs Run, which are tributaries to the River. This excess flow is referred to as Combined Sewer Overflow (CSO).

In 1990, the City retained the consulting firm of Greeley and Hansen to assist in preparing the City's VPDES permit application and to conduct a study of the effectiveness of the City's

CSO program and its control measures. Using computer models, Greeley and Hansen examined the impact of the CSO discharges on the Potomac River and the Hunting Creek Embayment.

In 1995, the Virginia Department of Environmental Quality (DEQ) issued a Virginia Pollutant Discharge Elimination System (VPDES) permit to the City to operate the combined sewer system. As required by its VPDES permit, the City in recent years has implemented a number of programs to control the combined sewer discharges and their impact on receiving waters. The City is also required to make annual reports to DEQ, which has determined that the City's existing pollution control program for the Potomac River and Hunting Creek Embayment is highly effective and adequately controls CSO pollutant loads.

Based on the results of studies conducted by Greeley and Hansen and based on the DEQ's findings, the City is planning to pursue a demonstration project to show that with refinements and improvements, the City's control program already in place is capable of enhancing the protection of the receiving waters while continuing to meet federal and state Water Quality Standards. In addition, DEQ has requested additional information from the City on the impact of CSO discharges into Hooffs Run. In response, the City is conducting an in-stream monitoring program and is providing additional stream data to DEQ so that it can complete its evaluation of the impacts of CSO discharges into Hooffs Run.

To prevent nutrients, such as nitrogen and phosphorous, and other pollutants and debris from entering the Potomac River and its tributaries, the City is implementing such control measures as regular street sweeping and flushing, catch basin cleaning, leaf collection, household hazardous waste recycling, waste oil and antifreeze recycling, sewer flushing, inflow and infiltration reduction, a riverfront clean-up program, and hoods on catch basins. In addition to an expanded public education program, the City is considering adding an advanced sewer system inspection program to its existing list of control measures.

Copies of information materials on the City's CSO Program and the consultant's Alexandria CSO Study Final Report, "Development of Preliminary Alternatives and Selection of Final Alternatives," are available at all Alexandria Library branches in advance of the February 10 public meeting. For further information, please contact City Environmental Scientist Larry Gavin at (703) 519-3400, ext. 188.

[Back to Top](#)

[Back to Current City News, Policy Documents, Council, Planning Commission and BZA Agendas](#)

**Responsiveness Summary For  
Public Meeting No. 2  
February 10, 1998**

**APPENDIX B**

**Attendees and Handout**

City of Alexandria  
Transportation and Environmental Services  
Alexandria, Virginia

