THE DISTRICT OF COLUMBIA
WATER QUALITY ASSESSMENT

2006 INTEGRATED REPORT TO THE ENVIRONMENTAL PROTECTION AGENCY
AND U.S. CONGRESS PURSUANT TO
SECTIONS 305(b) AND 303(d) CLEAN WATER ACT (P.L. 97-117)

Department of Health
Environmental Health Administration
Bureau of Environmental Quality
Water Quality Division

Government of the
District of Columbia
Anthony A. Williams, Mayor

PREFACE

The Water Quality Division of the District of Columbia's Department of Health, Environmental Health Administration, prepared this report to satisfy the listing requirements of §303(d) and the reporting requirements of §305(b) of the federal Clean Water Act (P.L. 97-117). This report provides water quality information on the District of Columbia's surface and ground waters that were assessed during 2006 and updates the water quality information required by law. Various programs in the Bureau of Environmental Quality contributed to this report including the Watershed Protection Division and the Fisheries and Wildlife Division.

Questions or comments regarding this report or requests for copies should be forwarded to the address below.

The District of Columbia Government
Department of Health
Environmental Health Administration
Bureau of Environmental Quality
Water Quality Division
51 N St., NE
Washington, D.C. 20002-3323
Attention: N. Shulterbrandt

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ACRONYMS

ACE	Army Corps of Engineers
AWRC	Anacostia Watershed Restoration Committee
AWS	Anacostia Watershed Society
BAT	Best available technology
BEQ	Bureau of Environmental Quality
BMP	Best management practice
BNR	Biological nutrient removal
BOD	Biochemical oxygen demand
CBP	Chesapeake Bay Program
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System (non-NPL)
CHAMPS	Capitol Hill Association of Merchants and Professionals
CPH	Cost per household
CIP	Capital Improvement Program
CMP	Correlated Metal Pipe
CSGWPP	Comprehensive State Ground Water Protection Program
CSO	Combined Sewer Overflow(s)
CWA	Clean Water Act
C&O	Chesapeake and Ohio
DC	District of Columbia (the District)
DDOE	District of Columbia Department of the Environment
DO	Dissolved oxygen
DOE	Department of Energy
DOD	Department of Defense
DOH	Department of Health
DOJ	U.S. Department of Justice
DPR	Department of Parks and Recreation
DW	Drinking water
ECC	Earth Conservation Corps
EHA	Environmental Health Administration
EPA	Environmental Protection Agency
FBI	Family Biotic Index
FUDS	Formally Used Defense Sites
FWD	Fisheries and Wildlife Division
FY	Fiscal year
GIS	Geographic information system
GWPP	Ground water protection program
HBI	Hilsenhoff Biotic Index
ICPRB	Interstate Commission on the Potomac River Basin
LID	Low impact development
LTCP	Long Term Control Plan
LUST	Leaking underground storage tank
MD	Maryland
MPD	Metropolitan Police Department (DC)

MWCOG	Metropolitan Washington Council of Governments
NMC	Nine Minimum Controls
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NWP	Nationwide Permits Program
PAH	Polycyclic aromatic hydrocarbons
PCB	Polychlorinated biphenyl
PIT	Passive integrated transponder
PWS	Public water supply
RBP	Rapid bioassessment protocol
RCP	Reinforced metal pipe
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SAV	Submerged aquatic vegetation
SRF	State Revolving Fund
SW	Southwest
SWAP	Source water assessment program
SWCD	Soil and Water Conservation District
SWQS	Surface water quality standards
TMDL	Total maximum daily load
TSS	Total suspended solids
U.S.	United States
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UST	Underground storage tanks
VA	Virginia
WASA	Water and Sewer Authority
WBID	Waterbody identification number
WPD	Watershed Protection Division, formerly the Soil Quality Division
WQD	Water Quality Division, formerly the Water Resources Management Division
WQMB	Water Quality Monitoring Branch
WQS	Water quality standards
WRRC	Water Resources Research Center
WWTP	Wastewater treatment plant

PART I: EXECUTIVE SUMMARY

The District of Columbia 2006 Integrated Report provides information on the quality of the City's water. The Integrated Report combines the comprehensive biennial reporting requirements of the Clean Water Act's Section 305(b) and the Section 303(d) listing of waters for which total maximum daily loads are required.

District of Columbia Water Quality

Thirty-six waterbody segments were monitored for the goals of the Clean Water Act that apply to the District of Columbia. Each of the waterbodies have been assigned designated uses in the D.C. water quality standards. The standards also outline numeric and narrative criteria that must be met if a waterbody is to support its uses. Various types of water quality data collected during the period of 2001 to 2005 were evaluated to assess use support by the waterbodies. The evaluation found that the designated uses which directly relate to human use of the District's waters were generally not supported. The uses related to the quality of habitat for aquatic life were not supported. No waterbody monitored by the Water Quality Division fully supported all of its designated uses. The District of Columbia's water quality continues to be impaired.

The following tables show the degree to which the waters of the District of Columbia supported their designated uses. Appendices 1.1 to 1.4 are maps showing the degree to which those waters met their uses.

Ground water is not monitored on the same basis as surface water. This is partly due to the fact that surface water north of the city's boundary, and not ground water, is the drinking water source for the District of Columbia. However, ground water quality is scrutinized via compliance monitoring and on-going studies.

TABLE 1.1
DESIGNATED USE SUPPORT BY RIVERS OR STREAMS

Waterbody Type: River, Streams	Degree of Use Support			
	Supporting (mi)	Not Supporting (mi)	Insufficient Information (mi)	Not Assessed (mi)
Overall Use *		38.4		
Swimmable Use		38.4		
Secondary Contact Recreation Use		38.4		
Aquatic Life Use		34.1	4.3	
Fish Consumption Use		36.4		2
Navigation Use	9.50			28.9*

* = not a designated use

TABLE 1.2
DESIGNATED USE SUPPORT BY LAKES

Waterbody Type: Lake, reservoir	Degree of Use Support			
	Supporting (ac)	Not Supporting (ac)	Insufficient Information (ac)	Not Assessed (ac)
Overall Use *		238.4		
Swimmable Use		238.4		
Secondary Contact Recreation Use	108.4	130.0		
Aquatic Life Use	27.3	211.1		
Fish Consumption Use		238.4		
Navigation Use	238.4			

* = not a designated use

TABLE 1.3
DESIGNATED USE SUPPORT BY ESTUARIES

Waterbody Type: Estuary	Degree of Use Support			
	Supporting (mi^2)	Not Supporting (mi^2)	Insufficient Information (mi^2)	Not Assessed (mi^2)
Overall Use *		5.93		
Swimmable Use		5.93		
Secondary Contact Recreation Use	3.75	2.18		
Aquatic Life Use	5.33	0.60		
Fish Consumption Use		5.93		
Navigation Use	5.93			

* = not a designated use

Causes and Sources of Water Quality Impairment

The major causes of impairment to D.C. rivers are pathogens. Lakes are impaired by organic enrichment/low dissolved oxygen (D.O.) and pathogens. While the estuaries are impaired by pathogens, and organic enrichment/low D.O.

The sources with major impacts on D.C. waters are combined sewer overflows, urban runoff/storm sewers. Municipal point sources on the estuaries also have a major impact. Rivers and streams are also impacted by habitat modification and unknown sources.

Programs to Correct Impairment

Several programs within the District of Columbia's Environmental Health Administration (EHA) are involved in activities to correct water quality impairment. The water pollution control program implements the water quality standards, monitors and inspects permitted facilities in the city, and comprehensively monitors D.C. waters to identify and reduced impairment. The water pollution control program is involved in the search for solutions that will provide maximum water quality benefits. The revised water quality standards were posted on the D.C. Register in October 2005. The revisions were subject to stakeholder review, a public hearing, and EPA reviews before being published as final. EPA approved the D.C. water quality standards on February 15, 2006.

Given the District's urban landscape, nonpoint source pollution has a large impact on its waters. The sediment and stormwater control program regulates land disturbing activities, stormwater management, and flood plain management by providing technical assistance and inspections throughout the city. The Nonpoint source program also provides education and outreach to residents and developers on pollution prevention to ensure that their actions do not further impair the city's water quality.

Several activities are coordinated within the ground water protection program. Those activities include underground storage tank installation and remediation, pesticide use certification, and ground water quality standards implementation.

Water Quality Trends

The Potomac River continues to benefit from the CSO improvements and implementation of improvements and biological nutrient removal at the Blue Plains wastewater treatment plant. The Anacostia River remains aesthetically and chemically polluted. Much remains to be done. Both of the main waterbodies, do support fish and other wildlife populations. The small streams' aquatic communities are increasingly stressed. Submerged aquatic vegetation in the Anacostia and Potomac Rivers continues to struggle. 2005 observations revealed 5 different species of SAV indicating recovery over two previous observation periods.

Highlights

The Water Quality Division completed the revisions of the DC Water Quality Standards . The proposed rulemaking of Water Quality Standards was published in the March 18, 2005 D.C. Register. The WQS triennial review public hearing was held on April 27, 2005. After legal sufficiency review the final rulemaking of Water Quality Standards was published in D.C. Register of October 28, 2005.

The last remaining in-stream barrier at Pierce Mill Dam is scheduled to be removed in April 2006.

Low impact development projects to improve the quality and reduce the quantity of stormwater

runoff are being implemented throughout the city. Projects such as rain gardens, green roofs, rain barrels, school yard conservation sites are in the process of being installed or are already in place.

PART II: BACKGROUND

The D.C. Government's environmental protection responsibilities are delegated to the Department of Health. The department's Environmental Health Administration is comprised of several bureaus. One of the bureaus is the Bureau of Environmental Quality (BEQ). BEQ consists of the Air Quality Division, the Fisheries and Wildlife Division, the Water Quality Division and the Watershed Protection Division.

Atlas and Total Waters

Table 2.1 is a general view of the resources of the District of Columbia. Figure 2.1 is the monthly and yearly total rainfall graph. To give an idea of how much precipitation occurred in 2004 the normal yearly rainfall total is also included in Figure 2.1 (The National Weather Service, Washington National Airport is the source for the rainfall totals). Figures 2.2 and 2.3 present monthly and yearly mean flow data for the Anacostia and Potomac Rivers, from 2004-2005.

TABLE 2.1
ATLAS

State population: 572,059 (2000 Census)

State surface area: 69 square miles

Number of water basins: one

Total number of river miles: 39 miles

Number of perennial river miles: 39 miles

- Number of intermittent stream miles: none
- Number of ditches and canals: none[1]
- Number of border miles: none

Number of lakes, reservoirs, ponds: eight

Acres of lakes/reservoirs/ponds: 238 acres

Square miles of estuaries/harbors/bays: 6.1 square miles[1]

Acres of freshwater tidal wetlands: 180 [2]

Names of border waterbodies: Potomac River estuary

Number of border estuary miles: 12.5 miles

[1]Impoundments are classified according to their hydrologic behavior. The District of Columbia classifies the C&O Canal as a lake. The estuary estimate includes the Washington Ship Channel, the Channel Lagoon, and Little River.
[2] This total is compiled from the District of Columbia Watershed Protection Division.

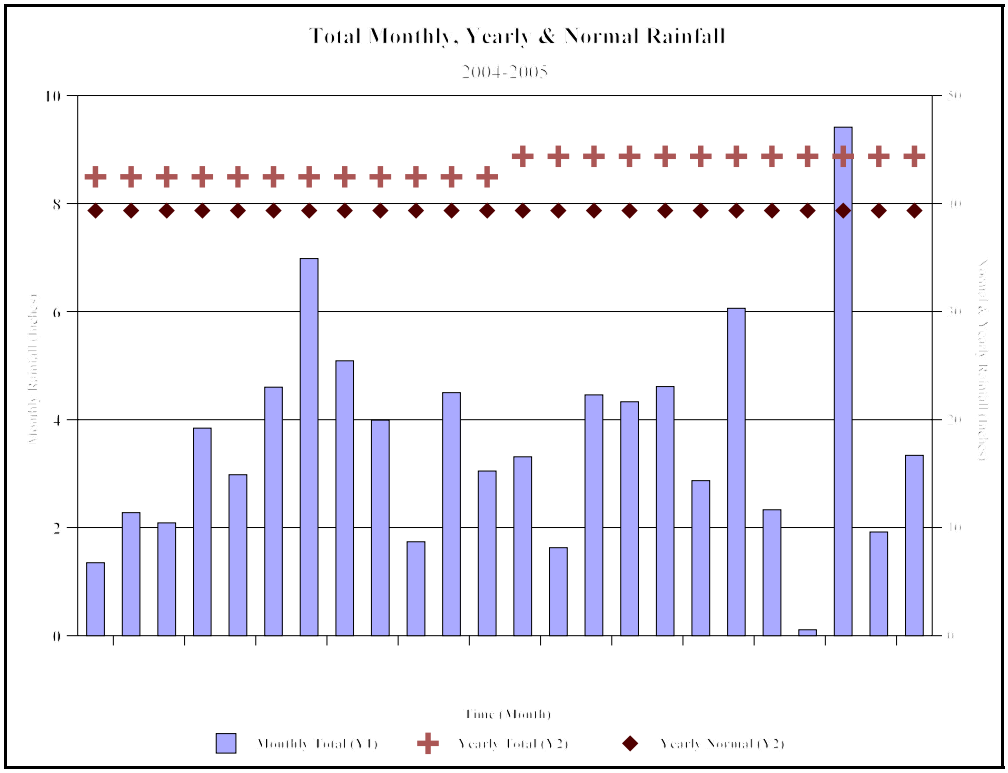

Figure 2.1: Monthly, yearly and normal total rainfall (inches), 2004-2005
Source: National Weather Service.

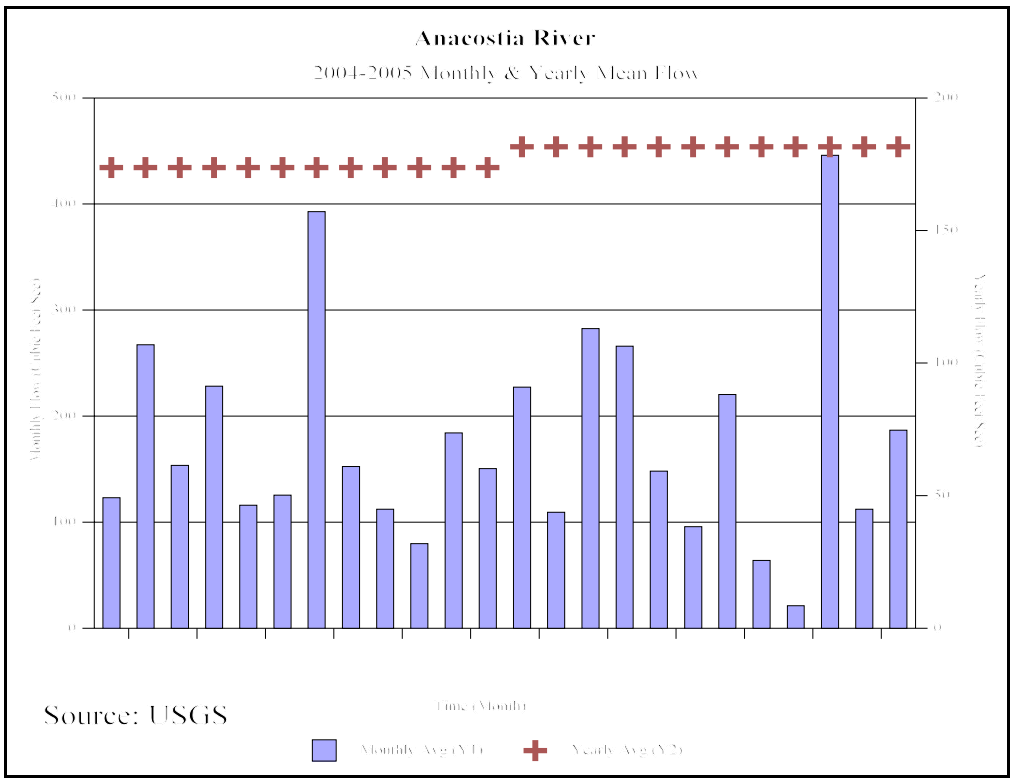

Figure 2.2: Monthly and yearly mean flow on the Anacostia River, 2004-2005

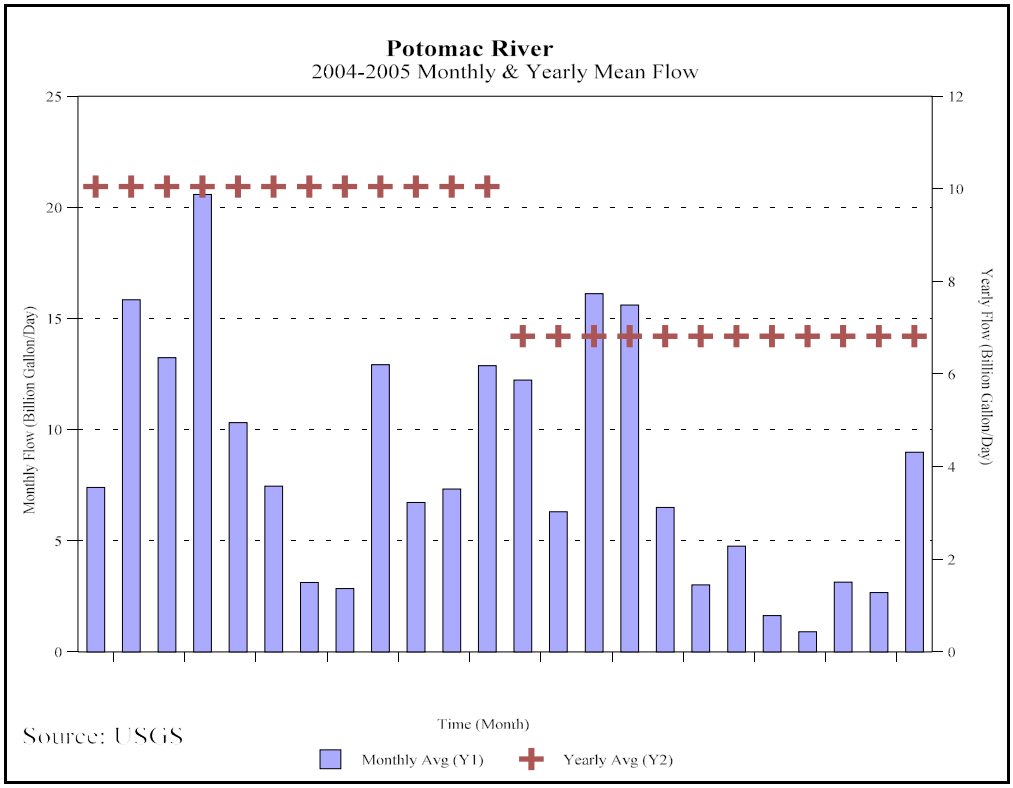

Figure 2.3: Monthly and yearly mean flow on the Potomac River, 2004-2005.

Maps

Appendix 2.1 is a map of the major watersheds within the District of Columbia.

Effectiveness of Pollution Control Programs

Watershed Approach

The District has been using an inter-jurisdictional approach to solve its water quality problems for more than 20 years, and long before the watershed approach concept became fashionable. The restoration of the Potomac River in the 1980s was made possible by working with the states of Virginia and Maryland, both at the state and local government levels. Development of the Potomac Estuary Model and the subsequent wasteload allocation was carried out in cooperation with the responsible parties in the river's watershed. Out of necessity, the model included the pollutants entering the District's portion of the river from upstream, and from both point and nonpoint sources. Another early need for utilization of the multi-jurisdictional approach resulted from the Blue Plains Wastewater Treatment Plant's (WWTP) operation. Though the plant discharges into D.C. water, it is a regional facility where municipal wastes from surrounding counties in Virginia and Maryland are treated.

The watershed approach is central to the current effort to restore the Anacostia River. Although the tidal portion of the river is within the District, it is fed by two major tributaries in Maryland, the Northeast and Northwest branches, which are the main sources of fresh water to the river. The branches drain Montgomery and Prince George's counties in Maryland. The Anacostia River watershed approach began with the signing of the Anacostia Watershed Restoration Agreement in 1987 by the Mayor of the District of Columbia and the Governor of Maryland. Since 1987, the jurisdictions have reaffirmed their commitment to the Anacostia River cleanup on several occasions. The latest agreement was on May 10, 1999, when the Hon. Anthony Williams, Mayor of the District of Columbia, the Hon. Parris Glendening, Governor of Maryland, the Hon. Douglas Duncan, County Executive Montgomery County, Maryland, and the Hon. Wayne Curry, County Executive Prince George's County, Maryland, signed a six-goal agreement to restore the Anacostia River. On December 31, 2001, the signatories of this agreement signed a document that sets targets to measure progress for a restored Anacostia River. From these agreements, the Metropolitan Washington Council of Governments (MWCOG) established the Anacostia Watershed Restoration Committee to help coordinate regional efforts to restore the river. The committee has representatives from local governments and federal agencies with a presence in the Anacostia Watershed.

The District of Columbia (DC) uses the watershed approach to address nonpoint source pollution and non-attainment of use categories in District waterbodies. The District of Columbia's Watershed Protection Division (WPD) has developed Watershed Implementation Plans (WIPs) for 5 tributaries that fall entirely or partially within the city's geographic boundaries. These tributaries are Pope Branch, Ft. Dupont, Hickey Run, Watts Branch, and Oxon Run. The WIPs set out the actions required to address impaired water quality in the particular watershed. These actions can range from education and outreach to storm water management. They serve as planning documents that will direct future efforts in a coordinated and systematic manner. Given the fact that two of the tributaries for which WIPs were written (Oxon Run and Watts Branch) partially fall within Maryland's jurisdiction, efforts made by the WPD will only partially address water quality impairment. Coordination with Maryland jurisdictions is ongoing and is successful to the extent that funding priorities by these jurisdictions is targeted towards complementary actions. The WPD coordinates with several DC stakeholders including the National Park Service, the District Department of Parks and Recreation, the District Department of Transportation, the District Office of Planning, the Anacostia Watershed Society, and The Casey Trees Foundation, to name a few.

Since the inception of the EPA's Chesapeake Bay Program (CBP) the District of Columbia has been an active participant. This program is a public-private partnership consisting of governments in Pennsylvania, Maryland, Virginia, the District of Columbia and the Chesapeake Bay Commission along with the federal government, citizens, and businesses. Begun in 1983 with the first Chesapeake Bay Agreement, the purpose of the program is to develop and implement coordinated plans to improve and protect the living resources of the Bay. The District of Columbia Government participates in many of the committees, subcommittees and work groups of the Bay Program. The program was an outgrowth of a comprehensive study initiated by the U.S. Congress to assess the environmental problems afflicting the Bay. As part of the original agreement, the signatories pledged to work toward reducing by 40% the amount of

nutrients entering the Bay from their jurisdictions. In 1994, the District of Columbia prepared a strategy to reduce nutrient pollution to its waters and the Bay as part of the overall 40% reduction commitment. In addition, the CBP designated the Anacostia River, along with Baltimore Harbor, MD, and the Elizabeth River in VA, as regions of concern for toxics. In response to that designation, the District of Columbia prepared an Anacostia River Toxics Management Action Plan to begin to address the contamination. The Mayor of the District of Columbia served as the Chair of the Executive Council from 2000-2002. Virginia Governor Mark R. Warner is the current Chesapeake Executive Council Chair. On December 3, 2001, the Mayor Williams, along with the other signatories, signed the Chesapeake 2000 Agreement that will guide the program for the next 10 years. The District of Columbia sees its participation in the CBP as a way to help the Bay and to secure resources and inter-jurisdictional support to clean up its waters also.

Water Quality Standards Program

The District of Columbia Department of Health, Environmental Health Administration Water Quality Division (WQD) conducted triennial review of the Water Quality Standards (WQS) for the year 2004/2005 as required by the Water Pollution Control Act of 1984 and the Federal Clean Water Act. The Water Quality Division started the triennial review process by issuing a public notice in D.C. Register to interested parties to submit their comments and concerns on the District of Columbia Water Quality Standards triennial review.

The Water Quality Standar ds completed the technical revisions to Water Quality Standards that include: adding narrative criteria for Class C waters, updating numeric criteria for over 100 constituents, adding 34 new constituents including E. coli and revising numeric criterion consistent with Chesapeake Bay published criterion, adding several new definitions and updating references. WQD carefully considered comments and completed the technical revisions to Water quality standards and prepared response to comments and chart of changes/justification.

The proposed rulemaking of Water Quality Standards was published in the March 18, 2005 D.C. Register. The WQS triennial review public hearing was held on April 27, 2005. After legal sufficiency review the final rulemaking of Water Quality Standards was published in D.C. Register on October 28, 2005. On February 15, 2006 EPA approved the revised District of Columbia Surface Water Quality Standards with the exception of the following items:

- Section 1104.8, first sentence of Note 1, Table 1-“This criterion shall apply to E.coli bacteria determined by the Director to be of non-wildlife origin based on best scientific judgement using available information.”;
- Section 1199-Modification of the definition for primary contact recreation (second sentence) - “Such uses are not expected during times of high current velocity, floods, electrical storms, hurricanes, tornadoes, winter temperatures, heavy ice conditions and other adverse natural conditions;” and the added definition for “adverse natural conditions.”

Point Source Program

In the District of Columbia, there are twelve (14) facilities currently discharging under National Pollutant Discharge Elimination System (NPDES) industrial permits. The Blue Plains Advanced Wastewater Plant (Plant), operated by the Water and Sewer Authority continues to be the major discharger. Plant processes continue to operate efficiently and flows are within the design capacity.

The Plant, along with other industrial NPDES permitted facilities, is inspected annually or semi-annually, to insure compliance with permit conditions and District of Columbia Water Quality Standards. As a part of its grant agreement with EPA, Region III, the Water Quality Division (WQD) reviews and certifies draft NPDES permits prepared by the Region. The District of Columbia is not a delegated state under the NPDES program and can not, therefore, issue its own permits. Draft permits prepared by EPA are reviewed by the WQD for completeness, compliance with both Federal and District laws, and D.C. Water Quality Standards. The WQD may require changes in a draft permit so as to more stringently comply with applicable laws/standards. Changes in draft permits may also incorporate comments received from various parties during the public comment period, the announcement of which is made in one or more of the District's local newspapers, and is a joint issue by both EPA and the District of Columbia. Final, certified, permits are issued for a five year period, but contain re-opener clauses in case facility conditions and/or Water Quality Standards or regulations change.

Although not a requirement of the Water Pollution Control Grant, the WQD also reviews and certifies permits issued by the US Army, Corps of Engineers, under the Nationwide Permits program (NWP). As with NPDES permits, NWPs are reviewed for compliance with Federal and District water quality laws and standards. The certification of both NPDES and NWP permits by the state water pollution control agency is a requirement of section 401 of the Clean Water Act.

Nonpoint Source Control Program

Environmental pollution from nonpoint sources occurs when water moving over land picks up pollutants such as sediment, bacteria, nutrients, and toxicants and carries them to nearby waters. Sediment and pollutant-laden water can pose a threat to public health. Pollutants come from both natural sources and human activity. Storm water runoff and associated soil erosion are significant causes of lost natural habitat and poor water quality in the District of Columbia and throughout the United States. EPA and United States Department of Agriculture (USDA) have made the control of soil erosion and the treatment of storm water runoff important pieces in their strategy to restore the quality of the Nation's waters.

Nonpoint source pollutants of concern in the District of Columbia are nutrients, sediment, toxicants, pathogens, and oil and grease. For the District of Columbia, the origins of nonpoint pollutants are diverse and include:

- stormwater runoff due to the high degree of imperviousness of urban areas
- development and redevelopment activities

- urbanization of surrounding jurisdictions
- agricultural activities upstream in the watershed

The District of Columbia has shown that urban runoff is one of the more important contributors to surface water impairment in the city. A process to rank watersheds for nonpoint source implementation in DC, conducted by the Nonpoint Source Management Program in 1993, determined that the Anacostia River and its tributaries should receive the highest priority.

The control of nonpoint source pollution requires the cooperation of many environmental programs. In 1989, the DC WPD developed *The District of Columbia Nonpoint Source Management Plan* (NSMP) (DC, 1989). The NSMP describes the various environmental programs and projects in place to help control nonpoint source pollution. It was the first step by the District of Columbia to develop a Nonpoint Source Management Program. The city's Nonpoint Source Management Program has been in existence for over 12 years. Since its inception, it has grown and has become institutionalized into a branch under the WPD. This change in the program is described in more detail in the Nonpoint Source Program Highlights. The Nonpoint Source Management Program revised its Nonpoint Management Plan in FY 2000 to reflect the changes in program activities that had taken place over the previous 10 years and to prioritize future strategies.

1. *Nonpoint Source Assessment Update*

In 1998 the District of Columbia conducted a unified watershed assessment to characterize the condition of its watershed (Potomac) and sub-watersheds. The assessment identified so called *Category I Watersheds* or, in other words, watersheds in need of restoration. The assessment actually was a re-characterization of the condition of its watershed and sub-watersheds, done using existing waterbody assessments, strategies, surveys, and recommendations to compile an overall watershed assessment and ranking. The outcome of the assessment found its watershed and sub-watersheds to be of Category I, with the tidal Anacostia, Watts Branch, Rock Creek, Hickey Run, and Kingman Lake waterbodies having the highest priority for restoration (EHA, WQD). One of the main causes of degradation cited in the assessment was urban runoff. Seeking more specific information regarding the problems associated with its most degraded sub-watersheds, in lieu of habitat restoration, DC commissioned a number of individual assessments. To date, MWCOG has completed watershed assessments of Fort DuPont Tributary and Popes Branch Tributary, and the U.S. Fish and Wildlife service (U.S. FWS) has completed assessments of Hickey Run, Oxon Run, and Watts Branch. MWCOG is currently completing an assessment of Fort Chaplin Tributary.

2. Nonpoint Source Program Highlights

The WPD mission is to conserve the soil and water resources of the city and protect its watersheds from nonpoint source pollution. It has three branches:

- Nonpoint Source Management Branch,
- Sediment and Stormwater Technical Services Branch, and

- Inspection and Enforcement Branch

The WPD is primarily responsible for managing both the city's Nonpoint Source Management (§319(h)) and Chesapeake Bay Implementation (§117(b)) programs. Both the §319(h) and Bay Programs are non-regulatory programs that strive to achieve the same results.

Included under the auspices of the Nonpoint Source Management Branch are tree plantings and riparian buffer restoration. WPD organized buffer planting events in 2004 that produced a thriving one-hundred to one-hundred-twenty foot (100-120 ft) wide tree and shrub buffer where before there had been only a two to ten foot buffer. The new buffer extends approximately five-hundred yards (500 yd) along the shore of Kingman Lake. The buffer continued to grow during 2005. The buffer project involved many groups including Casey Trees Foundation, Chesapeake Bay Foundation (Anacostia Office), Anacostia Watershed Society, and the National Park Service, Student Conservation Association, and children from Boy Scouts and District of Columbia schools. The ongoing Trees For Kids Project brings trees into the city's schoolyards. In 2004 and 2005 citizen volunteers and students planted over two-hundred 1 ½ to 2 ½ inch diameter trees with the help of Casey Trees Foundation and WPD.

To help instill Nonpoint Source Management principles in the consciousness and daily habits of DC residents, the WPD in fiscal 2000, created the District of Columbia Soil and Water Conservation District (DCSWCD) Citizen Advisory Committee. The committee now has a full compliment of Ward representatives and conducts monthly meetings. They reviewed the former plan of action and accomplishments of the DCSWCD and began crafting a new five-year plan. Through the Storm Drain Marker Program, two-thousand markers have been installed throughout the city by citizens groups, youth programs, schools and the Department of Public Works. Approximately five-hundred volunteers installed the markers and were educated about stormwater runoff and nonpoint source pollution.

The WPD is committed to student and community education. The annual Anacostia Environmental Fair brings more than four-hundred students and their teachers to the banks of the Anacostia River each Spring and 2005 was the ninth year for this educational event. WPD continues to offer outdoor and on-water experiences to as many DC school children as possible through the Meaningful Bay Experience. One of the primary education goals in 2006 is to institute a 'meaningful watershed experience' teacher training workshop on the Anacostia River and to incorporate the 'meaningful watershed experience' into DC Science Standards.

The WPD's Nonpoint Source Management Program provides Federal funds to universities and nonprofit organizations to conduct projects that will help the program achieve its overall goals and objectives. Descriptions of those projects that received funding under the WPD in fiscal 2004 and 2005 are provided below.

The Meaningful Bay Experience: WPD funded Meaningful Bay Experiences for over five-hundred-fifty students by providing grant funds to Living Classrooms Foundation, Capitol Hill Cluster School, Student Conservation Association, and Hard Bargain Farm. These organizations provided students with a variety of experiences including field, shipboard and overnight

experiences that teach lessons in water quality and biology.

A Public-Private Partnership to Demonstrate Low Impact Development on Capitol Hill: Awarded to Capitol Hill Association of Merchants and Professionals' (CHAMPS) Business Improvement District. Under this grant a raingarden was installed at the Metropolitan Police Department's First District Substation on Capitol Hill where it is highly visible to the public and lawmakers. This project was completed in 2003.

Low Impact Development Implementation Project: During 2004 and 2005, WPD's LID program funded greenroof installations in the heart of downtown DC. The funding supported construction of 1,500 square-feet (out of a total 3,500 sq-ft) of greenroof atop Casey Trees Foundation's K Street office building. This project was completed in 2004.

Human Rights Campaign Foundation-2,000 SF Green Roof-LID Project: Awarded to Human Rights Campaign Foundation, this grant contributed to establishment of two-thousand square-feet of greenroof in downtown DC. This project was completed in 2004.

Completion of PEPCO Benning Road Facility LID-IMP: Awarded to Interstate Commission on the Potomac River Basin. This raingarden filters runoff from over five-thousand square-feet of heavily used road at PEPCO's Benning Road facility and, over the course of a typical year, will treat one-hundred-thousand gallons of water before it reaches the Anacostia River. This project was completed in 2005.

Provide Professional Services to Revise and Update the District of Columbia Soil Erosion and Sedimentation Control and Stormwater Management Regulations: Awarded to American Society of Civil Engineers. The new manual updates and clarifies multiple regulations and building codes pertaining to stormwater control and sediment pollution. This project was completed in 2005.

Outdoor Space/Low Impact Development Project: Proposed by Bancroft Elementary School and awarded to 21st Century School Fund. Under this grant a raingarden and seven rainbarrels were installed at Bancroft Elementary School and plans for maintenance and education were created for the students and teachers. This project was completed in 2005.

Ross Elementary School Play Yard/Parking Lot LID Retrofit Demonstration Project: Awarded to 21st Century School Fund. This project removed substantial amounts of paved parking lot, created a separate playground and permeable artificial turf field, and retrofitted a parking lot with permeable pavers and underground stormwater detention chambers. This project was completed in 2005.

Provide Design/Build Services to Implement Schoolyard Conservation Sites at Peabody Elementary School: Awarded to Sustainable Community Initiative. A bioretention cell and permeable pavers were implemented at Peabody Elementary School. This project was completed in 2005.

BayScaped Schools, Protecting the Potomac and Anacostia Rivers through Conservation

Landscaping at DC Public Schools: Awarded to Alliance for the Chesapeake Bay. Under this grant the Alliance provided stormwater, raingarden and rainbarrel training to school teachers. The Alliance distributed rainbarrels to citizens and trained them in use and maintenance of their rainbarrels under the 'Let It Rain' program. This project was completed in 2005.

Provide Design/Build Services for a Low Impact Development Implementation Project: A Bioretention Cell at National Park Service-National Capitol Parks East Headquarters. Awarded to Sustainable Community Initiative. Under this grant a new bioretention cell was implemented at National Park Service Headquarters-East; this LID is projected to treat, in an average rainfall year, approximately 571,000 gallons of previously untreated runoff. This project was completed in 2005.

Historic Anacostia Gateway Low Impact Development Project: Awarded to Anacostia Watershed Society. This project created a raingarden/bioretention cell in the underserved Ward 8 where the city is working to improve the Historic Anacostia neighborhood. The education and design component, which this grant funded, was completed in 2005. Construction by DDOT is anticipated to reach completion in 2006.

Stormwater Management and Sediment Control Regulatory Programs

In conjunction with its voluntary activities to control nonpoint source pollution through its Nonpoint Source Management and Chesapeake Bay Implementation programs, the WPD also supports activities to regulate land disturbing activities, stormwater management, and flood plain management. The major regulatory actions of the WPD in the area of nonpoint source pollution control include enforcing the provisions of D.C. Law 2-23, The District of Columbia Erosion and Sedimentation Control Act of 1977, D.C. Law 10-166, The Erosion and Sedimentation Control Amendment Act of 1994, D.C. Law 5-188 (§509-518, Storm Water Management Regulations-1988) of The District of Columbia Water Pollution Control Act of 1984, and D.C. Law 1-64, The District of Columbia Applications Insurance Implementation Act of 1976. Implementation of the above laws involves the following:

- Reviewing and approving construction plans for storm water runoff control measures, flood plain intrusion, unstable soils, topography compatibility, erosion and sediment control measures, and landscaping;
- Conducting routine and programmed inspections at construction sites;
- Developing and revising regulations, design standards and specifications;
- Preparing technical manuals;
- Providing technical assistance to developers and DC residents; and,
- Conducting investigations of citizen complaints related to drainage and erosion and sediment control.

Consistent with the above statutes, the WPD reviews building permit applications for compliance with the soil erosion and sedimentation control regulations. In FY 2004, 2,293 plans were reviewed and 1,689 plans were approved. In FY 2005, 2,333 plans were reviewed and 2,211

were approved. An integral part of this regulatory compliance program in nonpoint source control is the kind of best management practices (BMPs) DC approves for installation. For stormwater management in particular, the District of Columbia requires developers to control both the quantity and quality of stormwater runoff. Management of stormwater has evolved in the past decade. As a part of that evolution, the District of Columbia has begun to encourage, where applicable, the use of "greener" BMPs and low impact development techniques such as wetlands, vegetated biofilters, and bioretention facilities. Table 2.2 provides the number and type of BMPs approved for installation in the District of Columbia in 2004 and 2005. See Appendix 2.2 for the BMP Classification.

TABLE 2.2
NUMBER AND TYPE OF STORMWATER MANAGEMENT BMPS APPROVED FOR INSTALLATION

	2004		2005	
BMP Category	**Number of Plans**	**Acres Served**	**Number of Plans**	**Acres Served**
Exfiltration/Infiltration System	5	1.1	6	6.3
Hydrodynamic Filtration Device	36	123.3	41	127.2
Infiltration Trench	24	10.5	15	13.6
Low Impact Development	29	44.3	7	16.5
Oil-Water Separator	3	3.6	0	0.0
Pond	1	6.3	1	0.5
Sandfilter	32	24.1	28	25.8
Underground Retention/Detention	21	42.0	8	2.5
Water Quality Inlet	9	33.6	11	13.7
Water Quantity Control	5	1.6	0	0.0
Wetland	0	0.0	1	25.9
Total	165	290.5	118	232.0

Inspection and Enforcement

The overall goal of inspection and enforcement program is to coordinate, facilitate, manage, and plan activities to protect the water quality and aquatic resources in the Potomac and Anacostia River watersheds by developing and implementing an efficient and effective inspection and enforcement program in support of the regulation of land-disturbing activities. In order to achieve this goal, WPD conducted an assessment of the program that existed after the realignment in 1998. Based on this assessment, a 5-year strategic plan was prepared and implemented. The strategic plan highlighted the following critical components where improvements were needed: an increase in the number of inspections by hiring additional inspectors, development and implementation of a formal stormwater management maintenance program, strengthening of the enforcement authority of existing regulations and development of new operating guidance. Five new inspectors have been hired since 1998, significantly increasing our enforcement capability. The program improvement components are discussed below.

The District of Columbia enacted the Civil Infractions Law (D.C. Law 6-42) in 1987, to strengthen the enforcement of existing regulations. Under this law, inspectors are authorized to impose fines for each violation of the regulations. Civil infraction fines range from five hundred

to two thousand dollars ($500 to $2,000) depending on the nature of the infraction and whether the violator is a repeat offender. Additionally, enforcement procedures stipulate that anyone convicted of violating the stormwater management regulations is guilty of a misdemeanor, and upon conviction is subject to a fine of at least two thousand five hundred dollars ($2,500) but no more than twenty-five thousand dollars ($25,000). Initially, the soil erosion and sediment control and stormwater management regulations were not included in the Civil Infractions Law. However, the law was subsequently amended to include these regulations. The mechanism to fully implement the Civil Infractions Law for this program has been developed and is currently being implemented. WPD also updated the Civil Infractions Schedule of Fines for Soil Erosion and Sedimentation Control and Stormwater Management, which have been in place since December 1999. Additionally, our enforcement capabilities were further strengthened through the implementation of stop work order authority included in The Soil Erosion and Sedimentation Control Amendment Act of 1994.

In FY 2004, 6,694 inspections at construction sites for compliance with approved plans and regulations were conducted; in FY 2005, 7,360 inspections were performed. Additionally, enforcement procedures stipulate that anyone convicted of violating the storm water management regulations is guilty of a misdemeanor, and upon conviction is subject to a fine of at least two thousand five hundred dollars ($2,500), but not more than twenty-five thousand dollars ($25,000).

More that 20 different types of ultra-urban stormwater management BMPs with varying levels of inspection requirements have been installed in the city. The types of BMPs include infiltration/exfiltration devices, sand filters, water quality inlets, oil/water separators, hydrodynamic devices and stormwater ponds. In addition, numerous soil erosion and sediment control BMPs are installed at construction sites on a daily basis and must be inspected to ensure compliance with approved plans.

The use of low impact development (LID) techniques such as rain gardens, bioretention systems, porous pavement, and green roofs, has gained interest in the stormwater management community. However, in order for any BMP to function effectively after construction, particularly LID, proper construction techniques and strict adherence to design specifications must be followed during installation. The most effective tool at our disposal to ensure compliance is timely inspections during construction and proper maintenance after construction.

As part of the program development and implementation, WPD developed standard operating procedures (SOP) for inspection and enforcement. The purpose of the standard operating procedures was to provide a consistent framework for conducting inspection, issuing notices of violations, civil infraction fines, and stop work orders for violation of the District of Columbia's soil erosion and sediment control and stormwater management regulations.

BMP Maintenance

Since the inception of the stormwater management program, over 1100 facilities or BMPs have been installed at new development and redevelopment projects throughout the city. In FY 2004, 209 stormwater management BMPs were inspected for maintenance and in FY 2005, 245

inspections were performed. These BMPs are used for nonpoint source pollution control, and hundreds more have been approved for on-going development projects. Most of these stormwater management BMPs are installed beneath impervious surfaces such as parking lots and sidewalks due to the high cost of land and lack of space, and are generally not visible.

Initially, the District of Columbia did not have a formal program for stormwater management BMP maintenance. Like most other jurisdictions throughout the country, the primary focus was on the construction and installation of BMPs to meet regulatory requirements. However, recognizing that proper operation and maintenance of BMPs was critical to sound stormwater management, and ultimately to the health of its rivers and streams, WPD developed and implemented an aggressive stormwater management facilities maintenance inspection program in 1999.

Maintenance responsibility designation is critical to ensuring that maintenance service is performed as needed throughout the design life of the stormwater BMP. District of Columbia Municipal Regulations (DCMR) require that the owner of a property or agent in control of the property on which a stormwater BMP has been constructed, maintain the facility in good condition and promptly repair and restore it whenever necessary. The District of Columbia's stormwater regulations enable the BMP maintenance program to implement enforcement measures for all stormwater BMPs throughout the entire District of Columbia.

As part of the protocol for stormwater management site plan approval, a "Maintenance Agreement" requires designation of the "Person Responsible for Maintenance" of the stormwater BMP. It states that the undersigned agrees to maintain and operate the discharge facilities in such a manner as to comply with the provisions of DC law. Maintenance responsibility is further clarified by a specific maintenance covenant that is required to be recorded on the Property Deed by regulation and "runs with the land" in the event of a change of property ownership where a stormwater BMP is located.

The maintenance covenant is an important tool that informs the current owner and any future owner of not only the existence of the stormwater BMP, but also of the specific maintenance schedule which ensures that the BMP will be maintained in tip-top condition to treat stormwater. Language is also included in the maintenance covenant that authorizes the District to enter the property in the event that the owner fails to maintain the BMP after notification.

The program has evolved into an effective water management maintenance program. An instructional video containing all the important elements of maintaining a stormwater management facility was produced and disseminated to property owners and maintenance contractors for educational purposes. Following inspections, stormwater management facilities are restored on an as-needed basis, and appropriate enforcement actions are taken to ensure compliance.

Low Impact Development

LIDs are another stormwater management tools. LID is an innovative non-structural alternative to standard structural-type storm water control BMPs. LID technologies reduce the frequency and volume of stormwater within urban watersheds as close to where the rain falls as possible. What's more LID techniques are very effective BMPs at treating storm water quality, particularly nitrates and other highly soluble& mobile pollutants, as well as, very fine sediments and suspended clays which carry the majority of adsorbed pollutants. LID typically uses vegetated areas into which stormwater is directed, detained, filtered and released either back into the storm drain network or into the groundwater table in an attempt to mimic pre-development hydrology. The WPD aims to provide outreach to planners, engineers, architects, developers, and watershed managers on the benefits, principles, and practice of LID. To this end, WPD has hosted, co-hosted, and participated in a number of LID workshops. For example:

- On March 20, 2002, the WPD co-hosted a workshop entitled "The Promise and Challenge of Low Impact Development". Approximately 100 participants from public and private sector and non-profit organizations attended. The workshop covered a broad range of stormwater management techniques and practices and provided participants with practical information on overcoming impediments to LID and how to put theory into practice. Information on regulatory and policy aspects, and the design, construction and maintenance of LID structures was provided.

- On March 28, 2003, the WPD and the Metropolitan Washington Council of Governments (MWCOG) hosted a one-day technical workshop on "Exploring Innovative Stormwater Management and Sediment Control Measures for Infill and Redevelopment in Ultra-Urban Areas." The objective of the workshop was to explore new techniques associated with sediment and stormwater control for infill and redevelopment projects. Some examples of concepts presented at the workshop included flexible funding mechanisms in support of stormwater management, and increasing water infiltration in compacted soil using "ditch witch" techniques. Approximately 120 professionals attended the workshop.

- On August 14, 2003, the WPD unveiled its "Put a LID on it!" program for funding LID projects throughout the city at a workshop titled "Landscape Designs for Better Water Quality." Held at the Washington Navy Yard, the workshop presented a broad range of stormwater management alternatives to participants, using a number of working examples. Participants also learned that they can apply for LID funding under the WPD's "Put it a LID on it!" program by providing some basic information regarding their proposed project. The project criteria most pertinent to the WPD's objectives include the amount of stormwater potentially treated at each site, potential longevity of the project, and site visibility.

- September 21-24, 2004, WPD, US EPA Region III, Prince George's County MD, Montgomery County MD, Anacostia Watershed Toxics Alliance, and the MWCOG co-sponsored a national conference entitled, "Putting the LID on Stormwater Management" at the University of Maryland, College Park in order to continue to promote the use of LID as an effective alternative for traditional stormwater management, as well as to examine successful watershed management practices related to stream restoration. The

primary purpose of the conference was to inform practitioners throughout the country of the benefits of LID approaches and how to anticipate and address the real impediments for implementation of these techniques to accelerate change in state and local practices in stormwater management.

- On May 4 and 5, 2005, Washington, DC, hosted the international Greenroofs for Healthy Cities Conference and Trade Show, drawing over 800 international and attendees together to talk about sustainable technologies, practices and programs. This event reflects Washington's emerging identity and commitment to becoming a green and sustainable city, and national capital. http://greenroofs.org/washington/

- For FY 2006 the District of Columbia Department of Health/Environmental Health Administration (EHA)/Watershed Protection Division has formalized a unique program with the US Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) in which NRCS will manage a program to design, permit and build approximately $800k worth of low impact development (LID) storm water management installations in the District of Columbia. Our new methodology allows more flexibility for cost escalations and unforeseen cost overruns compared with the old granter-grantee model. Working with NRCS also allows for better pricing through a bidding process by pre-qualified design/build firms. These installations will demonstrate innovative but simple methods to treat storm water to reduce the quantity and improve the quality of water going directly into our rivers and combined sewer system and institutionalize these innovative practices.

In addition to this outreach work, in the FY 2004 and 2005, WPD helped implement a number of LID projects throughout the District. Examples of these types of projects can be found at PEPCO's Benning Road Service Center, the Human Rights Campaign's Rhode Island Avenue office building, Casey Trees office building on K Street, NW, the Architect of the Capitol's raingarden on the Senate Office building parking-lot, and many other locations throughout the city.

Lastly, during the 2005-2006 time period, the WPD Technical Services Branch is in the process of revising, its "Storm Water Management Guidebook."

The building and plumbing codes are in the process of being revised to permit the use of pervious surfaces for parking areas.

Land Use Projects

The WPD is involved in several projects that will have a net positive effect on the water quality and living resources of DC. It is involved with the environmental assessment and development of Kingman and Heritage Islands. The WPD, one of the main agents for redevelopment of this land, has decided on a low impact recreational use such as the hiking/nature trail established on Roosevelt Island in the Potomac River. The WPD is also part of a cooperative effort with the

Director of the USDA National Arboretum to restore water quality to Hickey Run, a tributary of the Anacostia that flows through the National Arboretum.

Habitat Modification

The WPD has begun to focus its program on "on the ground" projects, using the combined environmental expertise of its fellow DOH/Bureau of Environmental Quality Divisions, and other various partnerships with local, regional, and federal entities. Through these partnerships, the WPD endeavors to restore lost habitat in the District of Columbia's portion of the Anacostia River watershed, and beyond. To this end, the WPD has proposed several restoration projects and received $5 million in District of Columbia obligated funds to be used as a local match and has leveraged significant federal funds from the U.S. Army Corps of Engineers (ACE), U.S. Environmental Protection Agency (EPA), the U.S. Geological Service (USGS), and has leveraged resources from the U.S. Fish & Wildlife Service (USFWS) and National Park Service (NPS). This commitment on the part of the District is a significant step toward real Anacostia River restoration over the next several years.

The District of Columbia's portion of the Anacostia River watershed supports a surprising variety of wildlife in the remnant habitats that have survived the pressures of development. In large part, the city's remaining undeveloped land associated with the Anacostia River is the result of an effort to create a unified Anacostia park system in the early part of this century, through the preservation of 1,000 acres for public access to the waterfront. Unfortunately, most of this land originated from the prior filling of valuable tidal wetlands. At the time of this filling, dredge material from the Anacostia River was redeposited in what were then considered efforts to 'reclaim worthless swampland.' However, the Anacostia River's remnant habitats, from tidal river fringe to the stream valley parks of the Anacostia River's tributaries, all contribute to the relative diversity of the Anacostia River watershed's flora and fauna.

EHA's efforts to rebuild tidal wetlands on the river began with the restoration of 33 acres of emergent marsh in the Kenilworth Aquatic Gardens area of the Anacostia River. The success of that restoration project in 1993 resulted in the WPD to develop two similar projects, one in nearby Kingman Lake, which restored 42 acres of emergent tidal marsh, and another restoration of 15 acres of river fringe wetlands, which were destroyed during the original dredging, filling, and walling of the river's edge.

The small tributaries of the Anacostia River all have been piped and developed on some portion of their reach. Fortunately, many of these streams also flow through the remnants of Civil War era forts that are now under the control of the NPS and have remained relatively untouched. These wooded stream valley parks provide islands of habitat in a sea of pavement. Nevertheless, most of these streams continue to be severely degraded by stormwater runoff draining from paved areas and other impervious surfaces within their watershed.

There is no doubt that the District of Columbia's portion of the Anacostia River Watershed is degraded; it is an urban area. The goal of the WPD is to preserve what is left, while helping to restore and enhance habitat that has been degraded or destroyed. Working toward this goal will not only provide valuable habitat for resident flora and fauna, but also will improve the health of the human community. The WPD has engaged in several habitat restoration and water quality improvement project agreements in the Anacostia River watershed. These projects include tidal and nontidal wetland restoration, stream daylighting and erosion control, riparian reforestation, stormwater wetland BMP construction, and upland terrestrial wildland enhancement. The planning and implementation of several of these projects have already begun and others are nearing final agreements. The already realized achievements, and current status of these projects can be found on the following pages. The District of Columbia continues to advance toward its ultimate environmental goal: restoring the Anacostia River.

Completed and Ongoing Habitat Enhancement and Restoration Projects

The WPD is conducting pre-assessments in individual sub-watersheds and implementing restoration projects throughout the Anacostia watershed in conjunction with various federal agency partners. Those agencies include: U.S. Army Corps of Engineers, Baltimore District (ACE), NPS, NRCS, EPA, and USFWS. The following is a brief summary and the status of each project currently planned for implementation by WPD.

Kingman Lake

This project restored over 42 acres of freshwater tidal wetlands in the Kingman Lake area in order to increase plant and animal diversity and improve the filtering capacity of the Anacostia. This project was completed in 2000. Monitoring efforts are continuing in connection with other wetlands that have been restored in Kenilworth Park. Funding for this project was cost shared by the ACE and EPA.

River Fringe Wetlands

During FY 2003 under the guidance of the WPD, the 15 acre River Fringe wetlands were completed and technical designs were approved for an additional 6 acres of wetlands adjacent to Heritage Island. This project is a significant component of the multi-agency Anacostia Waterfront Initiative and is also a component of the city's objective of promoting a net gain of wetlands within the District of Columbia. Its construction follows the Kingman Lake wetlands, 42 acres of freshwater tidal wetlands created in 2000 in a lake adjacent to the Anacostia River. These restored wetlands along the Anacostia River will help create wildlife habitat and improve the filtering capacity of the river. Funding for the project was cost shared by the ACE and DOH.

After completion of the 15-acre fringe wetland project, the WPD installed trash racks at two large stormwater outfalls that empty into the newly restored wetlands. WPD enlisted the services of the Water and Sewer Authority (WASA) to ensure

routine cleaning of the trash racks, and the ACE in the construction of the racks. This project will ensure that the wetlands remain free of trash and aesthetically appealing. It also will reduce the amount of trash in the Anacostia River.

Kingman Island

The goal of this project is to restore the southern half of the island as a natural recreational area, similar to what is found on Roosevelt Island. Habitat restoration efforts will focus on enhancement of vernal pool habitat on Heritage Island, reforestation of Kingman Island, and creation of tidal wetlands and a tidal gut for water access to the islands. Construction is scheduled for sometime in 2006, depending upon ACE funding. US Navy completed reconstruction of the pedestrian bridges in August 2001. Funding for this project is cost shared by ACE and EPA.

RFK Stadium

The goal of this project is to filter pollutants from a stormwater outfalls discharging into the Anacostia River. The outfall is located along the RFK Stadium parking lot. A habitat improvement study for the area surrounding the RFK Stadium was commissioned in early 2001. The area was subdivided into 7 sub-basins, and a review of the potential for installation of BMPs, including LID, at the site was conducted. Following this study, in June 2002, a final agreement between the WPD and the DC Sports and Entertainment Commission (DCSEC) was reached. Under this agreement, installation of BMPs and habitat improvement activities will occur in three phases. Phase I, involving the installation of new water quality inlets and a dissipater has been completed.

Fort Dupont Tributary

The goal for this restoration project is to reduce the impact of storm water upon the stream. The WPD has come to agreement with the U.S. National Park Service (NPS) on the installation of LID type storm water management in two large parking lots within the Ft. Dupont watershed as well as LID to treat stormwater from a 500-yard section of Ridge Road adjacent to the park. A contract to design and build these facilities has been issued and construction is expected in 2006.

Lower Anacostia Park Enhancements

Pope Branch

The goal of this project is to restore habitat and improve water quality in lower Anacostia Park. Two large, abandoned boats were removed from the river. ACE no longer involved – improvements on NPS land (Lower Anacostia Park) have been postponed until additional funding comes. EHA is working with WASA to

jointly replace an aging sewer line and restore the stream channel using natural restoration techniques. The costs for the project will be shared and implementation will happen concurrently in order to better integrate these highly interrelated projects. The goal is to improve water quality through the reduction of sewer leaks as well as to reduce streambank sluffing and erosion. A memorandum of understanding (MOU) has been signed by both agencies and designs will be complete by the end of 2006. Construction will begin in 2007.

Watts Branch

Following the 2003 completion of the U.S. FWS's Watts Branch Watershed Assessment, the WPD contracted with the ACE to implement a Section 206 Aquatic Habitat Restoration. The ACE's North Atlantic Division approved a Preliminary Restoration Plan for Watts Branch in July of 2003, allowing for the preparation of a project feasibility study. The WPD hosted a feasibility study "kickoff" meeting on September 24, 2003, attended by a number of Watts Branch stakeholders. Completion of the feasibility study was expected before the end of 2004, with construction slated for 2005. Unfortunately, the ACE has experienced a FY 2004 budget shortfall, and all work associated with Watts Branch was suspended in February 2004. Shortly after this, the WPD asked for the assistance of the U.S. FWS- Chesapeake Bay Field Office on the project. U.S. FWS has completed 30% designs and will have finished designs for the stream from Minnesota Avenue to Eastern Avenue by the end of 2006. Restoration will begin in 2007 as a partnership between EHA and USFWS. Final restoration designs will incorporate natural channel modifications that will help improve the stream's water quality, stabilize its banks, improve instream habitat, and enhance its aesthetic qualities.

Hickey Run

In the summer of 2003, the U.S. FWS completed a comprehensive Level IV assessment describing the fluvial geomorphology of Hickey Run, in preparation for a comprehensive stream rehabilitation using natural channel design, to be done at the earliest convenience of the National Arboretum. Restoration of the stream's banks and channel to reduce erosion and increase biological diversity is considered to be of equal importance to the WPD as the installation of BMPs. As of the December of 2003, a MOU was created in consultation with the National Arboretum and a USDA project manager, EPA, WASA, and EHA to research and build a trash trap and oil/grease separator to treat the first half-inch of any rain event. The MOU is in the process of being signed and completion of the BMP is expected in 2005. This combined BMP and channel restoration approach to the stream will benefit water quality in both Hickey Run and the Anacostia River.

Oxon Run

The goal of this restoration project is to improve water quality and habitat conditions to Oxon Run, which traverses both Prince George's County in Maryland and the District of Columbia. In FY 2003, the U.S. FWS continued work on their stream assessment and began conceptual stream restoration designs. The WPD has met with all stakeholders, WASA, D.C. Department of Parks and Recreation (DPR), and NPS, however future work is dependent upon significant additional funding.

District of Columbia Parks

The goal of this project is to restore habitat, increase erosion control measures, and provide green space to District of Columbia residents in D.C. parks. The project is a partnership with the DPR, the WPD, and the USDA Natural Resources Conservation Service (NRCS). In 2003 selected District of Columbia parks were assessed for restoration needs. Phase II, which started in 2004, will include testing the soil for nitrogen, phosphorus, and pH, and developing a maintenance plan for selected site. Walter Pierce Park located in Ward 1 was selected as one of the top five recreational sites by the DC Department of Parks and Recreation to enter into Phase III of the DC Park Soil Erosion Inventory and Evaluation. A preliminary stabilization concept was designed and presented to the local community in March 2006. Restoration construction is to begin in the fall of 2006.

To help ensure long-term success of these projects, the WPD has attended neighborhood meetings apprizing citizens of upcoming and ongoing projects, and has involved DC residents in clean-up events and meetings. When the community has an understanding of projects and have an opportunity to become involved through planning or more active participation, they are more likely to support project outcomes.

Natural Resource and Habitat Restoration

The goals of natural resource protection and habitat restoration in the Anacostia River watershed is indeed an important one. Maintaining the ecological diversity still found in the Anacostia watershed requires protecting the habitat that remains and enhancing when possible. Developing a plan to address habitat issues is crucial to the overall health of the river itself. Important signs of the river "coming back," such as regular visits by bald eagles, an improved fishery, and increased aquatic grasses all point toward a road to recovery. These signs are noticed not only by the ecologists and managers who gauge the rivers' health, but also by the people who actually use the river for recreation. Birders, fishermen and boaters all agree that a healthy river is important to their lives. Most people would agree that an important part of a healthy community is a clean and healthy environment. Many of the projects planned by the District of Columbia not only restore or enhance existing resources but help to improve the water quality of the river and those waters flowing into it. Water quality and other natural resources are gaining notice and support for their improvement in the community. The issues involved with quality of life and city services don't stop with efforts to reduce crime, improve education or ensure garbage pick up.

They must extend to effectively managing what is left of the natural environment in urban areas, for it is in the city where it is most needed as a respite from the stresses of city life.

Coordination with Other Agencies

Information on coordination with other local, regional, and federal agencies is included throughout this report.

Benefit Assessment

A quantitative assessment of benefits resulting from water pollution control expenditures over the years is difficult to make. Qualitatively, improvements continue to be seen. Recreational fishing is flourishing in the city. Annual surveys by the Fisheries and Wildlife Division (FWD) document the general stability of the resident and migratory fish populations in District of Columbia waters. The sale of fishing licenses in D.C. support the findings of the annual surveys and is an indicator of recreational use. Since 1988, the District of Columbia has required the purchase of licenses to fish in D.C. waters. Table 2.3 is a summary of the number of licenses sold from 2001 to 2005.

TABLE 2.3
SALES OF FISHING LICENSES IN THE DISTRICT OF COLUMBIA (2001 TO 2005)

Year	Non-Resident	Resident	14-day Temp	Total
2001	7028	1739	200	8967
2002	6909	2470	515	9894
2003	6557	2510	201	9268
2004	7467	1184	347	8998
2005	7270	2434	178	9882

PART III: SURFACE WATER ASSESSMENT

Strategy to Achieve Comprehensive Monitoring and Assessments

The Water Quality Division has developed a draft monitoring strategy based on EPA's 2003 guidance, *Elements of a State Water Monitoring and Assessment Program.* The strategy will continue the practice of comprehensive monitoring of the District of Columbia waters. When completed the strategy will describe a monitoring program that will move towards allowing water quality resource managers to know the overall quality of D.C. waters, the extent of water quality change, problem areas, the level of protection needed and the effectiveness of projects to correct impairments. A final strategy was approved by U.S. EPA in September 2005.

Current Surface Monitoring Program

Changes

The Water Quality Division began monitoring the Anacostia River continuously in 1997. Hourly readings are taken seven days a week. The WQD began with one station, ANA13, located at the Conrail bridge just upriver from the Pennsylvania Avenue bridge. The Pennsylvania Avenue bridge is the dividing line of the upper and lower segments of the Anacostia River. The first continuous monitor device (sonde unit) was deployed to assess the feasibility of using a sonde unit to determine the dissolved oxygen (DO) cycle of the river. In 2004 another Potomac station was added (Appendix 3.1). Appendix 3.2 are percent violation tables for the continuous monitors.

Monthly ambient monitoring will continue as in the past. Waterbodies will be monitored for identified TMDL pollutants on a rotating watershed basis. The rotation is Anacostia watershed, Rock Creek watershed and Potomac watershed. Monitoring for this purpose began in 2005.

Assessment Methodology and Summary Data

Assessment Methodology

The WQD uses the D.C. SWQS as one way of evaluating its surface waters. The percentage of time a selected standard is out of compliance at a monitoring station or group of monitoring stations over a selected span of time determines whether a waterbody supports a particular use. For the 2006 reporting cycle, physical, chemical, and bacterial data collected from January 2001 to December 2005 were used to make many of the use support decisions. Biological data collected during 2002-2003 was also used.

Fish consumption use determinations (Class D) are based on known fish consumption advisories in effect during the assessment period, and not water quality standards. The District of Columbia developed its fish consumption advisories from fish tissue contamination data collected in recent years. The following points should be noted for the fish consumption use support determinations. Fish tissue contamination data used to issue advisories are collected at stations on the Anacostia

and Potomac Rivers. If no barrier for fish movement exists, it is assumed that fish move freely to the smaller streams and other waterbodies. The criteria for the fish consumption use (Class D) support determination is presented in Table 3.1. SWQS were not used to make fish consumption support decisions.

TABLE 3.1
CRITERIA FOR FISH CONSUMPTION USE SUPPORT CLASSIFICATION

Support of Designated Use	Criteria for Fish Consumption
Fully Supporting (F)	No fish/shellfish advisories or bans are in effect.
Not Supporting(N)	"No consumption" fish/shellfish advisory or ban in effect for general population, or a subpopulation that could be at potentially greater risk, for one or more fish species; commercial fishing/shellfishing ban in effect.
Not Assessed (X)	"Not assessed" is used when fish consumption is not a designated use for the waterbody.
Insufficient Information (I)	Data to determine if the designated use is fully supporting/not supporting is not available.

To help to compare D.C. water quality and national water quality, the District of Columbia applies national criteria, where possible, in determining use support of its waterbodies. However, a modified version of the criteria established by U.S. EPA had to be used in certain use support decisions because D.C. did not collect the data as specified in the national criteria. For example, in many cases D.C. collected monitoring data less frequently than indicated by U.S. EPA criteria. The majority of monitoring stations are only sampled once-a-month. The District of Columbia, therefore, had to modify the criteria for determining primary and secondary contact recreation (Class A and B) as well as aquatic life use determinations using physical/chemical data to accommodate the sampling frequency. Fecal coliform bacteria data were used to make use support decisions about pathogens. The criteria used for these uses may be found in Table 3.2.

TABLE 3.2
CRITERIA FOR USING CONVENTIONAL POLLUTANTS AND PATHOGENS WHEN MAKING USE SUPPORT DECISIONS

Support of Designated Use	Criteria for using Conventional Pollutants and Pathogens
Fully Supporting (F)	For any pollutant, standard exceeded in $\leq$ 10% of measurements. Pollutants not found at levels of concern.
Not Supporting (N)	For any one pollutant, standard exceeded in > 10% of measurements. Pollutants found at levels of concern.
Not Assessed (X)	Not assessed

Support of Designated Use	Criteria for using Conventional Pollutants and Pathogens
Insufficient Information (I)	Data to determine if the designated use is fully supporting/not supporting is not available.

[1] Conventional pollutants are defined here as dissolved oxygen (DO), pH, and temperature.

In some cases, D.C. relies on biological/habitat data, instead of chemical/physical standards, to make aquatic life use (Class C) decisions. When streams with both conventional pollutant data and biological data are evaluated, the biological data are the overriding factor in aquatic life use decisions. The District Columbia's biological data were used in this report. Rapid bioassessment data were only used for aquatic life use support decisions (Class C waters) on the District's smaller streams. All but one of DC's small streams were re-evaluated from 2002-2003 for the Aquatic Life Use attainment category using biological assessment methodologies. These tributary assessments were based on the Maryland 2001 Biological Stream Survey (MBSS) for benthic macroinvertebrates which was used as a reference.

Aquatic life use support is based on the relationship between observed stream biological condition as compared to the reference stream condition producing a percent of reference stream biological condition. This scale rates "impaired" at 0-79%, and "non-impaired at 80-100%" of reference condition. U.S. EPA 305(b) guidelines on criteria for aquatic life use support classification recommend designation of "not supporting" if impairment exists, and "fully supporting" if no impairment exists. Piedmont and Coastal Plain tributaries were assessed using reference condition data from Montgomery and Prince George's Counties, Maryland.

Biological Integrity Class scores were determined using scoring criteria adapted from Montgomery County. These scoring ranges were also used for Coastal Plain values. Habitat assessments were compared directly to each ecoregions' corresponding reference condition habitat evaluation.

The following tributaries were assessed for the Aquatic Life Use category using data collected during 2002-2003:

Coastal Plain		**Piedmont**	
TDU01	Fort Dupont Tributary	TFB02	Foundry Branch
TFC01	Fort Chaplin Run	TLU01	Luzon Branch
TFD01	Fort Davis Tributary	TMH01	Melvin Hazen Valley Branch
THR01	Hickey Run	TPO01	Portal Branch
TOR01	Oxon Run	TPY01	Piney Branch

Coastal Plain		Piedmont	
TWB01	Lower Watts Branch	TSO01	Soapstone Creek
TWB02	Upper Watts Branch	TDA01	Dalecarlia Tributary
TTX27	Texas Avenue Tributary	TFE01	Fenwick Branch
TFS01	Fort Stanton Tributary	TNS01	Normanstone Creek
TNA01	Nash Run	TDO01	Dumbarton Oaks Tributary
TPB01	Popes Branch	TPI01	Pinehurst Branch
		TKV01	Klingle Valley Creek
		TBR01	Broad Branch

The District also determines overall use support for waterbodies with multiple uses according to EPA guidance (Table 3.3). A waterbody fully supports its designated uses when **all** its uses are fully supported. When one or more uses are **not** supporting, then the waterbody is not supporting.

TABLE 3.3
CRITERIA FOR OVERALL USE SUPPORT CLASSIFICATION

Overall Designated Use for Multiple-Use Waterbodies	Criteria for Overall Use Support
Fully supporting (F)	All uses are fully supported.
Not supporting (N)	One or more uses are not supported.
Not Assessed (X)	Not assessed
Insufficient Information (I)	Data to determine if the designated use is fully supporting/not supporting is not available.

Appendix 3.3 includes the tables of percent violations and statistical summary reports for the waterbodies assessed for this reporting cycle.

Maps

Appendices 3.4 through 3.8 display use support data in map form for the surface waters of the District of Columbia. The maps were generated by EHA's GIS using Arc/Info software. These maps should help the reader interpret the water quality information given in this report on a

geographic basis. Appendix 3.4 shows the degree of support for primary contact recreation, while Appendix 3.5 depicts the degree of support for secondary contact recreation and aesthetic enjoyment. In comparison, Appendix 3.6 shows the degree of support for the protection and propagation of fish, shellfish, and wildlife. In addition, Appendix 3.7 present the degree of support for the consumption of fish, and finally, Appendix 3.8 presents the degree of support for navigation.

Section 303(d) Waters

Background

Section 303(d) of the Federal Clean Water Act and regulations developed by U.S. EPA require states to prepare a list of waterbodies that do not meet water quality standards even after all the pollution controls required by law are in place. Waterbodies not meeting the appropriate water quality standards are considered to be impaired. The law requires that states place the impaired waterbody segments on a list referred to as the 303(d) list and develop Total Maximum Daily Loads (TMDLs) for the waterbodies on the list.

In July 2005, EPA distributed new guidance for the assessment, listing, and reporting requirements for Section 303(d) and 305(b) of the Clean Water Act for the 2006 reporting cycle. The product of the July 2005 guidance is called the Integrated Report. The new guidance requires the categorization of all state waters into 5 assessment categories. Category 1 should include waters with the status that all designated uses are being met. Category 2 should include waters that meet some of their designated uses, but there is insufficient data to determine if remaining designated uses are met. Category 3 should include waters for which insufficient data exists to determine whether any designated uses are met. Category 4 should include waters that are impaired or threatened but a TMDL is not needed. Category 5 should include waters that are impaired or threatened and a TMDL is needed. Categories can be subcategorized.

EPA regulations require that the 2006 Integrated Report (305(b)/303(d) list) and methodology used to prepare the categorize the waters be submitted to EPA by April 1, 2006. The public must also be given the opportunity to comment on a draft list.

Basis for Consideration of Data

Various data sources were considered for use in the preparation of the draft 2006 303(d) List. As the 303d list is a tool of the regulatory TMDL process, D.C. wants to ensure that the 303(d) list produced and approved is based on data that utilized unbiased, scientifically sound data collection and analytical methods. The D.C. Water Quality Monitoring Regulations (Title 21, Chapter 19 - District of Columbia Municipal Regulations) were developed to provide for accurate, consistent, and reproducible water quality monitoring data for decision making purposes. Data used must have been collected in the actual waterbody that is being assessed. Data that did not satisfy the above mentioned monitoring regulations were not reviewed for the development of the draft 2006 303d list.

Like the 2004 303(d) list, the draft 2006 list enumerates specific pollutants of concern, not categories of pollutants. The draft 2006 DC 303(d) List is based on the following data:

- 2004 303(d) list
- DC Ambient Water Quality Monitoring data for 2001-2005 used to make use support determinations for the 2006 305(b) report
- DC Municipal Separate Storm Sewer System 2004-2005 Monitoring data
- Draft Tributary Assessment Report, 2004 (Biological Data collected between 2002-2003) being used to make aquatic life use support determinations for the 2006 305(b) report
- DC Fish Tissue Contamination Report, 2001

A request for data was sent to organizations that may have data for the waters of the District of Columbia. Data received will be reviewed and considered during preparation of the final 303(d) list.

Data Interpretation for Listing

If a designated use is not supported, then a waterbody is listed for the pollutant associated with the applicable criteria. In order for a waterbody to be listed the data evaluated for water quality standard attainment must have been collected from that specific waterbody. Only relevant data should be used to make the attainment determination. This stipulation is necessary as development of a TMDL is a major time and monetary investment for the parties involved. The Water Quality Division must ensure that the funds expended for TDML purposes are used in an efficient manner and will result in maximum water quality benefits. For example, the Anacostia River cannot be listed for copper if there is no copper data available from water samples collected in a segment of the Anacostia River to indicate that impairment. MS4 data from an outfall to a tributary of the Anacostia River cannot be used to list a segment of the Anacostia River.

Use Support Determination

-Ambient Monitoring Data and Draft Tributary Assessment Data
The Water Quality Division uses the D.C. Surface Water Quality Standards to evaluate its surface waters. The designated uses for the surface waters of the District of Columbia are delineated in the October 2005 Water Quality Standards. The designated uses are:

- primary contact recreation (swimmable),
- secondary contact recreation and aesthetic enjoyment (wadeable),
- protection and propagation of fish, shellfish, and wildlife (aquatic life) ,
- protection of human health related to consumption of fish and shellfish (fish consumption), and
- navigation.

For the draft 2006 303(d) list determination, physical, chemical, and bacterial data collected from January 2001 to December 2005 are being used to make the use support decisions for primary contact, secondary contact, and aquatic life support uses for the rivers. A waterbody is

included on the draft 303(d) list if its designated use was not supported, i.e.- greater than 10% exceedance of the measurements taken with the data period of study. It is listed on Category 5 of the list if it is a new instance of non-support of a parameter.

Biological/habitat data collected during 2002-2003 in addition to the physical/chemical data is used to determine aquatic life use support for the small D.C. streams. Biological/ habitat data for small streams was evaluated using the U.S. EPA stressor identification guidance. If a stream's aquatic life use is not supported based on the biological information found in the D.C. Tributary Assessment Report (draft internal document) it is listed under Category 4C of the list, if a TMDL has not been completed.

Fish Tissue Contamination Data

Fish consumption use determinations (Class D) are based on known fish consumption advisories in effect during the assessment period. Surface Water Quality Standards (SWQS) were not used to make fish consumption support decisions. Fish tissue contamination data used to issue advisories are collected at stations located on the Anacostia and Potomac Rivers. If no barrier for fish movement exists, it is assumed that fish move freely to the smaller streams and other waterbodies. A fish consumption advisory remains in place in the District of Columbia. In addition, the EPA guidance on using fish advisories for Integrated Report categorization indicates that fish and shellfish consumption advisories demonstrate non-attainment when the advisor is based on fish and shellfish tissue data.

Municipal Separate Storm Sewer (MS4) Data

The MS4 data used is the result of wet and dry weather samples collected from the stations monitored during this MS4 monitoring cycle. Only parameters for which numeric criteria was listed in the DC WQS were evaluated. The most strict criteria listed was used for comparison with the data results.

Category Placement Methodology

The pollutant causing an impairment in a waterbody must be identified. With multiple uses associated with each waterbody it is possible for a single waterbody to need more than one TMDL. The guidance allows a waterbody to be listed in only one category. So a waterbody's placement in a category is dependent on the aggregate of TMDLs that may be needed and not a specific pollutant. Keep in mind that the main goal of this list is to have TMDLs approved and implemented so that water quality standards can be attained. Following is a general description of the categories.

Category 1- Waterbody or segment of a waterbody attained all its designated uses and no use is threatened.

Category 2- Waterbody or segment of a waterbody attained some but not all of their designated uses.

Category 3- Insufficient data or information to determine designated use attainment in a waterbody or segment of a waterbody.

Category 4- Waterbody or segment of a waterbody with at least one designated use impaired but a TMDL is not needed. This category is subcategorized below.

Subcategory 4A- Waterbody or segment of a waterbody for which TMDLs for pollutants causing impairments have been approved or established by EPA may be placed in this category.
.
Subcategory 4B- Waterbody or segment of a waterbody for which other pollution controls are expected to result in water quality standard attainment in a reasonable period of time.

Subcategory 4C- Waterbody of segment of a waterbody for which TMDLs are not required. Impairment is not caused by a pollutant..

Category 5- Waterbody or segment of a waterbody with at least one designated use not attained or threatened and a TMDL is needed. A waterbody may be placed in this category even if TMDLs have been approved for some of the pollutants/pollution identified as causing non-attainment. All necessary TMDLs for a waterbody must be approved or established by EPA in order to placed in category 4A.

Priority Ranking

Waterbodies that are first placed in 2006 on the draft list for toxics substances such as metals, pesticides, carcinogens or noncarcinogens, etc. are ranked as high priority for TMDL development on the basis of their risk to human health. Due to experience with the TMDL development process- data gathering, model development, public participation- the District of Columbia does not foresee the development of TMDL for waterbodies ranked as high priority (on the 2006 list) before the next five years or 2011. Keep in mind that impaired waters listed on the 2004 Section 303 (d) list are scheduled for development until April 2009.

If a waterbody is first listed in 2006 for fecal coliform due to secondary contact recreation use violations with 50% or more exceedances, that waterbody is ranked as Medium priority waterbodies.(The term “50% or more exceedances” refers to the percentage of time within the 5-year period of study that monitoring data for a waterbody exceeded the water quality standard. For example, if the secondary contact recreation use was being evaluated and there are 60 fecal coliform readings for the Anacostia River during the 5- year study period and 33 of those readings were greater than 1000 MPN/100mL then 55% of the time during that study period the secondary contact recreation use was exceeded and that waterbody would be ranked as a medium priority waterbody.) Bacterial impairment also poses some human health risk, though the effects seen are usually not as severe as toxic substances’ effects. The secondary contact recreation use exceedances (a current use) will take higher priority than the primary contact recreation use exceedances as it is also more a efficient use of resource to address the existing uses before the designated uses (such as primary contact recreation). Waterbodies listed for trash will be ranked as High priority. Waterbodies listed for pH are also ranked as Medium priority as it is a aquatic

life use criterion. The medium priority waterbodies will be scheduled for TMDL preparation in 2012.

If a waterbody is first listed in 2006 for fecal coliform for secondary contact recreation use violations with less than 50% exceedances are ranked as low priority. Waterbodies listed for any other pollutant not previously mentioned will also be ranked low priority. Low priority waterbodies will be scheduled for TMDL preparation in 2013.

Georeferencing

The geographic location codes included in the draft 2006 303(d) List were taken from the National Hydrography Dataset. The District of Columbia has two codes. 02070010 - the Potomac Watershed and 02070008- the Middle Potomac-Catoctin Watershed. Only one D.C. waterbody, Dalecarlia Tributary, is in the Middle Potomac-Catoctin Watershed. All the remaining waterbodies are in the Potomac Watershed. The EPA Assessment DatabaseVersion 2.2 for Access is being used to compile the data for the Integrated Report.

Public Participation

The draft 2006 Section 303(d) list will be available for a 30-day public comment period. The comment period commenced on March 24 and ends on April 24, 2006. A copy of the draft 303(d) list was available at the Martin Luther King, Jr. Public Library's Washingtonian Room starting on March 24, 2006. The notice was also be published in the D.C. Register. The formal required responses to the comments received by the submission deadline will be prepared and sent to U.S. EPA Region 3 when completed.

Categorization of District of Columbia waters

See Appendix 3.9 for Categorization List.

Total Maximum Daily Load (TMDL) Program

Background

Section 303(d)(1)(A) of the Federal Clean Water Act (CWA) states:

> Each state shall identify those waters within its boundaries for which the effluent limitations required by section 301(b)(1)(A) and section 301(b)(1)(B) are not stringent enough to implement any water quality standards applicable to such waters. The State shall establish a priority ranking for such waters taking into account the severity of the pollution and the uses to be made of such waters.

Further section 303(d)(1)(C) states:

> Each state shall establish for the waters identified in paragraph (1)(A) of this subsection, and in accordance with the priority ranking, the total maximum daily load, for those pollutants which the Administrator identifies under section 304(a)(2) as suitable for such calculations. Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.

In 1998, the District of Columbia developed a list of waters that did not or were not expected to meet water quality standards as required by section 303(d)(1)(A). The Section 303(d) list was revised in 2002 and 2004. As stated in the Clean Water Act (CWA), Total Maximum Daily Loads (TMDLs) shall be developed for those water bodies not attaining water quality standards after application of technology-based and other required controls. A TMDL sets the quantity of a pollutant that may be introduced into a waterbody without exceeding the applicable water quality standard. A TMDL is typically defined as the sum of the wasteload allocations (WLAs) assigned to point sources, the load allocations (LAs) assigned to nonpoint sources, and a margin of safety (MOS). The TMDL is commonly expressed as:

$$TMDL = WLAs + LAs + MOS$$

TMDL Development

Since 1998, the Water Quality Division has developed 354 TMDLs for the District's waters, with all of them approved by the U.S. Environmental Protection Agency (USEPA). The development of the TMDLs required monitoring and modeling studies for the Anacostia and Potomac Rivers and their tributaries including Rock Creek. The Water Quality Division has conducted many monitoring and modeling studies to help support the development of the TMDLs. The Section 303(d) list in this report summarizes the TMDLs that are already completed and planned to be developed in the coming years.

The District of Columbia is currently participating in a multi-state (DC, Maryland and Virginia) effort that had been initiated for a coordinated monitoring and modeling to develop TMDLs for organics impairments in the Virginia, Maryland, and District of Columbia portions of the tidal Potomac River. The study is being coordinated by the Interstate Commission on the Potomac River Basin and with the help of the U.S. Environmental Protection Agency. The District will continue to partner with watershed states, federal agencies and regional organizations to develop cost effective, scientifically defensible and consensus driven TMDLs.

The development of TMDL is a continuing evolving process. Many of the District's TMDLs were established based on limited data and consequently narrow modeling options available at the time. Most of the District's TMDLs or loading estimates will need to be revised as more data becomes available and our understanding of the natural environmental processes and settings improves, which in turn will allow development of more sophisticated water quality models and better predictions.

TMDL Implementation

Once the TMDLs are established, existing loads in excess of allocated amounts determined in the TMDL calculations need to be eliminated. Various ongoing/planned pollution reduction activities mentioned in this report are geared toward achieving the TMDL goals for the District's waterbodies. Both regulatory and non-regulatory programmatic measures are needed to achieve the reductions set in the TMDLs.

The combined and separate sewer systems in the District are regulated with NPDES permits. The permits must be consistent with any applicable USEPA approved waste load allocation (WLA) component of any established TMDL. The District has developed MS4 (municipal separate storm sewer system) TMDL implementation plans for the Anacostia and Rock Creek watersheds in February and August 2005, respectively. The plans delineate specific goals and actions that must be implemented to achieve water quality goals and to attain designated uses in the waterbodies. To reduce pollution from CSO discharges in the combined sewer system, the D.C. Water and Sewer Authority has developed a Long Term Control Plan (LTCP). The LTCP calls for about 96 percent reductions of CSOs in the District and has been approved by the USEPA. As described in this report, a number of other programs/projects (e.g., low impact developments, wetlands and habitat restoration, storm water BMPs, etc.) are currently in place and being planned to reduce water pollution from nonpoint areas and federally owned lands in the District. As all of the District's major rivers and tributaries are shared with other jurisdictions, it must be recognized that without significant reductions in upstream or boundary loads the water quality goals in the District cannot be achieved.

Rivers and Streams

Designated Use Support

Twenty-four (24) rivers and streams were assessed for this update. Each of those waterbodies were impaired for one or more uses (Table 3.4). Appendix 3.10 contains individual assessments for each of the waterbodies.

TABLE 3.4
SUMMARY OF FULLY SUPPORTING, THREATENED, AND IMPAIRED RIVERS AND STREAMS

Degree of Use Support	Assessment Category		Total
	Evaluated	Monitored	Assessed Size (miles)
Size Fully Supporting All *Assessed* Uses	0.00	0.00	0.00
Size Fully Supporting All *Assessed* Uses but Threatened for at Least One Use	0.00	0.00	0.00
Size Impaired for One or More Uses	0.00	38.40	38.40
TOTAL ASSESSED	0.00	38.40	38.40

Based on Table 3.5 no stream supported it's aquatic life use. The fish consumption use was not supported in any of the streams assessed due to the fish advisory in effect for all D.C. waterbodies. A high number of fecal coliform standard violations was the indicator of nonsupport of the swimming use by streams with the designated use. The secondary contact use for all streams in the District of Columbia was not supported . The navigation use was fully supported in the streams and rivers.

TABLE 3.5
INDIVIDUAL USE SUPPORT SUMMARY FOR RIVERS AND STREAMS

Type of Waterbody: Rivers and Streams (miles)

Goals	Designated Use	Total in State	Total Assessed	Supporting-Attaining WQ Standards	Not Supporting-Not Attaining WQ Standards	Insufficient Data & Information	Size Not Assessed
Protect & Enhance Ecosystems	Aquatic Life	38.4	34.1	0.00	34.9	4.3	0.00
Protect &	Fish Consumption	38.4	36.4	0.00	36.4	0.00	2.0
Enhance Public Health	Shellfishing	-		-	-	-	-
	Swimming	38.4	38.4	0.00	38.4	0.00	0.00
	Secondary Contact	38.4	38.4	0.00	38.4	0.00	0.00
	Drinking Water	-	-	-	-	-	-
Social & Economic	Agricultural	-	-	-	-	-	-
	Cultural or Ceremonial	-	-	-	-	-	-
	Navigation	38.4	9.5	9.5	0.00	0.00	28.9

- = not applicable

Relative Assessment of Causes/Stressors

The causes of impairment to streams and rivers are varied. For example, Nash Run and Hickey Run have occasional problems with low D.O. Pathogens play a minor role in impairing Fort Dupont. While all the other streams are at least moderately impacted by pathogens. Many of the streams have poor biological integrity. Table 3.6 lists the causes of impairment to D.C. streams and rivers.

TABLE 3.6
TOTAL SIZES OF WATER IMPAIRED BY VARIOUS CAUSE CATEGORIES FOR RIVERS AND STREAMS

Type of Waterbody: Rivers and Streams (miles)

Cause Category	Total Size of Water Impaired
PATHOGENS	**37.6**
Fecal Coliform	37.6
BIOLOGIC INTEGRITY (BIOASSESSMENTS)	**34.1**
Benthic-Macroinvertebrate Bioassessments (Streams)	6.2
Combination Benthic/Fishes Bioassessments (Streams)	34.1
Combined Biota/Habitat Bioassessments (Streams)	13
Fishes Bioassessments (Streams)	6.2
Habitat Assessment (Streams)	1
FLOW ALTERATIONS	**18.7**
Other Flow regime alterations	18.7
HABITAT ALTERATIONS (INCLUDING WETLANDS)	**10.6**
Alteration in stream-side or littoral vegetative covers	5.1
Alterations in wetland habitats	6.2
Physical substrate habitat alterations	0.7
SEDIMENTATION	**28**
Particle distribution (Embeddedness)	28
Total Suspended Solids (TSS)	3.7
OIL AND GREASE	**1.7**
OTHER	**16.5**
Debris/Floatables/Trash	16.5

Relative Assessment of Sources

A source of impairment that is common to D.C. rivers and streams is urban runoff/storm sewers

from residential districts. Battery Kemble and Portal Branch are highly impacted by runoff. Habitat modification still has an impact on many of the streams as riparian vegetation is removed and stream banks are destabilized due to heavy runoff. Combined sewer overflow continues to affect Klingle Valley Creek, Rock Creek and Piney Branch. Table 3.7 lists the sources of impairment.

TABLE 3.7
TOTAL SIZES OF WATER IMPAIRED BY VARIOUS SOURCE CATEGORIES FOR RIVERS AND STREAMS

Type of Waterbody: Rivers and Streams (miles)

Source Category	Total Size of Water Impaired
Site Clearance (Land Development or Redevelopment)	5.3
Landfills	0.6
Channelization	5.6
Impacts from Hydrostructure Flow Regulations/modification	14.7
Loss of Riparian Habitat	1.2
Hydrostructure Impacts on Fish Passage	14.7
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO, or CSO)	18.7
Illegal Dumping	9.9
Illegal Dumps or Other Inappropriate Waste Disposal	11.4
Cercla NPL (Superfund) Sites	1.6
Combined Sewer Overflows	9.5
Discharges from Municipal Separate Storm Sewer Systems (MS4)	23.5
Municipal (Urbanized High Density Area)	5.8
Post-development Erosion and Sedimentation	8.5
Residential Districts	30.9
Wet Weather Discharge (Non-Point Source)	18.7
Above Ground Storage Tank Leaks (Tank Farms)	0.9
Source Unknown	15.1

Lakes

Three waterbodies were monitored for their designated use support. The waterbodies classified as lakes are Kingman Lake, C&O Canal, and the Tidal Basin. All of these waterbodies were

impaired for one or more of their designated uses. Table 3.8 is a summary of the degree of support by lakes in the District of Columbia. Individual water quality assessments may be found in Appendix 3.10.

TABLE 3.8
SUMMARY OF FULLY SUPPORTING, THREATENED, AND IMPAIRED LAKES

Degree of Use Support	Assessment Category		Total
	Evaluated	Monitored	Assessed Size (miles)
Size Fully Supporting All *Assessed* Uses	0.00	0.00	0.00
Size Fully Supporting All *Assessed* Uses but Threatened for at Least One Use	0.00	0.00	0.00
Size Impaired for One or More Uses	0.00	238.40	238.40
TOTAL ASSESSED	0.00	238.40	238.40

Designated Use Support

Lakes in the District of Columbia supported the goals of the *CWA* to various degrees. Based on physical/ chemical data, the aquatic life use was fully supported in the C&O Canal. It was not supported in the Tidal Basin or Kingman Lake. Due to the fish consumption advisory currently in effect in the District of Columbia, the fish consumption use was not supported in any of the lakes. The swimming use was not supported by lakes. While the secondary contact use was supported in the Tidal Basin, but not supported in Kingman Lake and the C&O Canal. Navigation was fully supported in all the lake waterbodies. Table 3.9 is the use support summary for D.C. lakes.

TABLE 3.9
INDIVIDUAL USE SUPPORT SUMMARY FOR LAKES

Type of Waterbody: Lakes (acres)

Goals	Designated Use	Total in State	Total Assessed	Supporting- Attaining WQ Standards	Not Supporting- Not Attaining WQ Standards	Insufficient Data & Information	Size Not Assessed
Protect & Enhance Ecosystems	Aquatic Life	238.40	238.40	27.3	211.1	0.00	0.00

Goals	Designated Use	Total in State	Total Assessed	Supporting- Attaining WQ Standards	Not Supportin g- Not Attaining WQ Standards	Insufficient Data & Information	Size Not Assessed
Protect & Enhance Public Health	Fish Consumption	238.40	238.40	0.00	238.40	0.00	0.00
	Shellfishing	-	-	-	-	-	-
	Swimming	238.40	238.40	0.00	238.40	0.00	0.00
	Secondary Contact	238.40	238.40	108.40	130.0	0.00	0.00
	Drinking Water	-	-	-	-	-	-
Social & Economic	Agricultural	-	-	-	-	-	-
	Cultural or Ceremonial	-	-	-	-	-	-
	Navigation	238.40	238.40	238.40	0.00	0.00	0.00

- = not applicable

Relative Assessment of Causes

All the lakes are highly impacted by pathogens. Kingman Lake is moderately impacted by pathogens and organic enrichment/low D.O. and oil and grease Table 3.10 lists the causes of impairment to D.C. lakes.

TABLE 3.10
TOTAL SIZES OF WATER IMPAIRED BY VARIOUS CAUSE CATEGORIES FOR LAKES
Type of Waterbody: Lakes (acres)

Cause Category	Total Size of Water Impaired
PATHOGENS	**238.4**
Fecal Coliform	238.4
OXYGEN DEPLETION	**102.7**
Oxygen, Dissolved	102.7

Cause Category	Total Size of Water Impaired
SEDIMENTATION	**102.7**
Sedimentation/Siltation	102.7
Solids (Suspended/Bedload)	102.7
OIL AND GREASE	**102.7**

Relative Assessment of Sources

There are two sources of impairment to D.C. lakes, combined sewer overflow and urban runoff/storm sewers. The three waterbodies are at least moderately impacted by combined sewer overflow. Urban runoff/storm sewers is a source with moderate impact on the C&O Canal and the Tidal Basin, but a high impact on Kingman Lake. Table 3.11 shows the sources of impairment.

TABLE 3.11
TOTAL SIZES OF WATER IMPAIRED BY VARIOUS SOURCE CATEGORIES FOR LAKES
Type of Waterbody: Lakes (acres)

Source Category	Total Size of Water Impaired
Combined Sewer Overflow	102.7
Discharges from Municipal Separate Storm Sewer Systems (MS4)	238.40

Estuary and Coastal Assessment

The Anacostia River, the Potomac River, and the Washington Ship Channel are classified as estuaries due to their tidal influences. The Potomac River and the Anacostia River are divided into segments for assessment purposes. Individual water quality assessments for the waterbodies can be found in Appendix 3.10.

Designated Use Support

All of the estuary waterbodies were impaired for one or more of their designated uses. The total square miles monitored and assessed are shown in Table 3.12.

TABLE 3.12
SUMMARY OF FULLY SUPPORTING, THREATENED, AND IMPAIRED ESTUARIES

Degree of Use Support	Assessment Category		Total
	Evaluated	Monitored	Assessed Size (miles)
Size Fully Supporting All *Assessed* Uses	0.00	0.00	0.00
Size Fully Supporting All *Assessed* Uses but Threatened for at Least One Use	0.00	0.00	0.00
Size Impaired for One or More Uses	0.00	5.93	5.93
TOTAL ASSESSED	0.00	5.93	5.93

The aquatic life use was fully supported along 4.83 square mile of estuary (Potomac River), and not supported along 1.1 square miles of estuary (Washington Ship Channel and the entire Anacostia River). The fish consumption use was not supported due to the fish consumption advisory in effect for D.C. waters. The swimming use is not supported in the estuaries. The swimming use support is evaluated based on the number of times the fecal standard of 200 MPN/100ml is exceeded. Table 3.13 shows the secondary contact use fully supported along 3.75 square miles, not supported along 2.18 square miles (the entire Anacostia River and the middle Potomac River). The navigation use was fully supported in estuaries as no hazard to users by submerged or partially submerged artificial objects existed in the waterbodies during this study period.

TABLE 3.13
INDIVIDUAL USE SUPPORT SUMMARY FOR ESTUARIES FOR ESTUARIES
Type of Waterbody: Estuaries (square miles)

Goals	Designated Use	Total in State	Total Assessed	Supporting-Attaining WQ Standards	Not Supporting-Not Attaining WQ Standards	Insufficient Data & Information	Size Not Assessed
Protect & Enhance Ecosystems	Aquatic Life	5.93	5.93	5.33	0.6	0.00	0.00
Protect &	Fish Consumption	5.93	0.00	0.00	5.93	0.00	0.00
Enhance	Shellfishing	-	-	-	-	-	-

Goals	Designated Use	Total in State	Total Assessed	Supporting-Attaining WQ Standards	Not Supporting-Not Attaining WQ Standards	Insufficient Data & Information	Size Not Assessed
Public Health	Swimming	5.93	5.93	0.00	5.93	0.00	0.00
	Secondary Contact	5.93	5.93	3.75	2.18	0.00	0.00
	Drinking Water	-	-	-	-	-	-
Social & Economic	Agricultural	-	-	-	-	-	-
	Cultural or Ceremonial	-	-	-	-	-	-
	Navigation	5.93	5.93	5.93	0.00	0.00	0.00

- = not applicable

Relative Assessment of Causes

The lower Anacostia has a slight pH impairment while the Washington Ship Channel has a moderate pH impairment. All the estuaries have a pathogen impairment. It is most pronounced in the Anacostia River. The pathogen impairment is moderate in the Potomac River and the Washington Ship Channel. Low D.O. is slightly impairing in the upper Anacostia River segment. Table 3.14 lists the causes of impairment to estuaries in D.C.

TABLE 3.14
TOTAL SIZES OF WATER IMPAIRED BY VARIOUS CAUSE CATEGORIES FOR ESTUARIES
Type of Waterbody: Estuaries (square miles)

Cause Category	Total Size of Water Impaired
PATHOGENS	**5.93**
Fecal Coliform	5.93
OXYGEN DEPLETION	**0.3**
BOD, Biochemical Oxygen Demand	0.3
Oxygen, Dissolved	0.3
SEDIMENTATION	**0.3**
Sedimentation/Siltation	0.3
Solids (Suspended/Bedload)	0.3

Cause Category	Total Size of Water Impaired
OIL AND GREASE	**0.8**

Relative Assessment of Sources

The sources of impairment to the estuaries with high impact are combined sewer overflows (along the Anacostia and upper Potomac), municipal point sources, and urban runoff. A moderate source of impairment to the Potomac is natural sources. The Anacostia is impacted by surface mining, highway runoff and unknown sources in its watershed. The Washington Ship Channel is impacted by urban runoff and other unknown sources. Table 3.15 lists the sources of impairment to D.C. estuaries.

TABLE 3.15
TOTAL SIZES OF WATER IMPAIRED BY VARIOUS SOURCE CATEGORIES FOR ESTUARIES
Type of Waterbody: Estuaries (square miles)

Source Category	Total Size of Water Impaired
Combined Sewer Overflows	5.63
Dredging (E.g., for Navigation Channels)	0.30
Municipal point sources discharges	4.43
Highway/Road/Bridge Runoff (Non-construction Related)	0.80
Unknown sources	1.38
Petroleum/natural Gas Production Activities (Permitted)	0.80
Discharges from Municipal Separate Storm Sewer Systems (MS4)	5.23
Municipal (Urbanization High Density Area)	0.40

Wetlands

Development of Wetland Water Quality Standards

The development of wetland water quality standards is on going.

Integrity of Wetland Resources

No change.

Extent of Wetland Resources

No change.

Additional Wetland Protection Activities

One of the objectives of the proposed Wetland Conservation Plan is to codify the draft regulations that were part of the plan. The WQD is currently examining the draft regulations in and effort to ensure that wetland protection programs will meet water quality standards section 303(c)(2) of the Clean Water Act. After the examination is completed and internal BEQ approval is obtained, the regulations will go through the promulgation process.