Combined Sewer Overflow Program  
Public Participation Program

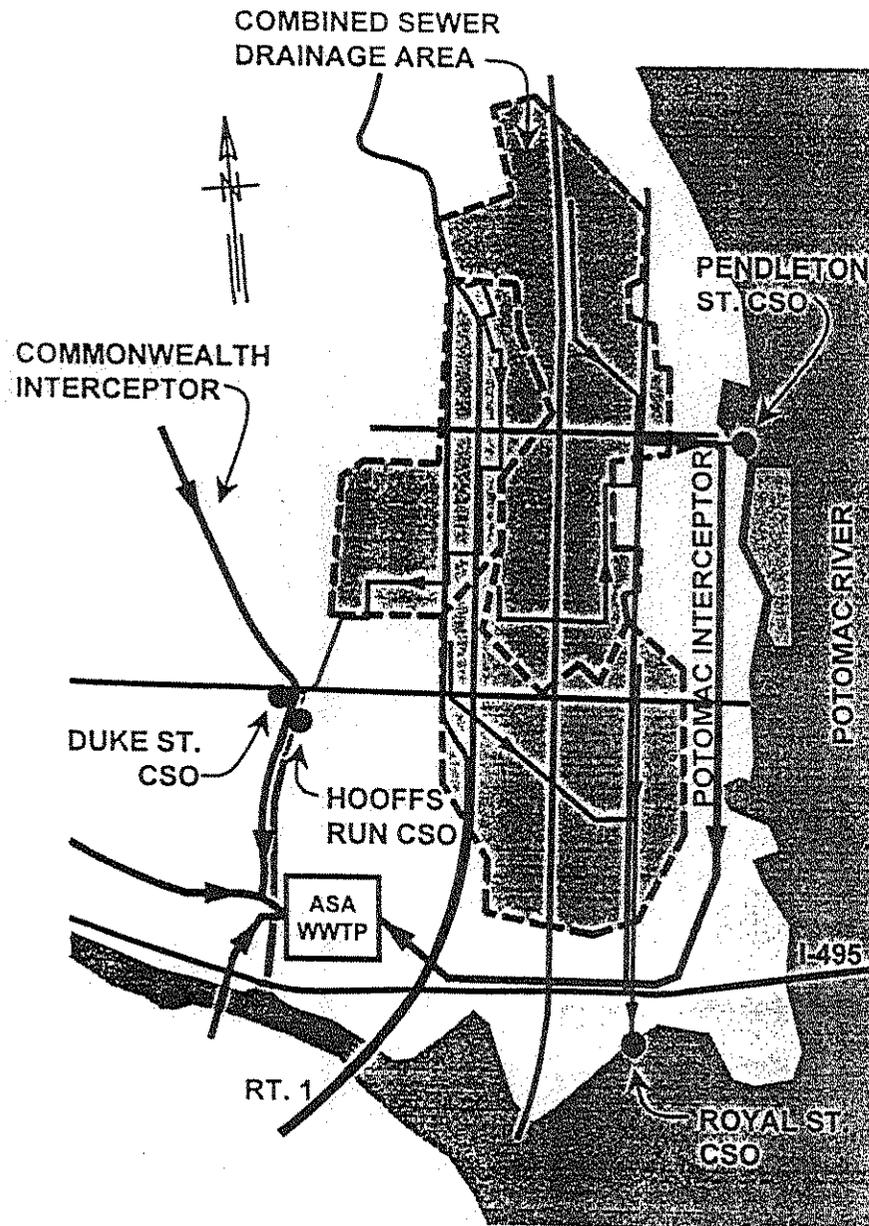
*List of Attendees*  
*Public Meeting No. 2*  
*February 10, 1998*

1. Ronald E. Bizzarri (Presenter)  
Greeley and Hansen  
8905 Presidential Parkway  
Upper Marlboro, MD 20707
2. John F. Cassidy  
Greeley and Hansen  
2116 W. Laburnum Avenue  
Suite 100  
Richmond, VA 23221
3. Larry Gavan (Presenter)  
Department of Transportation and Environmental Services  
P.O. Box 178 - City Hall  
Alexandria, VA 22313
4. M. M. Halim  
City of Alexandria  
301 King Street  
Alexandria, VA 22313
5. Ellen Pickering  
Taylor Run Civic Association  
103 Roberts Lane  
Alexandria, VA 22207

# **CITY OF ALEXANDRIA PUBLIC INFORMATION MEETING COMBINED SEWER OVERFLOW PROGRAM**

- ◆ Purpose
- ◆ Background
- ◆ Current Program
- ◆ CSO Control Enhancements Being Considered
- ◆ Next Steps

# City of Alexandria Combined Sewer System



◆ CSS is 500 AC

◆ 4 CSO outfalls

◆ ASA WWTP provides treatment

# CSO Program Background

- ◆ Initiated study in 1990
- ◆ Held introductory public meeting in February 1991
- ◆ Monitored CSOs during 1991 and 1992
- ◆ Submitted results to DEQ
- ◆ DEQ issued VPDES permit in April 1995
  - \* CSOs do not impair water quality
  - \* Meet USEPA's 9 Minimum Controls
  - \* Develop long term plan with verification monitoring

# City of Alexandria

## Current CSO Control Program

- ◆ Provide proper O&M for CSS
- ◆ Maximize storage in CSS
- ◆ Implement a pretreatment program
- ◆ Maximize flow to ASA WWTP
- ◆ Prevent dry weather overflows
- ◆ Control solids and floatables in CSOs
- ◆ Implement pollution prevention programs
- ◆ Provide public notice of CSOs
- ◆ Monitor system

# Alexandria Combined Sewer System Operating Results

<u>Year</u>	<u>Modeled Average Discharges<sup>(1)</sup></u>			<u>Rainfall (Inches)</u>
	<u>Number of Events</u>	<u>Volume (MG) Ea. Event</u>	<u>Duration (Hrs) Ea. Event</u>	
1995	40	3.23	3.09	39.8
1996	52	2.82	3.25	51.0
			Long Term Average	39.1

---

(1) For all 4 CSO outfalls during wet weather events

# CSO Control Measures Implemented

## Operation And Maintenance

- \* Weekly inspection/maintenance of CSO control structures
- \* Regular program of sewer flushing
- \* Regular program of TV inspection of sewers
- \* Annual catch basin cleaning

## Maximize Use of Storage in Collection System

- \* CSO diversion controls set to optimize storage in trunk system
- \* Completed several sewer relining projects to reduce infiltration/inflow
- \* CSS fills to level of lowest overflow storing flow in excess of DWF
- \* Tide gates adjusted and repairs made to control tidal intrusion
- \* Onsite stormwater retention required in combined sewer areas

# CSO Control Measures Implemented

## Review and Modify Pretreatment Requirements

- \* Pretreatment ordinance and program in effect
- \* CSO monitoring, modeling and analysis does not show any impacts that might be attributed to non-domestic sources
- \* No significant industrial users located within the CSS

## Maximize Flow to ASA WWTP for Treatment

- \* Treatment rates at ASA WWTP are increased during wet weather events

## Eliminate Dry Weather Overflows (DWOs)

- \* Combined sewer diversion system design has capacity to convey in excess of 3 times DWF to WWTP
- \* Diversion facilities inspected regularly and PM'd to insure they are in proper working order
- \* City maintains a 24-hour on-call team responsible to respond to reported DWOs

# CSO Control Measures Implemented

## Control of Solid and Floatable Materials in CSOs

- \* Regular sewer flushing prevents buildup of solids
- \* Static screen at Royal Street CSO controls solids/floatables
- \* Hooded catch basins to retain solids and floatables
- \* Regular leaf season pickup
- \* Regular catch basins cleaning
- \* Regular litter cleanup program
- \* Regular street cleaning program

# CSO Control Measures Implemented

## Pollution Prevention

- \* Awareness programs encourage industrial waste reduction through recycling and improved housekeeping
- \* Regular street cleaning and litter control
- \* Hazardous waste recycling program
- \* General recycling and solid waste control programs
- \* Best Management Practices for Automotive Related Industries
- \* Leaf collection citywide in fall
- \* Substances that may impair or damage the function and performance of collection and treatment systems are prohibited

# CSO Program

## Alternative Control Enhancements

- ◆ Improve combined sewer inspection
  - \* Review contributors to CSS
  - \* Evaluate methods to prevent entrance of solid material into CSS
- ◆ Expand public education programs
  - \* To keep materials out of CSS
- ◆ Review existing control measures
  - \* Evaluate management practices
  - \* Evaluate minor structural improvements

# Next Steps

- ◆ Evaluate public comments
- ◆ Submit CSO control enhancements to DEQ
  - \* By August 1998
- ◆ Hold a public meeting on final plan
  - \* Following DEQ comments
- ◆ Submit final report to DEQ
- ◆ Continue system monitoring

**Responsiveness Summary For  
Public Meeting No. 2  
February 10, 1998**

**APPENDIX C**

**Notice Regarding Submission  
of Written Comments**

**GREELEY AND HANSEN**  
ENGINEERS

8905 PRESIDENTIAL PARKWAY • SUITE 230 • UPPER MARLBORO, MD 20772  
(301) 817-3700 • FAX (301) 817-3735

February 25, 1998

ARTHUR H. ADAMS  
WALLACE A. AMBROSE  
RONALD E. BIZZARRI  
THOMAS J. SULLIVAN  
JERRY C. BISH  
ROGER J. CRONIN  
JOHN M. SKACH  
JOHN C. VOGEL  
TERRY L. WALSH  
RONALD F. MARTIN  
KENNETH V. JOHNSON  
CARL M. KOCH, PH.D.  
EDWARD M. GERULAT, JR.  
CLYDE WILBER  
FRANK J. TANTONE  
STEPHEN H. PALAC  
ANDREW W. RICHARDSON  
STEVEN A. GYORY  
JOSEPH R. POPECK  
PAUL S. HAGLUND  
FEDERICO E. MAISCH

Attendees - Attached list.