As the link between land and water, wetlands play a vital role in water quality management programs. The basic element of water quality standards (WQS), including designated use criteria (Class C and D), monitoring, and antidegradation policy to control nonpoint source pollution impact. The antidegradation policies and the implementation of current Best Management Practices (BMPs) will provide a powerful tool for the protection of wetlands and can be used by District of Columbia to regulate point and nonpoint source discharge to wetlands in the same way as to other surface waters.

Development pressures continue to threaten the new and existing wetlands. The District of Columbia is actively assessing the use of current BMPs preservation options for wetland protection. Buffer strips are one of many BMP's that is currently being assayed by the District of Columbia WQD. Two major facets of managing wetlands protection within the District of Columbia include buffering wetlands from direct human pressures, and maintaining natural processes that shape and sustain a wetland, such as hydrology, climate, biogeochemical fluxes, fires, and monitoring. A key element of any protection strategy is the establishment of a physical buffer to minimize edge effects and to mitigate water quality impacts. The District of Columbia WQD is currently in the process of reviewing a wetland conservation plan based on four criteria to determining adequate buffer size (15 to 30m) to protect wetlands and other sources:

- wetland functional value – level of disturbance, sensitivity to disturbance,
- intensity of adjacent land use
- buffer characteristic-vegetation density and structural complexity, soil condition, and
- specific buffer required.

The District of Columbia WQD is aggressively attempting to develop a monitoring activity program based on assessments of new and existing wetlands. Water quality management activities, including the permitting of wastewater and storm water discharges, the assessment and control of NPS pollution, and waste disposal activities (sewage sludge, CERCLA, RCRA) require sufficient monitoring to ensure that the designated and existing use of waterbodies in District of Columbia are maintained and protected. Many wetlands, through their capacity for nutrients and sediments, also can serve as an important water quality control function for nonpoint source effects on water adjacent to, or down stream of the wetland. Water quality standards implemented by the District of Columbia WQD will play a pivotal role in both of the above.

As a signatory to the Chesapeake Bay Agreement the District of Columbia also signed in December1997, the Wetlands Directive 97-2, which calls for "No Net Loss" and restoration of wetlands. Under this directive the District of Columbia, U.S. EPA, the ACE and other regional parties have restored 42 acres of freshwater tidal wetlands in the Kingman Lake wetland portion connected to the Anacostia River. The Kingman Lake wetland restoration project was completed in 2000. In addition to the restoration of 42 acres of freshwater tidal in Kingman Lake 15 acres of river fringe was reestablished along the banks of the Anacostia River. The reestablishment of the historical river fringe to the banks of the Anacostia river was completed in 2003. Other planned wetland restoration projects such as the Heritage island wetland was completed in 2004. To continue to protect the Kingman Lake and Heritage Island wetlands the Water Quality Division has partnered with the Anacostia Watershed Society to perform a "Goose Management for Wetlands Protection" study. The study will include propagating 3,000 containerized native wetland plants and planting two additional acres of wild rice. The project is scheduled to be completed in September 2006. Pope Branch wetland located on the lower Anacostia Park is schedule to be completed in 2006.

Environmental Impact/Economic and Social Benefits of Effective Water Programs

Submerged Aquatic Vegetation

The Fisheries and Wildlife Division (FWD) of the District of Columbia has been surveying submerged aquatic vegetation (SAV) populations of the Potomac and Anacostia Rivers since 1993. The goal is to monitor the health of the aquatic vegetation found in the District of Columbia and to examine the importance it has on the ecosystem. Surveys include all shorelines in the navigable waters of the Potomac and Anacostia Rivers, within the boundaries of the District of Columbia. There have been considerable changes in the SAV attributes from year to year including; SAV species diversity, cover density, and total acreage values for the species that are observed. The one thing that has remained consistent is the direct relationship that exists between the relative abundance of certain fish species and the presence or absence of viable SAV beds.

Acreage calculations using Global Positioning Systems (GPS) technology began in 2002. The combined total SAV coverage in the waters of the District of Columbia in 2002 totaled just over 699 acres. One year later in 2003, the acreage totals for the same area had plummeted to less than 24 acres. 2004 totals showed a meager increase, covering 28 acres. Total acreage values for the 2005 observations have not been totaled as of the submission of this report, but the preliminary results reveal the re-vegetation of a great many of the beds that were nearly destroyed following the weather events at the 2002 years end. Although the cover density of these beds is relatively low, the 2005 total acreage values will be much closer to the record high of 2002 as opposed to the record lows experienced in 2003. Unfortunately GPS Calculated acreage totals are not available for years prior to 2002, however it is safe to conclude that over the course of one year (2002-2003), SAV acreage totals declined from one of the most successful years ever to one of the worst and is now beginning to recover.

2005 observations revealed 5 different species of SAV including: Hydrilla verticillata (hydrilla), Heteranthera dubia (water stargrass), Ceratophyllum demersum (coontail), Vallisneria americana (wild celery), and Najas minor (spiny naiad). This too, is indicative of SAV recovery, as the SAV diversity has improved over each of the last two observation periods. Cover density scores will continue to improve over the next several growing seasons as long as there are no catastrophic rain events similar to what was experienced in beginning of 2003.

Although the status of the SAV over the last three years has been erratic, it has provided the opportunity to examine the effects that it has on fish species that inhabit these areas. Several of the electrofishing sites utilized by the Research Branch of the FWD are directly adjacent to the grass beds that were monitored for the SAV shoreline survey. For this reason, it is valuable to examine the data gathered from each independent survey, and analyze it to see if any significant relationships exist between the SAV and fish species in these areas. Using only electrofishing data from May through December (months when SAV presence is ecologically significant) for the years of 1994-2005, relationships were examined in an effort to show how the members of the two Kingdoms interact. Several relationships were identified, but none is as significant as the relationship that exists between SAV cover density and the relative abundance of largemouth bass. The figure below illustrates the most "sensitive" site in terms of SAV dependence.

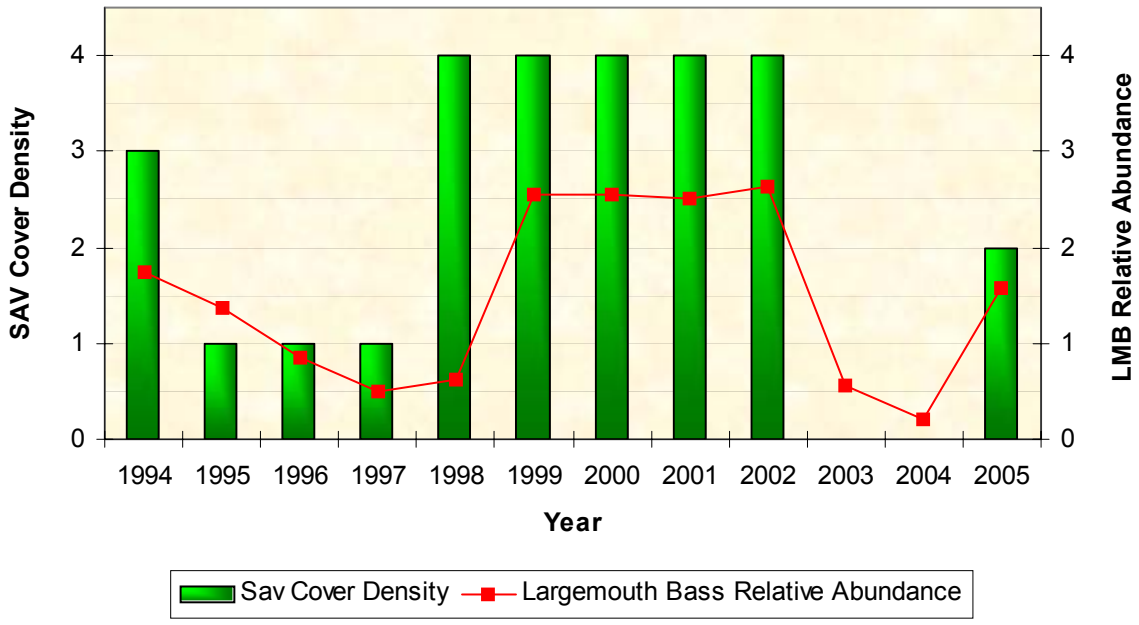

Figure 3.1 Relative Abundance of Harvestable Largemouth Bass vs. SAV Cover Density

This area of the river certainly shows a dependence upon SAV when it comes presence of harvestable largemouth bass. This site has no alternative habitat opportunities for the bass to utilize. Without the presence of SAV; ambush points, and sheltered areas are limited to sparsely scattered isolated rocks and tide dispersed woody debris. This is not only scientifically significant, but economically important to understand, as the largemouth bass is such a highly

sought after game fish. There are many other relationships that exist between SAV cover density and fish populations. They are highlighted in the comprehensive SAV report.

Fish Populations

Table 3.16 shows the yearly relative abundance of select game fish in the District of Columbia.

TABLE 3.16
YEARLY RELATIVE ABUNDANCE OF SELECT GAME FISH FROM 1994 TO 2005 FOR REGULAR ELECTROFISHING SITES

Yearly Relative Abundance for Select Game Fish Species in the District of Columbia													
Species	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**Overall Average**
Largemouth Bass	4.40	3.12	2.77	1.66	2.40	4.30	5.42	6.54	5.90	4.32	1.81	1.81	3.70
Striped Bass	.73	.17	.50	.96	.67	.74	.41	1.07	.49	.66	1.11	.472	.67
Yellow Perch	4.56	6.20	3.76	5.93	8.18	8.29	8.79	6.31	5.78	3.47	3.73	2.59	5.63
Smallmouth Bass	.69	.32	.40	.28	.56	.74	.47	.85	.28	.23	.35	.167	.44

Sampling conducted over the past 12 years has revealed several interesting trends concerning the relative abundance of several game fish species at eight electrofishing sampling stations in the waters of the District of Columbia. After remaining steady for a period of five years (1999-2003) the relative abundance of all of the closely monitored game fish found in the District of Columbia has declined. Much of this is related to the dramatic decline in SAV cover density at or near several of the electrofishing sites. Although the SAV has started recovering, it sometimes takes the fish species a bit longer to re-populate areas where a significant cover source has been eliminated. With the continued recovery and development of SAV in the District of Columbia, the game fish relative abundance should eventually increase as well. If continued SAV re-establishment is experienced without an increase in game fish species relative abundance, it will be time to review the effects of other factors that may effect bass populations such as; fishing tournaments, creel limits, sampling methods, and competition from newly introduced invasive species like *Ictalurus furcatus* (Blue Catfish) and *Channa argus* (Snakeheads).

The introduction and expansion of two invasive species has prompted specific protocols for collecting data to establish base line information to track and monitor the situation moving forward. Blue catfish have been positively identified throughout the Potomac River system as they have been showing up in electrofishing samples for several years. A blue catfish tagging program was launched in 2005 whereby, information gathered by anglers and biologist would be

used to assess the condition of the growing population and effectively establish creel limits and regulations that will protect this species without negatively impacting the other species that inhabit the city's waters. Currently the District of Columbia has not had to deal with the snakehead phenomenon that has captured so much attention in the Potomac River, south of the Woodrow Wilson Bridge. Snakeheads have not been reported in DC waters.

Night-time, mark-recapture, black bass population estimates have been performed over the last seven years in July at one site, and in October at up to three sites. Results from the population estimates are consistent with the relative abundance numbers observed during electrofishing at the standard electrofishing sites. Populations have declined over the past 3 years at both the Washington Channel, and Lower Anacostia sites.

Tagging efforts using passive integrated transponder (PIT) tags, continued in 2005. The FWD has been tagging largemouth bass for the past eight years in an effort to determine site affinity, movement patterns, age and growth analysis, and validation of scale age analysis. In all, we have over 1600 recapture records, and many fish have been recaptured multiple times. Approximately ninety percent of the recapture records are from fish which have been recaptured at the same site where they were originally tagged. PIT tag recaptures also indicated our length measurement error to be on average no more than two millimeters.

Icthyoplankton sampling in 2005 indicated peak Alosid spawning on the Potomac and Anacostia Rivers to have occurred around the third week of May. Peak larval abundances appeared in our May 25, 2005 sample. This data is fairly consistent with data collected over the past five years.

Fish Populations

Sampling conducted over the past 10 years has revealed several interesting trends concerning the relative abundance of several game fish species in the waters of the District of Columbia. While 2003 observations and analysis display a relatively consistent trend in terms of overall abundance of select game fish, certain sites experienced unusual changes in abundance that did not go unnoticed. Relative abundance numbers for largemouth bass, were slightly better than the 10 year average, resulting in large part from record numbers at three sampling sites. One site registered a near record high in terms of largemouth bass relative abundance, while two sites struggled to produce near record lows. Striped bass relative abundance numbers were also slightly higher than the 10-year average, with record output at two sites. Contrasting the success that largemouth bass displayed in the Anacostia River, for the first time in ten years not a single striped bass was collected at our lower Anacostia River site in 2003, and only 6 specimens were collected at the upper river site during 2003. Yearly relative abundance totals for yellow perch in 2003 were nearly half of the ten-year average and represented the low mark in the data set. Only two sites improved slightly, while the other six sites suffered marked declines in yellow perch relative abundance. Similarly, the overall relative abundance for smallmouth bass in 2003 was reduced to less than half of the ten-year average. Three sites failed to yield a single smallmouth bass and two sites demonstrated slight increases over 2002 findings. Size at age, determined by scale samples, has remained good for all game fish species collected. Table 3.18

shows the yearly relative abundance of select game fish in the District of Columbia.

Night-time, mark-recapture, black bass population estimates have been performed over the last five years in July at one site, and in October at up to three sites. While the July estimate showed a larger population than in 2002 it was lower than our 2001 estimate and about identical to the population estimate in 2000. Our October survey, completed at two of our three sites, indicated a slight increase at one site over 2002 levels, but at the same time showed a sharp decline at the other site to only one half of the population estimated in the 2002 survey.

In 2003, 842 black bass were tagged with passive integrated transponder (PIT) tags, bringing our total number of PIT tagged fish to over 6200. In all, we have 1500 recapture records, and many fish have been recaptured multiple times. Approximately ninety percent of the recapture records are from fish which have been recaptured at the same site where they were originally tagged. PIT tag recaptures also indicated our length measurement error to be on average no more than two millimeters.

Icthyoplankton sampling in 2003 indicated peak spawnings to have occurred in the third week of May and the last week of June. Peak larval abundances appeared in our May 21, 2003 and June 28, 2003 collections. These data are consistent with data collected over the past three years.

Fish Passage (Removal of Fish Passage Barriers)

Work on fish passage in Rock Creek is ongoing, with the trap-and-transport of alewife and blueback from several sites below the barrier at Pierce Mill Dam to above the most upstream barrier at stream mile 8.08. Trap-and-transport benefits the alosids population by encouraging fish to imprint the upper reaches of the creek. It is also a management tool to get alosids beyond current in-stream barriers that block natural spawning runs. Sampling continued and included six sampling sites in Rock Creek in anticipation of the opening of the entire creek to fish passage.

Last year, 2005, the topography of Rock creek changed with the removal of several barriers. Barrier removal was implemented to restore upstream fish migration for anadromous species and to allow existing resident fish to benefit from improved access to additional forage and habitat. Removal of these fish barriers included abandoned fords and inactive sewer lines. Active sewer lines in the creek were modified using “boulder step pools” to compensate for blockages. A total of six barriers were removed, three fords and three abandoned sewer lines; and, four active sewer lines were modified. The last remaining in-stream barrier at Pierce Mill Dam was scheduled to have a fish ladder installed in September 2005, but unforeseen complications have delayed this project. Work is expected to continue in April 2006.

The fish passage project on Rock Creek is funded as part of a mitigation package for the new construction to the Woodrow Wilson Bridge. The District of Columbia, Fisheries and Wildlife Division’s (FWD) work on Rock Creek over the last eight years, and the promise of continued support into the future, has helped put this Rock Creek fish passage project firmly in the

mitigation package. Once passage at Pierce Mill Dam is operational the current trap-and-transport project is anticipated to shorten the time required by alosids to effectively return to their historical spawning patterns.

A major thrust of trap-and-transport work was to help restore the runs of the river herring, both alewife, Alosa pseudoharengus (Wilson), and blueback herring, Alosa aestivalis (Mitchill). Both species had historically large runs in this stream system. Over the past 100 years, many man-made obstructions were placed in the stream. This limited access to historical spawning grounds and restricted resident fish movement throughout the Rock Creek drainage area. Over the past seven years, the FWD has compiled baseline data on species diversity and species abundance, and alosid breeding success.

Currently, six sites are sampled on a monthly basis two are below the dam and four are above the dam. Species diversity from the two downstream sampling sites is greatest with thirty-four species represented. Five species of gamefish were found some anadromous, but most resident. Species included striped bass, largemouth bass, smallmouth bass, channel catfish and alewife. Two non-game anadromous species were collected, white perch and sea lamprey.

The four sampling sites located above Pierce Mill Dam, yielded seventeen species. No resident gamefish or anadromous fish were collected at sites above the dam. This omission of diversity was expected and confirmed since resident gamefish and anadromous are unable to navigate the Pierce Mill barrier. All fish collected above the dam were non-game species. The majority of these species are members of the families Cyprinidae, Catostomidae, Ictaluridae, and Percidae.

Data collected in ichthyoplankton tows indicate that last year's alosid spawning was successful. An abundance of alosid larvae and eggs were collected in early to mid-April which is peak spawning season for river herring in Rock Creek. Barrier removals are expected to increase available spawning, resulting in an overall increase fish population.

PART IV: PUBLIC HEALTH - RELATED ASSESSMENTS

Drinking Water Program Monitoring & Assessments

None of the District of Columbia's waterbodies have been designated for either public water supply (PWS) or drinking water (DW) uses. Though the Potomac River is the source of D.C.'s drinking water, the intakes are located outside the D.C. city limits. The drinking water intakes are located at Great Falls and Little Falls, Maryland. The District of Columbia has completed its Source Water Assessment Project (SWAP). The primary goals of this SWAP were: (a) source delineation, (b) inventory of potential contaminants within the basin, (c) susceptibility analysis of the inventoried contaminants identified in the source delineation and (d) providing documentation to the general public and D.C. describing the source contaminants. Additionally, non-point source modeling was incorporated into the SWAP to enable D.C. to better understand and predict conditions within the basin that might pose a threat to the water supply.

Drinking water is treated by ACE. Drinking water quality is regulated by EPA Region III. The District of Columbia does not have primacy. Persons seeking information on the status of the lead in drinking water issue in the District of Columbia should consult the EPA website http://www.epa.gov/dclead.

PART V: GROUND WATER ASSESSMENT

Introduction

This section updates D.C.'s ground water assessment and protection efforts. No significant changes have occurred since the FY 2004 305(b) report except for the availability of ground water monitoring data from the now expanded monitoring network in the Lower Anacostia River watershed. Physical and chemical results from these wells are being evaluated and processed for inclusion in a comprehensive report on the hydrogeology of the Lower Anacostia River. To date, the chemical data show that the general background ground water quality is very good. However, the number of sites with confirmed ground water releases is increasing. A significant portion of these cases is attributed to the due diligence investigations being conducted for the continued development in the District. Excavation and associated dewatering during and after construction are expected to result in corrective action at most of these sites.

Summary of Ground Water Quality

The D.C. Department of Health, WQD in cooperation with the Unites States Geological Survey (USGS) began a study of the ground water within the Lower Anacostia River Watershed in May 2002. This study has continued over the years and now utilizes a monitoring network (Appendix 5.1) comprised of 25 wells.

The wells were sampled in 2005 for an extensive list of analytes - volatiles, semi-volatiles, pesticides, polychlorinated biphenyls, trace metals, major ions and nutrients. The preliminary tabulated results are available in Appendix 5.2. None of the D.C. Ground Water Quality Criteria were exceeded. Organic compounds usually were not detected and inorganic detections generally were quite low. Some emerging contaminants such as, caffeine was detected and may indicate the presence of leaking wastewater. Within the District, there are extensive efforts to identify and rectify leaking sewer lines which impact ground water and surface water. This type of wastewater indicator data may assist with such efforts. A full report of the multi-year study is expected to be released later this year. As a result, the Aquifer Monitoring Data Table was not completed for this Integrated Report.

Overview of Ground Water Contamination Sources

No new major sources of ground water contamination have been identified in D.C. (Table 5.1).

TABLE 5.1
MAJOR SOURCES OF GROUND WATER CONTAMINATION

Sources	Ten Highest-Priority Sources (✓)	Factors[1]	Contaminants[2]
Animal Feedlots	NA	--	--
Containers		A, B, D, E	A, B, C, D, H
CERCLIS Sites	✓	A, B, D, E, F, G,	A, B, C, D, H, I, M

De-icing Applications	✓	A, D, F, G, H	G
Federal Superfund (NPL)	✓	A, B, D, E, F, G,	A, B, C, D, H, M
Fill		A, D, E, F, G, H	A, B, C, D, H, M
Graveyards	✓	--	E, H, J
Landfills (permitted)	✓	A, B, D, E, F, G, H	A, B, C, D, E, E, J, K, L, M
Landfills (unpermitted)	✓	A, B, D, E, F, G, H	A, B, C, D, E, H, I, J, K, L, M
Material Transfer Operations		A, B, D, E, F, H	A, B, C, D, E, F, G, H, I, J, K, L, M
Material Stockpiles		A, B	A, B, C, D, E, F, G, H, I, J, K, L, M
Mining and Mine Drainage	NA	--	--
Pesticide Applications	✓	A, B, C, F, G, H	A, B
Pipeline and Sewer Lines	✓	F, H	A, B, C, D, E, H, J, K, L
Radioactive Disposal Sites	NA	--	--
RCRA Sites	✓	A, B, D, E, F, G,	A, B, C, D, H, I, M
Septic Tanks	NA	--	--
Shallow Injection Wells		F, G	D, H
Storage Tanks (above ground)		A, B, D, F, G, H	A, B, C, D, H, M
Storage Tanks (under ground)	✓	A, B, D, E, F, G,	A, B, C, D, H, M
Storm Water Drainage Wells		I	D, H
Surface Impoundments		A, B	A, B, C, D, E, F, G, H, I, J, K, L, M
Transportation of Materials	✓	A, B, C, D, G, H	A, B, C, D, E, F, G, H, I, J, K, L, M
Urban Runoff		F, H	A, B, C, D, E, F, G, H, J, K, L, M
Waste Tailings	NA	--	--
Waste Piles	NA	--	--

* Unknown. The locations and nature of the materials disposed in unpermitted landfills are not yet known.
NA - Not Applicable
(–) - Not a Priority
[1]Factors Key:

A. Human health and/or environmental risk (toxicity)
B. Size of the population at risk
C. Location of the sources relative to drinking water sources
D. Number and/or size of contaminant sources
E. Hydrogeologic sensitivity
F. State findings, other findings
G. Documented from mandatory reporting
H. Geographic distribution/occurrence
I. Assigned for pipelines and sewer lines and is a combination of the age and construction material of the lines (in D.C., there still are brick lines at least 100 years old).

[2] Contaminants Key
A. Inorganic pesticides
B. Organic pesticides
C. Halogenated solvents
D. Petroleum compounds
E. Nitrate
F. Fluoride
G. Salinity/brine
H. Metals
I. Radionuclides
J. Bacteria
K. Protozoa
L. Viruses
M. Polychlorinated biphenyls

The ten highest priority sources were identified by first comparing the relative importance of the factors associated with each source type. Then, using best professional judgment, the sources were selected.

Overview of Ground Water Protection Programs

The District of Columbia Department of Health, Environmental Health Administration (EHA) soon to become the District of Columbia Department of the Environment (DDOE) is the primary environmental protection agency in the District of Columbia. The Water Quality Division is the body charged with administration of the *District of Columbia Water Pollution Control Act*, which defines the District's waters as both ground water and surface water. There are no significant changes regarding the ground water protection programs since the last 305(b) report.

In 1993, numerical criteria and enforcement standards for forty-seven constituents are established. The regulations also set the guidelines for ground water monitoring supporting preventive as well as remedial activities. Ground water related programs within the EHA and their functions are as follows:

- Voluntary Cleanup Program: The Voluntary Cleanup Program (VCP) is a part of the Bureau of Hazardous Materials and Toxic Substances. Unlike the media-specific programs that require mandatory cleanup of contaminated property, VCP oversees owner or developer initiated voluntary remediation of contaminated lands and buildings that return actual or potentially contaminated properties to productive uses.

- Construction Grants Program: Pursuant to the Clean Water and the Safe Drinking Water Acts and various appropriations acts, the U.S. EPA provides and anticipates providing in the future as authorized, funding through the award of assistance grants to the District of Columbia. These assistance awards enable the District to perform construction and/or improvement of wastewater facilities, drinking water distribution and storage facilities and other water related structures. The overall objective of the grant-funded program is to select and fund projects that will protect the quality of water in the District of Columbia. The projects are identified to meet a variety of needs [i.e., Combined Sewer Overflow Long Term Control Plan (LTCP), Municipal Sanitary Storm Sewer Monitoring Network, and the implementation of pollution control measures, and the protection of the public and safety.]

- Federal Facilities Program: The Federal Facilities Program oversees the cleanup of Formally Used Defense Sites (FUDS) that are contaminated.

- Hazardous Waste Management Program: The program regulates hazardous waste small and large quantity generators.

- Integrated Pest Management Program: The program conducts public education for pesticide use.

- Non-Point Source Program: The program plans and implements BMPs, provides oversight of non-point source studies.

- Pesticide Certification and Enforcement Program: The program processes registration of pesticide products for use in the District of Columbia, certifies applicators and performs application inspection.

- Stormwater Management Program: The program reviews storm water management plans and performs compliance inspection.

- TMDL: The program develops point and non-point source load allocations to meet surface water quality standards in impaired water bodies.

- Underground Storage Tank Management Program: The program provides oversight for installation and removal of underground storage tanks as well as remedial activities for leaking tanks.

- Water Quality Management Planning: The program coordinates water quality planning and research including ground water quality research.

Table 5.2 provides additional information regarding the District's ground water protection programs.

TABLE 5.2
SUMMARY OF DC GROUND WATER PROTECTION PROGRAMS

Programs or Activities	Check	Implementation Status	Responsible State Agency
Active SARA Title III Program	✓	Fully established	OEP
Ambient ground water monitoring system	✓	Under development	DOH
Aquifer vulnerability assessment(1)	✓	Fully established	DOH
Aquifer mapping(2)	✓	Under development	DOH
Aquifer characterization	✓	Under development	DOH
Comprehensive data management system (3)	✓	Under development	DOH
EPA-endorsed Core Comprehensive State Ground Water protection Program (CSGWPP)	✓	Under development	DOH
Ground water discharge permits			
Ground water Best Management Practices			
Ground water legislation	✓	Fully established	DOH
Ground water classification	✓	Fully established	DOH
Ground water quality standards	✓	Fully established	DOH
Interagency coordination for ground water protection initiatives	✓	Under development	DOH
Nonpoint Source Controls			
Pesticide State Management Plan	✓	Fully established	DOH
Pollution Prevention Program	✓	Under Development	DOH
Resource Conservation and Recovery Act (RCRA) Primacy	✓	Fully established	DOH
State Superfund (4)			
State RCRA Program incorporating more stringent requirements than RCRA Primacy	✓	Fully established	DOH
State septic system regulations			
Underground storage tank installation requirements	✓	Fully established	DOH
Underground Storage Tank Remediation Fund	✓	Fully established	DOH
Underground Storage Tank Permit Program	✓	Fully established	DOH
Underground Injection Control Program			
Vulnerability assessment for drinking water/wellhead protection	✓	Fully established	DOH
Well abandonment regulations	✓	Pending	DOH
Wellhead Protection Program (U.S. EPA-approved)			
Well installation regulations	✓	Pending	DOH

OEP - Office of Emergency Preparedness
DOH – Department of Health

(1) Aquifer Vulnerability Assessment

The District of Columbia's ground water vulnerability to contamination was assessed in 1992 by the DC Water Resources Research Center (WRRC) in a report entitled *Urban Land Use Activities and The Ground Water: A Background Survey of the District of Columbia* (WRRC,

1992). The probability of ground water contamination was mapped and ranked accordingly. D.C. recognizes that this report is over ten years old and needs to be revised and hopes to do so in the near future.

(2) Aquifer Mapping
D.C. in conjunction with the USGS is collecting and reviewing available data to map the aquifers the Anacostia Watershed. D.C. hopes to have a preliminary map completed within the near future.

(3) Comprehensive Data Management System
All data collected during the joint DC-USGS projects completed up to 2005 have been maintained and managed by the USGS. This data is readily available on the USGS website (www.usgs.gov) and will continue to grow as more projects are funded. This data includes chemical, locational, and geological information. Monitoring well data are included in the regional ground water database maintained by the USGS for DC and other states, and will be available in GIS formats in the near future.

(4) State Superfund
Although the District of Columbia does not have a State Superfund or CERCLA program, the WQD provides regulatory oversight under the DC Water Pollution Control Act at CERCLIS, Superfund, RCRA, and any other sites with reported ground water contamination. The WQD also provides regulatory oversight and attends meetings at CERCLA/NPL sites in D.C. whenever appropriate.

Summary of Ground Water Contamination Sources

Table 5.3 summarizes shallow aquifer quality contamination.

TABLE 5.3
GROUND WATER CONTAMINATION SUMMARY

AQUIFER: SHALLOW AQUIFER				
Source Type	**Present in reporting area**	**Number of sites in area**	**Number of sites that are listed and/or have confirmed releases**	**Number with confirmed ground water contamination**
NPL	Yes	1	1	1
CERCLIS (non-NPL)	Yes	26	10	8
DOD/DOE	Yes (a)	47	9	8
UST	Yes	830 (b)	1571	383 (c)
RCRA Corrective Action	Yes	2	2	1

AQUIFER: SHALLOW AQUIFER				
Source Type	**Present in reporting area**	**Number of sites in area**	**Number of sites that are listed and/or have confirmed releases**	**Number with confirmed ground water contamination**
NPL	Yes	1	1	1
Underground Injection	Yes (d)	23	—	---
State Sites	Yes (e)	—	—	---
Nonpoint Sources	(f)	—	—	---
Other	Yes	15	14	14
Totals		944	1607	415

NPL - National Priority List
CERCLIS (non-NPL) - Comprehensive Environmental Response, Compensation, and Liability Information System
DOE - Department of Energy
DOD - Department of Defense
UST - Underground Storage Tanks
RCRA - Resource Conservation and Recovery Act

(a) Only DOD facilities. The number represents the number of facilities. Within a facility, there are several areas of concern resulting from distinct sources (e.g., LUST, landfill, maintenance shops, etc). Ground water contamination assessment is on going for the majority of the sites. Numbers were provided by the Hazardous Waste Division.

(b) Data represent the number of registered tanks not the number of sites. This value includes tanks used for the storage of heating oil and hazardous materials. Numbers were provided by the Underground Storage Tank Division.

(c) Over 50 percent of the cases have been remediated and closed. For the remaining cases, there is on-going ground water contamination assessment/remediation.

(d) One UIC site has stormwater injection wells. The remaining 22 UIC sites are operated for ground water remediation wells. The District does not regulate injection wells. Injection well numbers were provided by the USEPA.

(e) Source type data make no distinction between State and non-State sites.

(f) See Nonpoint Source Section

Ground Water/Surface Water Interaction

No change.

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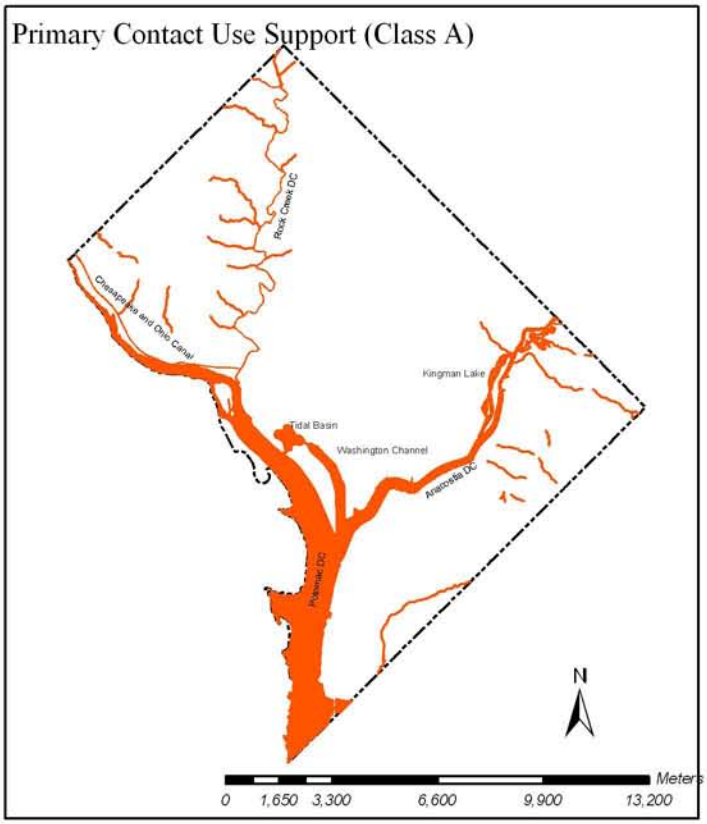
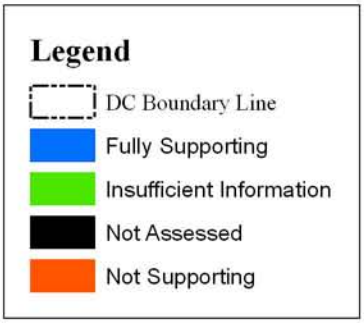
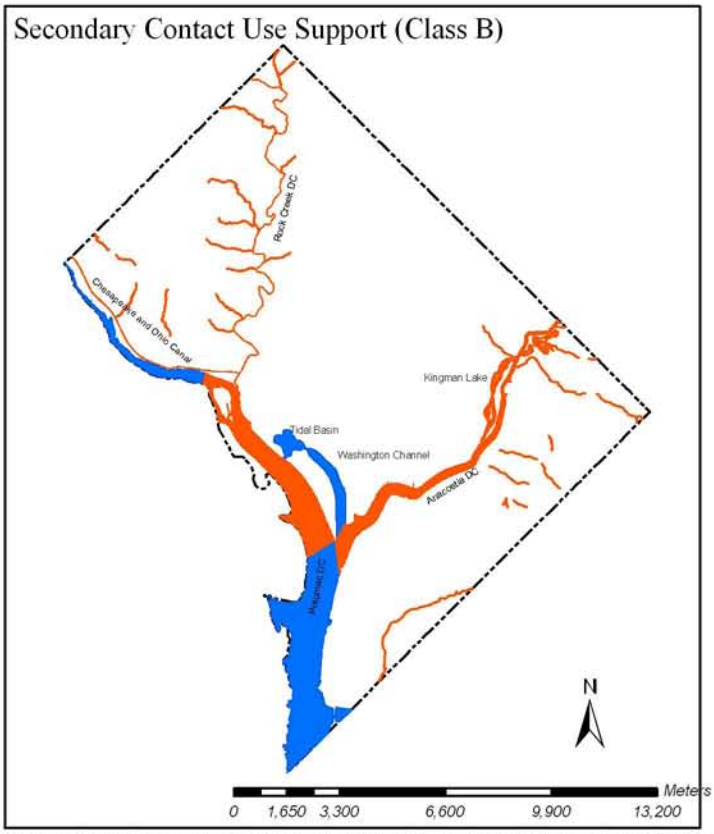
APPENDICES

EXECUTIVE SUMMARY

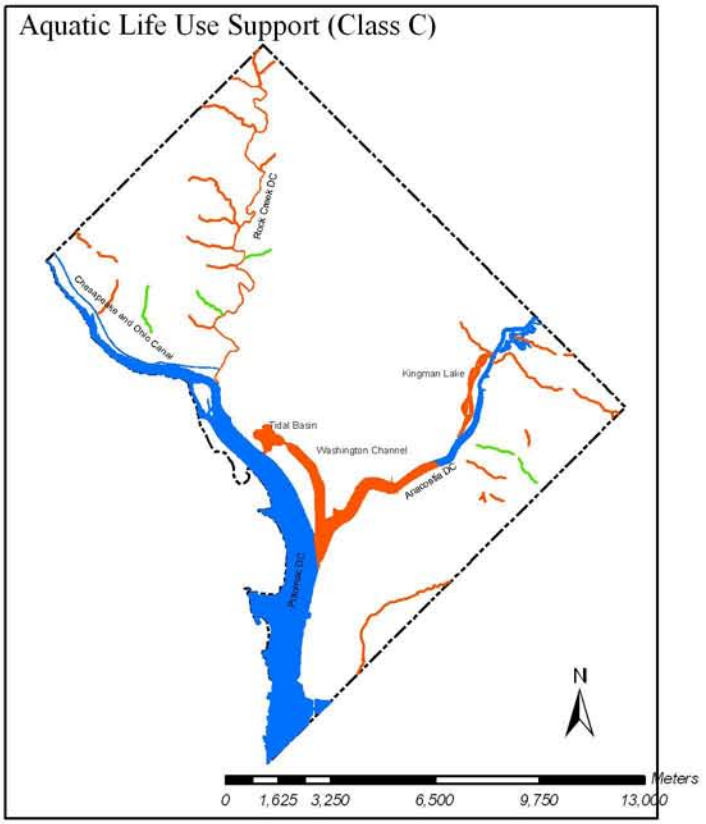




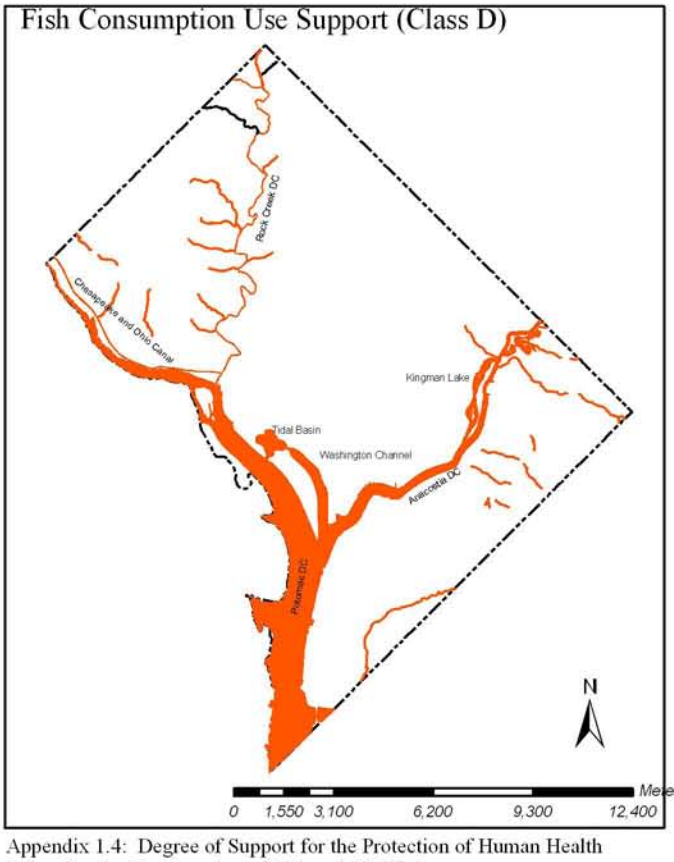
Appendix 1.1: Degree of Support for the Protection of Primary Contact Recreation.



Appendix 1.2: Degree of Support for the Protection of Secondary Contact and Aesthetic Enjoyment.

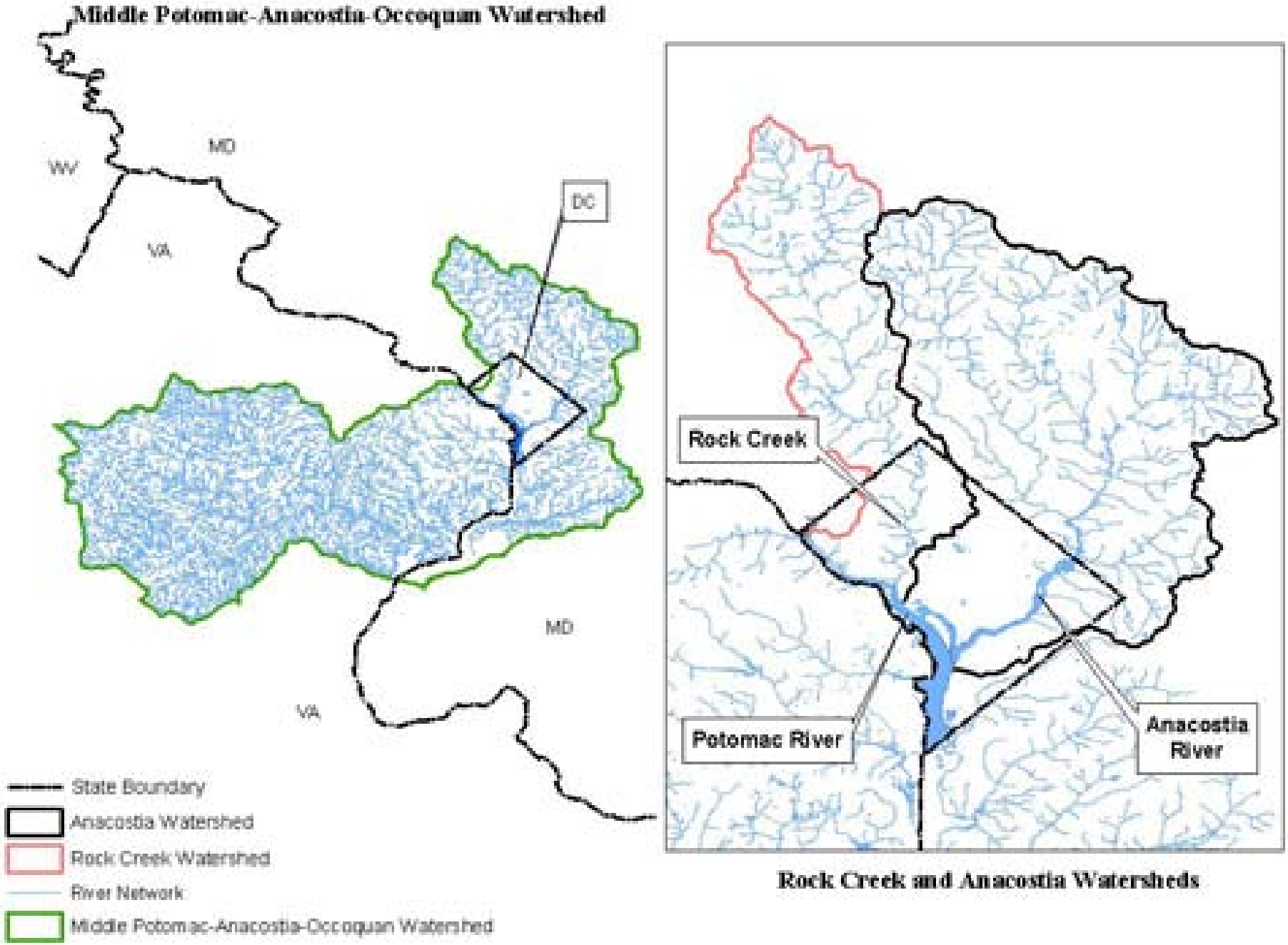


Appendix 1.3: Degree of Support for the Protection and Propagation of Fish, Shellfish and Wildlife.



Appendix 1.4: Degree of Support for the Protection of Human Health Related to the Consumption of Fish and Shellfish.