Subject: City of Alexandria, Virginia  
Public Information Meeting  
Combined Sewer Overflow Program  
February 10, 1998

Dear Attendee:

The City of Alexandria will receive written comments regarding the material provided and information presented and discussed at subject meeting until March 31, 1998.

Persons wishing to submit written comments may do so by sending them to:

Mr. Larry Gavan  
Department of Transportation and Environmental Services  
P. O. Box 178 - City Hall  
Alexandria, Virginia 22313

RICHARD P. MILNE  
HAROLD D. GILMAN  
JOSEPH M. CERVONE  
TIM GREIF  
CLIFFORD M. POMERANTZ  
ROGER S. HOWELL  
SCOTT T. GIRMAN  
HARVEY A. BRODSKY  
DAVID C. HAGAN  
DAVID V. HOBBS  
NICHOLAS J. HOUMIS  
BURTON B. KAHN  
JAY H. LOVELASS  
MIKE PEKKALA  
RENZO GASPAROTTO  
PAUL J. VOGEL  
JONG S. LEE, PH.D.  
RICK L. SCHOENTHALER  
EDWIN M. PHILLIPS  
V. SAM SUIGUSSAAR  
ROGER P. LINDE  
PETER F. POLSTER  
STANLEY S. DIAMOND  
JOHN R. BRATBY, PH.D.  
WILLIAM L. JUDY  
JOSEPH M. GORGAN  
GAETANO GARIBALDI  
THOMAS E. POEHLS  
D. BRETT BARBER

List of Attendees

City of Alexandria, Virginia  
Public Information Meeting  
Combined Sewer Overflow Program  
February 10, 1998

1. Ronald E. Bizzarri  
Greeley and Hansen  
8905 Presidential Parkway  
Upper Marlboro, MD 20707
2. John F. Cassiday  
Greeley and Hansen  
2116 Laburnum Avenue  
Richmond, VA 23221
3. Larry Gavan  
Department of Transportation and Environmental Services  
P. O. Box 178 - City Hall  
Alexandria, Virginia 22313
4. M. M. Halim  
City of Alexandria  
301 King Street  
Alexandria, VA 22313
5. Ellen Pickering  
Taylor Run Civic Association  
103 Roberts Lane  
Alexandria, VA 22207

**Responsiveness Summary For  
Public Meeting No. 2  
February 10, 1998**

**APPENDIX D**

**Written Comments**

Daniel L. Fearn  
Clare M. Chisholm  
4769 W. Braddock Rd., #200  
Alexandria, VA 22311-4769



DIRECTOR  
SANITATION AUTHORITY  
P.O. BOX 1987  
ALEXANDRIA, VA 22313

ASA  
E-D  
REC'D: 10/6/97



3 OCTOBER 1997

DEAR MR. CANADAY:

YOU OUGHT TO GET THE CITY TO ASK ALL THE OCCUPANTS OF THE AREAL WHICH ARE SERVED BY A COMBINED STORM WATER/SEWAGE SYSTEM TO REDUCE THEIR WATER USE DURING RAINY WEATHER. WE CAN'T STOP THE RAIN, BUT WE DON'T HAVE TO DO THE LAUNDRY WHILE IT IS. I'M SURE THAT THIS REDUCTION IN FLOW, SMALL AS IT MIGHT BE, WILL REDUCE THE CHANCE THAT AN OVERFLOWING TREATMENT PLANT WILL HAVE TO DISCHARGE EFFLUENT INTO OUR WATERWAYS. I BELIEVE AN ANNUAL CIRCULAR WOULD DO THE TRICK.

SINCERELY YOURS,

*L. Fearn*

ling to a much larger, if not wiser newspaper, the underlying in Tuesday's election was family values. We hope that's so. hope that translates into a concern for children. Everyone out education this time around but it was not clear if was committed to educating every child who goes to not just children fortunate enough to have two healthy, ed parents.

hile we are worrying about upgrading the quality of public o that the next generation is prepared for the 21st century, need to take a hard look at who will be minding the children. thers, the poor as well as the middle class are to be out of nes, at jobs, where will the children be? Will all children ess to preschool? Will all children have access to quality n?

uestions don't make catchy campaign slogans. But they go art of what family is all about, and what our society ought to

## er the election

ction is over. Statewide the Republicans swept all the top hile the Democrats appear to have retained control of the f Delegates. Here in Alexandria, the voters continued to vote life with 61 percent casting their ballots for Don Beyer, 67 r Marian Van Landingham, and 62 percent for Brian Moran. onesty we don't expect the car tax to disappear but we do t our state legislators and top officials work together to do est for Virginia and Virginians. We have serious transporta- infrastructure problems, an educational system that needs to ded and environmental issues that need to be solved. r part we plan on paying more attention to what goes on in nd this coming year and we promise to let our readers know representatives are doing and what they are doing for



The colors of autumn finally came to Alexandria but for many trees, it was a short-lived bloom as heavy rains washed the bright leaves away.

Staff photo/Louise Krafft

# Backtalk • 518-0655

### What's the difference ?

The vice-president of the NAACP and others who are against unpairing Maury and Lyles-Crouch schools because it would make Maury a dominantly white and Lyles-Crouch mostly black. I want to know what difference does it make? What is the importance of a black student sitting by a white student? Does a black student have to sit by a white student in order to learn? That is insulting. If most schools had the proper materials and good teachers, they should be able to learn regardless who they sit by, unless they have a learning disability or are disruptive. I wish when I read the paper and people make statements like that, I wish they would give the reasons why it is so...one has to be mostly...it's bad for one to be mostly white and one to be mostly black. I don't understand it. Thank you.

### Move if you don't like it

I live in Old Town and I'm calling to

record my opinion about the Alexandria Civic Association. It seems to me that everything that the city wants to do in reference to bridge and buildings is opposed by the Old Town Civic Association. Come on folks! Get a life! We need the bridge and we need development along the river. Remember, you don't have to live here. If you don't like it, move away. Bye.

### Build parking under bridge

Hi, my name is Daniel Fearn and I live in the west end of Alexandria. I think that a multi-deck garage should be built under the Woodrow Wilson Bridge or in addition, the new Potomac crossing, wherever it winds up being. I believe the revenues generated by this garage could be devoted to the needs of the city of Alexandria after helping pay for the new crossing and the building of the garage itself. The city is growing and if we need to build

a new bridge because there is so much traffic, well the cars have to be parked somewhere and we might as well take advantage of the under-utilized space under the bridge. Thank you very much.

### Reduce water usage during rain storms

Hi, my name is Daniel Fearn. I live in the west end of Alexandria. To reduce the effluent discharge by an overburdened storm drain/sewage system, the occupants of the older sections of Alexandria should reduce their water usage. Less water entering a burdened water treatment system during a rain means less chance of a sewage overflow into our waterways. While we can't stop the rain, we don't have to wash our clothes during it. The city should send a circular notice to the individuals who live in these areas and ask them to cooperate in making our waters cleaner and safer. Thank you.

## ANDRIA The Gazette Packet

is published by DCI Publishing of Alexandria, Inc. at 1610 King Street, Alexandria, VA 22314  
E-Mail: Connect @ Erols.com Newsroom: 549-7185 Circulation: 917-6480 Advertising: 838-0302  
Member Virginia Press Association. Publisher's Representatives: United Suburban Press, Inc. (USSPI)

ublishing Inc.: PETER LABOVITZ Chief Executive Officer • JERRY VERNON Executive Vice President & Publisher • MARY KIMM DIXON Executive Vice President • DONNA LAURENZI Controller

**EDITORIAL**  
r: Mary Anne Weber  
s Editor: Marge Fahey  
i Editor: Rich Sanders  
Editor: Alexa Beattie

**Copy Editor:** V. Casey Gonzalez  
**Reporters:** Barbara Sullivan,  
Marilyn Claiborne

**ART**  
**Photographer:** Louise Krafft

**Graphics/Design:** John Harman  
Kristian Dixon, Jane Hughes,  
Stetanie O'Rourke

**ADVERTISING**  
**Sales Director:** Mary J. Wadland  
**Display Sales:** Julie Ferrell

**Employment:** Sue Brady  
**Classified:** Ron Childs  
**Corporate Sales:** Susan Jacobs

**Office Manager:** Patricia Brown  
**PRODUCTION**  
**Manager:** Jean Card  
**Artist:** Paula Friedrich  
**Circulation Manager:** Debbie Statz