BACKGROUND

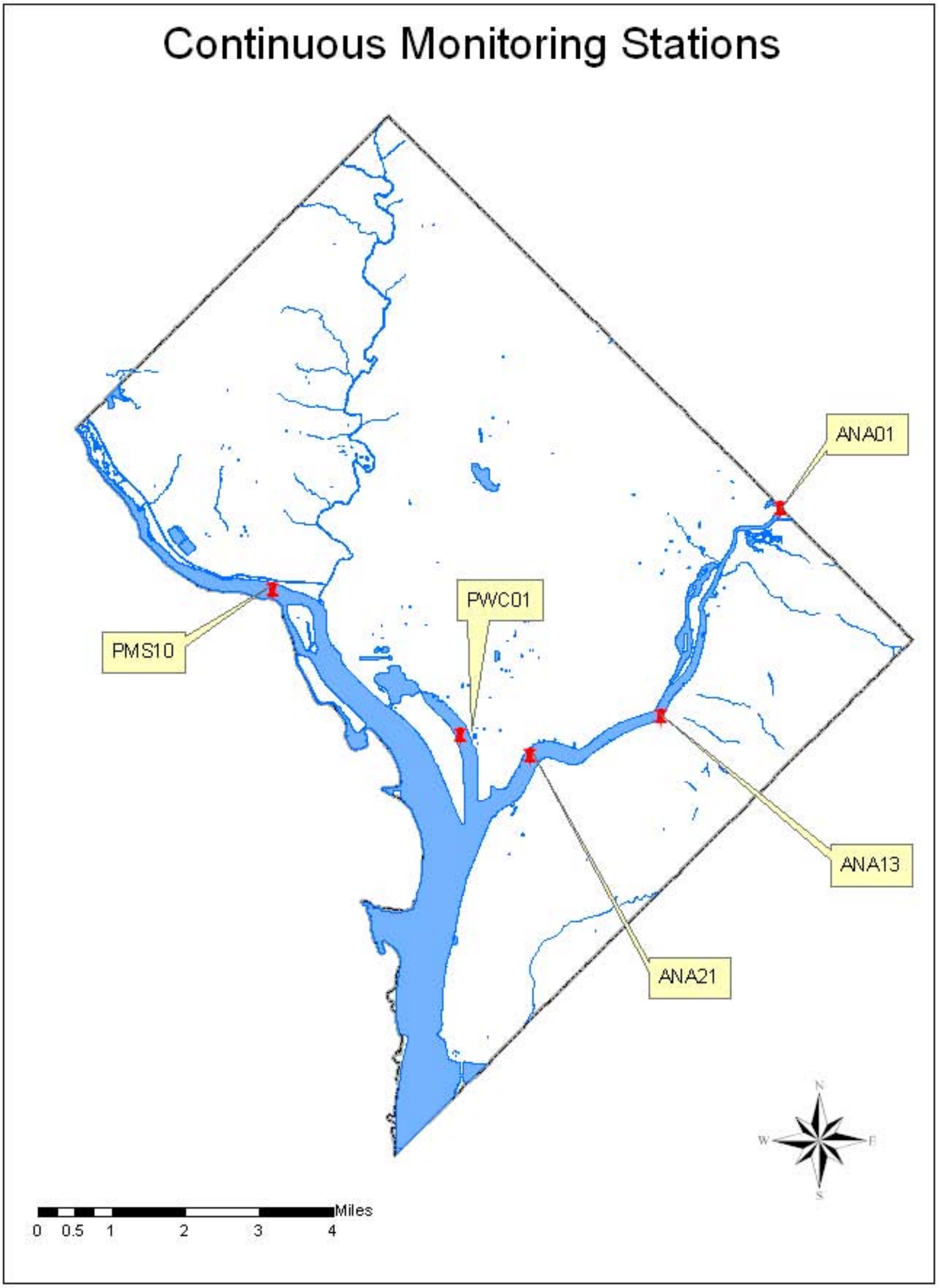


Appendix 2.1: Major D.C. Watersheds

BMP Classifications

Low Impact Development (structural/non-structural	**Exfiltration/ Infiltration Systems**	**Sandfilter**	**Water Quality Inlets**	**Oil/Grit Separator**	**Underground Rentention/ Detention Systems**	**Hrdro-dymanic Filtration Devices**	**Ponds**
Bioretention cells (rain gardens)	Dry Well	Vertical Sandfilter	Triple Water Quality Inlets	Oil/Water Separator	CMP, RCP, Vault	Stormceptor	Dry Pond
Vegetative Biofilter (swale, strips)	Infiltration Basin	Underground Sandfilter	Double Water Quality Inlets	Vortechnics	Roof Top Detention	Storm Filter	Wet Pond
Rain Barrels	Infiltration Trench/ Exfiltration Trench	Aboveground Sandfilter	Single Water Quality Inlets		Gravel Storage	Baysaver	
Porous Pavement	Perimeter Drains	Biseted CMP Sandfilter					

SURFACE WATER ASSESSMENT



Appendix 3.1 Continuous Monitoring Stations

District Of Columbia
2001-2005
Total Summary Report
Water Quality Standard
% Violation

Waterbody	Station Data Used	Temp % Violation	pH % Violation	DO % Violation	Class A Fecal Coliform % Violation	Class B Fecal Coliform % Violation
DCAKL00L	KNG01, KNG02	0.0%	0.0%	11.8%	78.9%	38.2%
DCANA00E SEG1	ANA19, ANA21 ANA24	0.0%	1.0%	5.1%	64.3%	23.8%
DCANA00E SEG2	ANA01, ANA08 ANA13, ANA14	0.0%	0.4%	12.6%	72.7%	28.9%
DCPMS00E SEG1	PMS37, PMS44	0.0%	3.5%	0.0%	32.2%	6.7%
DCPMS00E SEG2	PMS10, PMS21	0.0%	6.7%	0.0%	32.5%	12.4%
DCPMS00E SEG3	PMS01	0.0%	1.9%	0.0%	40.0%	2.4%
DCPTB01L	PTB01	0.0%	29.3%	0.0%	30.6%	8.3%
DCPWC04E	PWC04	0.0%	14.5%	1.8%	41.5%	9.7%
DCRCR00R SEG1	RCR09	0.0%	0.0%	0.0%	77.1%	28.6%
DCRCR00R SEG2	RCR01	0.0%	1.8%	0.0%	81.6%	47.4%
DCTBK01R	TBK01	0.0%	0.0%	0.0%	84.6%	69.2%
DCTCO01L	TCO01,TCO06	0.0%	7.3%	0.0%	50.9%	17.0%
DCTDA01R	TDA01	0.0%	5.3%	0.0%	58.3%	16.7%
DCTDU01R	TDU01	0.0%	0.0%	0.0%	20.0%	13.3%
DCTFB02R	TFB02	0.0%	0.0%	0.0%	50.0%	25.0%
DCTFC01R	TFC01	0.0%	0.0%	0.0%	44.4%	16.7%
DCTFD01R	TFD01	0.0%	0.0%	0.0%	31.3%	18.7%
DCTHR01R	THR01	0.0%	0.0%	0.0%	68.2%	31.8%
DCTNA01R	TNA01	0.0%	0.0%	0.0%	92.3%	53.8%
DCTOR01R	TOR01	0.0%	5.3%	0.0%	100.0%	81.3%
DCTPB01R	TPB01	0.0%	5.6%	0.0%	58.8%	35.3%
DCTTX27R	TTX27	0.0%	0.0%	0.0%	53.3%	26.7%
DCTWB00R SEG1	TWB01	0.0%	2.0%	0.0%	66.7%	64.1%
DCTWB00R SEG2	TWB05,TWB06	0.0%	1.8%	1.8%	88.5%	70.8%
DCTFS01R	TFS01	0.0%	6.3%	6.3%	36.4%	27.3%

District of Columbia
2001-2005
Total summary report
Water Quality Standard
% Violation

Waterbody	Station Data Used	Temp % Violation	pH % Violation	DO % Violation	Class A Fecal Coliform % Violation	Class B Fecal Coliform % Violation
DCTKV01R	TKV01	0.0%	0.0%	0.0%	53.8%	15.4%
DCTSO01R	TSO01	0.0%	0.0%	0.0%	84.6%	46.1%
DCTDO01R	TDO01	0.0%	0.0%	0.0%	54.5%	36.4%
DCTMH01R	TMH01	0.0%	0.0%	0.0%	66.7%	16.7%
DCTPY01R	TPY01	0.0%	0.0%	0.0%	66.7%	16.7%
DCTPO01R	TPO01	0.0%	0.0%	0.0%	64.3%	28.6%
DCTLU01R	TLU01	0.0%	0.0%	0.0%	66.7%	22.2%
DCTBR01R	TBR01	0.0%	5.3%	0.0%	90.9%	81.8%
DCTFE01R	TFE01	0.0%	5.6%	0.0%	72.7%	27.3%
DCTNS01R	TNS01	0.0%	0.0%	0.0%	91.7%	41.7%
DCTPI01R	TPI01	0.0%	5.3%	0.0%	61.5%	23.1%

2001-2005
Statistical Summary Report
For
Fecal Coliform (MPN/ml)

Waterbody	Station Data Used	Min. Value	Max. Value	Avg. Value	Std. Dev.	Median Value	Class“A” % Violation of WQ Std.	Class“B” % Violation of WQ Std.
DCAK00L	KNG01,KNG02	20	50000	2436	6339	500	78.9%	38.2%
DCANA00E SEG1	ANA19,ANA21 ANA24	20	13000	1174	2385	320	64.3%	23.8%
DCANA00E SEG2	ANA01,ANA08 ANA14	20	50000	1809	5675	500	72.7%	28.9%
DCPMS00E SEG1	PMS37,PMS44	20	5000	336	715	90	32.2%	6.7%
DCPMS00E SEG2	PMS10,PMS21	20	3000	367	684	90	32.5%	12.4%
DCPMS00E SEG3	PMS01	20	13000	455	2020	40	40.0%	2.4%
DCPTB01L	PTB01	20	1700	233	359	80	30.6%	8.3%
DCPWC04E	PWC04	20	8000	504	1266	130	41.5%	9.7%
DCRCR00R SEG01	RCR09	40	90000	4800	17023	500	77.1%	28.6%
DCRCR00R SEG02	RCR01	80	50000	2841	8211	800	81.6%	47.4%
DCTBK01R	TBK01	70	160000	19569	43211	5000	84.6%	69.2%
DCTCO01L	TCO01,TCO06	20	5000	635	946	220	50.9%	17.0%
DCTDA01R	TDA01	20	50000	4570	14314	500	58.3%	16.7%
DCTDU01R	TDU01	20	2300	300	641	40	20.0%	13.3%
DCTFB02R	TFB02	20	2200	655	1033	200	50.0%	25.0%
DCTFC01R	TFC01	20	5000	697	1243	105	44.4%	16.7%
DCTFD01R	TFD01	20	160000	11137	39828	150	31.3%	18.7%
DCTHR01R	THRO1	20	8000	1468	2330	400	68.2%	31.8%
DCTNA01R	TNA01	140	160000	15785	44060	2300	92.3%	53.8%
DCTOR01R	TOR01	300	50000	9018	12066	5000	100.0%	81.3%
DCTPB01R	TPB01	20	3000	842	986	500	58.8%	35.3%
DCTTX27R	TTX27	40	7400	1084	1915	500	53.3%	26.7%
DCTWB00R SEG1	TWB01	70	14000	2954	3211	2300	66.7%	64.1%
DCTWB00R SEG2	TWB05,TWB06	20	240000	13242	34841	2750	88.5%	70.8%
DCTFS01R	TFS01	20	17000	3529	6301	170	36.4%	27.3%

2001-2005
Statistical Summary Report
For
pH

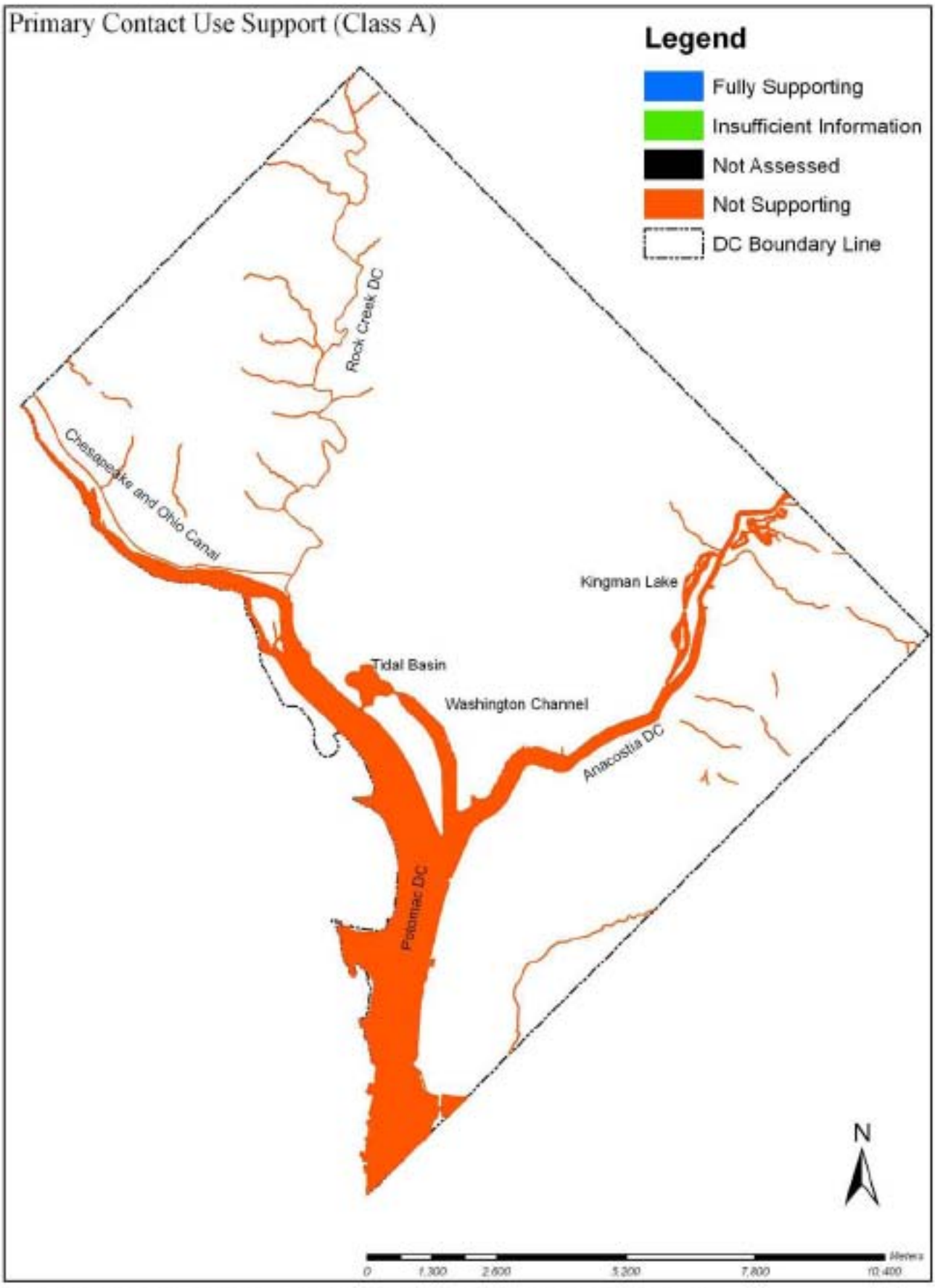
Waterbody	Station Data Used	Min. Value	Max. Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCAKL00L	KNG01,KNG02	6.6	8.7	7.32	0.43	7.2	0.0%
DCANA00E SEG1	ANA19,ANA21 ANA24	5.6	8.6	7.40	0.43	7.4	1.0%
DCANA00E SEG2	ANA01,ANA08 ANA14	4.7	8.4	7.17	0.42	7.1	0.4%
DCPMS00E SEG1	PMS37,PMS44	6.7	8.9	7.69	0.44	7.6	3.5%
DCPMS00E SEG2	PMS10,PMS21	6.4	9.1	7.93	0.40	7.9	6.7%
DCPMS00E SEG3	PMS01	6.9	9.1	7.93	0.49	7.9	1.9%
DCPTB01L	PTB01	6.5	9.2	8.13	0.59	8.2	29.3%
DCPWC04E	PWC04	5.9	9.0	7.91	0.58	7.9	14.5%
DCRCR00R SEG1	RCR09	6.9	8.3	7.62	0.32	7.6	0.0%
DCRCR00R SEG2	RCR01	6.9	8.6	7.47	0.34	7.4	1.8%
DCTBK01R	TBK01	7.3	8.4	7.70	0.27	7.7	0.0%
DCTCO01L	TCO01,TCO06	7.2	9.2	7.96	0.38	7.9	7.3%
DCTDA01R	TDA01	7.0	8.6	7.58	0.37	7.5	5.3%
DCTDU01R	TDU01	6.8	8.4	7.58	0.48	7.5	0.0%
DCTFB02R	TFB02	6.8	7.8	7.41	0.41	7.6	0.0%
DCTFC01R	TFC01	6.6	8.4	7.23	0.43	7.2	0.0%
DCTFD01R	TFD01	6.0	8.4	7.05	0.62	7.1	0.0%
DCTHR01R	THR01	7.0	8.8	7.54	0.33	7.5	0.0%
DCTNA01R	TNA01	6.9	8.4	7.39	0.40	7.3	0.0%
DCTOR01R	TOR01	6.7	8.8	7.45	0.55	7.3	5.3%
DCTPB01R	TPB01	6.3	8.9	7.26	0.62	7.2	5.6%
DCTTX27R	TTX27	6.6	8.8	7.29	0.51	7.2	0.0%
DCTWB00R SEG1	TWB01	6.9	8.7	7.43	0.39	7.4	2.0%
DCTWB00R SEG2	TWB05,TWB06	6.6	8.9	7.53	0.43	7.5	1.8%
DCTFS01R	TFS01	6.8	8.6	7.31	0.46	7.2	6.3%

2001-2005
Statistical Summary Report
For
Temperature

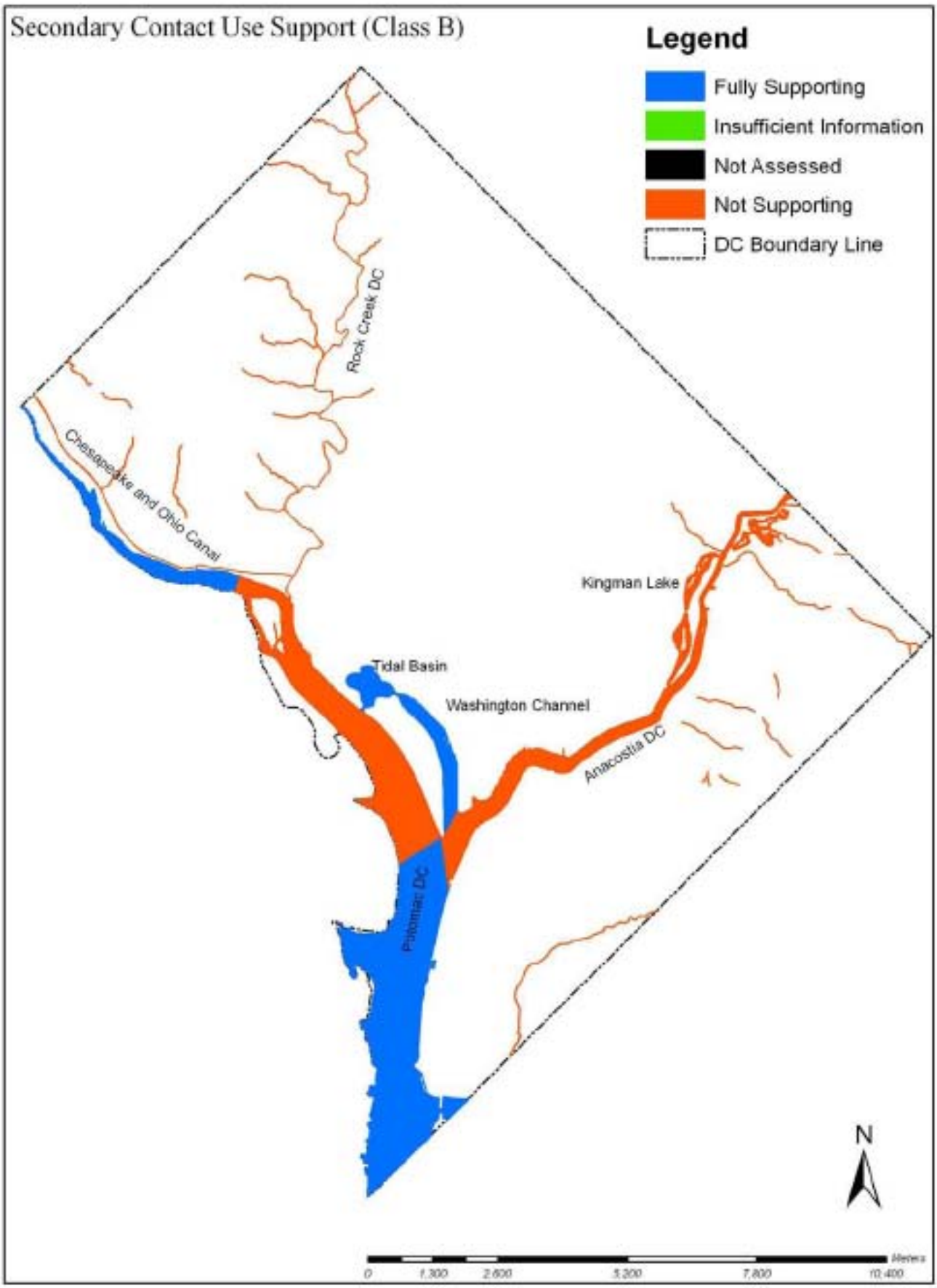
Waterbody	Station Data Used	Min. Value	Max. Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ
DCAKL00L	KNG01, KNG02	1.6	29.5	16.1	8.28	16.3	0.0%
DCANA00E SEG1	ANA19, ANA21, ANA24	0.2	29.4	16.9	8.85	17.7	0.0%
DCANA00E SEG2	ANA13	0.02	28.8	16.5	8.62	17.2	0.0%
DCPMS00E SEG1	PMS37, PMS44	1.2	32.0	16.0	9.01	16.8	0.0%
DCPMS00E SEG2	PMS10, PMS21	0.1	31.0	17.6	8.67	18.3	0.0%
DCPMS00E SEG3	PMS01	0.5	30.8	16.3	8.91	16.7	0.0%
DCPTB01L	PTB01	0.6	30.0	15.6	9.22	15.4	0.0%
DCPWC04E	PWC04	0.9	29.6	15.6	9.42	15.5	0.0%
DCRCR00R SEG1	RCR09	0.1	25.4	12.9	7.73	13.0	0.0%
DCRCR00R SEG2	RCR01	1.1	25.6	13.7	7.11	13.7	0.0%
DCTBK01R	TBK01	0.6	22.8	12.5	6.85	12.6	0.0%
DCTCO01L	TCO01, TCO06	1.3	29.8	18.3	7.88	20.1	0.0%
DCTDA01R	TDA01	4.2	23.7	14.5	5.99	15.0	0.0%
DCTDU01R	TDU01	0.7	23.8	13.0	7.65	13.6	0.0%
DCTFB02R	TFB02	3.6	21.7	11.9	6.77	12.6	0.0%
DCTFC01R	TFC01	0.02	24.0	13.4	7.20	13.4	0.0%
DCTFD01R	TFD01	2.1	22.6	13.5	6.40	13.6	0.0%
DCTHR01R	THR01	0.5	26.3	14.6	6.92	15.3	0.0%
DCTNA01R	TNA01	1.6	25.0	13.9	7.32	14.4	0.0%
DCTOR01R	TOR01	2.9	23.7	13.2	7.56	11.3	0.0%
DCTPB01R	TPB01	4.6	22.5	12.4	6.10	9.6	0.0%
DCTTX27R	TTX27	4.6	21.3	13.0	5.69	12.9	0.0%
DCTWB00R SEG1	TWB01	3.2	26.9	14.8	7.01	14.7	0.0%
DCTWB00R SEG2	TWB05, TWB06	0.5	25.2	13.8	6.76	14.5	0.0%
DCTFS01R	TFS01	2.2	23.7	12.6	7.09	13.3	0.0%

2001-2005
Statistical Summary Report
For
Dissolved Oxygen

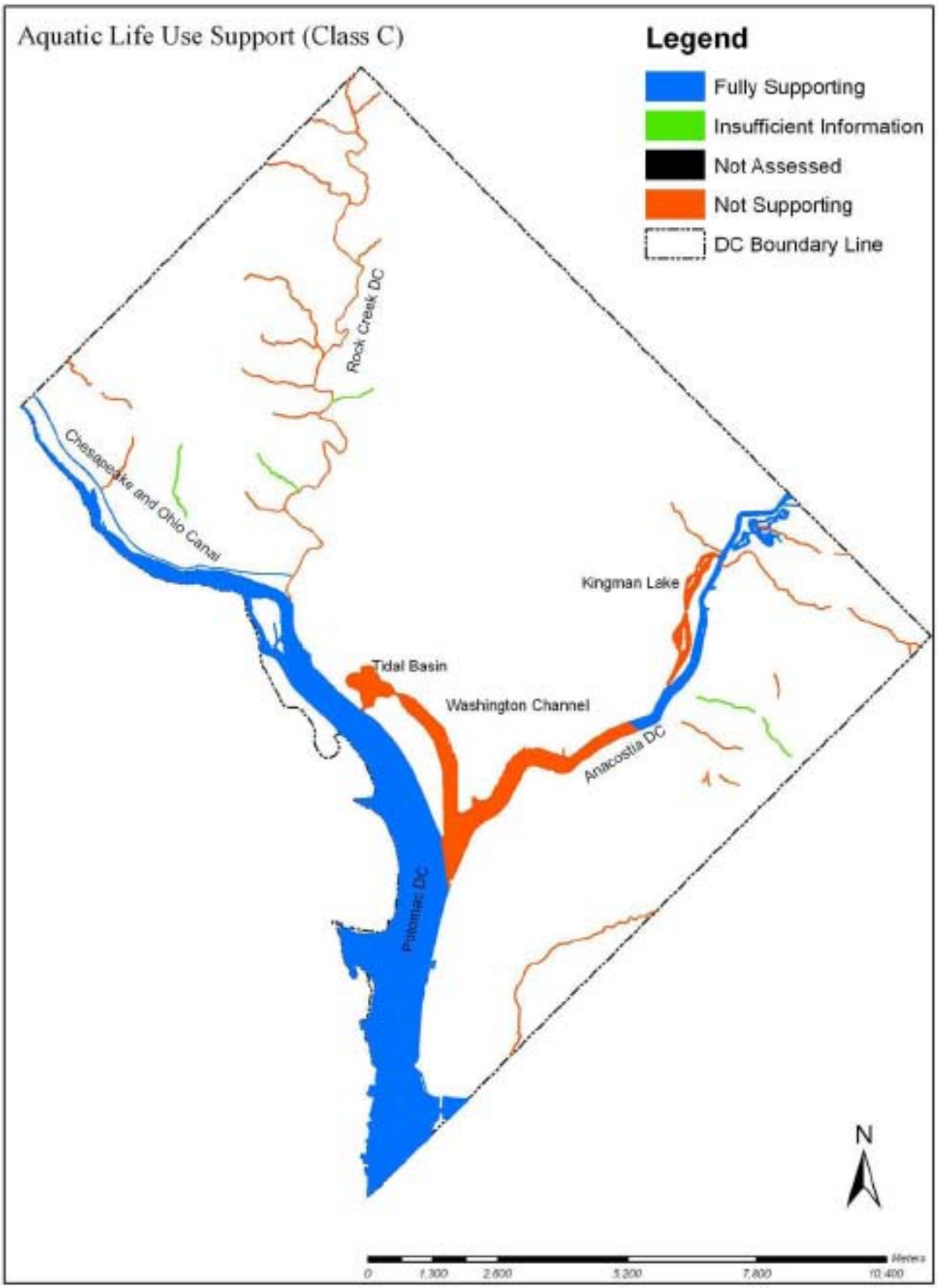
Waterbody	Station Data Used	Min. Value	Max. Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCAKL00L	KNG01,KNG02	1.8	16.1	6.96	3.22	6.3	11.8%
DCANA00E SEG1	ANA19,ANA21 ANA24	1.7	16.8	8.56	3.22	8.2	5.1%
DCANA00E SEG2	ANA13	1.4	15.8	7.82	3.50	7.2	12.6%
DCPMS00E SEG1	PMS37,PMS44	4.3	18.5	9.98	3.17	9.5	0.0%
DCPMS00E SEG2	PMS10,PMS21	5.7	17.7	9.97	2.78	9.4	0.0%
DCPMS00E SEG3	PMS01	6.5	17.8	10.3	2.57	9.8	0.0%
DCPTB01L	PTB01	6.3	15.8	10.7	2.33	10.5	0.0%
DCPWC04E	PWC04	3.0	16.7	10.9	2.66	10.6	1.8%
DCRCR00R SEG1	RCR09	6.9	17.1	10.7	2.72	10.1	0.0%
DCRCR00R SEG2	RCR01	3.9	16.9	9.74	2.88	8.9	0.0%
DCTBK01R	TBK01	5.7	18.3	10.3	3.16	9.6	0.0%
DCTCO01L	TCO01,TCO06	5.6	16.8	9.32	2.52	8.7	0.0%
DCTDA01R	TDA01	6.2	12.7	9.27	2.14	8.8	0.0%
DCTDU01R	TDU01	5.7	14.1	9.78	2.57	9.3	0.0%
DCTFB02R	TFB02	6.7	15.0	10.3	3.09	9.7	0.0%
DCTFC01R	TFC01	5.0	12.0	8.03	2.21	7.8	0.0%
DCTFD01R	TFD01	3.8	12.6	8.20	2.56	7.7	0.0%
DCTHR01R	THR01	4.8	22.5	9.20	3.34	8.5	0.0%
DCTNA01R	TNA01	3.5	15.0	8.21	3.49	8.3	0.0%
DCTOR01R	TOR01	3.4	14.6	9.73	3.25	10.2	0.0%
DCTPB01R	TPB01	7.0	15.3	10.3	2.53	9.9	0.0%
DCTTX27R	TTX27	6.4	14.2	9.62	2.23	9.6	0.0%
DCTWB00R SEG1	TWB01	3.7	19.8	8.60	3.47	8.5	0.0%
DCTWB00R SEG2	TWB05,TWB06	2.2	18.4	9.83	3.24	9.5	1.8%
DCTFS01R	TFS01	1.8	14.0	10.0	3.18	9.6	6.3%



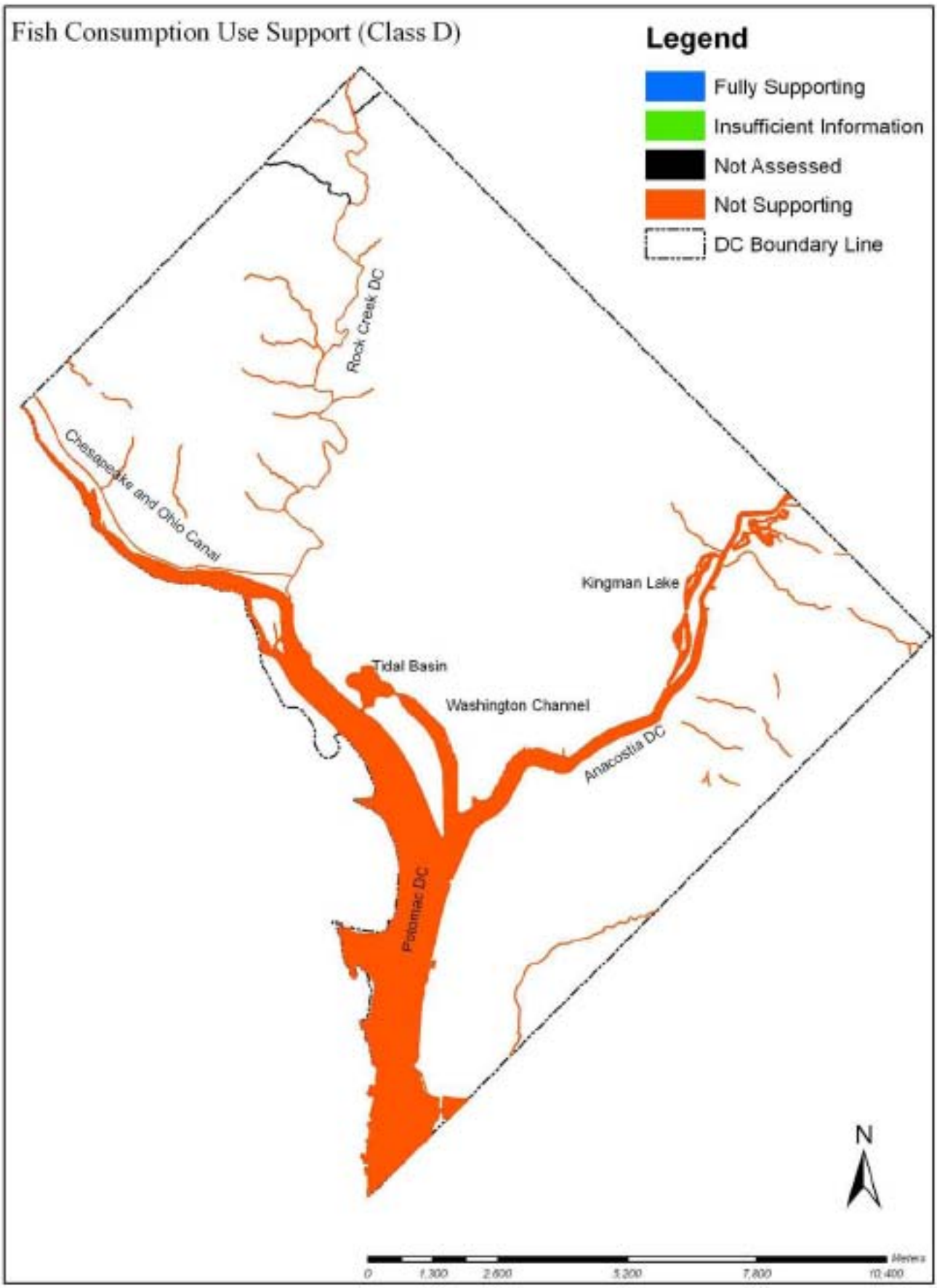
Appendix 3.4: Degree of Support for the Protection of Primary Contact Recreation.



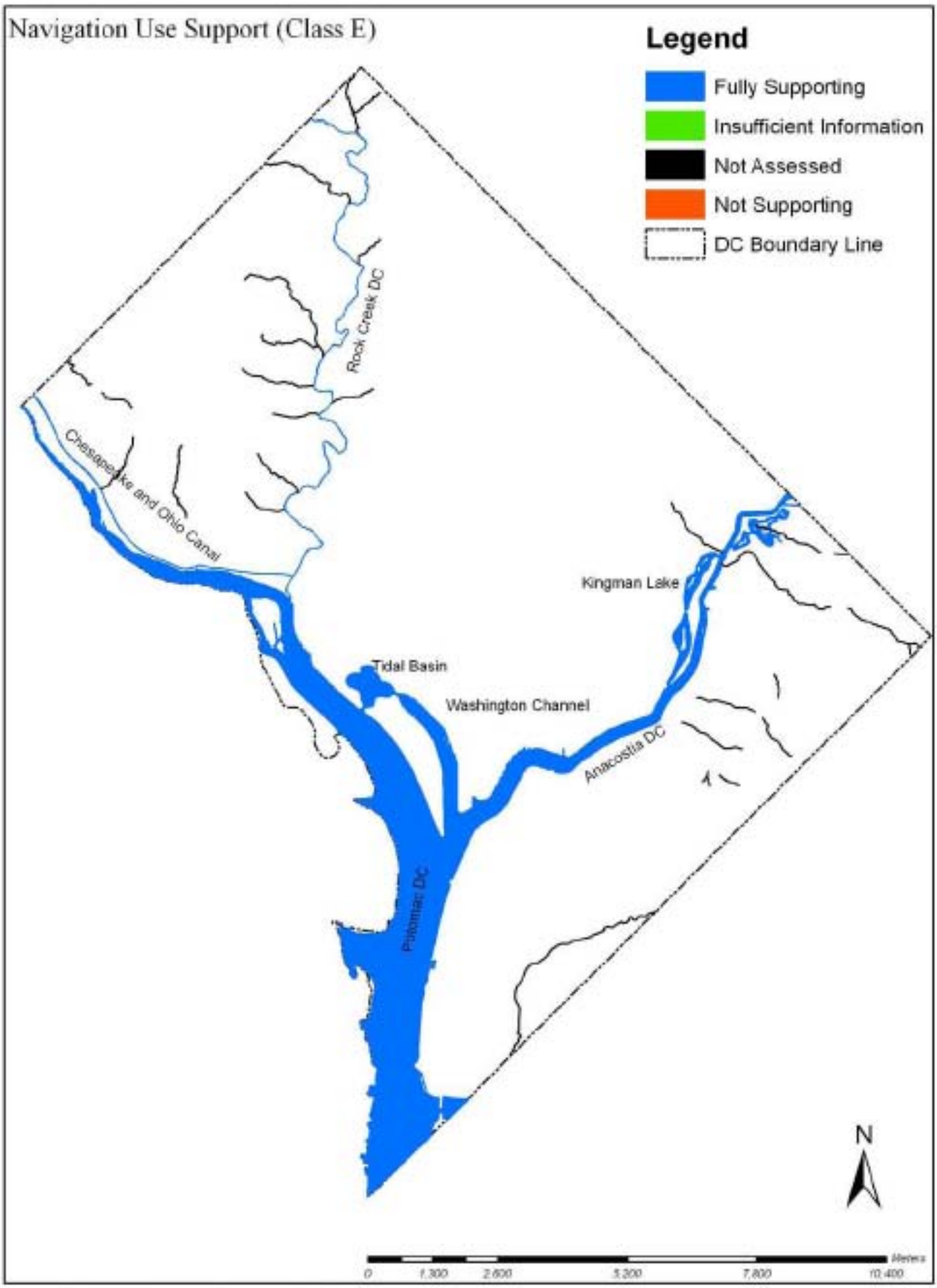
Appendix 3.5: Degree of Support for the Protection of Secondary Contact and Aesthetic Enjoyment.



Appendix 3.6: Degree of Support for the Protection and Propagation of Fish, Shellfish and Wildlife.



Appendix 3.7: Degree of Support for the Protection of Human Health Related to the Consumption of Fish and Shellfish.



Appendix 3.8: Degree of Support for Navigation.

Categorization of District of Columbia Waters

Category 1- All designated uses are attained and no use is threatened.

No DC waters fit this category.

Category 2- Some, but not all, of the designated uses are attained and no use is threatened. The attainment status of the remaining designated uses is unknown as insufficient data exists to make an attainment determination.

No DC waters fit this category.

Category 3- Insufficient data exists to determine whether any designated uses are attained.

No DC waters fit this category.

Category 4- Water is impaired or threatened for one or more designated uses, but a TMDL is not needed.
See subcategories below.

Category 5- Water is impaired or threatened for one or more designated uses and a TMDL is needed.

Category 4A- All TMDLs needed to result in designated use attainment have been approved or established by EPA.

DISTRICT OF COLUMBIA
DRAFT LIST OF IMPAIRED WATERBODIES
Category 4A

303d Listing Year	Geographic Location	WBID[1]	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
1998	02070010	DCTWB00R	Upper Watts Branch-segment 2	Bacteria Organics Total Suspended Solids	High High High	Oct 2003 Oct 2003 Oct 2003
1998	02070010	DCTWB00R	Lower Watts Branch-segment 1	Bacteria Organics Total Suspended Solids	High High High	Oct 2003 Oct 2003 Oct 2003
1998	02070010	DCAKL00L	Kingman Lake	Bacteria Organics Metals Oil and Grease	High High High High	Oct 2003 Oct 2003 Oct 2003 Oct 2003
1998	02070010	DCTDU01R	Fort DuPont Creek	Bacteria Metals	High High	Oct 2003 Oct 2003
1998	02070010	DCTFD01R	Fort Davis Tributary	Bacteria Metals	Medium Medium	Oct 2003 Oct 2003

DISTRICT OF COLUMBIA
DRAFT LIST OF IMPAIRED WATERBODIES
Category 4A

303d Listing Year	Geographic Location	WBID[1]	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
1998	02070010	DCTFS01R	Fort Stanton Tributary	Bacteria Organics Metals	Medium Medium Medium	Oct 2003 Oct 2003 Oct 2003
1998	02070010	DCTFC01R	Fort Chaplin Tributary	Bacteria Metals	High High	Oct 2003 Oct 2003
1998	02070010	DCTPB01R	Popes Branch	Bacteria Organics Metals	Medium Medium Medium	Oct 2003 Oct 2003 Oct 2003
1998	02070010	DCTTX27R	Texas Avenue Tributary	Bacteria Organics Metals	Medium Medium Medium	Oct 2003 Oct 2003 Oct 2003
1998	02070010	DCRCR00R	Upper Rock Creek-segment 2	Bacteria Organics Metals	Medium Medium Medium	Feb 2004 Feb 2004 Feb 2004

DISTRICT OF COLUMBIA
DRAFT LIST OF IMPAIRED WATERBODIES
Category 4A

303d Listing Year	Geographic Location	WBID[1]	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
1998	02070010	DCRCR00R	Lower Rock Creek-segment 1	Organics Bacteria Metals	Medium Medium Medium	Feb 2004 Feb 2004 Feb 2004
1998	02070010	DCTOR01R	Oxon Run	Bacteria Organics Metals	Medium Medium Medium	Dec 2004 Dec 2004 Dec 2004
1998	02070010	DCPWC04E	Washington Ship Channel	Bacteria Organics pH	Low Low Low	Dec 2004 Dec 2004 Dec2004
1998	02070010	DCTBK01R	Battery Kemble Creek	Bacteria Metals	Low Low	Dec 2004 May 2005
1998	02070008	DCTDA01R	Dalecarlia Tributary	Bacteria Organics	Low Low	Dec 2004 May 2005

DISTRICT OF COLUMBIA
DRAFT LIST OF IMPAIRED WATERBODIES
Category 4A

303d Listing Year	Geographic Location	WBID[1]	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
1998	02070010	DCTCO01L	Chesapeake and Ohio Canal	Bacteria	Low	Dec 2004
1998	02070010	DCTNA01R	Nash Run	Bacteria Organics Metals	Medium Medium Medium	Oct 2003 Oct 2003 Oct 2003
1998	02070010	DCPMS00E	Upper Potomac River-segment 3	Bacteria	High	Dec 2004
1998	02070010	DCPMS00E	Middle Potomac River-segment 2	Bacteria	High	Dec 2004
1998	02070010	DCPMS00E	Lower Potomac River-segment 1	Bacteria	High	Dec 2004

DISTRICT OF COLUMBIA
DRAFT LIST OF IMPAIRED WATERBODIES
Category 4A

303d Listing Year	Geographic Location	WBID[1]	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
1998	02070010	DCTFB01R	Foundry Branch	Bacteria Metals	Low Low	Dec 2004 May 2005
1998	02070010	DCTBR01R	Broad Branch	Organics	Low	Feb 2004
1998	02070010	DCTDO01R	Dumbarton Oaks	Organics	Low	Feb 2004
1998	02070010	DCTFE01R	Fenwick Branch	Organics	Low	Feb 2004
1998	02070010	DCTKV01R	Klingle Valley Creek	Organics	Low	Feb 2004
1998	02070010	DCTLU01R	Luzon Branch	Organics	Low	Feb 2004
1998	02070010	DCTMH01R	Melvin Hazen Valley Branch	Organics	Low	Feb 2004
1998	02070010	DCTNS01R	Normanstone Creek	Organics	Low	Feb 2004

DISTRICT OF COLUMBIA
DRAFT LIST OF IMPAIRED WATERBODIES
Category 4A

303d Listing Year	Geographic Location	WBID[1]	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
1998	02070010	DCTPI01R	Pinehurst Branch	Organics	Low	Feb 2004
1998	02070010	DCTPO01R	Portal Branch	Organics	Low	Feb 2004
1998	02070010	DCTPY01R	Piney Branch	Organics Metals	Low	Feb 2004 Feb 2004
1998	02070010	DCTSO01R	Soapstone Creek	Organics	Low	Feb 2004
1998	02070010	DCPTB01L	Tidal Basin	Bacteria Organics	Low	Dec 2004 Dec 2004
1998	02070010	DCTHR01R	Hickey Run	Bacteria Organics	High	Oct 2003

DISTRICT OF COLUMBIA
DRAFT LIST OF IMPAIRED WATERBODIES
Category 4A

303d Listing Year	Geographic Location	WBID[1]	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
1998	02070010	DCANA00E	Lower Anacostia River-segment 1	BOD Bacteria Organics Metals Total Suspended Solids Oil and Grease	High	Dec 2001 Oct 2003 Oct 2003 Oct 2003 Mar 2002 Oct 2003
1998	02070010	DCANA00E	Upper Anacostia River-segment 2	BOD Bacteria Organics Metals Total Suspended Solids Oil and Grease	High	Dec 2001 Oct 2003 Oct 2003 Oct 2003 March 2002 Oct 2003

*BOD means biochemical oxygen demand

*The chemicals for which the Organics TMDL for Upper and Lower Watts Branch, Kingman Lake, Fort Stanton Tributary, Nash Run, Pope's Branch, Texas Avenue Tributary, Hickey Run, Upper and Lower Anacostia River have been approved are chlordane, DDD, DDE, DDT, Dieldrin, Heptachlor Epoxide, PAH1, PAH2, PAH3 and TPCBs.

*The chemicals for which the Metals TMDL for Kingman Lake, Fort Dupont Creek, Fort Chaplin Tributary, Fort Stanton Tributary, Nash Run, Pope's Branch, Texas Avenue Tributary, Hickey Run, Upper and Lower Anacostia River have been approved are Arsenic, Cooper, Lead, and Zinc.

DISTRICT OF COLUMBIA
DRAFT LIST OF IMPAIRED WATERBODIES
Category 4A

*Bacteria TMDLs have been approved for fecal coliform bacteria.
[1]- last position of alphanumeric code represents the waterbody type. E- estuary, R-river, stream, L- impoundment, lake

DISTRICT OF COLUMBIA
DRAFT LIST OF IMPAIRED WATERBODIES
Category 4B

Category 4B- TMDL not required. Other pollution control requirements (such as permits, strategies) are expected to address all waterbody/pollutant combinations and result in attainment of all water quality standards in a reasonable period of time.

No DC waters fit this category.

DISTRICT OF COLUMBIA
DRAFT LIST OF IMPAIRED WATERBODIES
Category 4C

Category 4C- Impaired or threatened waters for one or more designated uses. TMDL is not required as impairment is not caused by a pollutant.

No DC waters fit this category

DISTRICT OF COLUMBIA
DRAFT LIST OF IMPAIRED WATERBODIES

Category 5

Category 5- Water is impaired or threatened for one or more designated uses and a TMDL is needed**.**

303d Listing Year	Geographic Location	WBID[1]	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	Targeted for TMDL within 2 years	TMDL Establishment Date
2002	02070010	DCTNA01R	Nash Run	Bis(2-ethylhexyl)phthalate 4,4'-DDE Dioxin	High	Y	Dec 2007
1998	02070010	DCPMS00E	Upper Potomac River-segment 3	Organics**	High	Y	Sept 2007
1998	02070010	DCPMS00E	Middle Potomac River-segment 2	Organics** pH	High	Y Y	Sept 2007 Sept 2007
1998	02070010	DCPMS00E	Lower Potomac River-segment 1	Organics**	High	Y	Sept 2007
2002	02070010	DCTFB02R	Foundry Branch	DO	Medium	Y	Aug 2008

DISTRICT OF COLUMBIA
DRAFT LIST OF IMPAIRED WATERBODIES

Category 5

303d Listing Year	Geographic Location	WBID[1]	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	Targeted for TMDL within 2 years	TMDL Establishment Date
2002	02070010	DCTBR01R	Broad Branch	Fecal coliform	Medium	Y	Aug 2008
2002	02070010	DCTDO01R	Dumbarton Oaks	Fecal coliform	Low	N	Apr 2009
2002	02070010	DCTFE01R	Fenwick Branch	Fecal coliform	Low	N	Apr 2009
2002	02070010	DCTKV01R	Klingle Valley Creek	Fecal coliform	Low	N	Apr 2009
2002	02070010	DCTLU01R	Luzon Branch	Fecal coliform	Medium	Y	Aug 2008
2002	02070010	DCTMH01R	Melvin Hazen Valley Branch	Fecal coliform	Low	N	Apr 2009
2002	02070010	DCTNS01R	Normanstone Creek	Fecal coliform	Low	N	Apr 2009
2002	02070010	DCTPI01R	Pinehurst Branch	Fecal coliform	Medium	Y	Aug 2008
2002	02070010	DCTPO01R	Portal Branch	Fecal coliform	Medium	Y	Aug 2008

DISTRICT OF COLUMBIA
DRAFT LIST OF IMPAIRED WATERBODIES

Category 5

303d Listing Year	Geographic Location	WBID[1]	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	Targeted for TMDL within 2 years	TMDL Establishment Date
2002	02070010	DCTPY01R	Piney Branch	Fecal coliform	Low	N	Apr 2009
2002	02070010	DCTSO01R	Soapstone Creek	Fecal coliform	Medium	Y	Aug 2008
2002	02070010	DCPTB01L	Tidal Basin	pH	Medium	N	Aug 2009
2002	02070010	DCTHR01R	Hickey Run	Bis(2-ethylhexyl)phthalate Chlorine(total Residual)	High	Y	Dec 2007
2006	02070010	DCANA00E	Lower Anacostia River-segment 1	Trash	High	N	March 2012
2006	02070010	DCANA00E	Upper Anacostia River-segment 2	Trash	High	N	March 2012

*BOD means biochemical oxygen demand
**The chemicals for which the Organics TMDL for Soapstone Creek, Broad Branch, Dumbarton Oaks, Fenwick Branch, Klingle

DISTRICT OF COLUMBIA
DRAFT LIST OF IMPAIRED WATERBODIES

Category 5

Valley Creek, Luzon Branch, Melvin Hazen Valley Branch, Normanstone Creek, Pinehurst Branch, Portal Branch, and Piney Brach have been developed are Chlordane, DDD, DDE,DDT, Dieldrin, Heptachlor Epoxide, PAH1, PAH2, PAH3 and TPCBs.
***The chemicals for which the Metals TMDL for Piney Branch has been developed are Arsenic, Copper, Lead, and Zinc.
****Bacteria TMDLs are develop for fecal coliform bacteria.
[1]- last position of alphanumeric code represents the waterbody type. E- estuary, R-river, stream, L- impoundment, lake

INDIVIDUAL WATERBODY WATER QUALITY ASSESSMENTS

Detail Report for ANACOSTIA DC

ID: DCANA00E_01 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**ANACOSTIA DC**	
	Location: PENNSYLVANIA AVENUE BRIDGE TO THE MOUTH AT THE POTOMAC (ANA15 TO ANA29), TIDAL FRESHWATER. IT FLOWS THROUGH A HIGHLY URBAN AREA OF MARINAS, COMMERCIAL BUILDINGS AND NATIONAL PARKLAND.	**Water Type:** ESTUARY **Size:** 0.5 SQUARE MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	**Uses**
Assessed:	Fully Supporting	Navigation Protection and Propagation of Fish, Shellfish and Wildlife
	Not Supporting	Primary Contact Recreation Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment

Types of Assessment

Assessment Type	**Uses**	**Assessment Confidence**
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	**Associated Uses**	**Pollutant?**	**Confidence**
Fecal Coliform	Primary Contact Recreation Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Oil and Grease	Primary Contact Recreation	Yes	

Source Information

Sources	Associated Causes	Confirmed?
Combined Sewer Overflows	Fecal Coliform	
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Highway/Road/Bridge Runoff (Non-construction Related)	Oil and Grease	
Petroleum/natural Gas Production Activities (Permitted)	Oil and Grease	

Comments On:

Overall Assessment

THE LOWER TIDAL ANACOSTIA EXTENDS FROM THE PENNSYLVANIA RAILROAD BRIDGE TO THE MOUTH OF THE RIVER. THIS SEGMENT SUFFERS FROM OCCASIONAL LOW DISSOLVED OXYGEN, HIGH FECAL COLIFORM LEVELS, AND SEDIMENT TOXICITY. IT ALSO HAS BEEN SUBJECTED TO BOTH SMALL AND LARGE OIL SPILLS. FECAL AMBIENT MONITORING DATA FROM 2001 TO 2006 WERE ANALYZED TO MAKE USE SUPPORT DETERMINATIONS.

A REVIEW OF THE 2001-2005 DIURNAL MONITORING DATA FOR THIS ANACOSTIA SEGMENT SHOWED 5.1% OF THE D.O. OBSERVATIONS TO BE IN VIOLATION OF THE D.O. STANDARD. LOW D.O. LEVELS COULD BE ATTRIBUTED TO COMBINED SEWER OVERFLOWS AND STORMWATER RUNOFF. pH AND TEMPERATURE WERE IN FULL COMPLIANCE DURING 2001-2005. OF THE TOTAL OBSERVATIONS OF FECAL COLIFORM BACTERIA, 64.3% WERE IN VIOATION OF THE PRIMARY CONTACT RECREATION STANDARD (SWIMMABLE) OF 200 MPN/100 ML., AND 23.8% WERE IN VIOLATION OF THE SECONDARY CONTACT RECREATION STANDARD OF 1000 MPN/100 ML. THEREFORE, THESE USES WERE NOT SUPPORTED.

BECAUSE OF A FISH CONSUMPTION ADVISORY, THE LOWER ANACOSTIA DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15,1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

THE LOWER ANACOSTIA FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

SOURCES WITH POTENTIAL IMPACT IN THIS ANACOSTIA SEGMENT INCLUDE SEVERAL ACTIVE AND ABANDONED MINES AND INDUSTRIAL FACILITIES LOCATED ON THE WEST BANK OF THE RIVER. THESE FACILITIES INCLUDE STEUART PETROLEUM, AND OIL TERMINAL AND TANK FARM OPERATION, WASHINGTON GAS AND LIGHT, AND AN ABANDONED COAL GASIFICATION FACILITY. OTHER POTENTIAL SOURCES OF POLLUTANTS ARE A LARGE NUMBER OF BOATS IN SEVERAL MARINAS.

RELATIVELY RECENT EVENTS WITH POTENTIAL IMPACT ON THE UPPER ANACOSTIA WATER QUATITY INCLUDE: DREDGING OF THE CHANNEL UPSTREAM, AND PENNSYLVANIA AVE. BRIDGE CONSTRUCTION. A FLOATABLE DEBRIS REMOVAL PROJECT, MANAGED BY THE D.C. WASA, REMOVES A SIGNIFICANT AMOUNT OF TRASH, THEREBY CONTRIBUTING TO THE ENHANCEMENT OF THE QUALITY OF THE ANACOSTIA.

SURVEYS CONDUCTED OVER THE PAST SEVERAL YEARS REVEAL THE PRESENCE OF TOXICS IN SEDIMENTS. FISH TISSUE OF SAMPLES OF CERTAIN SPECIES SHOW ELEVATED LEVELS OF CONTAMINANTS INCLUDING CHLORDANE AND PCBs. BIOLOGICAL SAMPLES FROM THE SITE SUGGEST A SEVERELY STRESSED BENTHIC COMMUNITY. THE CAUSES OF STRESS COULD BE ATTRIBUTED TO URBAN STORM WATER RUNOFF FROM UPSTREAM AND POLLUTED TRIBUTARY STREAMS, CSO EVENTS AND IMPACT FROM THE ADJACENT INDUSTRIAL FACILITIES.

REPORTS WITH MORE INFORMATION INCLUDE:

* "IMPACT OF DREDGING ON THE WATER QUALITY OF THE ANACOSTIA RIVER" BY ICPRB, 1993.

* "SEDIMENT CONTAMINATION STUDIES OF THE POTOMAC AND ANACOSTIA RIVER AROUND THE DISTRICT OF COLUMBIA, 1992.

* "HICKEY RUN SUBWATERSHED ACTION PLAN" BY THE MWCOG, 1991.

* "HICKEY RUN COMPREHENSIVE POLLUTION ABATEMENT STUDY, PHASE I REPORT" BY THE MWCOG, 1991.

* "EMERGENT WETLAND ESTABLISHMENT UNDER DIFFERING HABITAT CONDITIONS IN THE ANACOSTIA AND POTOMAC RIVER BASIN", HORN POINT ENVIRONMENTAL

LABORATORY, CEES AND MWCOG, 1991.

* "STEUART PETROLEUM OIL SPILL", VERSAR, PINKNEY, 1993.

Detail Report for ANACOSTIA DC

ID: DCANA00E_02 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**ANACOSTIA DC**	
	Location: NEW YORK AVE BRIDGE (DC/MARYLAND LINE) TO PENNSYLVANNIA AVENUE BRIDGE (ANA01 TO ANA15), TIDAL FRESHWATER. IT FLOWS THROUGH MOSTLY NATIONAL AND CITY PARK LAND AND PAST A SMALL URBAN AREA OF RESIDENTIAL BUILDINGS, PEPCO, RFK STADIUM AND MARINA.	**Water Type:** ESTUARY **Size:** 0.3 SQUARE MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	**Uses**
Assessed:	Fully Supporting	Navigation
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment

Types of Assessment

Assessment Type	**Uses**	**Assessment Confidence**
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	**Associated Uses**	**Pollutant?**	**Confidence**
BOD, Biochemical oxygen demand	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Fecal Coliform	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Oil and Grease	Primary Contact Recreation	Yes	

Oxygen, Dissolved	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Sedimentation/Siltation	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Solids (Suspended/Bedload)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Combined Sewer Overflows	Fecal Coliform Oxygen, Dissolved	
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Dredging (E.g., for Navigation Channels)	Sedimentation/Siltation Solids (Suspended/Bedload)	
Highway/Road/Bridge Runoff (Non-construction Related)	Oil and Grease Sedimentation/Siltation	
Petroleum/natural Gas Production Activities (Permitted)	Oil and Grease	

Comments On:

Overall Assessment

THIS SEGMENT OF THE ANACOSTIA INCLUDES THE UPPER TIDAL ANACOSTIA FROM NEW YORK AVE., D.C. BORDER, TO THE PENNSYLVANIA RAILROAD BRIDGE. IT SUFFERS FROM FREQUENT LOW DISSOLVED OXYGEN, HIGH FECAL COLIFORM BACTERIA LEVELS, AND TOXIC SEDIMENTS. FECAL COLIFORM AMBIENT MONITORING DATA COVERING THE PERIOD 2001 TO 2005 WERE ANALYZED TO MAKE USE THE PRIMARY AND SECONDARY CONTACT SUPPORT DECISIONS. DIURNAL MONITORING DATA FROM JANUARY 2001 TO DECEMBER 2005 WAS USED TO DETERMINE THE DO, TEMPERATURE AND pH PERCENT VIOLATIONS FOR THIS SEGMENT.

DURING THE PERIOD UNDER REVIEW, AN AVERAGE OF12.6% OF D.O. OBSERVATIONS VIOLATED THE D.O. STANDARD FOR AQUATIC LIFE SUPPORT. WHILE pH AND TEMPERATURE OBSERVATIONS WERE IN FULL COMPLIANCE WITH THE AQUATIC LIFE USE STANDARD. OF THE TOTAL OBSERVATIONS OF FECAL COLIFORM BACTERIA, 72.7% DID NOT MEET THE STANDARD FOR PRIMARY CONTACT RECREATION (SWIMMABLE) STANDARD OF 200 MPN/100ML AND 28.9% DID NOT MEET THE STANDARD FOR SECONDARY CONTACT RECREATION OF 1000 MPN/100ML. THIS SEGMENT OF THE ANACOSTIA DID NOT SUPPORT EITHER SWIMMABLE OR SECONDARY CONTACT RECREATION USES.

BECAUSE OF THE FISH CONSUMPTION ADVISORY, THIS SEGMENT DID NOT SUPPORT THE FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

D.O. VIOLATIONS COULD HAVE BEEN CAUSED BY EITHER HIGH FLOW CONDITIONS AND ORGANIC DEBRIS ACCOMPANYING STORMS OR LOW FLOW CONDITIONS. SEVERAL POLLUTED STREAMS JOIN THIS SEGMENT OF ANACOSTIA. LOWER BEAVER DAM CREEK DRAINS AN INDUSTRIAL AREA AND COULD BE SOURCE OF POLLUTANTS ORIGINATING FROM AUTOMOTIVE RECYCLING AND JUNK YARDS. HICKEY RUN IS A SOURCE OF CHRONIC OIL AND OTHER INDUSTRIAL POLLUTANTS. WATTS BRANCH IS THE LARGEST ANACOSTIA TRIBUTARY IN THE DISTRCT, AND IS A SOURCE OF URBAN RUNOFFS. SIMILARLY, N.E. BOUNDARY, THE LARGEST COMBINED SEWER OUTFALL IN THE DISTRICT, IS LOCATED ALONG THE LOWER PORTION OF THIS SEGMENT.

RECENT EVENTS WITH POTENTIAL IMPACT ON THE UPPER ANACOSTIA WATER QUALITY INCLUDE: DREDGING OF THE CHANNEL, DEPOSITION OF SPOILS IN KENILWORTH MARSH. A FLOATABLE DEBRIS REMOVAL PROJECT, MANAGED BY THE D.C. WASA, REMOVES A SIGNIFICANT AMOUNT OF TRASH AND CONTRIBUTES TO THE ENHANCEMENT OF THE QUALITY OF THE ANACOSTIA.

SURVEYS CONDUCTED IN PAST SEVERAL YEARS REVEALS THE PRESENCE OF TOXICS IN SEDIMENTS. FISH TISSUE OF SAMPLES OF CERTAIN SPECIES SHOW ELEVATED LEVELS OF CONTAMINATION INCLUDING CHLORDANE AND PCBs. BIOLOGICAL SAMPLES FROM SELECTED SITES SUGGEST A SEVERELY STRESSED BENTHIC COMMUNITY. THE CAUSES OF STRESS COULD BE ATTRIBUTED TO URBAN STORM WATER RUNOFF FROM UPSTREAM POLLUTED STREAMS, CSO EVENTS AND IMPACT FROM THE ADJACENT INDUSTRIAL FACILITIES.

REPORTS WITH MORE INFORMATION INCLUDE:
* "IMPACT OF DREDGING ON THE WATER QUALITY OF THE ANACOSTIA RIVER" BY ICPRB, 1993.
* "SEDIMENT CONTAMINATION STUDIES OF THE POTOMAC AND ANACOSTIA RIVER AROUND THE DISTRICT OF COLUMBIA" BY ICPRB, VELINSKY, 1992.
* "HICKEY RUN SUBWATERSHED ACTION PLAN" BY MWCOG, 1991.
* "HICKEY RUN COMPREHENSIVE POLLUTION ABATEMENT STUDY, PHASE I REPORT" BY MWCOG, 1991.
* "EMERGENT WETLAND ESTABLISHMENT UNDER DIFFERING HABITAT CONDITIONS IN THE ANACOSTIA AND POTOMAC RIVER BASIN"/ HORN POINT ENVIRONMENTAL LABORATORY, CEES AND MWCOG, 1991.
* "STEUART PETROLEUM OIL SPILL" BY VERSAR, PINKNEY, 1993.
* AWRC, 1997, DRAFT ANACOSTIA WATERSHED RESTORATION PROGRESS AND CONDITIONS REPORT 1990-1996, DEPT. OF ENVIRONMENTAL

Detail Report for BATTERY KEMBLE CREEK

ID: DCTBK01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**BATTERY KEMBLE CREEK**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 1.2 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Benthic-Macroinvertebrate Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes	

Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments (Streams)	
Municipal (Urbanized High Density Area)	Fecal Coliform	
Post-development Erosion and Sedimentation	Combination Benthic/Fishes Bioassessments (Streams)	
Yard Maintenance	Combination Benthic/Fishes Bioassessments (Streams)	

Comments On:

Overall Assessment

BATTERY KEMBLE CREEK IS A TRIBUTARY OF THE POTOMAC RIVER THAT DRAINS BATTERY KEMBLE PARK. BANTA (1993) MISIDENTIFIED THIS STREAM AS FLETCHERS RUN. THE STREAM ORIGINATES AT NEBRASKA AVENUE AND FOXHALL ROAD. THE WATERSHED IS 230 ACRES IN AREA, OF WHICH 60% IS PARKLAND AND FOREST WITH THE REMAINING AREA HIGH-PRICED RESIDENTIAL PROPERTY. THE WATERSHED'S NORTHWESTERN BORDER IS UNIVERSITY TERRACE AND THE WESTERN EDGE OF BATTERY KEMBLE PARK; THE EASTERN BORDER IS FOXHALL ROAD AND THE SOUTHERN BORDER IS NORTH OF W STREET, NW. IT IS BUFFERED ON EITHER SIDE BY ABOUT 300 FEET OF FORESTED PARKLAND. THIS TRIBUTARY IS CLASSIFIED AS A "SPECIAL WATERS OF THE DISTRICT OF COLUMBIA" UNDER THE WATER QUALITY STANDARDS OF THE DISTRICT.

AT RESERVOIR ROAD, TWO LARGE SEWER LINES CROSS THE STREAM AS WELL AS SEVERAL SMALLER SEWER LINES WHICH TRAVERSE THE STREAM FURTHER DOWNSTREAM. THE STREAM AREA NEAR RESERVOIR ROAD RECEIVES DISCHARGE FROM THREE SMALL STORM DRAINS.

THE WATERSHED LIES MAINLY IN THE SYKESVILLE FORMATION, GRANITE ROCKS OF UNKNOWN AGE. ABOUT 1/4 OF THE AREA DRAINS SOME PLEISTOCENE TERRACE GRAVELS DEPOSITED BY THE POTOMAC.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," BY W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE EVALUATION OF BATTERY KEMBLE CREEK'S AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT CONDUCTED IN 2002. BATTERY KEMBLE CREEK WAS FOUND TO BE NOT SUPPORTING OF ITS AQUATIC LIFE USE DESIGNATION. HBI SCORE SUGGESTS THERE MAY BE SIGNIFICANT ORGANIC POLLUTION IN THE STREAM. THERE WERE NO SENSITIVE ORGANISMS FOUND (EPT), WHICH MAY SUGGEST A TOXIC STREAM. HABITAT IS MODERATELY IMPAIRED. DO, PH AND TEMP FULLY SUPPORTED THE ALUS STANDARD.

A GASTROPODA WAS THE ONLY ORGANISM THAT WAS FOUND IN THE 75 METER SAMPLED AREA. THIS MACROINVERTERBRATE IS HIGHLY TOLERANT TO TOXICS.

THE EVALUATION OF BATTERY KEMBLE CREEK SWIMMABLE AND SECONDARY USES ARE BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND COMPILED FOR A FIVE-YEAR SPAN 2001-2005. BATTERY KEMBLE CREEK WAS NOT IN COMPLIANCE FOR ITS SWIMMABLE USE 84.6% OF THE TIME. ITS SECONDARY CONTACT USE69.25% OF THE TIME. AS A RESULT, BATTERY KEMBLE CREEK DID NOT SUPPORT ITS SWIMMABLE OR 2ND CONTACT RECREATION USES.

BATTERY KEMBLE CREEK DID NOT SUPPORT THE EPA FISH CONSUMPTION USE DESIGNATION. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHS OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE BATTERY KEMBLE CREEK IS A TRIBUTARY OF THE POTOMAC RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THE TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO BATTERY KEMBLE CREEK.

Detail Report for BROAD BRANCH

ID: DCTBR01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**BROAD BRANCH**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 1.7 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Benthic-Macroinvertebrate Bioassessments (Streams)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Combination Benthic/Fishes Bioassessments (Streams)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Debris/Floatables/Trash	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Fecal Coliform	Primary Contact Recreation Protection of Human Health related to	Yes	

	Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment	
Fishes Bioassessments (Streams)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Particle distribution (Embeddedness)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes

Source Information

Sources	Associated Causes	Confirmed?
Impacts from Hydrostructure Flow Regulation/modification	Fishes Bioassessments (Streams)	
Residential Districts	Fishes Bioassessments (Streams)	
Wet Weather Discharges (Non-Point Source)	Fishes Bioassessments (Streams)	
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Fishes Bioassessments (Streams)	
Yard Maintenance	Fishes Bioassessments (Streams)	

Comments On:

Overall Assessment

BROAD BRANCH FLOWS THROUGH A RESIDENTIAL PARK PARALLELING BROAD BRANCH RD. FIFTEEN OUTFALLS FEED INTO THIS STREAM. BROAD BRANCH IS A WESTERN TRIBUTARY OF ROCK CREEK WHICH IS JOINED BY SOAPSTONE CREEK ABOUT 800 FEET BEFORE IT DISCHARGES INTO ROCK CREEK. THE SURFACE PORTION OF THE STREAM BEGINS NEAR NEBRASKA AND CONNECTICUT AVENUES AND IS BORDERED BY PARKLAND AND RESIDENTIAL PROPERTY FOR HALF OF ITS REACH AND A 200 FOOT BUFFER OF TREES AND SHRUBS FOR THE REST OF ITS REACH. THE WATERSHED ENCOMPASSES ABOUT 1120 ACRES.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE EVALUATION OF BROAD BRANCH'S AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT PERFORMED 2003. AN AQUATIC LIFE USE DESIGNATION OF NOT SUPPORTING WAS DETERMINED. NO MACROINVERTEBRATES WERE FOUND IN THE SAMPLE COLLECTED. TOXICS ARE MOST LIKELY THE SOURCE OF DEGRADATION. HABITAT WAS MODERATELY IMPAIRED.

THE TRIBUTARY VIOLATED THE D.O. STANDARDS 5.3% OF THE TIME DURING THE 2001-2005 AMBIENT DATA STUDY PERIOD. THE TEMPERATURE AND PH STANDARDS WERE NOT VIOLATED. THE PRIMARY CONTACT STANDARD WAS VIOLATED 90.9% OF THE TIME, THE PRIMARY CONTACT USE IS NOT SUPPORTED. THE SECONDARY CONTACT STANDARD WAS NOT SUPPORTED VIOLATIONS OCCURED 81.8% OF THE TIME.

Detail Report for CHESAPEAKE AND OHIO CANAL

ID: DCTCO01L_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**CHESAPEAKE AND OHIO CANAL**	
	Location: IMPOUNDMENT RUNNING PARALLEL TO UPPER POTOMAC (TCO01:GEORGETOWN AND TCO06: FLETCHER'S BOATHOUSE).	**Water Type:** FRESHWATER LAKE **Size:** 27.3 ACRES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A **Trophic Status:** N/A **Public Lake:** No

Use Information

	Attainment Status	**Uses**
Assessed:	Fully Supporting	Navigation Protection and Propagation of Fish, Shellfish and Wildlife
	Not Supporting	Primary Contact Recreation Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment

Types of Assessment

Assessment Type	**Uses**	**Assessment Confidence**
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	**Associated Uses**	**Pollutant?**	**Confidence**
Fecal Coliform	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	Yes	

Source Information

Sources	**Associated Causes**	**Confirmed?**

Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform

Comments On:

Overall Assessment

THIS WATERBODY IS AN IMPOUNDMENT RUNNING PARALLEL TO UPPER POTOMAC (TCO01: GEORGETOWN AND TCO06: FLETCHER'S BOATHOUSE). USE SUPPORT DETERMINATIONS WERE MADE FROM THE ANALYSIS OF AMBIENT MONITORING DATA FROM 2001 TO 2005.

USE SUPPORT DECISIONS FOR SWIMMABLE AND SECONDARY CONTACT RECREATION WERE MADE USING FECAL COLIFORM DATA. THE C&O CANAL DID NOT SUPPORT EITHER ITS PRIMARY CONTACT RECREATION USE (SWIMMABLE) EXCEEDING THE FECAL COLIFORM BACTERIA STANDARD OF 200 MPN/100ML 50.9% OF THE TIME OR ITS SECONDARY CONTACT RECREATION USE EXCEEDING STANDARD OF 1000 MPN/100ML 17.0% OF THE TIME.

THE C&O CANAL FULLY SUPPORTED ITS AQUATIC LIFE USE DURING THE PERIOD UNDER REVIEW, BASED ON PH AND D.0. VIOLATIONS OF 7.3% AND 0% RESPECTIVITY; TEMPERATURE OBSERVATION WERE IN FULL COMPLIANCE DURING THIS PERIOD. HIGH FECAL COLIFORM LEVELS COULD BE CONTRIBUTED TO URBAN/STORM WATER RUNOFFS. OCCASIONAL VIOLATIONS IN PH COULD BE DUE TO EITHER RUNOFF OR FLOW CONDITIONS.

THE C&0 CANAL DID NOT SUPPORT THE FISH CONSUMPTION USE CLASSIFICATION. DETERMINATION OF THE FISH CONSUPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

THERE HAS BEEN NO KNOWN MAN-MADE OBSTRUCTIONS DURING THE PERIOD IN REVIEW; THEREFORE, IT FULLY SUPPORTED ITS NAVIGATIONAL USE.

BECAUSE OF THE ABOVE USE SUPPORT DECISIONS, THE C&O CANAL DID NOT SUPPORT THE OVERALL USE CLASSIFICATION FOR WATERS WITH MULTIPLE USES.

Detail Report for DALECARLIA TRIBUTARY

ID: DCTDA01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**DALECARLIA TRIBUTARY**	
	Location: DALECARLIA TRIBUTARY (ALSO REFERRED TO AS DALECARLIA CREEK) IS A STREAM WHICH ORIGINATES IN DC THEN CROSSES INTO MARYLAND CONTRIBUTING TO THE MARYLAND STREAM, LITTLE FALLS RUN. DALECARLIA FORMS AT THE CONFLUENCE OF MILL CREEK AND EAST CREEK, UNNAMED STRE	**Water Type:** RIVER **Size:** 1.7 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Benthic-Macroinvertebrate Bioassessments (Streams)	Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Combination Benthic/Fishes Bioassessments (Streams)	Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Debris/Floatables/Trash	Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Fecal Coliform	Primary Contact Recreation Secondary Contact Recreation and	Yes	

	Aesthetic Enjoyment	
Fishes Bioassessments (Streams)	Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Particle distribution (Embeddedness)	Secondary Contact Recreation and Aesthetic Enjoyment	Yes

Source Information

Sources	Associated Causes	Confirmed?
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Impacts from Hydrostructure Flow Regulation/modification	Particle distribution (Embeddedness)	
Residential Districts	Particle distribution (Embeddedness)	
Source Unknown	Fecal Coliform	
Wet Weather Discharges (Non-Point Source)	Particle distribution (Embeddedness)	
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Particle distribution (Embeddedness)	
Yard Maintenance	Particle distribution (Embeddedness)	

Comments On:

Overall Assessment

THE STREAM'S WATERSHED IS ALMOST ENTIRELY IN THE DISTRICT OF COLUMBIA. THE WATERSHED MEASURES ABOUT 270 ACRES AND DRAINS SOUTHERN SPRING VALLEY AND NORTHERN KENT. ABOUT 1/4 OF THE WATERSHED IS PARKLAND, WHILE THE REMAINDER IS COMPRISED OF UPSCALE SUBURBAN RESIDENTIAL HOUSING AND POCKETS OF LIGHT COMMERCIAL USE.

THE STORM DRAIN SYSTEM THAT EMPTIES INTO DALECARLIA TRIBUTARY IS PARALLELED BY SEWER PIPE. THE POTENTIAL FOR SEWER LEAKAGE IS HIGH. THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE EVALUATION OF SUPPORT USES ARE PARTIALLY BASED ON AFIVE-YEAR STATISTICAL EVALUATION (2001-2005) OF CONVENTIONAL AND BACTERIAL WATER QUALITY DATA COLLECTED BY THE WQMB.

THE EVALUATION OF DALECARLIA TRIBUTARY'S AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT IN 2003. DALECARLIA TRIBUTARY WAS FOUND TO BE NOT SUPPORTING OF THIS DESIGNATED USE. THE HBI SCORE SUGGESTS SEVERE ORGANIC POLLUTION IN THE STREAM.

NO SENSITIVE ORGANISMS WERE FOUND (EPT). HABITAT IS MODERATELY IMPAIRED. 73 CHIRONOMIDAE (TOLERANT GENERALIST) WERE FOUND. WITH 73 CHIRONOMIDAE BEING

PRESENT, THIS MAY POSSIBLY SUGGEST A STREAM THAT IS IMPACTED WITH TOXICS AND ORGANICS. DO, PH AND TEMPERATURE DATA FULLY SUPPORTED THE ALUS STANDARD. MORE THAN 100 ORGANISMS FOUND IN THE SAMPLE

THE EVALUATION OF DALECARLIA'S SWIMMABLE AND SECONDARY CONTACT USES WERE BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND ANALYZED FROM 2001-2005. WITH AN AVERAGE FECAL COUNT OF 4570 MPN/100ML, THIS STREAM DID NOT SUPPORT ITS SWIMMABLE USE OR ITS SECONDARY CONTACT RECREATION USE. IT WAS NOT IN COMPLIANCE FOR ITS SWIMMIABLE USE (200MPN/100ML)58.3% OF THE TIME AND FOR ITS SECONTARY CONTACT USE (1000MPN/100ML) 16.78% OF THE TIME.

TYPICAL OF STREAMS IN THE DISTRICT OF COLUMBIA, DALECARLIA IS NEGATIVELY IMPACTED BY URBAN NPS STORMWATER RUNOFF. RUNOFF FROM SURROUNDING RESIDENTAL YARDS AND STREETS MAY BE A SOURCE OF PATHOGENS, ORGANICS, AND METALS.

Detail Report for DUMBARTON OAKS

ID: DCTDO01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**DUMBARTON OAKS**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 0.6 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Benthic-Macroinvertebrate Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish,	Yes	

	Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	
Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Cercla NPL (Superfund) Sites	Benthic-Macroinvertebrate Bioassessments (Streams) Combination Benthic/Fishes Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Fishes Bioassessments (Streams)	
Hydrostructure Impacts on Fish Passage	Benthic-Macroinvertebrate Bioassessments (Streams) Combination Benthic/Fishes Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Fishes Bioassessments (Streams)	

Comments On:

Overall Assessment

DUMBARTON FLOWS THROUGH A RESIDENTIAL PARK ENTERING ROCK CREEK FROM THE WEST BELOW THE ZOO ABOUT 1000 FEET NORTHEAST OF THE MASSACHUSETTS AVENUE BRIDGE. THE SURFACE PORTION OF THE STREAM ORIGINATES AT A PAIR OF STORMDRAINS AND FLOWS A LITTLE MORE THAN HALF A MILE SOUTHEAST TO ROCK CREEK. THE WATERSHED OF 51 ACRES DRAINS MOSTLY PARKLAND AND INCLUDES ABOUT A QUARTER OF THE GROUNDS OF THE US NAVAL OBSERVATORY AND DUMBARTON OAKS GARDENS. DUMBARTON IS BUFFERED FOR ITS ENTIRE LENGTH BY FORESTED PARKLAND. THE STREAM IS PARALLELED BY A COMBINED SEWER/STORM DRAIN. TWO STORMWATER CONDUITS EXIST NEAR THE HEAD OF THE STREAM.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE EVALUATION OF DUMBARTON OAKS'S AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT PERFORMED IN 2003. DUMBARTON OAKS STREAM HAS BEEN DESIGNATED AS NOT SUPPORTING THE AQUATIC LIFE USE. THE HBI SCORE SUGGESTS EXPOSURE TO SOME ORGANIC POLLUTANTS. THE DOMINANT TAXA WAS OLIGOCHAETA (SEWAGE LOVING ORGANISMS).

DO (0.0%), PH (0.0%), AND TEMERATURE (0.0%) OBSERVATIONS GENERALLY FULLY SUPPORTED THE ALUS. THE STREAM'S HABITAT WAS MODERATELY IMPAIRED, WITH THE LEFT BANK MORE IMPAIRED THAT THE RIGHT BANK. 27 ORGANISMS WERE FOUND IN THE ENTIRE SAMPLE. THE ORGANISMS WERE COLLECTED, ALL FELL IN THE TOLERANT CATEGORY. WITH OLIGOCHAETA BEING THE DOMINANT TAXA AND CHIRONOMIDAE MAKING UP MOST OF THE SAMPLE. TOXICS ARE POSSIBLY THE CAUSE OF THE

DEGRADATION .

THE SWIMMABLE AND SECONDARY CONTACT RECREATION USES WERE NOT SUPPORTED DURING THE 2001-2005 STUDY PERIOD. THE SWIMMABLE STANDARD WAS VIOLATED 54.5% OF THE TIME. THE SECONDARDY CONTACT RECREATION STANDARD WAS VIOLATED 36.4% OF THE TIME.

DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C. COMMISSIONER OF PUBLIC HEALTH ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATER. THE FISH CONSUMPTION USE IS NOT SUPPORTING.

Detail Report for FENWICK BRANCH

ID: DCTFE01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**FENWICK BRANCH**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 1 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Alteration in stream-side or littoral vegetative covers	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Benthic-Macroinvertebrate Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Habitat Assessment (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Impacts from Hydrostructure Flow Regulation/modification	Alteration in stream-side or littoral vegetative covers Benthic-Macroinvertebrate Bioassessments (Streams) Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Fishes Bioassessments (Streams) Habitat Assessment (Streams) Particle distribution (Embeddedness)	
Residential Districts	Alteration in stream-side or littoral vegetative covers Benthic-Macroinvertebrate Bioassessments (Streams) Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Fishes Bioassessments (Streams) Habitat Assessment (Streams) Particle distribution (Embeddedness)	
Wet Weather Discharges (Non-Point Source)	Alteration in stream-side or littoral vegetative covers Benthic-Macroinvertebrate Bioassessments (Streams) Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Fishes Bioassessments (Streams)	

	Habitat Assessment (Streams)
	Particle distribution (Embeddedness)
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Alteration in stream-side or littoral vegetative covers
	Benthic-Macroinvertebrate Bioassessments (Streams)
	Combination Benthic/Fishes Bioassessments (Streams)
	Combined Biota/Habitat Bioassessments (Streams)
	Debris/Floatables/Trash
	Fecal Coliform
	Fishes Bioassessments (Streams)
	Habitat Assessment (Streams)
	Particle distribution (Embeddedness)
Yard Maintenance	Alteration in stream-side or littoral vegetative covers
	Benthic-Macroinvertebrate Bioassessments (Streams)
	Combination Benthic/Fishes Bioassessments (Streams)
	Combined Biota/Habitat Bioassessments (Streams)
	Debris/Floatables/Trash
	Fecal Coliform
	Fishes Bioassessments (Streams)
	Habitat Assessment (Streams)
	Particle distribution (Embeddedness)

Comments On:

Overall Assessment

FENWICK BRANCH FLOWS FROM A COMMERCIAL AREA IN MARYLAND TO A RESIDENTIAL PARK IN THE DISTRICT AND THEN INTO ROCK CREEK. FENWICK BRANCH IS A TRIBUTARY OF ROCK CREEK WHICH INCLUDES THE NORTHERN CORNER OF THE DISTRICT OF COLUMBIA. THE WATERSHED IS ABOUT 500 ACRES BUT ONLY ABOUT 90 ACRES OF IT ARE IN THE DISTRICT. PORTAL BRANCH JOINS FENWICK BRANCH ABOUT 120 FEET NORTH OF ITS MOUTH. THE SURFACE PORTION OF THE STREAM RUNS ALMOST COMPLETELY WITHIN THE DISTRICT. THE STREAM ORIGINATES AS A DISCHARGE FROM A STORM DRAIN A FEW FEET OUTSIDE THE DC BORDER IN MARYLAND SOUTH OF EAST-WEST HIGHWAY. WITHIN THE DISTRICT, SEVEN STORM DRAINS DISCHARGE INTO FENWICK BRANCH. THROUGHOUT ITS LENGTH THE STREAM IS BORDERED ON EITHER SIDE BY 100 FEET OF PARKLAND. BEYOND THAT THE STREAM IS ENTIRELY URBAN WITH RESIDENTIAL DEVELOPMENT INSIDE THE DISTRICT AND LIGHT INDUSTRIAL DEVELOPMENT IN MARYLAND.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE EVALUATION OF FENWICK BRANCH'S AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT PERFORMED IN 2003. FENWICK BRANCH HAS BEEN DESIGNATED AS 'NOT SUPPORTING'. THE HBI SCORE SUGGESTS SOME ORGANIC POLLUTION. NO SENSITIVE ORGANISMS WERE FOUND (EPT). THE STREAM'S HABITAT IS SEVERELY IMPAIRED WITH A DOMINANT TAXA OF CHIRONOMIDAE (TOLERANT GENERALIST). D.O. (0.0%), PH (5.6%) AND

TEMPERATURE (0.0%) FULLY SUPPORTED THE AQUATIC LIFE USE. 55 ORGANISMS WERE FOUND IN THE SAMPLE. ONE OTHER FACTOR THAT MAY CAUSE FENWICK BRANCH HABITAT AND MACROINVERTEBRATES TO SUFFER ARE THE 11 OUTFALLS DOCUMENTED IN THE STREAM. TOXICS ARE POSSIBLY RESPONSIBLE AS WELL.

THE SECONDARY AND PRIMARY CONTACT USES WERE NOT SUPPORTED DRING THE 2001-2005 STUDY PERIOD. THE SECONDARY CONTACT USE WAS VIOLATED 27.3% OF THE TIME AND PRIMARY CONTACT USE 72.7% OF THE TIME.

FENWICK BRANCH WAS NOT ASSESSED FOR FISH CONSUMPTION.

Detail Report for FORT CHAPLIN RUN

ID: DCTFC01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 4A(N/A)

Water Information:	**FORT CHAPLIN RUN**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 0.6 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish,	Yes	

	Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment	
Oil and Grease	Primary Contact Recreation	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Physical substrate habitat alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness) Physical substrate habitat alterations	
Illegal Dumps or Other Inappropriate Waste Disposal	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness) Physical substrate habitat alterations	
Impacts from Hydrostructure Flow Regulation/modification	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness) Physical substrate habitat alterations	
Landfills	Oil and Grease	
Residential Districts	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness) Physical substrate habitat alterations	

Source Unknown	Fecal Coliform Oil and Grease

Comments On:

Overall Assessment

FORT CHAPLIN RUN IS A MINOR EPHEMERAL TRIBUTARY OF PINEY RUN, A NOW ALMOST COMPLETELY CANALIZED AND SUBTERRANEAN STORM DRAIN WHICH WAS ONCE A SURFACE TRIBUTARY OF THE ANACOSTIA RIVER. FORT CHAPLIN ORIGINATES AS A 6.5 FOOT DIAMETER STORM PIPE NEAR BURNS STREET AND TEXAS AVENUE, SE. THE SURFACE PORTION OF THE STREAM IS A LITTLE OVER A HALF MILE LONG AND HAS A WATERSHED THAT ENCOMPASES ABOUT 270 ACRES WHICH IS ABOUT 90% RESIDENTIAL AND COMMERCIAL PROPERTY AND ABOUT 10% PARKLAND. MOST OF THE SURFACE STREAM IS BUFFERED BY ABOUT 200 FEET OF FORESTED AREA ON EACH SIDE ALTHOUGH THE STREAM RECEIVES SEVERAL STORM DRAINS AND IS PARALLELED AND CROSSED BY NUMEROUS SEWER LINES.

THE INVERTEBRATE SAMPLE COLLECTED IN FORT CHAPLIN WAS DOMINATED BY OLIGOCHAETE WORMS AND CHIRONOMIDS. THE STREAM IS BUFFERED BY A SUPSTANTIAL RIPARIAN ZONE, ALTHOUGH IT RECIEVES NUMEROUS STORM DRAINS WHICH HAS CAUSED SEVERE EROSION IN SOME PLACES AND IS CROSSED BY SEVERAL SEWER LINES. THE STREAM IS CURRENTLY IN THE PROCESS OF DOWNCUTTING TO SEWER LINES AND SEVERAL STORMWATER OUTFALLS HAVE COLLAPSED INTO THE STREAM. THE EVALUATION OF FORT CHAPLIN RUN AQUATIC LIFE SUPPORT USED IS BASED ON A BIOASSESSMENT CONDUCTED IN 2002. FORT CHAPLIN RUN WAS FOUND TO BE NOT SUPPORTING OF ITS AQUATIC LIFE USE DESIGNATION. THE HBI SCORE SUGGESTS FAIRLY SIGNIFICANT ORGANIC POLLUTION. A HIGH PERCENTAGE OF GATHERER-COLLECTOR ORGANISMS SUGGESTS POLLUTANTS, BECAUSE THEY ARE GENERALIST AND CAN THRIVE IN POLLUTED WATERS. THE DOMINANT TAXA WAS OLIGOCHAETA (SEWAGE LOVING ORGANISMS). 47 ORGANISMS WERE FOUND IN THE SAMPLE. THE D.O., PH, AND TEMPERATURE OBSERVATIONS FULLY SUPPORTED THE AQUATIC LIFE USE. THE STREAM'S HABITAT IS SEVERELY IMPAIRED. THE EROSION IS RAPIDLY DESTROYING THIS STREAM. THERE IS A NEED FOR IMMEDIATE ACTION TO SLOW THE EROSION OF THE STEAMS BANKS.

THE EVALUATION OF FORT CHAPLIN RUN SWIMMABLE AND SECONDARY USES ARE BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND COMPLILED FOR A FIVE-YEAR SPAN 2001-2005. FORT CHAPLIN RUN WAS NOT IN COMPLIANCE FOR ITS SWIMMABLE USE 44.4% OF THE TIME OR ITS SECONDARY CONTACT USE 16.7% OF THE TIME. AS A RESULT, FORT CHAPLIN RUN DID NOT SUPPORT EITHER OF ITS SWIMMABLE OR 2ND CONTACT RECREATIONS USES.

FORT CHAPLIN RUN DID NOT SUPPORT THE EPA FISH CONSUMPTION USE DESIGNATION. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHES OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE FORT CHAPLIN RUN IS A TRIBUTARY OF THE ANACOSTIA RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THIS TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO FORT CHAPLIN RUN.

Detail Report for FORT DAVIS TRIBUTARY

ID: DCTFD01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 4A(N/A)

Water Information:	**FORT DAVIS TRIBUTARY**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 1.4 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Alteration in stream-side or littoral vegetative covers	Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Alterations in wetland habitats	Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Combination Benthic/Fishes Bioassessments (Streams)	Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Combined Biota/Habitat Bioassessments (Streams)	Secondary Contact Recreation and Aesthetic Enjoyment	Yes	

Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Other flow regime alterations	Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Particle distribution (Embeddedness)	Secondary Contact Recreation and Aesthetic Enjoyment	Yes

Source Information

Sources	Associated Causes	Confirmed?
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Hydrostructure Impacts on Fish Passage	Alteration in stream-side or littoral vegetative covers Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Impacts from Hydrostructure Flow Regulation/modification	Alteration in stream-side or littoral vegetative covers Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Residential Districts	Alteration in stream-side or littoral vegetative covers Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Source Unknown	Fecal Coliform	

Comments On:

Overall Assessment

FORT DAVIS IS A TRIBUTARY OF THE ANACOSTIA RIVER OF WHICH THE SURFACE PORTION PARALLELS PENNSYLVANIA AVENUE BEGINNING AT ALABAMA AVENUE AND SUBMERGES FOR THE REMAINDER OF ITS COURSE AT PENNSYLVANIA AVENUE ABOVE BRANCH AVENUE. THE WATERSHED IS ONLY 70 ACRES AND IS ROUGHLY HALF FORESTED AND HALF RESIDENTIAL PROPERTY. THE SOUTHEASTERN SIDE IS BUFFERED BY ABOUT 600 FEET OF FOREST WHILE THE NORTHWESTERN SIDE OF THE STREAM IS PENNSYLVANIA AVENUE. THE STREAM RECEIVES THREE SMALL STORM DRAINS AND IS SURROUNDED BUT NOT CROSSED BY SMALL SEWER LINES.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE EVALUATION OF FORT DAVIS TRIBUTARY AQUATIC LIFE SUPPORT USE IS BASED ON BIOASSESSMENT CONDUCTED IN 2002. FORT DAVIS TRIBUTARY WAS FOUND TO BE NOT SUPPORTING OF ITS AQUATIC LIFE USE DESIGNATION. THE HBI SCORE SUGGESTS SOME ORGANIC POLLUTION.

THE DOMINANT TAXA AND ONLY TAXA FOUND WAS A SINGLE OLIGOCHAETA (SEWAGE LOVING ORGANISM). THE D.O. (0.0%), PH (0%) AND TEMPERATURE (0%) FULLY SUPPORTED THE AQUATIC LIFE USE. EROSION ON THE RIGHT AND LEFT BANKS WERE SEVERE. BANK EROSION MAY HAVE BEEN THE WORST OUT OF ALL THE STREAMS IN THE COASTAL REGION. THE ENTIRE STREAM WAS FILLED WITH A REDDISH COLOR THAT IS THE SAME COLOR AS THE SILT OR CLAY IN THE STREAMBED.

THE EVALUATION OF FORT DAVIS TRIBUTARY SWIMMABLE AND SECONDARY USES ARE BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND COMPLIED FOR A FIVE-YEAR SPAN 2001-2005. FORT DAVIS TRIBUTARY WAS NOT IN COMPLIANCE FOR ITS SWIMMABLE USE 31.3% OF TIME. ITS SECONDARY CONTACT USE 18.7% OF THE TIME. AS A RESULT, FORT DAVIS TRIBUTARY DID NOT SUPPORT ITS SWIMMABLE OR 2ND CONTACT RECREATION USES.

FORT DAVIS TRIBUTARY DID NOT SUPPORT THE EPA FISH CONSUMPTION USE DESIGNATION. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHES OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE FORT DAVIS TRIBUTARY IS A TRIBUTARY OF THE ANACOSTIA RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THIS TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO FORT DAVIS TRIBUTARY.

Detail Report for FORT DUPONT CREEK

ID: DCTDU01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 4A(N/A)

Water Information:	**FORT DUPONT CREEK**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 1.7 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	**Uses**
Assessed:	Insufficient Information	Protection and Propagation of Fish, Shellfish and Wildlife
	Not Supporting	Primary Contact Recreation Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	**Uses**	**Assessment Confidence**
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	**Associated Uses**	**Pollutant?**	**Confidence**
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment	Yes	

Source Information

Sources	Associated Causes	Confirmed?
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Source Unknown	Fecal Coliform	

Comments On:

Overall Assessment

THE STREAM AT FORT DUPONT PARK IS A MINOR TRIBUTARY OF THE ANACOSTIA RIVER WHICH ORIGINATES AT FORT DUPONT NEAR ALABAMA AND MASSACHUSETTS AVENUES, SE. THE STREAM FLOWS ENTIRELY WITHIN THE CONFINES OF FORT DUPONT PARK AND THE WATERSHED OF ABOUT 410 ACRES IS DELIMITED BY THE BOUNDARIES OF THE PARK OF WHICH OVER 90% IS PARKLAND. THERE ARE FEW DEVELOPMENTAL PRESSURES THAT CAN IMPACT THE STREAM WITH ONLY TWO SMALL STORM DRAINS FROM U.S. NATIONAL PARK SERVICE FACILITIES. FORT DUPONT FLOWS INTO A LARGE STORM DRAIN AFTER IT PASSES UNDER THE B&O RAILROAD WHERE IT IS SUBVERTED FOR APPROXIMATELY 900 FEET BEFORE DISCHARGING INTO THE ANACOSTIA RIVER.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE WATERSHED OF FORT DUPONT IS ALMOST ENTIRELY ENCOMPASSED BY PARK SERVICE LAND. ONLY TWO STORM DRAINS ENTER THE PARK AND THERE ARE NO SEWER LINE CROSSING UNTIL JUST ABOVE THE STREAM REACH ENTERS THE PIPE FLOWING TO THE RIVER. THE NATIONAL PARK SERVICE BOARDS SEVERAL POLICE HORSES AND HOUSES A FACILITY MATINTAINENCE YARD ON THE SITE.

THE MONITORING SITE WAS VISITED IN SEPTEMBER 2002 AND COULD NOT BE ASSESSED AS IT WAS DRY. THE MONITORING SITE WAS DRY AND NO BIOLOGICAL ASSESSMENT COULD OCCUR. THE EVALUATION OF AQUATIC LIFE SUPPORT USE IS THEREFORE CLASSIFIED AS INSUFFICIENT INFORMATION. NO PH, D.O., OR TEMPERATURE VIOLATIONS OCCURRED DURING THE 2001-2005 AMBIENT STUDY PERIOD.

THE EVALUATION OF FORT DUPONT CREEK SWIMMABLE AND SECONDARY USES ARE BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND COMPILED FOR A FIVE YEAR SPAN 2001-2005. FORT DUPONT CREEK WAS NOT IN COMPLIANCE FOR ITS SWIMMABLE USE 20.0% OF THE TIME. ITS SECONDARY CONTACT USE AT 13.3% THE TIME. AS A RESULT, FORT DUPONT DID NOT SUPPORT EITHER ITS SWIMMABLE OR 2ND CONTACT RECREATION USES.

FORT DUPONT CREEK DID NOT SUPPORT THE EPA FISH CONSUMPTION USE DESIGNATION. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED UN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHES OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE FORT DUPONT CREEK IS A TRIBUTARY OF THE ANACOSTIA RIVER, FISH MAY MIGRATE FOR THE RIVER INTO THIS TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO FORT DUPONT CREEK.

Detail Report for FORT STANTON TRIBUTARY

ID: DCTFS01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 4A(N/A)

Water Information:	**FORT STANTON TRIBUTARY**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 1.3 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish,	Yes	

	Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment	
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Particle distribution (Embeddedness)	
Impacts from Hydrostructure Flow Regulation/modification	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Particle distribution (Embeddedness)	
Residential Districts	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Particle distribution (Embeddedness)	
Site Clearance (Land Development or Redevelopment)	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Particle distribution (Embeddedness)	
Source Unknown	Fecal Coliform	

Comments On:

Overall Assessment

FORT STANTON TRIBUTARY IS A TRIBUTARY OF THE ANACOSTIA RIVER WHICH ORIGINATES NEAR ERIE STREET AND PEARSON PLACE, SE JUST NORTH OF THE SMITHSONIAN'S ANACOSTIA MUSEUM. LESS THAN A MILE DOWNSTREAM IT FLOWS INTO A STORMDRAIN WEST OF NAYLOR ROAD ON GOOD HOPE ROAD, SE. WHERE IT IS SUBVERTED FOR THE REST OF ITS JOURNEY TO THE ANACOSTIA. ABOUT HALF OF THE 180 ACRE WATERSHED IS FORT STANTON PARKLAND WITH THE OTHER HALF RESIDENTIAL AND COMMERCIAL PROPERTY. THE STREAM EDGE IS FORESTED AND IT DOES RECEIVE SEVERAL STORM DRAINS.

THE ABOVE DESCRIPTION WAS TAKEN FROM 'BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA,' W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.,

THE EVALUATION OF FORT STANTON TRIBUTARY'S AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT PERFORMED IN 2003. FORT STATION RECEIVED A USE DESIGNATION OF 'NOT SUPPORTING.'

A REVIEW OF TEMPERATURE, AND PH DATA COLLECTED OVER FIVE YEARS, 2001-2005, FOUND NO VIOLATIONS IN WATER QUALITY STANDARDS FOR TEMPERATURE. D.O. AND PH WAS VIOLATED 6.3% AND 6.3 %, RESPECTIVELY, DURING THE PERIOD OF STUDY.

THE BIOASSESSMENT REVEALED A HBI THAT INDICATED NO APPARENT ORGANIC POLLUTION.

NO SENSITIVE ORGANISMS WERE FOUND (EPT). 6 ORGANISMS WERE FOUND IN THE ENTIRE SAMPLE

HIGH % OF GATHERER-COLLECTOR ORGANISMS SUGGEST POLLUTANTS BECAUSE THEY ARE GENERALIST AND CAN THRIVE IN POLLUTED WATER. HABITAT IS SEVERELY IMPAIRED. DOMINANT TAXA OLIGOCHAETA (SEWAGE LOVING ORGANISMS). HABITAT AND TOXICS ARE THE POSSIBLE CAUSES FOR DEGRADATION.

DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15,1994 BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS. THIS WATERBODY IS NOT SUPPORTING OF FISH CONSUMPTION.

THE EVALUATION OF THIS WATERBODY'S SWIMMABLE AND SECONDARY CONTACT USES IS BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND ANALYZED OVER A FIVE YEAR PERIOD, 2001-2005. FECAL COLIFORM LEVELS VIOLATED SWIMMABLE USE 36.4% OF THE TIME MAKING THIS USE NOT SUPPORTING. SECONDARY CONTACT USE WAS IN VIOLATION 27.3% SUPPORTING OF THE TIME WHICH IS NOT SUPPORTING OF THIS USE.

Detail Report for FOUNDRY BRANCH

ID: DCTFB02R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**FOUNDRY BRANCH**	
	Location: FOUNDRY BRANCH ORIGINATES FROM A 60" STORM DRAIN JUST SOUTH OF VAN NESS STREET, NW, BETWEEN NEBRASKA AND WISCONSIN AVENUES. THE SURFACE PORTION OF THE STREAM FLOWS THROUGH GLOVER ARCHIBALD PARK. A LARGE PORTION OF THE STREAM IS SUBTERRANEAN AND EMPTIES	**Water Type:** RIVER **Size:** 0.8 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

Source Information

Sources	Associated Causes	Confirmed?
Impacts from Hydrostructure Flow Regulation/modification	Other flow regime alterations	

Comments On:

Overall Assessment

TFB02 IS A MONITORING STATION WHERE PHYSICAL, CHEMICAL, AND BIOLOGICAL ASSESSMENT DATA ARE COLLECTED.

ACCORDING TO NATIONAL PARK SERVICE STAFF, THE PORTION OF FOUDNRY BRANCH IN GLOVER ARCHIBALD PARK ABOVE MASSACHUSETTS AVENUE, NW IS HYDROLOGICALLY SEPERATED FROM THE REACH OF FOUNDRY BRANCH BELOW MASSACHUSETTS AVENUE. ALL WATER ABOVE MASSACHUSETTS AVE. ENTERING THE PIPE FLOWS DIRECTLY TO THE POTOMAC RIVER THROUGH THE STORMWATER NETWORK. ALL WATER FLOWING BELOW MASSACHUSETTS AVE. IN FOUNDRY BRANCH IS HYDROLOGICALLY DISTINCT UNTIL IT ENTERS INTO A PIPE AT RESEVOIR ROAD, NW AND FINALLY DISCHARGES INTO THE POTOMAC RIVER.

FOUNDARY BRANCH FLOWS THROUGH THE ARCHILBALD GLOVER PARK, MAINTAINED BY THE U.S. NATIONAL PARK SERVICE. SEVERAL STREETS CROSS IT AND STORM WATER INPUTS FROM THE IMPERVIOUS SURFACES OUTSIDE OF THE PARK WHICH COMPOSE THE LARGEST PERCENTAGE OF THE WATERSHED AREA. CHIRONOMIDAE AND OLIGOCHAETEA DOMINATED THE INVERTEBRATE COMMUNITY ALTHOUGH RESPECTABLE NUMBERS OF LESS TOLERANT ORGANISMS WERE ALSO IN EVIDENCE. HISTORIC U.S. NAVY OPERATIONS HIGHER IN THE WATERSHED RESULTED IN THE DISPOSAL OF LARGE CONCENTRATIONS OF PCBS WHICH HAVE RECENTLY BEEN REMOVED FROM THEIR DISPOSAL SITES.

FOUNDRY BRANCH WAS VISITED FOR A NEW ASSESSMENT IN AUGUST 2002. THE MONITORING SITE WAS DRY AND NO BIOLOGICAL ASSESSMENT COULD OCCUR. THE EVALUATION OF FOUNDRY BRANCH'S AQUATIC LIFE SUPPORT USE IS THEREFORE CLASSIFIED AS INSUFFICIENT INFORMATION.

THE EVALUATION OF FOUNDRY BRANCH'S SWIMMABLE AND SECONDARY USES DID NOT SUPPORT VIOLATIONS OCCURRED 50.0% AND 25.0%, RESPECTIVELY, OF THE TIME.

FOUNDRY BRANCH DID NOT SUPPORT THE EPA FISH CONSUMPTION USE DESIGNATION. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED UN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHES OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE FOUNDRY BRANCH IS A TRIBUTARY OF THE POTOMAC RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THIS TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO FOUNDRY BRANCH.

THE SEGMENT OF FOUNDRY BRANCH ABOVE MASSACHUSETTS ANVENUE, NW HAS BEEN THE SITE OF US NAVY HAZARDEROUS WASTE REMEDIATION AND REMOVAL. HIGH LEVELS OF PCBS WERE REMOVED FROM THE STREAM AND ADJACENT SITED ALONG A SEVERAL HUNDRED METER REACH OF FOUNDRY BRANCH ABOVE MASSACHUSETTS AVENUE. THE HAZARDOUS MATERIAL WAS REMOVED AND THE STREAM AND SITE ARE CURRENTLY BEING RESTORED.

THIS TRIBUTARY WAS ASSESSED AS HAVING A POTENTIAL ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN WATER QUALITY IMPAIRMENT. THIS DETERMINATION WAS BASED ON A BENTHIC MACROINVERTEBRATE BIOLOGICAL ASSESSMENT WHICH FOUND A DOMINANCE OF THE OLIGOCHAETA ORDER OF AQUATIC WORM IN THE SAMPLED STREAM REACH. A DOMINANCE OF OLIGOCHAETE WORMS IS A STRONG INDICATOR OF ORGANIC ENRICHMENT WHICH CAN BE A MAJOR CAUSE OF LOW DISSOLVED OXYGEN CONCENTRATION(BANTA, 1993). WQMB HAS DETERMINED THAT ANY STREAM BENTHIC SAMPLE CONTAINING MORE THAN 20% OF OLIGOCHAETE DOMINANCE WILL BE

CLASSIFIED AS HAVING AN ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN CAUSE.

FOUNDRY BRANCH HAD 26% OF ITS MOST RECENT (1997) BENTHIC INVERTEBRATE SAMPLE IDENTIFIED AS OLIGOCHAETE WORMS.

Detail Report for HICKEY RUN

ID: DCTHR01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**HICKEY RUN**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 0.9 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Alteration in stream-side or littoral vegetative covers	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Oil and Grease	Primary Contact Recreation	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Above Ground Storage Tank Leaks (Tank Farms)	Oil and Grease	
Channelization	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Illegal Dumps or Other Inappropriate Waste Disposal	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Impacts from Hydrostructure Flow Regulation/modification	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	

Municipal (Urbanized High Density Area)	Alteration in stream-side or littoral vegetative covers
	Combination Benthic/Fishes Bioassessments (Streams)
	Combined Biota/Habitat Bioassessments (Streams)
	Debris/Floatables/Trash
	Fecal Coliform
	Other flow regime alterations
	Particle distribution (Embeddedness)
Municipal Point Source Discharges	Fecal Coliform

Comments On:

Overall Assessment

HICKEY RUN IS A WESTERN TRIBUTARY OF THE ANACOSTIA RIVER WHICH RUNS THROUGH THE NAT'L ARBORETUM (THR01). THE STREAM ORIGINATES FROM A LARGE STORM WATER DISCHARGE NORTH OF NY AVE AND RECEIVES DISCHARGE FROM AT LEAST THREE OTHER LARGE STORM DRAINS BEFORE ENTERING THE NATIONAL ARBORETUM. THE WATERSHED IS ABOUT 1080 ACRES OF MOSTLY URBAN LAND (36% IMPERVIOUS). ABOUT 20% OF WATERSHED IS FOREST OR PARKLAND. THE REMAINDER IS RESIDENTIAL (ABOUT 40%), COMMERCIAL AND INDUSTRIAL (ABOUT 40%). THE HICKEY RUN WATERSHED CAN BE DIVIDED INTO TWO PARTS; THE UPPER CATCHMENT DRAINING THE RESIDENTIAL, COMMERCIAL AND INDUSTRIAL AREAS; AND THE LOWER CATCHMENT IN THE IDYLLIC SETTING OF THE NATIONAL ARBORETUM BRFORE DISCHARGING INTO THE ANACOSTIA RIVER JUST ABOVE KINGMAN LAKE.

THE ABOVE DESCRIPTION IS PARTIALLY TAKEN FROM " BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA", W.C. BANTA, THE AMERICAN UNIVERSITY, 1993 AND "THE HICKEY RUN SUBWATERSHED ACTION PLAN, D.L. SHEPP, METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS, DECEMBER 1991.

AT LEAST ONE SEWER LINE DOES CROSS THE STREAM AND THE WATERSHED EXCOMPASES A RAILYARD AND A METRO MAINTAINANCE FACILITY. INPUTS OF OIL AND GREASE FROM THESE AREAS HAVE BEEN KNOWN TO BE CHRONIC PROBLEM WHICH IS CURRENTLY BEING DEALT WITH.

THE EVALUATION OF HICKEY RUN AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT CONDUCTED IN 2003. HICKEY RUN WAS FOUND TO BE NOT SUPPORTING OF ITS AQUATIC LIFE USE DESIGNATION. THE STREAM'S HABITAT WAS SEVERELY DEGRADED. OIL AND GREASE SHEEN WAS OBSERVED. IN THE 2002 SAMPLE INSECTS WERE FOUND, HOWEVER THE HEAVY RAINS SINCE MAY HAVE CAUSED MORE TOXICS TO POLLUTE THE STREAM AND THE MACROINVERTEBRATES WERE NOT ABLE TO RECOVER. THERE WERE NO INSECTS IN THE SAMPLE. TOXICS AND HABITAT DEGRADATION ARE POSSIBLY RESPONSIBLE.

THE EVALUATION OF HICKEY RUN SWIMMABLE AND SECONDARY USES ARE BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND COMPILED FOR A FIVE YEAR 2001-2005. HICKEY RUN WAS NOT IN COMPLIANCE FOR ITS SWIMMABLE USE 68.2% OF THE TIME. ITS SECONDARY CONTACT USE AT 31.8% THE TIME. AS A RESULT, HICKEY RUN DID NOT SUPPORT EITHER ITS SWIMMABLE OR 2ND CONTACT RECREATION USES.

HICKEY RUN DID NOT SUPPORT THE EPA FISH CONSUMPTION USE DESIGNATION.

DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED UN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHES OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE HICKEY RUN IS A TRIBUTARY OF THE ANACOSTIA RIVER, FISH MAY MIGRATE FOR THE RIVER INTO THIS TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO HICKEY RUN.

Detail Report for KINGMAN LAKE

ID: DCAKL00L_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 4A(N/A)

Water Information:	**KINGMAN LAKE**	
	Location: LOCATED BETWEEN CHILDRENS ISLAND AND RFK STADIUM PARKING LOT ON THE UPPER ANACOSTIA. THE NORTHEAST BOUNDARY SWIRL CONCENTRATOR IS LOCATED JUST DOWN RIVER FROM THE LAKE.	**Water Type:** FRESHWATER LAKE **Size:** 102.7 ACRES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A **Trophic Status:** Eutrophic **Public Lake:** No

Use Information

	Attainment Status	**Uses**
Assessed:	Fully Supporting	Navigation
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment

Types of Assessment

Assessment Type	**Uses**	**Assessment Confidence**
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	**Associated Uses**	**Pollutant?**	**Confidence**
Fecal Coliform	Primary Contact Recreation Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment	Yes	

Oil and Grease	Primary Contact Recreation	Yes
Oxygen, Dissolved	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Sedimentation/Siltation	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Solids (Suspended/Bedload)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Combined Sewer Overflows	Fecal Coliform Oxygen, Dissolved	
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2001-2005) OF CONVENTIONAL AND FECAL COLIFORM BACTERIA WATER QUALITY DATA COLLECTED BY THE WQMB.

EVALUATIONS OF KINGMAN LAKE'S PRIMARY (SWIMMABLE) AND SECONDARY CONTACT RECREATION USES WERE BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND ANALYZED OVER A FIVE YEAR PERIOD. WITH AN AVERAGE FECAL BACTERIA COUNT OF 2436 MPN/100ML, THIS LAKE DID NOT SUPPORT ITS SWIMMABLE USE AND SECONDARY CONTACT RECREATION USE. IT WAS NOT IN COMPLIANCE FOR ITS SWIMMABLE USE (200MPN/100ML) 78.9% OF THE TIME AND FOR ITS SECONDARY CONTACT USE (1000MPN/100ML) 38.2% OF THE TIME. KINGMAN LAKE IS TIDALLY INFLUENCED AND, THEREFORE, IS AFFECTED BY THE DISTRICT'S LARGEST CSO (COMBINED SEWER OVERFLOW) WHICH LIES JUST DOWNSTREAM OF THE LAKE'S LOWER INLET.

THE AQUATIC LIFE USE WAS NOT SUPPORTING BECAUSE OF VIOLATIONS OF THE DISSOLVED OXYGEN STANDARD 11.84% OF THE TIME OVER 5 YEARS. TEMPERATURE AND pH OBSERVATIONS WERE IN FULL COMPLIANCE.

BECAUSE OF A FISH CONSUMPTION ADVISORY IN PLACE, KINGMAN LAKE DID NOT SUPPORT THE FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE DC COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

KINGMAN LAKE FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE USE SUPPORT DECISIONS, KINGMAN LAKE DID NOT SUPPORT THE OVERALL SUPPORT CLASSIFICATION FOR WATERS WITH MULTIPLE USES.

APPROXIMATELY 42 ACRES OF FRESHWATER TIDAL WETLANDS WERE RESTORED IN THE

KINGMAN LAKE AREA IN 2000. A POTENTIALLY SIGNIFICANT PROJECT SLATED FOR THE KINGMAN LAKE AREA IS A NATURAL RECREATION AREA ON KINGMAN ISLAND.

Detail Report for KLINGLE VALLEY

ID: DCTKV01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**KLINGLE VALLEY**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 0.8 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Alteration in stream-side or littoral vegetative covers	Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Debris/Floatables/Trash	Protection and Propagation of Fish,	Yes	

	Shellfish and Wildlife	
	Secondary Contact Recreation and Aesthetic Enjoyment	
Fecal Coliform	Primary Contact Recreation	Yes
	Protection and Propagation of Fish, Shellfish and Wildlife	
	Secondary Contact Recreation and Aesthetic Enjoyment	
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
	Secondary Contact Recreation and Aesthetic Enjoyment	

Source Information

Sources	Associated Causes	Confirmed?
Residential Districts	Alteration in stream-side or littoral vegetative covers	
	Combination Benthic/Fishes Bioassessments (Streams)	
	Debris/Floatables/Trash	
	Fecal Coliform	
	Other flow regime alterations	
Wet Weather Discharges (Non-Point Source)	Alteration in stream-side or littoral vegetative covers	
	Combination Benthic/Fishes Bioassessments (Streams)	
	Debris/Floatables/Trash	
	Fecal Coliform	
	Other flow regime alterations	
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Alteration in stream-side or littoral vegetative covers	
	Combination Benthic/Fishes Bioassessments (Streams)	
	Debris/Floatables/Trash	
	Fecal Coliform	
	Other flow regime alterations	
Yard Maintenance	Alteration in stream-side or littoral vegetative covers	
	Combination Benthic/Fishes Bioassessments (Streams)	
	Debris/Floatables/Trash	
	Fecal Coliform	
	Other flow regime alterations	

Comments On:

Overall Assessment

KLINGLE VALLEY TRIBUTARY FLOWS THROUGH A RESIDENTIAL AREA AND DISCHARGES INTO ROCK CREEK FROM THE WEST NEAR THE PORTER STREET BRIDGE. THE STREAM'S REACH PARALLELS THE SOUTH SIDE OF KLINGLE ROAD. A WOODED BUFFER OF A FEW HUNDRED FEET COVERS ONE SIDE OF THE STREAM WITH THE REST OF THE 320 ACRE

WATERSHED RESIDENTIAL URBAN AREA. NINE (9) OUTFALLS INCLUDING ONE CSO LINE THE STREAM.

THE ABOVE DESCRIPTION WAS TAKEN FROM 'BIOLOGICAL WATER QUALITY OF THE SURFACE STREAMS OF THE DISTRICT OF COLUMBIA,' W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE EVALUATION OF KLINGLE CREEK'S AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT PERFORMED BY IN 2003. KLINGLE VALLEY CREEK WAS FOUND TO BE NOT SUPPORTING' OF THIS DESIGNATED USE. THE STREAM'S HBI SCORE SUGGESTA FAIRLY SIGNIFICANT ORGANIC POLLUTION. THERE WERE MORE THAN 100 ORGANISMS IN THE SAMPLE. THE SAMPLE WAS DOMINATED BY ORGANISMS THAT CAN SURVIVE IN TOXICS AND ONLY 1 EPT WAS FOUND IN THE SAMPLE. 72 CHIRONOMIDAE (TOLERANT GENERALIST) WERE THE DOMINANT TAXA. THE HABITAT WAS MODERATELY IMPAIRED. D.O., PH, AND TEMPERATURE FULLY SUPPORTED THE USE. THE EROSION ON THE RIGHT AND LEFT BANKS WAS MODERATELY EFFECTED THROUGH THE RAPID INCREASE OF THE URBANIZATION OF THE DISTRICT OF COLUMBIA. WITH THIS LARGE NUMBER OF TOLERANT TAXA, IT IS POSSIBLE THAT THIS STREAM IS UNHEALTHY BECAUSE OF TOXICS.

DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS. THIS WATERBODY DID NOT SUPPORT FISH CONSUMPTION CRITERIA.

THE EVALUATION OF KLINGLE VALLEY CREEK'S SWIMMABLE AND SECONDARY USES ARE BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND COMPILED FOR A FIVE YEAR SPAN2001-2005. THE CREEK WAS NOT IN COMPLIANCE FOR ITS SWIMMABLE USE 53.8.0% OF THE TIME. ITS SECONDARY CONTACT USE AT 15.4% THE TIME. AS A RESULT, KLINGLE VALLEY CREEK DID NOT SUPPORT EITHER ITS SWIMMABLE OR 2ND CONTACT RECREATION USES.

Detail Report for LUZON BRANCH

ID: DCTLU01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**LUZON BRANCH**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 1 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Alteration in stream-side or littoral vegetative covers	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish,	Yes	

	Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Cercla NPL (Superfund) Sites	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Other flow regime alterations	
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Other flow regime alterations	
Impacts from Hydrostructure Flow Regulation/modification	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Other flow regime alterations	
Loss of Riparian Habitat	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Other flow regime alterations	
Residential Districts	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Other flow regime alterations	

Comments On:

Overall Assessment

THE STREAM FLOWS THROUGH A SMALL PARK AND ENTERS ROCK CREEK AT JOYCE ROAD. THERE ARE 14 OUTFALLS FROM THE RESIDENTIAL AREA TO THE STREAM INCLUDING ONE CSO. LUZON CREEK EMPTIES INTO ROCK CREEK AT JOYCE ROAD, ABOUT 600 FEET DOWNSTREAM OF THE MILITARY ROAD BRIDGE OVER ROCK CREEK. THE SURFACE PORTION ORIGINATES AS A STORM DRAIN NEAR FORT STEVENS DRIVE AND TRAVELS ALMOST STRAIGHT SOUTHWEST TO ROCK CREEK. MOST OF THE WATERSHED IS RESIDENTIAL AND LIGHT COMMERCIAL. THE SURFACE STREAM IS BUFFERED BY A 100-1,000 FOOT BORDER OF PARKLAND ACCOUNTING FOR 10% OF THE WATERSHED. THERE ARE 14 OUTFALLS FROM THE RESIDENTIAL AREA TO THE STREAM INCLUDING ONE CSO.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE EVALUATION OF LUZON BRANCH AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT CONDUCTED IN 2002. LUZON BRANCH WAS FOUND TO BE NOT SUPPORTING OF ITS AQUATIC LIFE USE DESIGNATION. THE STREAM'S HBI SCORE SUGGESTED A FAIRLY SIGNIFICANT AMOUNT OF ORGANIC POLLUTION IN THE STREAM. THE DOMINANT TAXA FOUND WAS TURBELLARIA. HABITAT WAS ALSO MODERATELY IMPAIRED ON THE RIGHT BANK AND SEVERELY IMPAIRED ON THE LEFT BANK.

DO, PH, AND TEMPERATURE FULLY SUPPORTED THE USE. 29 ORGANISMS WERE FOUND IN THE SAMPLE COLLECTED. THE DIVERSITY OF THE STREAM WAS POOR AS EVIDENCED BY ONLY 2 TAXA IDENTIFIED. ORGANICS AND TOXICS ARE POSSIBLY THE CAUSE OF DEGRADATION.

THE EVALUATION OF LUZON BRANCH SWIMMABLE AND SECONDARY USES WERE ASSESSED AS NOT SUPPORTING DUE TO A 66.7% VIOLATION OF THE PRIMARY CONTACT USE AND 22.2% VIOLATION OF THE SECONDARY CONTACT USE, FOR THE PERIOD OF 2001-2005.

FISH CONSUMPTION WAS NOT ASSESSED FOR LUZON BRANCH.

Detail Report for MELVIN HAZEN VALLEY BRANCH

ID: DCTMH01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**MELVIN HAZEN VALLEY BRANCH**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 1 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes	

Source Information

Sources	Associated Causes	Confirmed?
Residential Districts	Combination Benthic/Fishes Bioassessments (Streams)	
	Combined Biota/Habitat Bioassessments (Streams)	
	Fecal Coliform	
Yard Maintenance	Combination Benthic/Fishes Bioassessments (Streams)	
	Combined Biota/Habitat Bioassessments (Streams)	
	Fecal Coliform	

Comments On:

Overall Assessment

THE STREAM FLOWS THROUGH A SMALL PARK AND ENTERS ROCK CREEK AT JOYCE ROAD. THERE ARE 14 OUTFALLS FROM THE RESIDENTIAL AREA TO THE STREAM INCLUDING ONE CSO. LUZON CREEK EMPTIES INTO ROCK CREEK AT JOYCE ROAD, ABOUT 600 FEET DOWNSTREAM OF THE MILITARY ROAD BRIDGE OVER ROCK CREEK. THE SURFACE PORTION ORIGINATES AS A STORM DRAIN NEAR FORT STEVENS DRIVE AND TRAVELS ALMOST STRAIGHT SOUTHWEST TO ROCK CREEK. MOST OF THE WATERSHED IS RESIDENTIAL AND LIGHT COMMERCIAL. THE SURFACE STREAM IS BUFFERED BY A 100-1,000 FOOT BORDER OF PARKLAND ACCOUNTING FOR 10% OF THE WATERSHED. THERE ARE 14 OUTFALLS FROM THE RESIDENTIAL AREA TO THE STREAM INCLUDING ONE CSO.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE EVALUATION OF MELVIN HAZEN VALLEY BRANCH AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT CONDUCTED IN 2002. THE STREAM'S HBI SCORE SUGGESTS A SIGNIFICANT ORGANIC POLLUTION. HYDROPSYCHIDAE IS THE DOMINANT TAXA AND THE HABITAT IS SEVERELY IMPAIRED. D.O., PH AND TEMPERATURE FULLY SUPPORTED THE AQUATIC LIFE USE. 47 ORGANISMS WERE FOUND IN THE ENTIRE SAMPLE. HABITAT AND ORGANICS ARE POSSIBLY THE CAUSES OF DEGRADATION TO THE STREAM. MELVIN HAZEN VALLEY BRANCH WAS FOUND TO BE NOT SUPPORTING OF ITS AQUATIC LIFE USE DESIGNATION.

MELVIN HAZEN VALLEY BRANCH'S SWIMMABLE AND SECONDARY USES WERE NOT SUPPORTED. THE SWIMMABLE USE WAS VIOLATED 66.7% OF THE TIME AND THE SECONDARY CONTACT USE WAS VIOLATED 16.7% OF THE TIME. PERIOD OF STUDY FOR THESE USES WAS 2001-2005.

Detail Report for NASH RUN

ID: DCTNA01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**NASH RUN**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 0.1 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment	Yes	

Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Physical substrate habitat alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Channelization	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness) Physical substrate habitat alterations	
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness) Physical substrate habitat alterations	
Illegal Dumping	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness) Physical substrate habitat alterations	
Illegal Dumps or Other Inappropriate Waste Disposal	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness) Physical substrate habitat alterations	
Impacts from Hydrostructure Flow Regulation/modification	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness) Physical substrate habitat alterations	
Residential Districts	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness) Physical substrate habitat alterations	

Source Unknown Fecal Coliform

Comments On:

Overall Assessment

NASH RUN IS A TRIBUTARY OF THE ANACOSTIA RIVER WHOSE MOUTH IS A BRAIDED WETLAND THAT EMPTIES INTO THE KENILWORTH MARSH. NASH RUN ORIGINATES FROM A STORMDRAIN AT NASH ROAD AND SHERIFF AVENUES IN DEANWOOD PARK IN MARYLAND. THE STREAMS REACH IS PUNCTUATED BY SEVERAL SEGMENTS THAT HAVE BEEN SUBVERTED INTO PIPES ONLY TO EMERGE AGAIN. ALL BUT 5% OF THE 460 ACRE WATERSHED IS URBAN RESIDENTIAL AND COMMERCIAL. THE STREAM RECEIVES NUMEROUS STORMDRAINS AND IS PARALLELED AND CROSSED BY SEVERAL SEWER LINES.

THE ABOVE DESCRIPTION WAS TAKEN FROM 'BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARIES OF THE DISTRICT OF COLUMBIA,' BY W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE EVALUATION OF SUPPORT USES ARE NOT SUPPORTED BASED ON A FIVE YEAR STATISTICAL EVALUATION (2001-2005) OF CONVENTIONAL AND BACTERIAL WATER QUALITY DATA COLLECTED BY THE WQMB. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS. THE WATERBODY IS NOT SUPPORTING OF FISH CONSUMPTION CRITERIA.

THE EVALUATION OF THIS WATERBODY'S SWIMMABLE AND SECONDARY CONTACT USES IS BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND ANALYZED OVER A FIVE YEAR PERIOD, 2001-2005 ERAGE FECAL COUNT OF 15785 MPN/100ML, THIS STREAM DID NOT SUPPORT ITS SWIMMABLE OR ITS SECONDARY CONTACT RECREATION USE. IT WAS NOT IN COMPLIANCE FOR ITS SWIMMABLE USE (200MPN/100ML) 92.3% OF THE TIME AND FOR ITS SECONDARY CONTACT USE (1000MPN/100ML) 53.8% OF THE TIME.

THE EVALUATION OF NASH RUN'S AQUATIC LIFE SUPPORT USE IS BASED ON BIOASSESSMENT PERFORMED IN 2003. NASH RUN WAS FOUND TO BE 'NOT SUPPORTING' OF THIS DESIGNATED USE.

THE HBI SCORE SUGGESTED SOME ORGANIC POLLUTION. MORE THAN 100 ORGANISMS WERE FOUND IN THE SAMPLE. 2 TAXA THAT ARE CATEGORIZED AS SENSITIVE TO TOXICS (EPT) WERE IDENTIFIED.

ONE MAYFLY AND ONE CADDIS FLY WERE IN THE SAMPLE. D.O. WAS SUPPORTED WITH A 0.0% VIOLATION OF THE STANDARD. TEMPERATURE AND PH FULLY SUPPORTED BY THE STANDARD.

HABITAT IN NASH RUN WAS MODERATELY IMPACTED. EXPOSURE TO TOXICS POSSIBLY DEGRADED THE STREAM. IMPROVING THE HABITAT COULD IMPROVE THE OVERALL QUALITY OF THE STREAM.

Detail Report for NORMANSTONE CREEK

ID: DCTNS01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**NORMANSTONE CREEK**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 0.8 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Insufficient Information	Protection and Propagation of Fish, Shellfish and Wildlife
	Not Supporting	Primary Contact Recreation Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and	Yes	

	Aesthetic Enjoyment	
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Cercla NPL (Superfund) Sites	Combination Benthic/Fishes Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations	
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations	
Impacts from Hydrostructure Flow Regulation/modification	Combination Benthic/Fishes Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations	
Yard Maintenance	Combination Benthic/Fishes Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations	

Comments On:

Overall Assessment

NORMANSTONE CREEK FLOWS THROUGH A SMALL RESIDENTIAL PARK AND ENTERS ROCK CREEK FROM THE WEST ABOUT 1000 FEET ABOVE THE MASSACHUSETTS AVENUE BRIDGE BELOW THE ZOO. THE STREAM ORIGINATES AS A STORMDRAIN NEAR GARFIELD AVENUE AND 3RD STREET, NW. THE 231 ACRE WATERSHED INCLUDES MOST OF THE GROUNDS OF THE WASHINGTON CATHEDRAL AND PART OF THE U.S. NAVAL OBSERVATORY AS WELL AS PARTS OF CLEVELAND AND WOODLEY PARKS. MOST OF THE ACREAGE IS RESIDENTIAL AND LIGHT COMMERCIAL PROPERTY WITH ABOUT 10% PARKLAND. THE STREAM PARALLELS NORMANSTONE PARKWAY AND IS CROSSED SEVERAL TIMES BY SMALL SEWER LINES AND LARGE STORM DRAINS.THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

WHEN THE SITE WAS VISITED FOR BIOLOGICAL ASSESSMENT IN AUGUST 2003, IT WAS DRY. THE BIOLOGICAL ASSESSMENT DID NOT OCCUR. EVALUATION OF NORMANSTONE CREEK'S AQUATIC LIFE SUPPORT USE IS THEREFORE CLASSIFIED AS INSUFFICIENT INFORMATION. NO D.O., TEMPERATURE, AND PH VIOLATIONS OCCURRED DURING THE 2001-2005 STUDY PERIOD.

THE SWIMMABLE AND SECONDARY CONTACT USE WERE NOT SUPPORTED DURING THE

2001-2005 PERIOD OF STUDY. THE SWIMMABLE STANDARD OF 200 MPN/100ML WAS VIOLATED 91.7% OF THE TIME. THE SECONDARY CONTACT USE WAS VIOLATED 41.7% OF THE TIME.

DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS. THIS WATERBODY IS NOT SUPPORTING OF FISH CONSUMPTION CRITERIA.

Detail Report for OXON RUN

ID: DCTOR01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**OXON RUN**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 3.2 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

	Secondary Contact Recreation and Aesthetic Enjoyment	
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Channelization	Combination Benthic/Fishes Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness)	
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness)	
Illegal Dumping	Combination Benthic/Fishes Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Combination Benthic/Fishes Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness)	
Impacts from Hydrostructure Flow Regulation/modification	Combination Benthic/Fishes Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness)	
Municipal (Urbanized High Density Area)	Fecal Coliform	
Post-development Erosion and Sedimentation	Combination Benthic/Fishes Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness)	
Residential Districts	Combination Benthic/Fishes Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness)	
Source Unknown	Fecal Coliform	

Comments On:

Overall Assessment

OXON RUN IS A TRIBUTARY OF THE POTOMAC RIVER WHICH DISCHARGES INTO THE RIVER WHERE THE SOUTHEASTERN DISTRICT LINE MEETS OXON COVE. THIS STREAM ORIGINATES IN PRINCE GEORGES COUNTY, MARYLAND AND FLOWS INTO THE DISTRICT BEFORE IT DIPS BACK INTO MARYLAND JUST BEFORE IT ENTERS OXON COVE. THE WATERSHED IS ABOUT 2,650 ACRES OF WHICH 37% IS IN THE DISTRICT. ABOUT 15% OF THE WATERSHED IS FORESTED WITH THE REST RESIDENTIAL AND COMMERCIAL PROPERTY. MOST OF ITS REACH WITHIN THE DISTRICT HAS BEEN CANALIZED AND MOST OF ITS TRIBUTARIES ARE PIPED. IT IS PARALLELED AND CROSSED BY NUMEROUS SEWER LINES OF ALL SIZES.

THE ABOVE DESCRIPTION WAS TAKEN FROM 'BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA,' W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

ALTHOUGH OXON RUN IS PREDOMINANTLY A CONCRETE CHANNEL THROUGHOUT ITS REACH IN THE DISTRICT, THERE ARE TWO RELATIVELY LARGE SEGMENTS WHICH ARE STILL IN THEIR 'NATURAL 'STATE. ONE OF THE SEGMENTS IS NEAR THE END OF THE TRIBUTARY AT THE DISTRICT LINE BEFORE IT REACHES THE POTOMAC RIVER. BECAUSE BIOLOGICAL SAMLPING WAS CONDUCTED AS LOW AS POSSIBLE IN EACH WATERSHED TO INCORPORATE THE CUMULATIVE EFFECTS OF EACH STREAM IMPACTS, OXON RUN WAS SAMPLED IN ONE OF THESE 'NATURAL' AREA. THIS SEGEMENT PRODUCED A MUCH HIGHER HABITAT ASSESSMENT THAN WOULD HAVE BEEN SCORED IN A CHANNELIZED SEGMENT AND RECORDED A BIOLOGICAL ASSESSMENT THAT INDICATED WATER QUALITY INPAIRMENT FROM TOXIC AND ORGANIC SOURCES. OXON RUN IS A LARGE TRIBUTARY BY DISTRICT STANDARDS AND SHARES A MAJORITY OF ITS WATERSHED WITH MARYLAND. IT IS HIGHLY CHANNELIZED AND MOST OF ITS FIRST AND SECOND ORDER TRIBUTARIES ARE PIPED INTO THE MAIN REACH. STORMWATER PIPES DISCHARGE AT NUMEROUS LOCATION ALONG ITS COURSE AND SEVERAL SEWER LINES CROSS AND PARALLEL IT. THERMAL WATER QUALITY POLLUTION IS ALSO MOST LIKELY A SIGNIFICANT IMPACT DURING THE SUMMER SEASON.

THE EVALUATION OF OXON RUN AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT CONDUCTED IN 2002. OXON RUN WAS FOUND TO BE NOT SUPPORTING OF ITS AQUATIC LIFE USE DESIGNATION. THE \PLAIN\F3\FS17 HBI SCORE SUGGESTS FAIRLY SIGNIFICANT ORGANIC POLLUTION. A HIGH PERCENTAG OF EPT, SUGGEST THE STREAMS HAS SOME SENSITIVE ORGANISMS. THE DOMINANT TAXA WAS COENAGRINIDAE. D.O. (0.0%-VIOLATION), PH (5.3%-VIOLATION) AND TEMPERATURE (0.0%) FULLY SUPPORTED THE USE. PERIOD OF STUDY FOR THE PHYSICAL PARAMETERS IS 2001-2005. 42 ORGANISMS WERE FOUND IN THE SAMPLE.

THE ORGANISMS FOUND DID NOT INDICATE THE APPARENT PRESENCE OF ORGANIC POLLUTANTS. THE EROSION ON THE RIGHT BANK WAS VERY MINIMAL, WHILE EROSION ON THE LEFT BANK WAS MODERATE. ALL MACROINVERTEBRATE COLLECTED WERE ALL VERY TOLERANT TO TOXICS, WHICH WOULD SUGGEST POSSIBLE TOXIC DEGRADATION OF THE STREAM'S INHABITANTS.

THE EVALUATION OF OXON RUN SWIMMABLE AND SECONDARY USES ARE BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND COMPILED FOR A FIVE YEAR, SPAN 2001-2005. OXON RUN WAS NOT IN COMPLIANCE FOR ITS SWIMMABLE USE 100% OF THE TIME WHICH RESULTED IN NOT SUPPORTING OF ITS SWIMMABLE USE. OXON RUN WAS NOT IN COMPLIANCE FOR ITS SECONDARY CONTACT USE AT 81.3% THE TIME WHICH RESULTED IN NOT SUPPORTING OF ITS SECONDARY CONTACT USE.

OXON RUN DID NOT SUPPORT THE EPA FISH CONSUMPTION USE DESIGNATION.

DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED UN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHES OF THE POTOMAC AND ANACOSTIA RIVERS.

Detail Report for PINEHURST BRANCH

ID: DCTPI01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**PINEHURST BRANCH**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 1.5 MILES **Assessed By:** 4/1/2006 **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation Protection of Human Health related to Consumption of Fish and Shellfish

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes	

Source Information

Sources	Associated Causes	Confirmed?

Residential Districts	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform
Yard Maintenance	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform

Comments On:

Overall Assessment

PINEHURST BRANCH STREAM FLOWS FROM A RESIDENTIAL SECTION OF MARYLAND TO ROCK CREEK IN THE DISTRICT. TEN OUTFALLS DISCHARGE TO THIS STREAM. PINEHURST BRANCH IS A TRIBUTARY OF ROCK CREEK WHOSE MOUTH IS ABOUT 1,200 FEET NORTH OF THE INTERSECTION OF BINGHAM DRIVE AND BEACH DRIVE NW. THE STREAM ORIGINATES AT THE DC/MARYLAND LINE IN CHEVY CHASE MANOR, MARYLAND. THE WATERSHED IS ABOUT 70% URBANIZED RESIDENTIAL AND COMMERCIAL.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE EVALUATION OF PINEHURST BRANCH'S AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT PERFORMED IN 2003. PINEHURST WAS RATED 'NOT SUPPORTING' OF THIS DESIGNATED USE. THE STREAM'S HBI SCORE INDICATES FAIRLY SIGNIFICANT ORGANIC POLLUTION.

THE DOMINANT TAXA FOUND WAS CHIRONOMIDAE (TOLERANT GENERALIST). HABITAT WAS ALSO MODERATELY IMPAIRED. D.O. (0.0% VIOLATION), PH (5.3%), AND TEMPERATURE (0.0%) FULLY SUPPORTED THE USE'S STANDARDS (BASED ON A RECENT 5-YEAR PERIOD OF STUDY, 2001-2005) . ONLY 17 (A LOW NUMBER) ORGANISMS WERE FOUND IN THE ENTIRE SAMPLE. TOXICS AND ORGANICS ARE POSSIBLY DEGRADING THE STREAM.

PINEHURST BRANCH WAS NOT ASSESSED FOR FISH CONSUMPTION.

THE STREAM DID NOT SUPPORT THE PRIMARY OR SECONDARY CONTACT USES DUE TO VIOLATIONS OF 61.5% AND 23.1%, RESPECTIVELY.

Detail Report for PINEY BRANCH

ID: DCTPY01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**PINEY BRANCH**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 1 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Protection and Propagation of Fish, Shellfish and Wildlife
	Not Supporting	Primary Contact Recreation Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Fecal Coliform	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	Yes	

Comments On:

Overall Assessment

PINEY BRANCH HAS THE LARGEST WATERSHED OF ANY TRIBUTARY OF ROCK CREEK

ENTIRELY IN THE DISTRICT OF COLUMBIA. THIS MINOR STREAM WHICH ENTERS ROCK CREEK FROM THE EAST ABOVE THE NATIONAL ZOO IS INDICATED ON THE USGS 7.5 MINUTE QUADRANGLE AS A TEMPORARY STREAM RUNNING NEAR THE CENTER OF A STRIP OF FORESTED PARKLAND ABOUT 1,000 YARDS WIDE. THE STREAM HAS A VERY LARGE WATERSHED (2,500 ACRES) COMPARED TO THE ACTUAL STREAM SIZE WHICH IS ATTRIBUTABLE TO THE EXTENSIVE SYSTEM OF COMBINED SEWER/STORM DRAINS THAT COLLECT RUNOFF. DURING PERIODS OF HIGH FLOWS THE EXCESS WATER FROM THESE LINES COMBINE WITH RAW SEWAGE AND ARE DISCHARGED INTO THE STREAM.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

PINEY BRANCH IS A RECIPIENT OF COMBINED SEWER OVERFLOW DURING HEAVY STORM PEAK FLOWS. THIS EFFECT COUPLED WITH THE STORMWATER DRAIN INPUTS CAUSE EPISODIC WATER QUALITY STRESSORS EVIDENCED BY THE DOMINANCE OF CHIRONOMID MIDGE LARVAE. THE WATERSHED ENCOMPASES A RELATIVELY LARGE PRIMARILY RESIDENTIAL AREA WHICH IS MOST LIKELY THE SOURCE OF TOXICS FROM VARIOUS UNIDENTIFIED SOURCES.

AN EVALUATION OF PINEY BRANCH FOR THE AQUATIC LIFE SUPPORT USE IS NOT AVAILABLE FOR THE 2004 REPORTING CYCLE. DUE TO A SCHEDULING OVERSIGHT, THE WATERBODY WAS NOT ASSESSED DURING 2003. A BIOASSESSMENT WILL BE COMPLETED DURING 2004.

A REVIEW OF PH, TEMPERATURE, AND D.O. DATA OVER THE 2001-2005 PERIOD SHOWED THAT THESE PARAMETERS MET THE INDIVIDUAL WATER QUALITY STANDARD. THE D.O. STANDARD WAS VIOLATED 0.0% DURING THE PERIOD OF STUDY. PH AND TEMPERATURE HAD NO VIOLATIONS.

THE EVALUATION OF PINEY BRANCH SWIMMABLE AND SECONDARY USES UTILIZING DATA COLLECTED FORM 2001-2005 INDICATED NON-SUPPORT OF THE TWO USES. THE SECONDARY CONTACT USE WAS VIOLATED 16.7% OF THE TIME. THE PRIMARY CONTACT USE WAS VIOLATED 66.7% OF THE TIME.

PINEY BRANCH DID NOT SUPPORT THE EPA FISH CONSUMPTION USE DESIGNATION. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHS OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE PINEY BRANCH IS A TRIBUTARY OF THE POTOMAC RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THE TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO PINEY BRANCH.

Detail Report for POPES BRANCH (HAWES RUN)

ID: DCTPB01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 4A(N/A)

Water Information:	**POPES BRANCH (HAWES RUN)**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 1.1 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

	Secondary Contact Recreation and Aesthetic Enjoyment	
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Channelization	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Particle distribution (Embeddedness)	
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Particle distribution (Embeddedness)	
Illegal Dumping	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Particle distribution (Embeddedness)	
Residential Districts	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Fecal Coliform Particle distribution (Embeddedness)	
Source Unknown	Fecal Coliform	

Comments On:

Overall Assessment

POPE'S BRANCH, THE LOWER REACHES OF WHICH WERE ONCE CALLED HAWES RUN, DISCHARGES INTO THE ANACOSTIA RIVER BY WAY OF A STORMWATER PIPE ABOVE THE EASTERN FOOTING OF THE PENNSYLVANIA AVENUE SOUSA BRIDGE. THE SURFACE PORTION OF THE STREAM ORIGINATES NEAR TEXAS AVENUE AND NASH STREET, SE. THE WATERSHED OF ABOUT 210 ACRES INCLUDES A FORESTED SECTION OF UP TO 400 FEET

WIDE CALLED POPE'S BRANCH PARK AND ALL OF FORT DAVIS. THE FORESTED WATERSHED ACCOUNTS FOR ABOUT 15% WITH THE REMAINDER RESIDENTIAL AND LIGHT COMMERCIAL PROPERTY. THE STREAM RECEIVES NUMEROUS STORMWATER DISCHARGES ALONG ITS REACH AND IS PARALLELED AND CROSSED BY MANY SMALL SEWER LINES.

THE ABOVE DESCRIPTION WAS TAKEN FROM 'BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA,' W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE EVALUATION OF SUPPORT USES ARE NOT SUPPORTED BASED ON A FIVE YEAR STATISTICAL EVALUATION 2001-2005 OF CONVENTIONAL AND BACTERIAL WATER QUALITY DATA COLLECTED BY THE WQMB. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS. THIS WATERBODY IS NOT SUPPORTING FISH CONSUMPTION CRITERIA.

THE EVALUATION OF THIS WATERBODY'S SWIMMABLE AND SECONDARY CONTACT USES IS BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND ANALYZED OVER THE RECENT FIVE YEAR PERIOD, 2001-2005. WITH AN AVERAGE FECAL COUNT OF 805 MPN/100ML, THIS STREAM DID NOT SUPPORT ITS SWIMMABLE USE (200MPN/100ML) 58.8% OF THE TIME AND FOR ITS SECONDARY CONTACT USE (1000MPN/100ML) 35.3% OF THE TIME.

THE EVALUATION OF POPE'S BRANCH AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT PROTOCOLS PERFORMED IN 2003. POPE'S BRANCH WAS RATED 'NOT SUPPORTING' OF THIS DESIGNATED USE. THE HBI SCORE SUGGESTS SOME ORGANIC POLLUTION. NO SENSITIVE ORGANISMS WERE FOUND (EPT). A HIGH PERCENTAGE OF GATHERER-COLLECTOR ORGANISMS SUGGEST POLLUTANTS, BECAUSE THEY ARE GENERALIST AND CAN THRIVE IN POLLUTED WATER. ALL 75 METERS OF THE HABITAT WERE SEVERELY IMPAIRED. THE DOMINANT TAXA WAS OLIGOCHAETA (WHICH SUGGEST SEWAGE LOVING ORGANISIMS). 39 ORGANISMS FOUND IN THE ENTIRE SAMPLE. HABITAT AND TOXICS ARE THE POSSIBLE CAUSES FOR DEGRADATION. A REVIEW OF D.O.TEMPERATURE AND PH DATA COLLECTED OVER THE RECENT FIVE YEAR STUDY PERIOD, 2001-2005, FOUND NO VIOLATIONS IN WATER QUALITY STANDARDS.

Detail Report for PORTAL BRANCH

ID: DCTPO01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**PORTAL BRANCH**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 0.5 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation Protection of Human Health related to Consumption of Fish and Shellfish

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and	Yes	

	Aesthetic Enjoyment	
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Illegal Dumping	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness)	
Municipal (Urbanized High Density Area)	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness)	
Post-development Erosion and Sedimentation	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Particle distribution (Embeddedness)	

Comments On:

Overall Assessment

PORTAL BRANCH FLOWS FROM MARYLAND INTO THE NORTHERN CORNER OF THE DISTRICT TO FENWICK BRANCH IN THE DISTRICT BEFORE JOINING ROCK CREEK. PORTAL BRANCH JOINS FENWICK BRANCH ABOUT 120 FEET NORTH OF FENWICK'S MOUTH AT ROCK CREEK. THE SURFACE STREAM IS ENTIRELY WITHIN THE DISTRICT BUT ONLY 36% OF IT'S WATERSHED IS WITHIN DC'S BORDERS. A TOTAL OF 10 OUTFALLS DISCHARGE INTO THIS STREAM SIX WITHIN THE DISTRICT. THE SURFACE PORTION OF THE STREAM IS BUFFERED BY 100 FEET OF PARKLAND AND IS PARALLELED BY SEWAGE LINES. THE 198 ACRE WATERSHED IS A MIX OF COMMERCIAL AND RESIDENTIAL PROPERTY.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

PORTAL BRANCH IS LIKELY TO BE SIGNIFICANTLY IMPACTED BY ORGANIC AND TOXIC EFFECTS. THE WATERSHED WITHIN THE DISTRICT OF COLUMBIA IS RESIDENTIAL AND PARKLAND PROPERTY. WHILE THE MARYLAND PORTION HAS INDUSTRIAL AND COMMERCIAL USES.

THE EVALUATION OF PORTAL BRANCH AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT CONDUCTED IN 2002. PORTAL BRANCH WAS FOUND TO BE NOT SUPPORTING OF ITS AQUATIC LIFE USE DESIGNATION. THE HBI SCORE SUGGESTS SIGNIFICANT ORGANIC POLLUTION. THE DOMINANT TAXA IDENTIFIED WAS GASTROPODA, WHICH IS VERY TOLERANT TO TOXIC WATER QUALITY. HABITAT IN THE STREAM WAS SEVERELY IMPAIRED. DO, PH AND TEMPERATURE READINGS FULLY SUPPORTED ALUS OVER THE 2001-2005 PERIOD OF STUDY. ONLY 21 ORGANISMS WERE FOUND IN THE ENTIRE SAMPLE. SIX STORM DRAINS THAT DISCHARGE IN DC AFFECT PORTAL BRANCH. ORGANICS AND HABITAT ARE POSSIBLY THE CAUSE OF DEGRADATION TO THE STREAM.

THE EVALUATION OF PORTAL BRANCH SWIMMABLE AND SECONDARY USES IS BASED ON DATA GATHERED DURING 2001-2005. THE WATERBODY DID NOT SUPPORT EITHER USE DUE TO A 64.3% VIOLATION OF THE PRIMARY CONTACT USE AND 28.6% VIOLATION OF THE SECONDARY CONTACT USE.

FISH CONSUMPTION WAS NOT ASSESSED FOR PORTAL BRANCH.

Detail Report for POTOMAC DC

ID: DCPMS00E_01 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	POTOMAC DC	
	Location: HAINES POINT TO WOODROW WILSON BRIDGE (PRINCE GEORGE'S COUNTY MARYLAND LINE) (PMS29 TO PMS44), TIDAL FRESHWATER. RIVER PASSES THROUGH AN URBAN AREA OF COMMERCIAL BUILDINGS, MILITARY BASES AND MUNICIPAL FACILITIES.	**Water Type:** ESTUARY **Size:** 3.05 SQUARE MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Fully Supporting	Navigation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment
	Not Supporting	Primary Contact Recreation Protection of Human Health related to Consumption of Fish and Shellfish

Types of Assessment

Assessment Type	Uses	Assessment Confidence
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Fecal Coliform	Primary Contact Recreation	Yes	

Source Information

Sources	Associated Causes	Confirmed?
Combined Sewer Overflows	Fecal Coliform	
Discharges from Municipal	Fecal Coliform	

Separate Storm Sewer Systems
(MS4)

Municipal Point Source Discharges Fecal Coliform

Comments On:

Overall Assessment

THE POTOMAC ESTUARY SEGMENT UNDER REVIEW EXTENDS FROM HAINS POINT TO WOODROW WILSON BRIDGE. THIS SEGMENT IS AFFECTED BY HIGH FECAL COLIFORM LEVELS, BLUE PLAINS OUTFALL LOADINGS, AND OCCASIONAL MAINTENANCE ACTIVITIES AT WOODROW WILSON BRIDGE. AMBIENT MONITORING DATA FROM 2001 TO 2005 WERE ANALYZED FOR THE USE SUPPORT DETERMINATIONS.

FOR THE PERIOD UNDER STUDY, TEMPERATURE, DISSOLVED OXYGEN, AND PH OBSERVATIONS MET AQUATIC LIFE USE SUPPORT CRITERIA. A REVIEW OF THE DATA FOR THIS SEGMENT SHOWED THAT 3.5% OF THE TIME PH OBSERVATIONS WERE IN VIOLATION OF ITS AQUATIC LIFE SUPPORT STANDARD. ELEVATED PH COULD BE ATTRIBUTED TO EITHER ITS SEASONAL PATTERN OR THE INTERACTION OF ELEVATED TEMPERATURES AND INCREASED PHYTOPLANKTON ACTIVITY. DISSOLVED OXYGEN AND TEMPERTURE OBSERVATIONS WERE GENERALLY IN FULL COMPLIANCE WITH WATER QUALITY STANDARDS.

SIMILARLY, 32.2% OF FECAL COLIFORM BACTERIA LEVELS WERE IN VIOLATION OF THE STANDARD FOR THE PRIMARY CONTACT RECREATION USE (SWIMMABLE) 200 MPN/100 ML, AND 6.7% IN VIOLATION OF THE SECONDARY CONTACT RECREATION STANDARD OF 1000 MPN/100ML. AS A RESULT THIS POTOMAC SEGMENT DID NOT SUPPORT ITS SWIMMABLE USE AND FULLY SUPPORTED ITS SECONDARY CONTACT RECREATION USE. EVENTS THAT COULD ACCOUNT FOR THE NON-COMPLIANCE IN FECAL COLIFORM BACTERICA INCLUDE COMBINED SEWER OVERFLOWS AND URBAN RUNOFF.

EVENTS DURING THE REVIEW PERIOD WITH POTENTIAL INFLUENCE ON THIS WATERBODY SEGMENT OF THE POTOMAC WATER QUALITY INCLUDE: THE BNR IMPLEMENTATION AT BLUE PLAINS, AND MARINA ACTIVITIES.

DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

BECAUSE OF THE ABOVE USE SUPPORT DECISIONS, THIS SEGMENT OF THE POTOMAC DID NOT SUPPORT ITS OVERALL USE FOR WATERS WITH MULTIPLE USES.

REPORTS WITH MORE INFORMATION INCLUDE: IMPACT OF DREDGING, ICPRB, FISH TISSUE SURVEY, ICPRB, SEDIMENT TOXICITY SURVEY, ICPRB; WETLAND ASSESSMENT, MWCOG, PETROLEUM OIL SPILL, VERSAR; A DISSOLVED OXYGEN STUDY OF THE UPPER POTOMAC ESTUARY-FINAL REPORT, MWCOG; POTOMAC RIVER WATER QUALITY 1982-1986 - TRENDS AND ISSUES IN THE METROPOLITAN WASHINGTON AREA, MWCOG.
* AWRC. 1997. DRAFT ANACOSTIA WATERSHED RESTORATION PROGRESS AND CONDITIONS REPORT 1990-1996. DEPT. OF ENVIRONMENTAL PROGRAM, MWCOG. WASH.,

DC.
* SEDIMENT CONTAMINATION STUDIES OF THE POTOMAC AND ANACOSTIA RIVER AROUND THE DISTRICT OF COLUMBIA, ICPRB, 1992.
* FISH TISSUE SURVEY, ICPRB, VELINSKY, 1993.
* EMERGENT WETLAND ESTABLISHMENT UNDER DIFFERING HABITAT CONDITIONS IN THE ANACOSTIA AND POTOMAC RIVER BASIN, HORN POINT ENVIRONMENTAL LABORATORY, CEES AND MWCOG, 1991.

Detail Report for POTOMAC DC

ID: DCPMS00E_02 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**POTOMAC DC**	
	Location: KEY BRIDGE, GEORGETOWN, TO HAINS POINT (PMS10 TO PMS 29), TIDAL FRESHWATER. RIVER PASSES THROUGH AN URBAN AREA OF COMMERCIAL AND RESIDENTIAL BUILDINGS AND NATIONAL PARK SERVICE LAND.	**Water Type:** ESTUARY **Size:** 1.38 SQUARE MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	**Uses**
Assessed:	Fully Supporting	Navigation Protection and Propagation of Fish, Shellfish and Wildlife
	Not Supporting	Primary Contact Recreation Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment

Types of Assessment

Assessment Type	**Uses**	**Assessment Confidence**
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	**Associated Uses**	**Pollutant?**	**Confidence**
Fecal Coliform	Primary Contact Recreation	Yes	

Source Information

Sources	**Associated Causes**	**Confirmed?**
Combined Sewer Overflows	Fecal Coliform	
Discharges from Municipal	Fecal Coliform	

Separate Storm Sewer Systems (MS4)	
Municipal Point Source Discharges	Fecal Coliform
Source Unknown	Fecal Coliform

Comments On:

Overall Assessment

THE MID-TIDAL POTOMAC WATERBODY SEGMENT EXTENDS FROM KEY BRIDGE TO HAINES POINT. THIS SEGMENT OF THE POTOMAC IS INFLUENCED BY HIGH FECAL COLIFORM BACTERIA LEVELS, OCCASSIONAL HIGH PH LEVELS, AND CONTAMINATED FISH TISSUE. FECAL AMBIENT MONITORING DATA FROM 2001TO 2005 WERE ANALYZED TO MAKE USE SUPPORT DETERMINATIONS FOR THE PERIOD UNDER REVIEW.

THIS SEGMENT OF THE POTOMAC FULLY SUPPORTED ITS AQUATIC LIFE USE. DIURNAL MONITORING DATA COLLECTED DURING 2001-2005 WAS USED TO DETERMINE USE SUPP0RT. pH WAS VIOLATED 6.7% , D.O AND TEMPERATURE WERE NOT VIOLATED AND DURING THE ASSESSMENT PERIOD.

32.5% OF FECAL COLIFORM LEVELS WERE IN VIOLATION OF THE PRIMARY CONTACT RECREATION (SWIMMABLE) STANDARD OF 200 MPN/100 ML, AND 12.4% WERE IN VIOLATION OF THE SECONDARY CONTACT RECREATION STANDARD OF 1000 MPN/100 ML.

THIS POTOMAC SEGMENT DID NOT SUPPORT THE FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

SEGMENT #2 FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE USE SUPPORT DECISIONS, THE MID-TIDAL POTOMAC DID NOT SUPPORT ITS OVERALL SUPPORT USE CLASSIFICATION.

SIMILARLY, SURVEYS CONDUCTED DURING THE PERIOD UNDER REVIEW REVEAL THE PRESENCE OF TOXICS IN SEDIMENTS. FISH TISSUE OF SAMPLES OF CERTAIN SPECIES SHOW ELEVATED LEVELS OF CONTAMINANTS, INCLUDING CHLORDANE AND PCBs. BIOLOGICAL SAMPLES FROM THE SITE SUGGEST A SEVERELY STRESSED BENTHIC COMMUNITY. STRESSED CONDITIONS COULD BE ATTRIBUTED TO URBAN RUNOFFS FROM UPSTREAM AND POLLUTED STREAMS, CSO EVENTS AND IMPACT FROM ADJACENT INDUSTRIAL FACILITIES.

REPORTS CONTAINING MORE INFORMATION INCLUDE: POTOMAC RIVER WATER QUALITY 1982-1986 - TRENDS AND ISSUES IN THE METROPOLITAN WASHINGTON, D.C.; IMPACT OF DREDGING, ICPRB; FISH TISSUE SURVEY, ICPRB; SEDIMENT TOXICITY SURVEY, ICPRB; WETLAND ASSESSMENT, MWCOG; PETROLEUM OIL SPILL, VERSAR.

REPORTS WITH MORE INFORMATION INCLUDE:
* SEDIMENT CONTAMINATION STUDIES OF THE POTOMAC AND ANACOSTIA RIVER AROUND THE DISTRICT OF COLUMBIA, ICPRB, 1992.
* FISH TISSUE SURVEY, ICPRB, VELINSKY, 1993.

* EMERGENT WETLAND ESTABLISHMENT UNDER DIFFERING HABITAT CONDITIONS IN THE ANACOSTIA AND POTOMAC RIVER BASIN, HORN POINT ENVIRONMENTAL LABORATORY, CEES AND MWCOG, 1991.

Detail Report for POTOMAC DC

ID: DCPMS00E_03 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	POTOMAC DC	
	Location: CHAIN BRIDGE (MONTGOMERY COUNTY MARYLAND LINE), JUST BELOW FALL LINE, TO KEY BRIDGE (PMS01 TO PMS10), TIDAL FRESHWATER. BORDERED BY NATIONAL PARK SERVICE LAND.	**Water Type:** ESTUARY **Size:** 0.4 SQUARE MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information

Assessed:	Attainment Status	Uses
	Fully Supporting	Navigation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment
	Not Supporting	Primary Contact Recreation Protection of Human Health related to Consumption of Fish and Shellfish

Types of Assessment

Assessment Type	Uses	Assessment Confidence
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Fecal Coliform	Primary Contact Recreation	Yes	

Source Information

Sources	Associated Causes	Confirmed?
Combined Sewer Overflows	Fecal Coliform	
Municipal (Urbanized High	Fecal Coliform	

Density Area)

Comments On:

Overall Assessment

THIS WATERBODY SEGMENT INCLUDES THE UPPER TIDAL POTOMAC FROM CHAIN BRIDGE, D.C. BORDER, TO KEY BRIDGE (GEORGETOWN). THIS SEGMENT IS AFFECTED BY HIGH COLIFORM BACTERIA LEVELS, TOXICS IN SEDIMENTS, AND FISH CONTAMINATED WITH TOXICS. FECAL AMBIENT WATER QUALITY DATA FROM 2001TO 2005 WERE ANALYZED FOR USE SUPPORT DETERMINATIONS.

A REVIEW OF THE DATA FOR THIS SEGMENT SHOWED THAT 1.9% OF THE TIME PH OBSERVATIONS WERE IN VIOLATION OF ITS AQUATIC LIFE SUPPORT STANDARD. ELEVATED PH COULD BE ATTRIBUTED TO EITHER ITS SEASONAL PATTERN OR THE INTERACTION OF ELEVATED TEMPERATURES AND INCREASED PHYTOPLANKTON ACTIVITY. DISSOLVED OXYGEN AND TEMPERTURE OBSERVATIONS WERE IN FULL COMPLIANCE OF WATER QUALITY STANDARDS.

FECAL COLIFORM BACTERIA OBSERVATIONS DID NOT SUPPORT THE PRIMARY CONTACT RECREATION (SWIMMABLE) USE OF 200 MPN/100ML BECAUSE IT VIOLATED THIS STANDARD 40.0% OF THE TIME. THIS SEGMENT SUPPORTED ITS SECONDARY CONTACT RECREATION USE OF 1000 MPN/100ML AT 2.4%. ELEVATED FECAL COLIFORM BACTERIA LEVELS COULD BE THE RESULT OF URBAN RUNOFF AND COMBINED SEWER OVERFLOWS.

SEGMENT #3 DID NOT SUPPORT THE FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

SURVEYS CONDUCTED OVER THE PERIOD OF REVIEW REVEAL THE PRESENCE OF TOXICS IN SEDIMENT. FISH TISSUE OF SAMPLES OF CERTAIN SPECIES SHOWED ELEVATED LEVELS OF CONTAMINANTS INCLUDING CHLORDANE AND PCBS. BIOLOGICAL SAMPLES FROM SELECTED SITES SUGGEST A SEVERELY STRESSED BENTHIC COMMUNITY. THE STRESSED CONDITION COULD BE ATTRIBUTED TO URBAN STORM WATER RUNOFFS FROM UPSTREAM AND POLLUTED STREAMS, CSO EVENTS AND IMPACT FROM ADJACENT INDUSTRIAL FACILITIES.

REPORTS WITH MORE INFORMATION INCLUDE:
* SEDIMENT CONTAMINATION STUDIES OF THE POTOMAC AND ANACOSTIA RIVER AROUND THE DISTRICT OF COLUMBIA, ICPRB, 1992.
* FISH TISSUE SURVEY, ICPRB, VELINSKY, 1993.
* EMERGENT WETLAND ESTABLISHMENT UNDER DIFFERING HABITAT CONDITIONS IN THE ANACOSTIA AND POTOMAC RIVER BASIN, HORN POINT ENVIRONMENTAL LABORATORY, CEES AND MWCOG, 1991.

Detail Report for ROCK CREEK DC

ID: DCRCR00R_01 **State:** DC - 2006 **Single Cat.(User Cat.):** 4A(N/A)

Water Information:	**ROCK CREEK DC**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 3.6 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	**Uses**
Assessed:	Fully Supporting	Navigation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment Primary Contact Recreation

Types of Assessment

Assessment Type	**Uses**	**Assessment Confidence**
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	**Associated Uses**	**Pollutant?**	**Confidence**
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and	Yes	

	Aesthetic Enjoyment	
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Combined Sewer Overflows	Fecal Coliform	
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Post-development Erosion and Sedimentation	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Residential Districts	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Wet Weather Discharges (Non-Point Source)	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	

Comments On:

Overall Assessment

THE SOUTHERN SEGMENT OF ROCK CREEK EXTENDING FROM ITS MOUTH AFTER THE POTOMAC RIVER TO NATIONAL ZOO. THE SOUTHERN OR LOWER SEGMENT OF ROCK CREEK WHICH EXTENDS FROM IT'S MOUTH AT THE POTOMAC RIVER IN GEORGETOWN UP TO JUST ABOVE THE NATIONAL ZOO BELOW THE PIERCE MILL DAM. THE ENTIRE REACH OF THIS SEGMENT OF THE TRIBUTARY IS ENCLOSED BY ROCK CREEK PARK. THIS TRIBUTARY IS DESIGNATED AS A "SPECIAL WATERS OF THE DISTRICT OF COLUMBIA" UNDER THE DISTRICT'S WATER QUALITY STANDARDS.

THE LOWER ROCK CREEK SUFFERS FROM A COMBINATION OF STRESSORS BY ITS TRIBUTARY STREAMS. THESE TRIBUTARY STREAMS ARE PREDOMINANTLY BUFFERED BY PARKLAND BUT STILL RECIEVE STORMWATER DISCHARGES FROM URBAN IMPERVIOUS SURFACES AS WELL AS PROBABLE LEAKAGE FROM UNIDENTIFIED SEWER LINES

CROSSING THE STREAMS. NUTRIENT ENRICHMENT, PHYSICAL HABITAT PROBLEMS AND TOXIC EFFECTS ALL MAY BE ATTRIBUTED TO THESE CAUSES.

THE EVALUATION OF LOWER ROCK CREEK'S AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT CONDUCTED IN 2003. ROCK CREEK WAS FOUND TO BE PARTIALLY SUPPORTING OF ITS AQUATIC LIFE USE DESIGNATION. HBI SUGGEST THERE MAY BE FAIRLY SIGNIFICANT ORGANIC POLLUTION. NO SENSITIVE ORGANISMS WERE FOUND (EPT). CHIRONOMIDAE (GENERALIST THAT CAN THRIVE IN POLLUTED WATERS) WERE THE DOMINANT TAXA AND THE HABITAT IS MODERATELY IMPAIRED. DO, PH AND TEMPERATURE STANDARDS WERE FULLYSUPPORTED. ONLY 10 ORGANISMS FOUND IN THE ENTIRE SAMPLE. THE DOMINANT TAXA FOR 2002 (HYDROPSYCHIDAE) HAS BEEN REPLACED BY CHIRONOMIDAE. ONLY 2 TAXA WERE FOUND IN THIS STREAM. THE WET WEATHER OF 2003 HAS POSSIBLY CAUSED AN INFLUX OF TOXICS TO DEGRADE THE STREAM.

THE EVALUATION OF LOWER ROCK CREEK'S SWIMMABLE AND SECONDARY USES ARE BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND COMPILED FOR A FIVE-YEAR SPAN 2001- 2005. ROCK CREEK WAS NOT IN COMPLIANCE FOR ITS SWIMMABLE USE 77.1% OF THE TIME. ITS SECONDARY CONTACT USE 28.6% OF THE TIME. AS A RESULT, LOWER ROCK CREEK DID NOT SUPPORT EITHER IT'S SWIMMABLE OR 2ND CONTACT RECREATION USES.

LOWER ROCK CREEK DID NOT SUPPORT THE EPA FISH CONSUMPTION USE DESIGNATION. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF
HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHS OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE ROCK CREEK IS A TRIBUTARY OF THE POTOMAC RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THE TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO ROCK CREEK.

Detail Report for ROCK CREEK DC

ID: DCRCR00R_02 **State:** DC - 2006 **Single Cat.(User Cat.):** 4A(N/A)

Water Information:	**ROCK CREEK DC**	
	Location: THE NORTHERN SEGMENT OF ROCK CREEK EXTENDING FROM THE PIERCE MILL DAM ABOVE THE NATIONAL ZOO AND KLINGLE ROAD TO THE DISTRICT/MARYLAND LINE. THIS SEGMENT OF ROCK CREEK FLOWS ABOVE THE FALL LINE AND IS SURROUNDED BY ROCK CREEK PARK.	**Water Type:** RIVER **Size:** 5.9 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	**Uses**
Assessed:	Fully Supporting	Navigation
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment

Types of Assessment

Assessment Type	**Uses**	**Assessment Confidence**
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	**Associated Uses**	**Pollutant?**	**Confidence**
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and	Yes	

	Aesthetic Enjoyment	
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Combined Sewer Overflows	Fecal Coliform	
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Residential Districts	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Wet Weather Discharges (Non-Point Source)	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Yard Maintenance	Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	

Comments On:

Overall Assessment

UPPER ROCK CREEK SUFFERS FROM A COMBINATION OF STRESSORS CONTRIBUTED BY ITS TRIBUTARY STREAMS. THESE TRIBUTARY STREAMS ARE PREDOMINANTLY BUFFERED BY PARKLAND BUT STILL RECEIVE STORMWATER DISCHARGES FROM URBAN IMPERVIOUS SURFACES AS WELL AS PRPBABLE LEEKAGE FROM UNIDENTIFIED SEWER LINES CROSSING THE STREAMS. NUTRIENT ENRICHMENT, PHYSICAL HABITAT PROBLEMS AND TOXIC EFFECTS ALL MAY BE ATTRIBUTED TO THESE CAUSES.

THE EVALUATION OF UPPER ROCK CREEK'S AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT CONDUCTED IN 2003. THE UPPER ROCK CREEK WAS FOUND TO BE NOT SUPPORTING OF ITS AQUATIC LIFE USE DESIGNATION. HBI SUGGESTS FAIRLY SIGNIFICANT ORGANIC POLLUTION. EPT PRESENT, BUT IN A VERY LOW PERCENTAGE. CHIRONOMIDAE (GENERALIST THAT CAN THRIVE IN POLLUTED WATERS) WERE THE DOMINANT TAXA. HABITAT IS MODERATELY IMPAIRED. DO (3.4% VIOLATION), PH AND TEMPERATURE GENERALLY FULLY SUPPORTED THE ALUS STANDARD. ONLY 11 ORGANISMS WERE FOUND IN THE ENTIRE SAMPLE. THE DOMINANT TAXA FOR 2002 (HYDROPSYCHIDAE) HAS BEEN REPLACED BY CHIRONOMIDAE. ONLY 3 TAXA WERE FOUND IN THIS STREAM. THE WET WEATHER OF 2003 HAS POSSIBLY CAUSED AS INFLUX OF TOXICS TO DEGRADE THE STREAM.

THE EVALUATION OF UPPER ROCK CREEK SWIMMABLE AND SECONDARY USES ARE BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND COMPILED FOR A FIVE-YEAR SPAN 2001-2005. ROCK CREEK WAS NOT IN COMPLIANCE FOR ITS SWIMMABLE USE 81.6% OF THE TIME. ITS SECONDARY CONTACT USE 47.4% OF THE TIME. AS A RESULT, UPPER ROCK CREEK DID NOT SUPPORT EITHER ITS SWIMMABLE OR 2ND CONTACT RECREATION USES.

UPPER ROCK CREEK WAS NOT ASSESSED FOR FISH CONSUMPTION.

Detail Report for SOAPSTONE CREEK

ID: DCTSO01R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**SOAPSTONE CREEK**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 0.8 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
BIOLOGICAL	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Alterations in wetland habitats	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and	Yes	

	Aesthetic Enjoyment	
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Illegal Dumping	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Particle distribution (Embeddedness)	
Impacts from Hydrostructure Flow Regulation/modification	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Particle distribution (Embeddedness)	
Residential Districts	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Particle distribution (Embeddedness)	
Yard Maintenance	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Fecal Coliform Particle distribution (Embeddedness)	

Comments On:

Overall Assessment

SOAPSTONE CREEK IS A TRIBUTARY OF BROAD BRANCH WHICH JOINS BROAD BRANCH JUST ABOVE ITS CONFLUENCE WITH ROCK CREEK NEAR DUMBARTON OAKS, NW. SIX OUTFALLS DISCHARGE INTO THE STREAM. THE 550 ACRE WATERSHED IS MOSTLY URBAN WITH 15% PARKLAND AND FOREST AT ITS LOWER REACHES. ONLY ABOUT 20% OF THE WATERSHED, ALL IN ITS LOWER REACHES, IS NATURALLY DRAINED. BETWEEN THE MAIN STORM DRAIN DISCHARGE AND ITS MOUTH, SOAPSTONE CREEK RUNS THROUGH A STEEP-SIDED, HEAVILY-WOODED VALLEY ABOUT 500 YARDS WIDE.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY OF THE DISTRICT OF COLUMBIA, "W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE EVALUATION OF SOAPSTONE CREEK'S AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT CONDUCTED IN 2003. SOAPSTONE CREEK WAS FOUND TO BE NOT SUPPORTING OF ITS AQUATIC LIFE USE DESIGNATION. THE HABITAT SCORE SUGGEST A

FAIRLY SIGNIFICANT ORGANIC POLLUTION PROBLEM IN THE STREAM. THE DOMINANT TAXA FOUND WAS CHIRONOMIDAE (TOLERANT GENERALIST). THE STREAM'S HABITAT WAS MODERATELY IMPAIRED. D.O., PH, AND TEMPERATURE PARAMETERS FULLY SUPPORTED THE USE DURING THE 2001-2005 DATA COLLECTION PERIOD. 27 ORGANISMS WERE FOUND IN ENTIRE SAMPLE. THE STREAM POSSIBLY SUFFERS FROM ORGANIC AND TOXIC POLLUTION.

THE EVALUATION OF SOAPSTONE CREEK'S SWIMMABLE AND SECONDARY USES DETERMINED THAT THE PRIMARY CONTACT USE WAS VIOLATED 84.6% OF THE TIME DURING 2001-2005. THE SECONDARY CONTACT USE WAS VIOLATED 46.1% DURING THE SAME PERIOD OF STUDY. NEITHER SUPPORTED THIEIR USE.

FISH CONSUMPTION WAS NOT ASSESSED FOR SOAPSTONE CREEK.

SOAPSTONE CREEK HAD 1.7% OF ITS MOST RECENT (1997) BENTHIC INVERTEBRATE SAMPLE IDENTIFIED AS OLIGOCHAETE WORMS. THIS LEVEL IS NOT HIGH ENOUGH TO CONSIDER THE STREAM AS HAVING HAD A RELATIVELY RECENT ORGNAIC ENRICHMENT PROBLEM.

Detail Report for TEXAS AVENUE TRIBUTARY

ID: DCTTX27R_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 4A(N/A)

Water Information:	**TEXAS AVENUE TRIBUTARY**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 0.2 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish,	Yes	

	Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment	
Oil and Grease	Primary Contact Recreation	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Illegal Dumping	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Impacts from Hydrostructure Flow Regulation/modification	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Loss of Riparian Habitat	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness)	
Residential Districts	Combination Benthic/Fishes Bioassessments (Streams)	

Combined Biota/Habitat Bioassessments (Streams)

Debris/Floatables/Trash

Fecal Coliform

Other flow regime alterations

Particle distribution (Embeddedness)

Comments On:

Overall Assessment

TEXAS AVENUE IS AN ANACOSTIA RIVER TRIBUTARY OF A NOW ALMOST COMPLETELY SUBTERRANEAN STREAM. THE SURFACE PORTION OF THE STREAM ORIGINATES FROM A STORM DRAIN SOUTH OF THE INTERSECTION OF PENNSYLVANIA AVENUE AND BRANCH AVENUE, SE. THE WATERSHED OF 110 ACRES IS ABOUT 40% FORESTED PARKLAND AND 60% RESIDENTIAL AND LIGHT COMMERCIAL PROPERTY. ONE LARGE STORMWATER OUTFALL DISCHARGES INTO THE STREAM WHILE SEVERAL SEWER LINES PARALLEL AND CROSS IT AS WELL.

THE ABOVE DESCRIPTION WAS TAKEN FROM 'BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA,' W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE EVALUATION OF TEXAS AVENUE TRIBUTARY AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT CONDUCTED IN 2002. TEXAS AVENUE TRIBUTARY WAS FOUND TO BE NOT SUPPORTING OF ITS AQUATIC LIFE USE DESIGNATION. THE STREAM'S HBI SCORE SUGGESTS SOME ORGANIC POLLUTION. A HIGH PERCENTAGLE OF GATHERER-COLLECTOR ORGANISMS SUGGESTS TOXIC AND ORGANIC POLLUTANTS, BECAUSE THEY ARE GENERALIST AND CAN THRIVE IN POLLUTED WATERS. NO SENSITIVE ORGANISMS WERE FOUND (EPT). THE DOMINANT TAXA SEEN WAS OLIGOCHAETA, (SEWAGE LOVING ORGANISMS). D.O. (0.0% VIOLATION), PH (0.0%), AND TEMPERATURE (0.0% VIOLATION) FULLY SUPPORTED THE AQUATIC LIFE SUPPORT USE FOR THE 2001-2005 DATA COLLECTION PERIOD. THE STREAM'S HABITAT WAS SEVERELY IMPAIRED. 11 ORGANISMS WERE FOUND IN THE SAMPLE COLLECTED. THIS STREAM WILL HAVE TO BE EVALUATED FOR WAYS TO PREVENT FURTHER BANK EROSION.

THE EVALUATION OF TEXAS AVENUE TRIBUTARY SWIMMABLE AND SECONDARY USES ARE BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND COMPILED FOR A FIVE-YEAR SPAN 2001-2005. TEXAS AVENUE TRIBUTARY WAS NOT IN COMPLIANCE FOR ITS SWIMMABLE USE 53.3% OF THE TIME. ITS SECONDARY CONTACT USE 26.7% OF THE TIME. AS A RESULT, TEXAS AVENUE TRIBUTARY DID NOT SUPPORT ITS SWIMMABLE OR SECONDARY CONTACT RECREATION USES.

TEXAS AVENUE TRIBUTARY DID NOT SUPPORT THE EPA FISH CONSUMPTION USE DESIGNATION. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHS OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE TEXAS AVENUE TRIBUTARY IS A TRIBUTARY OF THE ANACOSTIA RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THE TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO TEXAS AVENUE TRIBUTARY.

THIS TRIBUTARY WAS ASSESSED AS HAVING A POTENTIAL ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN WATER QUALITY IMPAIRMENT. THIS DETERMINATION WAS BASED ON A BENTHIC MACROINVERTEBRATE BIOLOGICAL ASSESSMENT WHICH FOUND A

DOMINANCE OF THE OLIGOCHAETA ORDER OF AQUATIC WORM IN THE SAMPLED STREAM REACH. A DOMINANCE OF OLIGOCHAETE WORMS IS A STRONG INDICATOR OF ORGANIC ENRICHMENT WHICH CAN BE A MAJOR CAUSE OF LOW DISSOLVED OXYGEN CONCENTRATION (BANTA, 1993). WQMB HAS DETERMINED THAT ANY STREAM BENTHIC SAMPLE CONTAINING MORE THAN 20% OF OLIGOCHAETE DOMINANCE WILL BE CLASSIFIED AS HAVING AN ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN CAUSE.

TEXAS AVENUE TRIBUTARY HAD 96% OF ITS MOST RECENT (1997) BENTHIC INVERTEBRATE SAMPLE IDENTIFIED AS OLIGOCHAETE WORMS.

Detail Report for TIDAL BASIN

ID: DCPTB01L_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**TIDAL BASIN**	
	Location: HUC: 02070010	**Water Type:** FRESHWATER LAKE **Size:** 108.4 ACRES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A **Trophic Status:** N/A **Public Lake:** No

Use Information

	Attainment Status	**Uses**
Assessed:	Fully Supporting	Navigation Secondary Contact Recreation and Aesthetic Enjoyment
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish

Types of Assessment

Assessment Type	**Uses**	**Assessment Confidence**
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	**Associated Uses**	**Pollutant?**	**Confidence**
Fecal Coliform	Primary Contact Recreation	Yes	

Source Information

Sources	**Associated Causes**	**Confirmed?**
Discharges from Municipal	Fecal Coliform	

Separate Storm Sewer Systems
(MS4)

Comments On:

Overall Assessment

IMPOUNDMENT BORDERING THE MIDDLE POTOMAC AND THE WASHINGTON SHIP CHANNEL (PTB01). LOCATION OF THE JEFFERSON MEMORIAL AND THE WELL-KNOWN CHERRY TREES OF THE NATION'S CAPITOL. THE LAND SURROUNDING THE BASIN IS OWNED AND MANAGED BY THE U.S. NATIONAL PARK SERVICE.

THE TIDAL BASIN IS AN IMPOUNDMENT BORDERING THE MIDDLE POTOMAC AND THE WASHINGTON SHIP CHANNEL (PTB01). IT IS LOCATED ADJACENT TO THE JEFFERSON MEMORIAL AND THE WELL-KNOWN CHERRY TREES OF THE NATION'S CAPITOL. THE LAND SURROUNDING THE BASIN IS OWNED AND MANAGED BY THE U.S. NATIONAL PARK SERVICE. AMBIENT WATER QUALITY DATA FROM 2001 TO 2005 WERE ANALYZED FOR USE SUPPORT DECISIONS.

THE TIDAL BASIN DID SUPPORT ITS AQUATIC LIFE USE DUE TO A 39.3% VIOLATION OF THE pH STANDARD. NO VIOLATIONS IN TEMPERATURE AND DISSOLVED OXYGEN WATER QUALITY STANDARDS WERE SEEN.

USE SUPPORT DECISIONS FOR SWIMMABLE AND SECONDARY CONTACT RECREATION WERE MADE USING FECAL COLIFORM BACTERIA DATA. THE TIDAL BASIN DID NOT SUPPORT ITS SWIMMABLE USE AS IT EXCEEDED THE FECAL COLIFORM STANDARD OF 200 MPN/100 ML 30.6% OF THE TIME. HOWEVER, IT FULLY SUPPORTED ITS SECONDARY CONTACT RECREATION AS IT EXCEEDED THE FECAL COLIFORM STANDARD OF 1000 MPN/100 ML ONLY 8.3% OF THE TIME.

THE TIDAL BASIN ALSO DID NOT SUPPORT THE FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

THERE WERE NO KNOWN OBSTRUCTIONS IN THE TIDAL BASIN. THEREFORE, IT FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE USE SUPPORT DECISIONS, THE TIDAL BASIN DID NOT SUPPORT THE OVERALL USE CLASSIFICATIONS FOR WATERS WITH MULTIPLE USES.

A STUDY TITLED "SEDIMENT CONTAMINATION STUDIES OF THE POTOMAC AND ANACOSTIA RIVERS AROUND THE DISTRICT OF COLUMBIA" WAS COMPLETED BY THE INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN IN 1992. THE STUDY INCLUDED THE TIDAL BASIN. RESULTS FROM THIS STUDY FOUND ELEVATED LEVELS OF TOTAL (THC) AND POLYCYCLIC HYDROCARBONS (PAHS) AT SAMPLED OUTFALLS AND STORM SEWERS TO THE TIDAL BASIN IN COMPARISON TO BASIN SEDIMENTS. RESULTS DID NOT INDICATE A SPECIFIC OUTFALL AS THE SOURCE. THE STUDY SUGGESTED THAT THE PRIMARY SOURCE FOR THESE HYDROCARBONS WAS MUCH MORE DIFFUSED AND PROBABLY RELATED TO VEHICULAR TRAFFIC.

Detail Report for WASHINGTON SHIP CHANNEL

ID: DCPWC04E_00 **State:** DC - 2006 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**WASHINGTON SHIP CHANNEL**	
	Location: DEEP EMBAYMENT OF THE POTOMAC BETWEEN HAINS POINT AND FORT MCNAIR. IT IS CONTIGUOUS TO THE POTOMAC AND ANACOSTIA RIVERS. THE NORTH END IS CONNECTED TO THE TIDAL BASIN (PWC04).	**Water Type:** ESTUARY **Size:** 0.3 SQUARE MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Fully Supporting	Navigation Secondary Contact Recreation and Aesthetic Enjoyment
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish

Types of Assessment

Assessment Type	Uses	Assessment Confidence
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Fecal Coliform	Primary Contact Recreation	Yes	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS WERE PARTIALLY BASED ON A FIVE YEAR SATISTICAL EVALUATION (2001-2005) OF CONVENTIONAL AND FECAL COLIFORM

BACTERIA WATER QUALITY DATA COLLECTED BY THE WQMB.

FECAL COLIFORM BACTERIA VALUES EXCEEDED THE SWIMMABLE USE (200 MPN/100 ML) 41.5% OF THE TIME FOR THE FIVE YEAR PERIOD, WHILE VALUES EXCEEDED THE SECONDARY CONTACT USE (1000 MPN/100ML) 9.7% OF THE TIME. AS A RESULT THE WASHINGTON SHIP CHANNEL FULLY SUPPORTED ITS SECONDARY CONTACT USE. SEVERAL STORM SEWERS EMPTYING INTO THIS AREA ARE SUSPECTED OF CONTRIBUTING TO THE POLLUTION. BOATS MOORED AT LOCAL MARINAS ARE ALSO SUSPECTED SOURCES OF POLLUTION.

DISSOLVED OXYGEN (1.8%) AND TEMPERATURE OBSERVATIONS WERE IN GENERALLY IN FULL COMPLIANCE OF THEIR RESPECTIVE WATER QUALITY STANDARDS. pH OBSERVATIONS DID NOT SUPPORT THE AQUATIC LIFE USE AT 14.5% OVER THE STUDY PERIOD. THE SHIPPING CHANNEL DID NOT SUPPORT THE AQUATIC LIFE USE.

DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP, OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS. THEREFORE, THE WASHINGTON SHIP CHANNEL DID NOT SUPPORT EPA FISH CONSUMPTION CRITERIA.

THE WASHINGTON SHIP CHANNEL FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE USE SUPPORT DECISIONS, THE WASHINGTON SHIP CHANNEL DID NOT SUPPORT THE OVERALL USE CLASSIFICATION FOR WATERS WITH MULTIPLE USES.

SURVEYS CONDUCTED IN THE PAST SEVERAL YEARS REVEAL THE PRESENCE OF TOXICS IN SEDIMENTS. FISH TISSUE OF SAMPLES OF CERTAIN SPECIES SHOW ELEVATED LEVELS OF CONTAMINANTS INCLUDING CHLORDANE AND PCBs. BIOLOGICAL SAMPLES COLLECTED SUGGEST A SEVERELY STRESSED BENTHIC COMMUNITY. THE CAUSES OF STRESS MAY BE ATTRIBUTED TO URBAN STORM WATER RUNOFF FROM POLLUTED STREAMS ENTERING THE TIDAL POTOMAC ESTUARY, TO CSO EVENTS, AND TO THE IMPACT FROM ADJACENT INDUSTRIAL FACILITIES. REPORTS WITH MORE INFORMATION INCLUDE:
- "IMPACT OF DREDGING ON THE WATER QUALITY OF THE ANACOSTIA RIVER" BY THE INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN (ICPRB), 1993,
- "SEDIMENT CONTAMINATION STUDIES OD THE POTOMAC AND ANACOSTIA RIVER AROUND THE DISTRICT OF COLUMBIA," ICPRB, 1992,
- A FISH TISSUE SURVEY REPORT BY ICPRB, VELINSKY, 1993.
-"EMERGENT WETLAND ESTABLISHMENT UNDER DIFFERING HABITAT CONDITION IN THE ANACOSTIA AND POTOMAC RIVER BASIN," HORN POINT ENVIRONMENTAL LABORATORY, CEES AND MWCOG, 1991.
-STEUART PETROLEUM OIL SPILL, VERSAR, PINKNEY, 1993.

Detail Report for WATTS BRANCH DC

ID: DCTWB00R_01 **State:** DC - 2006 **Single Cat.(User Cat.):** 4A(N/A)

Water Information:	**WATTS BRANCH DC**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 0.3 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Alterations in wetland habitats	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

Fecal Coliform	Primary Contact Recreation Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Channelization	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)	
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Illegal Dumping	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)	
Residential Districts	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)	
Site Clearance (Land Development or Redevelopment)	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams)	

	Combined Biota/Habitat Bioassessments (Streams)
	Debris/Floatables/Trash
	Other flow regime alterations
	Particle distribution (Embeddedness)
Source Unknown	Fecal Coliform
Wet Weather Discharges (Non-Point Source)	Alterations in wetland habitats
	Combination Benthic/Fishes Bioassessments (Streams)
	Combined Biota/Habitat Bioassessments (Streams)
	Debris/Floatables/Trash
	Other flow regime alterations
	Particle distribution (Embeddedness)
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Alterations in wetland habitats
	Combination Benthic/Fishes Bioassessments (Streams)
	Combined Biota/Habitat Bioassessments (Streams)
	Debris/Floatables/Trash
	Other flow regime alterations
	Particle distribution (Embeddedness)

Comments On:

Overall Assessment

ANACOSTIA RIVER TRIBUTARY, RUNS THROUGH KENILWORTH PARK WHICH IS A

COVERED LANDFILL. SEGMENT 01 (TWB01) IS TOTALLY AFFECTED FROM ITS MOUTH TO 25 YARDS ABOVE THE FIRST LOWER BRIDGE IN THE PARK. THIS

PORTION OF THE STREAM IS 23 FEET WIDE AND SHALLOW. ABOUT

80% OF THE STREAM'S WATERSHED IS URBAN RESIDENTIAL AND COMMERCIAL

PROPERTY; LESS THAN 15% IS FORESTED.

THE LOWER PORTION OF WATTS BRANCH IS SIGNIFICANTLY AFFECTED BY ORGANIC AND TOXIC EFFECTS STEMMING FROM STORMWATER DISCHARGES AND SEWER LINE LEAKS.

THE EVALUATION OF WATTS BRANCH AQUATIC LIFE SUPPORT USE IS BASED ON A BIOASSESSMENT CONDUCTED IN 2003. WATTS BRANCH WAS NOT SUPPORTING OF ITS AQUATIC LIFE USE DESIGNATION. THIS SEGMENT'S HBI SCORE SUGGESTS NO APPARENT ORGANIC POLLUTION.

CHIRONOMIDAE (GENERALIST THAT CAN THRIVE IN POLLUTED WATERS AND OLIGOCHAETA (SEWAGE LOVING ORGANISMS) ARE THE ONLY TWO TAXA FOUND. ONLY 5 ORGANISMS WERE FOUND IN THE SAMPLE COLLECTED AND THEY INCLUDED NO SENSITIVE ORGANISMS (EPT). THE SEGMENT'S HABITAT IS MODERATELY IMPAIRED. DO, PH, AND TEMPERATURE DATA COLLECTED DURING 2001-2005 INDICATED THAT THE STANDARD FOR THE PARAMETERS WAS SUPPORTED. TEMPERATURE HAD NO VIOLATIONS, WHILE D.O. HAD A 0.0% VIOLATION AND PH A VIOLATIONOF 2.0%. TOXICS POSSIBLY PLAYS

A ROLE IN THE POOR QUALITY OF THE STREAM.

THE EVALUATION OF WATTS BRANCH SWIMMABLE AND SECONDARY USES ARE BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND COMPILED FOR A FIVE YEAR SPAN2001-2005. WATTS BRANCH WAS NOT IN COMPLIANCE FOR ITS SWIMMABLE USE 66.7% OF THE TIME. ITS SECONDARY CONTACT USE 64.1% OF THE TIME. AS A RESULT, WATTS BRANCH DID NOT SUPPORT ITS SWIMMABLE OR SECONDARY CONTACT RECREATION USES.

WATTS BRANCH DID NOT SUPPORT THE EPA FISH CONSUMPTION USE DESIGNATION. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCH OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE WATTS BRANCH IS A TRIBUTARY OF THE ANACOSTIA RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THE TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO WATTS BRANCH.

Detail Report for WATTS BRANCH DC

ID: DCTWB00R_02 **State:** DC - 2006 **Single Cat.(User Cat.):** 4A(N/A)

Water Information:	**WATTS BRANCH DC**	
	Location: HUC: 02070010	**Water Type:** RIVER **Size:** 3.7 MILES **Assessed By:** N/A **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
Not Assessed:	Not Assessed	Navigation

Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation Secondary Contact Recreation and Aesthetic Enjoyment	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Alterations in wetland habitats	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

Fecal Coliform	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Total Suspended Solids (TSS)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Fecal Coliform	
Illegal Dumping	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness) Total Suspended Solids (TSS)	
Illegal Dumps or Other Inappropriate Waste Disposal	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness) Total Suspended Solids (TSS)	
Residential Districts	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness) Total Suspended Solids (TSS)	
Site Clearance (Land Development	Alterations in wetland habitats	

or Redevelopment)	Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness) Total Suspended Solids (TSS)
Source Unknown	Fecal Coliform
Wet Weather Discharges (Non-Point Source)	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness) Total Suspended Solids (TSS)
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments (Streams) Combined Biota/Habitat Bioassessments (Streams) Debris/Floatables/Trash Fecal Coliform Other flow regime alterations Particle distribution (Embeddedness) Total Suspended Solids (TSS)

Comments On:

Overall Assessment

PRINCE GEORGE'S COUNTY MARYLAND LINE TO KENILWORTH PARK (TWB05 AND TWB06). IT FLOWS THROUGH A DENSELY-POPULATED RESIDENTIAL AREA WITH A SMALL NUMBER OF COMMERCIAL BUILDINGS. WATTS BRANCH (MD & DC) DRAINS 2583 ACRES. THE STREAM IS SUBTERRANEAN FOR ABOUT 1000 FEET IN DEANWOOD, NE; IT TRAVELS BENEATH PARTS OF DEANE STREET AS TWIN 16-FOOT BY 7-FOOT CONDUITS. THE ENTIRE WATERSHED IS TRAVERSED AND PARALLELED BY NUMEROUS SEWER LINES. ITS ONCE NUMEROUS TRIBUTARIES HAVE BEEN REPLACED BY STORMWATER DISCHARGE WHICH ENTER THE STREAM THROUGH OUT ITS LENGTH.

THE UPPER PORTION OF WATTS BRANCH IS SIGNIGICANTLY AFFECTED BY ORGANIC AND TOXIC EFFECTS FROM STORMWATER DISCHARGES AND PERSISTENT SEWAGE LINE LEAKS. THE UPPER PORTION OF WATTS IS TRAVERSED AND PARALLELED BY SEWAGE LINES AND ALMOST ALL OF ITS FIRST AND SECOND ORDER TRIBUTARIES HAVE BEEN PIPED. HYDROLOGIC MODIFICATION HAS TAKEN ITS TOLL ON THE HABITAT STRUCTURE OF WATTS. MUCH WORK HAS BEEN UNDERTAKEN TO STABILIZE THE STREAMBANKS BUT THE FORCE OF PEAK STORMFLOW OFTEN SCOURS THE STREAM.

THE EVALUATION OF WATTS BRANCH AQUATIC LIFE SUPPORT USE IS BASED ON A

BIOASSESSMENT CONDUCTED IN 2003. WATTS BRANCH WAS FOUND NOT SUPPORTING OF ITS AQUATIC LIFE USE DESIGNATION. OLIGOCHAETA (SEWAGE LOVING ORGANISMS) WERE THE DOMINANT TAXA IDENTIFIED.

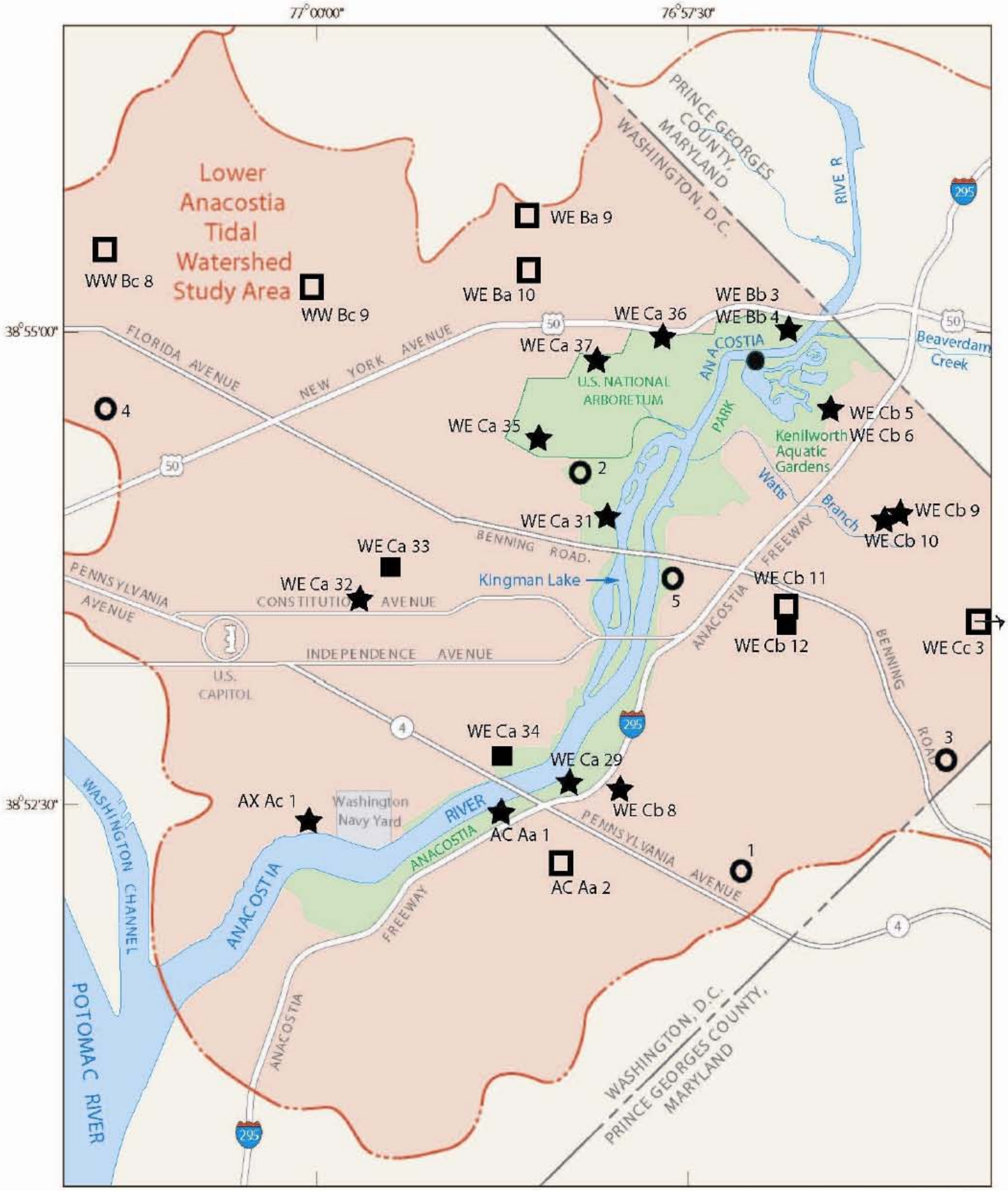
THE STREAM SEGMENT'S HBI SCORE SUGGESTS SOME ORGANIC POLLUTION. HABITAT IS SEVERELY IMPAIRED. NO SENSITIVE ORGANISMS WERE FOUND (EPT). D.O., PH AND TEMP FULLY SUPPORTED THE USE. STANDARDS FOR D.O. ONLY VIOLATED 1.8% OF THE TIME, PH VIOLATED 1.8% OF THE TIME, AND TEMPERATURE 0.0% DURING A 2001-2005 DATA COLLECTION PERIOD. THE PERCENTAGE OF GATHERER-COLLECTOR ORGANISMS FOUND SUGGEST POLLUTANTS ARE PRESENT BECAUSE THEY ARE GENERALIST AND CAN THRIVE IN POLLUTED WATERS. ONLY 13 INSECTS WERE FOUND THE SAMPLE COLLECTED.

TAKING ALL THE ABOVE FACTORS INTO CONSIDERATION WOULD POSSIBLY SUGGEST THAT HABITAT AND ORGANICS CONTRIBUTE TO THE POOR QUALITY OF THE STREAM.

THE EVALUATION OF WATTS BRANCH SWIMMABLE AND SECONDARY USES ARE BASED ON SURFACE FECAL COLIFORM DATA COLLECTED AND COMPILED FOR A FIVE YEAR SPAN 2001-2005. WATTS BRANCH WAS NOT IN COMPLIANCE FOR ITS SWIMMABLE USE 88.5% OF THE TIME. ITS SECONDARY CONTACT USE 70.8% OF THE TIME. AS A RESULT, WATTS BRANCH DID NOT SUPPORT EITHER OF ITS SWIMMABLE OR SECONDARY CONTACT RECREATION USES.

WATTS BRANCHDID NOT SUPPORT THE EPA FISH CONSUMPTION USE DESIGNATION. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY THIS SEGMENT DID NOT SUPPORT THE FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS. THIS WATERBODY IS NOT SUPPORTING OF FISH CONSUMPTION.

GROUND WATER ASSESSMENT



★ EXISTING WELL LOCATIONS

● TIDE GAGE LOCATION

■ NEW 2-INCH WELL LOCATIONS

□ NEW 1-INCH WELL LOCATIONS

○ 2 BOREHOLE LOCATION, NO WELL INSTALLED. NUMBER CORRESPONDS TO LIST ON PAGE 9.

Appendix 5.1 Well Locations

Station number	Site ID	Date	Time	Sample type	Depth of well, feet below LSD	Depth to bot sample intrval feet below LSD	Depth to top sample intrval feet below LSD	Depth to water level, feet below LSD	Alti-tude of land surface feet	Flow rate, instan-taneous gal/min	Pump or flow period prior to sam-pling, minutes	Turbdty white light, det ang 90+/-30 corrctd NTRU	Tur-bidity, NTU	Baro-metric pres-sure, mm Hg	Dis-solved oxygen, mg/L	pH, water, unfltrd field, std units
AC Aa 1	385225076590101	9/21/2005	1030	Environmental	30	30	25	3.23	5.65	0.75	80	--	7.7	769	3.1	6.7
AC Aa 1	385225076590101	9/21/2005	1035	Field equipment blank	30	--	--	--	5.65	--	--	--	--	--	--	--
WE Ba 9	385606076584101	10/12/2005	1230	Environmental	18	--	--	11.17	--	0.17	90	5	--	765	0.5	6.2
WE Ba 9	385606076584101	10/12/2005	2359	STL trip blank	18	--	--	--	--	--	--	--	--	--	--	--
WE Ba 10	385534076582101	10/12/2005	930	Environmental	17	17	10	5.8	--	0.4	60	2	--	765	0.6	5.4
WE Ba 10	385534076582101	10/12/2005	935	Field equipment blank	17	--	--	--	--	--	--	--	--	--	--	--
WE Ba 10	385534076582101	10/12/2005	2359	STL trip blank	17	--	--	--	--	--	--	--	--	--	--	--
WE Bb 3	385504076563801	9/20/2005	1000	Environmental	25	25	15	11.56	12.3	1	90	--	30	768	1	5.9
WE Bb 3	385504076563801	9/20/2005	1010	Replicate	25	--	--	--	12.3	--	--	--	--	--	--	--
WE Bb 4	385504076563802	9/20/2005	1430	Environmental	32	32	22	11.53	12.37	0.66	55	--	0.8	768	1.6	6
WE Cb 5	385443076562801	9/14/2005	1400	Environmental	22.6	23	13	12.26	18.53	1	50	1.3	--	764	4.5	5.2
WE Cb 6	385443076562802	9/14/2005	1030	Environmental	46.3	46	36	12.7	18.79	1	93	2.3	--	764	0.7	6.2
WE Cb 8	385252076572801	12/20/2005	1430	Environmental	265	--	--	38.48	61	--	150	--	--	763	--	6.8
WE Cb 8	385252076572801	12/20/2005	1435	Replicate	265	--	--	--	61	--	--	--	--	--	--	--
WE Cb 8	385252076572801	12/21/2005	1730	Field equipment blank	265	--	--	--	61	--	--	--	--	--	--	--
WE Cb 11	385332076564101	12/19/2005	1430	Environmental	21	--	--	14.36	--	--	40	--	--	769	--	6.2
WE Cb 12	385332076564102	9/27/2005	1000	Environmental	39	39	29	23.65	--	0.85	75	0.9	--	764	0.4	5.8
WE Cb 12	385332076564102	9/27/2005	2359	STL trip blank	39	--	--	--	--	--	--	--	--	--	--	--
WE Ca 29	385238076581501	9/19/2005	1400	Environmental	48.5	48	38	10.2	13.38	1	55	--	12	770	1.1	6
WE Ca 32	385332076594701	9/22/2005	1000	Environmental	29	29	19	21.97	79.98	0.75	90	--	7.5	765	5.8	5.6
WE Ca 33	385349076592801	10/14/2005	1030	Environmental	38	38	28	23.23	--	0.75	75	3	--	762	0.4	6.7
WE Ca 33	385349076592801	10/14/2005	800	Field equipment blank	38	--	--	--	--	--	--	--	--	--	--	--
WE Ca 34	385245076583501	9/27/2005	1330	Environmental	33	33	13	14.04	--	1	90	1.4	--	764	0.3	7.3
WE Ca 34	385245076583501	9/27/2005	2359	STL trip blank	33	--	--	--	--	--	--	--	--	--	--	--
WE Cc 3	385327076544801	10/6/2005	1000	Environmental	23	13	10	16.1	--	0.4	85	--	0.4	768	2	5.9
WE Cc 3	385327076544801	10/6/2005	1010	Replicate	23	--	--	--	--	--	--	--	--	--	--	--
WE Cc 3	385327076544801	10/6/2005	2359	STL trip blank	23	--	--	--	--	--	--	--	--	--	--	--
WW Bc 8	385519077012601	10/13/2005	1100	Environmental	32	32	22	10.99	--	0.2	50	1	--	761	1.7	5
WW Bc 8	385519077012601	10/13/2005	2359	STL trip blank	32	--	--	--	--	--	--	--	--	--	--	--
WW Bc 9	385527077000701	12/19/2005	1100	Environmental	36	--	--	17.22	--	0.18	40	--	--	775	--	4.8
WW Bc 9	385527077000701	12/19/2005	2359	STL trip blank	36	--	--	--	--	--	--	--	--	--	--	--

Station number	Specif. conduc-tance, wat unf uS/cm 25 degC	Temper-ature, air, deg C	Temper-ature, water, deg C	Calcium water, fltrd, mg/L	Magnes-ium, water, fltrd, mg/L	Potas-sium, water, fltrd, mg/L	Sodium, water, fltrd, mg/L	Alka-linity, wat flt inc tit field, mg/L as CaCO3	Bicar-bonate, wat flt incrm. titr., field, mg/L	Chlor-ide, water, fltrd, mg/L	Fluor-ide, water, fltrd, mg/L	Silica, water, fltrd, mg/L	Sulfate water, fltrd, mg/L	Ammonia + org-N, water, unfltrd mg/L as N	Ammonia water, fltrd, mg/L as N	Nitrite + nitrate water fltrd, mg/L as N	Nitrite water, fltrd, mg/L as N	Phos-phorus, water, fltrd, mg/L	Phos-phorus, water, unfltrd mg/L
AC Aa 1	291	28	16.5	19.5	8.67	2.66	7.23	131	159	9.39	0.2	10.7	<.2	4.2	3.81d	<.06	E.006n	0.43	0.47
AC Aa 1	--	--	--	.08c	<.008c	<.16c	.30c	--	--	<.20	E.1n	1.6	<.2	<.10	<.04	<.06	<.008	<.04	<.04
WE Ba 9	765	18.5	18.5	91.7	25.9	5.12	11.7	214	260	24.2	0.1	7.4	81.1	0.4	0.27	1.36	<.008	<.04	<.04
WE Ba 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ba 10	261	17	18.5	26.3	10.9	1.22	9.45	37	45	11.4	<.1	12.2	61.1	E.07n	<.04	1.15	<.008	<.04	<.04
WE Ba 10	--	--	--	0.16	E.004n	<.16	0.31	--	--	<.20	<.1	1.6	<.2	<.10	<.04	<.06	<.008	<.04	<.04
WE Ba 10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Bb 3	363	31	15.5	12	4.3	2.49	9.02	141	171	23	E.1n	19.1	<.2	5.0d	4.38d	<.06	<.008	0.49	.70d
WE Bb 3	--	--	--	11.8	4.22	2.54	8.81	--	--	23.3	E.1n	19.1	<.2	4.8	4.35d	<.06	<.008	0.52	0.72
WE Bb 4	279	32	16	10.5	4.63	3.33	9.13	101	123	24.2	0.1	16.8	<.2	1.8	1.76d	<.06	<.008	0.43	0.48
WE Cb 5	286	31	18	34.7	5.21	4.39	9.4	10	12	11.9	<.1	6.4	76.7	0.12	<.04	5.41d	<.008	<.04	<.04
WE Cb 6	87	28	17	2.47	1.03	1.25	1.65	27	32	5.58	<.1	11	6.4	0.18	0.11	<.06	0.009	0.13	0.17
WE Cb 8	151	--	15.2	11.2	6.63	5.53	4.71	58	71	2.91	0.2	11.8	11.8	E.08n	0.06	<.06	E.006n	0.21	0.29
WE Cb 8	--	--	--	11.2	6.6	5.59	4.69	--	--	3.01	0.1	11.8	11.8	0.11	0.07	<.06	E.005n	0.2	0.3
WE Cb 8	--	--	--	E.01n	<.008	<.16	<.20	--	--	<.20	<.1	<.2	<.2	<.10	<.04	<.06	<.008	<.04	<.04
WE Cb 11	355	3.5	11.5	23.7	11.6	3.82	7.33	109	133	37	0.2	15.9	2.7d	0.15	0.13	<.06	<.008	<.04	<.04
WE Cb 12	164	21	15	14.4	5.66	3.28	4.21	50	60	9.14	0.1	14	12.5	0.15	0.11	<.06	E.006n	<.04	<.04
WE Cb 12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ca 29	179	32	17	6.05	3.43	1.89	4.97	64	78	17.8	E.1n	15.7	<.2c	0.64	0.54	<.06	E.005n	E.04n	0.18
WE Ca 32	1100	25.5	18	57.4	14.3	7.73	122	17	21	257	<.1	7.6	79.7	<.10	<.04	7.74d	<.008	<.04	<.04
WE Ca 33	710	19	17.5	28.7	18.7	3.72	39.2	181	220	108d	0.2	6.2	14.1d	0.4	0.24	<.06	<.008	<.20d	E.02n
WE Ca 33	--	--	--	.05c	<.008	<.16	E.19nc	--	--	<.20	<.1	0.5	<.2	<.10	<.04	<.06	<.008	<.04	<.04
WE Ca 34	696	25	16	103	13.8	6.72	13.9	317	386	27.6	0.4	22.4	E.1n	3.6	3.27d	<.06	<.008	0.14	0.2
WE Ca 34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Cc 3	854	22	17.5	55.7	10.3	4.29	85.3	85	104	170	0.1	6.7	46.7	0.16	E.03n	3.03	<.008	<.04	<.04
WE Cc 3	--	--	--	54.1	10.2	4.08	85.7	84	102	174	0.2	6.7	47.7	0.17	E.02n	3.01	<.008	<.04	<.04
WE Cc 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 8	482	15	17.5	27.2	14.6 1	0.1	25.7	12	15	97.4	E.1n	11.3	11.4	0.56	0.5	11.2d	<.008	<.04	<.04
WW Bc 8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 9	371	5.5	15	15.6	10.9	4.51	30.1	5	7	77.3	E.1n	13.1	30.6	E.07n	<.04	2.92	<.008	<.04	<.04
WW Bc 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Station number	Alum-inum, water, fltrd, ug/L	Anti-mony, water, fltrd, ug/L	Arsenic water, fltrd, ug/L	Barium, water, fltrd, ug/L	Beryll-ium, water, fltrd, ug/L	Cadmium water, fltrd, ug/L	Chrom-ium, water, fltrd, ug/L	Cobalt water, fltrd, ug/L	Copper, water, fltrd, ug/L	Cyanide water unfltrd mg/L	Iron, water, fltrd, ug/L	Lead, water, fltrd, ug/L	Mangan-ese, water, fltrd, ug/L	Mercury water, fltrd, ug/L	Molyb-denum, water, fltrd, ug/L	Nickel, water, fltrd, ug/L	Selen-ium, water, fltrd, ug/L	Silver, water, fltrd, ug/L	Thall-ium, water, fltrd, ug/L
AC Aa 1	<2	<.20	39.9oc	97	<.06	<.04	0.17	3.9oc	<.40oc	<.01	22500d	<.08	63.1	<.01	4.9	1.0oc	E.06noc	<.2	<.04
AC Aa 1	15	<.20c	E.08noc	<.2c	<.06c	<.04c	.11c	<.014c	0.4	--	<6	.26c	<.2c	<.01	<.4c	0.12	<.08oc	<.2c	<.04c
WE Ba 9	<2	<.20	E.10n	58	<.06	E.04n	0.09	2.81oc	.7oc	<.01	<6	<.08	554	<.01	0.4	5.71oc	0.29	<.2	0.07
WE Ba 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ba 10	2	<.20	E.06n	25	0.08	E.03n	<.04	.364oc	E.3noc	<.01	<6	E.04n	176	<.01	<.4	4.71oc	E.04n	<.2	<.04
WE Ba 10	17	<.20	<.12	M	<.06	<.04	<.04	<.040oc	.7oc	--	<6	0.21	<.2	<.01	<.4	<.06oc	<.08	<.2	<.04
WE Ba 10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Bb 3	2	<.20	.38oc	178	E.03n	0.1	0.75	2.2oc	E.26noc	<.01	54400d	<.08	2330	<.01	E.2n	.62oc	<.08oc	<.2	<.04
WE Bb 3	2	<.20	.42oc	177	E.03n	0.16	0.8	2.2oc	E.24noc	--	53600d	<.08	2320	<.01	E.2n	.67oc	<.08oc	<.2	<.04
WE Bb 4	2	<.20	.40oc	163	E.04n	0.13	0.57	1.9oc	E.20noc	<.01	36900d	<.08	1600	<.01	<.4	.98oc	<.08oc	<.2	<.04
WE Cb 5	2	<.20	E.06noc	29	0.07	0.32	.47oc	--	--	<.01	E3n	0.1	19.3	<.01	<.4	--	.91oc	<.2	E.02n
WE Cb 6	<2	<.20	3.4oc	72	<.06	<.04	.08oc	--	--	<.01	5210	<.08	92	<.01	E.4n	--	<.08oc	<.2	<.04
WE Cb 8	<2	<.20	E.11n	173	<.06	<.04	0.12	.543oc	<.4oc	<.01	3070	<.08	189	<.01	<.4	.77oc	<.08	<.2	<.04
WE Cb 8	<2	<.20	0.12	172	<.06	<.04	0.29	.562oc	<.4oc	<.01	3080	<.08	187	<.01	<.4	.96oc	<.08	<.2	<.04
WE Cb 8	<2	<.20	<.12	<.2	<.06	<.04	<.04	<.040oc	<.4oc	<.01	<6	<.08	<.2	<.01	<.4	E.06noc	<.08	<.2	<.04
WE Cb 11	<2	<.20	0.79	535	<.06	<.04	<.04	61.4oc	<.4oc	M	17200d	<.08	5890	<.01	<.4	11.9oc	<.08	<.6d	<.04
WE Cb 12	2	<.20	0.3	136	<.06	<.04	0.12	8.77	E.3n	M	3060	0.13	1400	<.01	E.2n	4.65	<.4	<.2	<.04
WE Cb 12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ca 29	<2	<.20	3.1oc	117	E.03n	<.04	0.18	E.02noc	<.40oc	<.01	23900d	<.08	141	<.01	0.5	--	<.08oc	<.2	<.04
WE Ca 32	4	<.20	.43oc	87	<.06	0.07	1.1	0.423	1.2	M	13	0.14	2.8	<.01	<.4	4.22	2.1oc	<.2	0.08
WE Ca 33	<2	<.20	5.8	142	<.06	<.04	0.26	7.23oc	<.4oc	M	37800d	<.08	6830d	<.01	0.8	1.36oc	<.08	<.2	<.04
WE Ca 33	6c	<.20	<.12	<.2	<.06	<.04	.13c	<.040oc	<.4oc	<.01	<6	E.04n	<.2	<.01	<.4	<.06oc	<.08	<.2	<.04
WE Ca 34	2	<.20	2.1	404	<.06	<.04	0.15	0.334	E.4n	M	7930	<.08	643	<.01	E.3n	3.49	0.7	<.2	<.04
WE Ca 34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Cc 3	7	<.20	0.12	63	0.09	0.36	0.05	10.3oc	.5oc	<.01	815	<.08	255	<.01	E.4n	13.1oc	1.2	<.2	0.11
WE Cc 3	6	<.20	0.12	63	0.08	0.36	0.05	10.4oc	E.4noc	M	797	<.08	244	<.01	0.4	13.2oc	1.2	<.2	0.1
WE Cc 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 8	172	<.20	0.28	586	1.44	0.41	0.09	29.6oc	9.9oc	<.01	8	7.84	480	E.01n	<.4	29.4oc	0.23	<.2	0.18
WW Bc 8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 9	107	<.20	0.2	174	0.28	0.49	0.55	3.20oc	1.9oc	<.01	7	E.07n	296	.33d	<.4	21.1oc	0.82	<.2	0.08
WW Bc 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Station number	Zinc, water, fltrd, ug/L	Uranium natural water, fltrd, ug/L
AC Aa 1	372oc	<.04
AC Aa 1	0.6	<.04c
WE Ba 9	3.6oc	0.18
WE Ba 9	--	--
WE Ba 10	1.8oc	E.02n
WE Ba 10	6.2c	<.04
WE Ba 10	--	--
WE Bb 3	.73oc	<.04
WE Bb 3	E.34noc	<.04
WE Bb 4	E.44noc	<.04
WE Cb 5	2.4oc	<.04
WE Cb 6	.64oc	<.04
WE Cb 8	<.6oc	<.04
WE Cb 8	<.6oc	<.04
WE Cb 8	<.6oc	<.04
WE Cb 11	7.9oc	<.04
WE Cb 12	4.5	<.04
WE Cb 12	--	--
WE Ca 29	E.35noc	<.04
WE Ca 32	2	<.04
WE Ca 33	<.60	<.04
WE Ca 33	<.60	<.04
WE Ca 34	0.9	E.03n
WE Ca 34	--	--
WE Cc 3	13.7	0.14
WE Cc 3	13.2	0.12
WE Cc 3	--	--
WW Bc 8	122oc	0.05
WW Bc 8	--	--
WW Bc 9	37.0oc	0.04
WW Bc 9	--	--

Remark codes used in this table:
< -- Less than.
E -- Estimated.
M -- Presence verified but not quantified.

Value qualifier codes used in this table:
@ -- Holding time exceeded
b -- Value extrapolated at low end
c -- See laboratory comment
d -- Diluted sample: method hi range exceeded
m -- Value is highly variable by this method
n -- Below the LRL and above the LT-MDL
STL - contract laboratory
o -- Result determined by alternate method
t -- Below the long-term MDL
v -- Analyte detected in laboratory blank

Null value qualifier codes used in this table:
r -- Sample ruined in preparation

Station number	Site ID	Date	Time	Sample type	Oil and grease, water, unfltrd hexane extract mg/L	2,4,5-T surrog, water, fltrd, percent recovry	2,4,6-Tri-chloro-phenol, water, unfltrd ug/L	2,4-D methyl ester, water, fltrd, ug/L	2,4-D water, fltrd, ug/L	2,4-DB water, fltrd 0.7u GF ug/L	2,4-Di-chloro-phenol, water, unfltrd ug/L	2,4-Di-methyl-phenol, water, unfltrd ug/L	2,4-Di-nitro-phenol, water, unfltrd ug/L	2,4-Di-nitro-toluene water unfltrd ug/L	2,6-Di-nitro-toluene water unfltrd ug/L	CIAT, water, fltrd, ug/L	CEAT, water, fltrd, ug/L	2-Chloro-naphth-alene, water, unfltrd ug/L	2-chloro-phenol, water, unfltrd ug/L	OIET, water, fltrd, ug/L
AC Aa 1	385225076590101	9/21/2005	1030	Environmental	<5.00	E93.1	<10	<.016	<.08	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
AC Aa 1	385225076590101	9/21/2005	1035	Field equipment blank	--	E182	--	<.016	<.04	<.02	--	--	--	--	--	<.03	<.08c	--	--	<.032
WE Ba 9	385606076584101	10/12/2005	1230	Environmental	E.85	E154	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Ba 9	385606076584101	10/12/2005	2359	STL trip blank	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ba 10	385534076582101	10/12/2005	930	Environmental	<5.00	122	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Ba 10	385534076582101	10/12/2005	935	Field equipment blank	--	124	--	<.016	<.04	<.02	--	--	--	--	--	<.03	<.08c	--	--	<.032
WE Ba 10	385534076582101	10/12/2005	2359	STL trip blank	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Bb 3	385504076563801	9/20/2005	1000	Environmental	<5.00	E152	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Bb 3	385504076563801	9/20/2005	1010	Replicate	--	E142	--	<.016	<.04	<.02	--	--	--	--	--	<.03	<.08c	--	--	0.044
WE Bb 4	385504076563802	9/20/2005	1430	Environmental	<5.00	E111	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Cb 5	385443076562801	9/14/2005	1400	Environmental	<5.00	E128	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Cb 6	385443076562802	9/14/2005	1030	Environmental	<5.00	E113	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Cb 8	385252076572801	12/20/2005	1430	Environmental	<5.00	115	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Cb 8	385252076572801	12/20/2005	1435	Replicate	<5.00	118	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Cb 8	385252076572801	12/21/2005	1730	Field equipment blank	<5.00	125	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Cb 11	385332076564101	12/19/2005	1430	Environmental	E1.40	77.4	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Cb 12	385332076564102	9/27/2005	1000	Environmental	<5.00	83.3	<10	<.023	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Cb 12	385332076564102	9/27/2005	2359	STL trip blank	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ca 29	385238076581501	9/19/2005	1400	Environmental	<5.00	E108	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Ca 32	385332076594701	9/22/2005	1000	Environmental	<5.00	E146	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	E.02n	<.08c	<10	<10	<.032
WE Ca 33	385349076592801	10/14/2005	1030	Environmental	<5.00	104	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Ca 33	385349076592801	10/14/2005	800	Field equipment blank	<5.00	131	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Ca 34	385245076583501	9/27/2005	1330	Environmental	<5.00	87.7	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WE Ca 34	385245076583501	9/27/2005	2359	STL trip blank	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Cc 3	385327076544801	10/6/2005	1000	Environmental	<5.00	111	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	E.007t
WE Cc 3	385327076544801	10/6/2005	1010	Replicate	<5.00	117	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	E.007t
WE Cc 3	385327076544801	10/6/2005	2359	STL trip blank	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 8	385519077012601	10/13/2005	1100	Environmental	<5.00	136	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	<.03	<.08c	<10	<10	<.032
WW Bc 8	385519077012601	10/13/2005	2359	STL trip blank	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 9	385527077000701	12/19/2005	1100	Environmental	<5.00	101	<10	<.016	<.04	<.02	<10	<10.0	<50	<10	<10	E.01t	E.01mtc	<10	<10	<.032
WW Bc 9	385527077000701	12/19/2005	2359	STL trip blank	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Station number	2-Methyl-4,6-di-nitro-phenol, wat unf ug/L	2-nitro-phenol, water unfltrd ug/L	3,3'-Di chloro-benzi-dine, water, unfltrd ug/L	3-Hydroxy carbo-furan, wat flt 0.7u GF ug/L	3-Keto-carbo-furan, water, fltrd, ug/L	4-Bromo-phenyl phenyl ether, wat unf ug/L	4-Chloro-3-methyl-phenol, wat unf ug/L	4-Chloro-phenyl phenyl ether, wat unf ug/L	4-Nitro-phenol, water, unfltrd ug/L	9H-Fluor-ene, water, unfltrd ug/L	Ace-naphth-ene, water, unfltrd ug/L	Ace-naphth-ylene, water, unfltrd ug/L	Aci-fluor-fen, water, fltrd 0.7u GF ug/L	Ala-chlor, water, unfltrd ug/L	Aldi-carb sulfone water, fltrd 0.7u GF ug/L	Aldi-carb sulf-oxide, wat flt 0.7u GF ug/L	Aldi-carb, water, fltrd 0.7u GF ug/L	Aldrin, water, unfltrd ug/L	alpha-Endo-sulfan, water, unfltrd ug/L	alpha-HCH-d6, surrog, Sch1398 water, unfltrd pct rcv	Amino-methyl-phos-phonic acid, wat flt ug/L	Anthra-cene, water, unfltrd ug/L
AC Aa 1	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	89.4	<.310	<10
AC Aa 1	--	--	--	<.008	<.02mc	--	--	--	--	--	--	--	<.028	--	<.02	<.022	<.04mc	<.001	<.001	85.2	<.310	--
WE Ba 9	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	E102	<.310	<10
WE Ba 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ba 10	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	E105	<.310	<10
WE Ba 10	--	--	--	<.008	<.02mc	--	--	--	--	--	--	--	<.028	--	<.02	<.022	<.04mc	<.001	<.001	95.6	<.310	--
WE Ba 10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Bb 3	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	82.9	<.310	<10
WE Bb 3	--	--	--	<.008	<.02mc	--	--	--	--	--	--	--	<.028	--	<.02	<.022	<.04mc	<.001	<.001	50.8	<.310	--
WE Bb 4	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	90.8	<.310	<10
WE Cb 5	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	94.7	<.310	<10
WE Cb 6	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	97	<.310	<10
WE Cb 8	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	87.3	<.310	<10
WE Cb 8	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	88.8	<.310	<10
WE Cb 8	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	91.3	<.310	<10
WE Cb 11	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022mc	<.04mc	<.001	<.001	93.6	<.310	<10
WE Cb 12	<50	<10	<50	<.008	E.09mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	E107	<.310	<10
WE Cb 12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ca 29	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	E104	<.310	<10
WE Ca 32	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	92.4	<.310	<10
WE Ca 33	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	E105	<.310	<10
WE Ca 33	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	96	<.310	<10
WE Ca 34	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	E103	<.310	<10
WE Ca 34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Cc 3	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	--r	<.001	<.001	E106	<.310	<10
WE Cc 3	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	--r	<.001	<.001	E107	<.310	<10
WE Cc 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 8	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022	<.04mc	<.001	<.001	E110	<.310	<10
WW Bc 8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 9	<50	<10	<50	<.008	<.02mc	<10	<10	<10	<50	<10	<10	<10	<.028	<10.0	<.02	<.022mc	<.04mc	<.001	<.001	90.4	<.310	<10
WW Bc 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Station number	Atrazine, water, fltrd, ug/L	Atrazine, water, unfltrd ug/L	Barban, surrog, Sched. 2060/ 9060, wat flt pct rcv	Bendiocarb, water, fltrd, ug/L	Benomyl water, fltrd, ug/L	Bensulfuron, water, fltrd, ug/L	Bentazon, water, fltrd 0.7u GF ug/L	Benzidine, water, unfltrd ug/L	Benzo[a]anthracene, water, unfltrd ug/L	Benzo[a]pyrene, water, unfltrd ug/L	Benzo[b]fluoranthene water unfltrd ug/L	Benzo[ghi]perylene, water, unfltrd ug/L	Benzo[k]fluoranthene water unfltrd ug/L	Benzyl n-butyl phthalate, water, unfltrd ug/L	Bis(2-chloroethoxy) methane water unfltrd ug/L	Bis(2-chloroethyl) ether, water, unfltrd ug/L	Bis(2-chloroisopropyl) ether, wat unf ug/L	Bis(2-ethylhexyl) phthalate, wat unf ug/L	Bromacil, water, fltrd, ug/L	Bromoxynil, water, fltrd 0.7u GF ug/L	Caffeine, water, fltrd, ug/L	Caffeine-13C, surrog, wat flt percent recovry
AC Aa 1	<.008	<50.0	162	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	<.018	109
AC Aa 1	<.008	--	111	<.02	<.022	<.02	<.01	--	--	--	--	--	--	--	--	--	--	--	<.02	<.03	<.018	138
WE Ba 9	<.008	<50.0	E106	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	<.018	108
WE Ba 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ba 10	<.008	<50.0	124	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	<.018	88.9
WE Ba 10	<.008	--	E102	<.02	<.022	<.02	<.01	--	--	--	--	--	--	--	--	--	--	--	<.02	<.03	<.018	129
WE Ba 10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Bb 3	<.008	<50.0	110	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	<.018	98.5
WE Bb 3	<.008	--	93.8	<.02	<.022	<.02	<.01	--	--	--	--	--	--	--	--	--	--	--	<.02	<.03	<.018	64.6
WE Bb 4	<.008	<50.0	104	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	<.018	111
WE Cb 5	<.008	<50.0	119	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	<.018	129
WE Cb 6	<.008	<50.0	104	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	<.018	150
WE Cb 8	<.008	<50.0	81.8	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	E.006t	104
WE Cb 8	<.008	<50.0	90.5	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	E.007t	104
WE Cb 8	<.008	<50.0	102	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	<.018	86.1
WE Cb 11	<.008	<50.0	75.9	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	E.007t	90
WE Cb 12	<.008	<50.0	84.1	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	<.018	83.2
WE Cb 12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ca 29	<.008	<50.0	99.6	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	0.03	112
WE Ca 32	0.02	<50.0	105	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	<.018	106
WE Ca 33	<.008	<50.0	88.3	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	<.018	83.2
WE Ca 33	<.008	<50.0	87	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	E3	<.02	<.03	E.005t	129
WE Ca 34	<.008	<50.0	69.2	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	<.018	82.1
WE Ca 34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Cc 3	<.008	<50.0	110	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	<.018	63
WE Cc 3	<.008	<50.0	116	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<.02	<.03	E.017n	72.3
WE Cc 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 8	<.008	<50.0	E109	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	E2	<.02	<.03	<.018	93.8
WW Bc 8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 9	<.008	<50.0	124	<.02	<.022	<.02	<.01	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	E.01t	<.03	E.007t	91.2
WW Bc 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Station number	Carbaryl, water, fltrd 0.7u GF ug/L	Carbofuran, water, fltrd 0.7u GF ug/L	Chlorambenmethyl ester, water, fltrd, ug/L	Chlordane, technical, water, unfltrd ug/L	Chlorimuron, water, fltrd, ug/L	Chlorodiaminos-triazine, wat flt ug/L	Chlorothalonil, water, fltrd 0.7u GF ug/L	Chrysene, water, unfltrd ug/L	Clopyralid, water, fltrd 0.7u GF ug/L	Cyclodate, water, fltrd, ug/L	Dacthal monoacid, water, fltrd 0.7u GF ug/L	Dibenzo[a,h]anthracene, wat unf ug/L	Dicamba water fltrd 0.7u GF ug/L	Dichlorprop, water, fltrd 0.7u GF ug/L	Dieldrin, water, unfltrd ug/L	Diesel range organic cmpds, water, unfltrd mg/L	Diethyl phthalate, water, unfltrd ug/L	Dimethyl phthalate, water, unfltrd ug/L	Di-n-butyl phthalate, water, unfltrd ug/L	Di-n-octyl phthalate, water, unfltrd ug/L	Dinoseb water, fltrd 0.7u GF ug/L	Diphenamid, water, fltrd, ug/L
AC Aa 1	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.41	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
AC Aa 1	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	--	<.02	<.01	<.03	--	<.04	<.03	<.001	--	--	--	--	--	<.04	<.01
WE Ba 9	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
WE Ba 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ba 10	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
WE Ba 10	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	--	<.02	<.01	<.03	--	<.04	<.03	<.001	--	--	--	--	--	<.04	<.01
WE Ba 10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Bb 3	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
WE Bb 3	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	--	<.02	<.01	<.03	--	<.04	<.03	<.001	--	--	--	--	--	<.04	<.01
WE Bb 4	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
WE Cb 5	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
WE Cb 6	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
WE Cb 8	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
WE Cb 8	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
WE Cb 8	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
WE Cb 11	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02mc	<.01	<.03	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
WE Cb 12	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	E.021	<10	<10	<10	<10	<.04	<.01
WE Cb 12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ca 29	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
WE Ca 32	<.02	<.016	<.02	E.1b	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	0.065	0.41	<10	<10	<10	<10	<.04	<.01
WE Ca 33	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	0.002	0.39	<10	<10	<10	<10	<.04	<.01
WE Ca 33	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
WE Ca 34	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	E.028	<10	<10	<10	<10	<.04	<.01
WE Ca 34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Cc 3	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
WE Cc 3	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	E.015	<10	<10	<10	<10	<.04	<.01
WE Cc 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 8	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02	<.01	<.03	<10	<.04	<.03	<.001	1.1	<10	<10	<10	<10	<.04	<.01
WW Bc 8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 9	<.02	<.016	<.02	<.1	<.032mc	<.04vmc	<.04	<10	<.02mc	<.01	<.03	<10	<.04	<.03	<.001	<.250	<10	<10	<10	<10	<.04	<.01
WW Bc 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Station number	Diuron, water, fltrd 0.7u GF ug/L	Endrin, water, unfltrd ug/L	Fenuron water, fltrd 0.7u GF ug/L	Flumet-sulam, water, fltrd, ug/L	Fluo-meturon water fltrd 0.7u GF ug/L	Fluor-anthene water unfltrd ug/L	Gaso-line range organic cmpds, wat unf ug/L	Glufo-sinate, water, fltrd 0.7u GF ug/L	Glypho-sate, water, fltrd 0.7u GF ug/L	Hepta-chlor epoxide water unfltrd ug/L	Hepta-chlor, water, unfltrd ug/L	Hexa-chloro-benzene water unfltrd ug/L	Hexa-chloro-cyclo-penta-diene, wat unf ug/L	Imaza-quin, water, fltrd, ug/L	Imaze-thapyr, water, fltrd, ug/L	Imida-cloprid water, fltrd, ug/L	Indeno-[1,2,-3-cd]-pyrene, water, unfltrd ug/L	Isodrin surrog, Sch1398 wat unf percent recovry	Iso-phorone water unfltrd ug/L	Lindane water, unfltrd ug/L	Linuron water fltrd 0.7u GF ug/L	MCPA, water, fltrd 0.7u GF ug/L
AC Aa 1	<.01v	<.002	<.02	<.04	<.02	<10	E5.5	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	87.2	<10	<.0020	<.01	<.03
AC Aa 1	<.01v	<.002	<.02	<.04	<.02	--	--	<.140	<.150	<.001	<.001	--	--	<.04mc	<.04	<.020	--	80.1	--	<.0020	<.01	<.03
WE Ba 9	<.01v	<.002	<.02	<.04	<.02	<10	<25	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	80.8	<10	<.0020	<.01	<.03
WE Ba 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ba 10	<.01v	<.002	<.02	<.04	<.02	<10	<25	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	76.3	<10	<.0020	<.01	<.03
WE Ba 10	<.01v	<.002	<.02	<.04	<.02	--	--	<.140	<.150	<.001	<.001	--	--	<.04mc	<.04	<.020	--	60.7	--	<.0020	<.01	<.03
WE Ba 10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Bb 3	<.01v	<.002	<.02	<.04	<.02	<10	<25	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	75.5	<10	<.0020	<.01	<.03
WE Bb 3	<.01v	<.002	<.02	<.04	<.02	--	--	<.140	<.150	<.001	<.001	--	--	<.04mc	<.13	<.020	--	56	--	<.0020	<.01	<.03
WE Bb 4	<.01v	<.002	<.02	<.04	<.02	<10	<25	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	86.6	<10	<.0020	<.01	<.03
WE Cb 5	<.01v	<.002	<.02	<.04	<.02	<10	<25	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	87.7	<10	<.0020	<.01	<.03
WE Cb 6	<.01v	<.002	<.02	<.04	<.02	<10	<25	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	93.3	<10	<.0020	<.01	<.03
WE Cb 8	<.01v	<.002	0.02	<.04	<.02	<10	<10	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	80.8	<10	<.0020	<.01	<.03
WE Cb 8	<.01v	<.002	0.02	<.04	<.02	<10	<10	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	78	<10	<.0020	<.01	<.03
WE Cb 8	<.01v	<.002	<.02	<.04	<.02	<10	<10	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	E90.8	<10	<.0020	<.01	<.03
WE Cb 11	<.01v	<.002	<.02	<.04	<.02	<10	<10	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	90.1	<10	<.0020	<.01	<.03
WE Cb 12	<.01v	<.002	<.02	<.04	<.02	<10	47	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	88.7	<10	<.0020	<.01	<.03
WE Cb 12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ca 29	<.01v	<.002	<.02	<.04	<.02	<10	<25	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	97.2	<10	<.0020	<.01	<.03
WE Ca 32	<.01v	<.002	<.02	<.04	<.02	<10	E11	<.140	<.150	0.005	<.001	<10	<50	<.04mc	<.04	0.301	<10	88.7	<10	<.0020	<.01	<.03
WE Ca 33	<.01v	<.002	<.02	<.04	<.02	<10	540	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	109	<10	<.0020	<.01	<.07
WE Ca 33	<.01v	<.002	<.02	<.04	<.02	<10	<25	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	87.3	<10	<.0020	<.01	<.03
WE Ca 34	<.01v	<.002	<.02	<.04	<.02	<10	<25	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	97	<10	<.0020	<.01	<.03
WE Ca 34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Cc 3	<.01v	<.002	<.02	<.04	<.02	<10	<25	<.140	<.150	0.007	<.001	<10	<50	<.04mc	<.04	<.020	<10	96.9	<10	<.0020	<.01	<.03
WE Cc 3	<.01v	<.002	<.02	<.04	<.02	<10	<25	<.140	<.150	0.007	<.001	<10	<50	<.04mc	<.04	<.020	<10	100	<10	<.0020	<.01	<.03
WE Cc 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 8	<.01v	<.002	<.02	<.04	<.02	<10	35	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	106	<10	<.0020	<.01	<.03
WW Bc 8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 9	<.01v	<.002	<.02	<.04	<.02	<10	<10	<.140	<.150	<.001	<.001	<10	<50	<.04mc	<.04	<.020	<10	83	<10	<.0020	<.01	<.03
WW Bc 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Station number	MCPB, water, fltrd 0.7u GF ug/L	Meta-laxyl, water, fltrd, ug/L	Methio-carb, water, fltrd 0.7u GF ug/L	Meth-omyl, water, fltrd 0.7u GF ug/L	Metsul-furon, water, fltrd, ug/L	Mirex, water, unfltrd ug/L	N-(4-Chloro-phenyl) -N'-methyl-urea, ug/L	Neburon water, fltrd 0.7u GF ug/L	Nico-sul-furon, water, fltrd, ug/L	Nitro-benzene water unfltrd ug/L	N-Nitroso-di-methyl-amine, wat unf ug/L	N-Nitroso-di-n-propyl-amine, wat unf ug/L	N-Nitroso-di-phenyl-amine, wat unf ug/L	Norflur azon, water, fltrd 0.7u GF ug/L	Ory-zalin, water, fltrd 0.7u GF ug/L	Oxamyl, water, fltrd 0.7u GF ug/L	p,p'-DDD, water, unfltrd ug/L	p,p'-DDE, water, unfltrd ug/L	p,p'-DDT, water, unfltrd ug/L	p,p'-Meth-oxy-chlor, water, unfltrd ug/L	PCB 207, surrog, Sch1398 water, unfltrd pct rcv	PCBs, water, unfltrd ug/L
AC Aa 1	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	90.8	<.1
AC Aa 1	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	--	--	--	--	<.02	<.01	<.03	<.002	<.002	<.002	<.003	87.7	<.1
WE Ba 9	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	0.004	<.002	<.003	E115	<.1
WE Ba 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ba 10	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	E114	<.1
WE Ba 10	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	--	--	--	--	<.02	<.01	<.03	<.002	<.002	<.002	<.003	E94.9	<.1
WE Ba 10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Bb 3	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	86.7	<.1
WE Bb 3	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	--	--	--	--	<.02	<.01	<.03	<.002	<.002	<.002	<.003	70	<.1
WE Bb 4	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	96.5	<.1
WE Cb 5	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	98.6	<.1
WE Cb 6	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	E110	<.1
WE Cb 8	<.01	<.01	<.010	<.020	E.04mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	95.1	<.1
WE Cb 8	<.01	<.01	<.010	<.020	E.04mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	93	<.1
WE Cb 8	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	93.5	<.1
WE Cb 11	<.01	<.01	<.010	<.020mc	<.03mc	<.001	<.04	<.01	<.04c	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	102	<.1
WE Cb 12	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	E110	<.1
WE Cb 12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ca 29	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	E114	<.1
WE Ca 32	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	93.8	<.1
WE Ca 33	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	E129	<.1
WE Ca 33	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	E107	<.1
WE Ca 34	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	102	<.1
WE Ca 34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Cc 3	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	E119	<.1
WE Cc 3	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	E123	<.1
WE Cc 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 8	<.01	<.01	<.010	<.020	<.03mc	<.001	<.04	<.01	<.04mc	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	E117	<.1
WW Bc 8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WW Bc 9	<.01	<.01	<.010	<.020mc	<.03mc	<.001	<.04	<.01	<.04c	<10	<10	<10	<10	<.02	<.01	<.03	<.002	<.002	<.002	<.003	101	<.1
WW Bc 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Station number	Penta-chloro-phenol, water, unfltrd ug/L	Petrol-eum hydro-carbons wat unf hex ext mg/L	Phenan-threne, water, unfltrd ug/L	Phenol, water, unfltrd ug/L	Phen-olic com-pounds, water, unfltrd ug/L	Pic-loram, water, fltrd 0.7u GF ug/L	Propham water fltrd 0.7u GF ug/L	Propi-cona-zole, water, fltrd, ug/L	Pro-poxur, water, fltrd 0.7u GF ug/L	Siduron water, fltrd, ug/L	Sulfo-met-ruron, water, fltrd, ug/L	Tebu-thiuron water fltrd 0.7u GF ug/L	Terba-cil, water, fltrd, ug/L	Toxa-phene, water, unfltrd ug/L	Tri-clopyr, water, fltrd 0.7u GF ug/L	Xylene, water, unfltrd ug/L	1,1,1,2 -Tetra-chloro-ethane, water, unfltrd ug/L	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L	1,1,2,2 -Tetra-chloro-ethane, water, unfltrd ug/L	1,1,2-Tri-chloro-ethane, water, unfltrd ug/L	1,1-Di-chloro-ethane, water unfltrd ug/L	1,1-Di-chloro-ethene, water, unfltrd ug/L
AC Aa 1	<50	<5.0	<10	<10.0	--	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
AC Aa 1	--	--	--	--	--	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	--	--	--	--	--	--	--
WE Ba 9	<50	<5.0	<10	<10.0	<16	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Ba 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Ba 10	<50	<5.0	<10	<10.0	<16	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Ba 10	--	--	--	--	<16	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	--	--	--	--	--	--	--
WE Ba 10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Bb 3	<50	<5.0	<10	<10.0	--	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Bb 3	--	--	--	--	--	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	--	--	--	--	--	--	--
WE Bb 4	<50	<5.0	<10	<10.0	--	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Cb 5	<50	<5.0	<10	<10.0	E93	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Cb 6	<50	<5.0	<10	<10.0	<16	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Cb 8	<50	<5.0	<10	<10.0	<16	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Cb 8	<50	<5.0	<10	<10.0	<16	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Cb 8	<50	<5.0	<10	<10.0	<16	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Cb 11	<50	<5.0	<10	<10.0	<16	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Cb 12	<50	<5.0	<10	<10.0	<16	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Cb 12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Ca 29	<50	<5.0	<10	<10.0	--	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Ca 32	<50	<5.0	<10	<10.0	E3	<.03	<.030	<.01	<.008	<.02	<.038	.193v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Ca 33	<50	<5.0	<10	<10.0	<16	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Ca 33	<50	<5.0	<10	<10.0	<16	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Ca 34	<50	<5.0	<10	<10.0	<16	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Ca 34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Cc 3	<50	<5.0	<10	<10.0	<16	<.03	<.500	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Cc 3	<50	<5.0	<10	<10.0	<16	<.03	<.500	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WE Cc 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WW Bc 8	<50	<5.0	<10	<10.0	<16	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<2.5d	<2.5d	<2.5d	<2.5d	<2.5d	<2.5d
WW Bc 8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WW Bc 9	<50	<5.0	<10	<10.0	<16	<.03	<.030	<.01	<.008	<.02	<.038	<.026v	<.016	<1	<.03	<.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WW Bc 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Station number	1,1-Di-chloro-propene water unfltrd ug/L	1,2,3-Tri-chloro-benzene water unfltrd ug/L	1,2,3-Tri-chloro-propane water unfltrd ug/L	1,2,4-Tri-chloro-benzene water unfltrd ug/L	1,2,4-Tri-methyl-benzene water unfltrd ug/L	Dibromo chloro-propane water unfltrd ug/L	1,2-Di-bromo-ethane, water, unfltrd ug/L	1,2-Di-chloro-benzene water unfltrd ug/L	1,2-Di-chloro-ethane, water, unfltrd ug/L	1,2-Di-chloro-propane water unfltrd ug/L	1,3,5-Tri-methyl-benzene water unfltrd ug/L	1,3-Di-chloro-benzene water unfltrd ug/L	1,3-Di-chloro-propane water unfltrd ug/L	1,4-Di-chloro-benzene water unfltrd ug/L	2,2-Di-chloro-propane water unfltrd ug/L	-2 Chloro-toluene water unfltrd ug/L	-4 Chloro-toluene water unfltrd ug/L	4-Iso-propyl-toluene water unfltrd ug/L	Acrylo-nitrile water unfltrd ug/L	Benzene water unfltrd ug/L	Bromo-benzene water unfltrd ug/L	Bromo-chloro-methane water unfltrd ug/L
AC Aa 1	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
AC Aa 1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ba 9	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Ba 9	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<1.0
WE Ba 10	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Ba 10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ba 10	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<1.0
WE Bb 3	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Bb 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Bb 4	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Cb 5	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Cb 6	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Cb 8	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Cb 8	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Cb 8	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Cb 11	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Cb 12	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Cb 12	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<1.0
WE Ca 29	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Ca 32	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Ca 33	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Ca 33	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Ca 34	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Ca 34	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<1.0
WE Cc 3	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Cc 3	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WE Cc 3	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<1.0
WW Bc 8	<2.5d	<2.5d	<2.5d	<2d	<2.5d	<5.0d	<2.5d	<2d	E.41d	<2.5d	<2.5d	<2d	<2.5d	<2d	<12d	<2.5d	<2.5d	<2.5d	<50d	<.50	<2.5d	<2.5d
WW Bc 8	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<1.0
WW Bc 9	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<.50	<1.0	<1.0
WW Bc 9	<1.0	<1.0	<1.0	<1	<1.0	<2.0	<1.0	<1	<1.0	<1.0	<1.0	<1	<1.0	<1	<5.0	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<1.0

Station number	Bromo-di-chloro-methane water unfltrd ug/L	Bromo-methane water unfltrd ug/L	Chloro-benzene water unfltrd ug/L	Chloro-ethane, water, unfltrd ug/L	Chloro-methane water unfltrd ug/L	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L	cis-1,3-Di-chloro-propene water unfltrd ug/L	Di-bromo-chloro-methane water unfltrd ug/L	Di-bromo-methane water unfltrd ug/L	Di-chloro-di-fluoro-methane wat unf ug/L	Di-chloro-methane water unfltrd ug/L	Ethyl-benzene water unfltrd ug/L	Hexa-chloro-buta-diene, water, unfltrd ug/L	Hexa-chloro-ethane, water, unfltrd ug/L	Iso-propyl-benzene water unfltrd ug/L	meta- + para-Xylene, water, unfltrd ug/L	Naphth-alene, water, unfltrd ug/L	n-Butyl benzene water unfltrd ug/L	n-propyl-benzene water unfltrd ug/L	o-Xylene, water, unfltrd ug/L	sec-Butyl-benzene water unfltrd ug/L	Styrene water unfltrd ug/L
AC Aa 1	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	<.50	<1	<1.0	<1.0	<.50	<1.0	<1.0
AC Aa 1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ba 9	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	<.50	<1	<1.0	<1.0	<.50	<1.0	<1.0
WE Ba 9	<1.0	<2.0	<1.0	<2.0	E.59	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<1.0	<1	--	<1.0	--	<1	<1.0	<1.0	--	<1.0	<1.0
WE Ba 10	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	<.50	<1	<1.0	<1.0	<.50	<1.0	<1.0
WE Ba 10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Ba 10	<1.0	<2.0	<1.0	<2.0	E.48	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<1.0	<1	--	<1.0	--	<1	<1.0	<1.0	--	<1.0	<1.0
WE Bb 3	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	E.46v	<.50	<1	<10	<1.0	<.50	<1	<1.0	<1.0	<.50	<1.0	<1.0
WE Bb 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WE Bb 4	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	E.40v	<.50	<1	<10	<1.0	<.50	<1	<1.0	<1.0	<.50	<1.0	<1.0
WE Cb 5	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	<.50	<1	<1.0	<1.0	<.50	<1.0	<1.0
WE Cb 6	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	<.50	<1	<1.0	<1.0	<.50	<1.0	<1.0
WE Cb 8	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	--	<1	<1.0	<1.0	--	<1.0	<1.0
WE Cb 8	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	--	<1	<1.0	<1.0	--	<1.0	<1.0
WE Cb 8	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	--	<1	<1.0	<1.0	--	<1.0	<1.0
WE Cb 11	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	--	<1	<1.0	<1.0	--	<1.0	<1.0
WE Cb 12	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	<.50	<1	<1.0	<1.0	<.50	<1.0	<1.0
WE Cb 12	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	E.66	<1.0	<1	--	<1.0	--	<1	<1.0	<1.0	--	<1.0	<1.0
WE Ca 29	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	E.41v	<.50	<1	<10	<1.0	<.50	<1	<1.0	<1.0	<.50	<1.0	<1.0
WE Ca 32	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	<.50	<1	<1.0	<1.0	<.50	<1.0	<1.0
WE Ca 33	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	4.4	<.50	<1	21	<1.0	<.50	19	<1.0
WE Ca 33	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	<.50	<1	<1.0	<1.0	<.50	<1.0	<1.0
WE Ca 34	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	<.50	<1	<1.0	<1.0	<.50	<1.0	<1.0
WE Ca 34	<1.0	<2.0	<1.0	<2.0	E.42	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<1.0	<1	--	<1.0	--	<1	<1.0	<1.0	--	<1.0	<1.0
WE Cc 3	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	<.50	<1	<1.0	<1.0	<.50	<1.0	<1.0
WE Cc 3	<1.0	<2.0	<.50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	<.50	<1	<1.0	<1.0	<.50	<1.0	<1.0
WE Cc 3	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<1.0	<1	--	<1.0	--	<1	<1.0	<1.0	--	<1.0	<1.0
WW Bc 8	<2.5d	<5.0d	<.50	<5.0d	<5.0d	<2.5d	<2.5d	<2.5d	<2.5d	<5.0d	E1.3vd	<.50	<2d	<10	<2.5d	<.50	<2d	<2.5d	<2.5d	<.50	<2.5d	<2.5d
WW Bc 8	<1.0	<2.0	<1.0	<2.0	E.38	<1.0	<1.0	<1.0	<1.0	<2.0	E.94v	<1.0	<1	--	<1.0	--	<1	<1.0	<1.0	--	<1.0	<1.0
WW Bc 9	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<.50	<1	<10	<1.0	--	<1	<1.0	<1.0	--	<1.0	<1.0
WW Bc 9	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<1.0	<1	--	<1.0	--	<1	<1.0	<1.0	--	<1.0	<1.0

Station number	Methyl t-butyl ether, water, unfltrd ug/L	tert-Butyl-benzene water unfltrd ug/L	Tetra-chloro-ethene, water, unfltrd ug/L	Tetra-chloro-methane water unfltrd ug/L	Toluene water unfltrd ug/L	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L	trans-1,3-Di-chloro-propene water unfltrd ug/L	Tri-bromo-methane water unfltrd ug/L	Tri-chloro-ethene, water, unfltrd ug/L	Tri-chloro-fluoro-methane water unfltrd ug/L	Tri-chloro-methane water unfltrd ug/L	Vinyl chlor-ide, water, unfltrd ug/L
AC Aa 1	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
AC Aa 1	--	--	--	--	--	--	--	--	--	--	--	--
WE Ba 9	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Ba 9	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Ba 10	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Ba 10	--	--	--	--	--	--	--	--	--	--	--	--
WE Ba 10	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Bb 3	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Bb 3	--	--	--	--	--	--	--	--	--	--	--	--
WE Bb 4	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Cb 5	E1.4	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	E.95	<1.0
WE Cb 6	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Cb 8	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Cb 8	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Cb 8	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Cb 11	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Cb 12	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	3.9	<1.0
WE Cb 12	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Ca 29	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Ca 32	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	11	<1.0
WE Ca 33	6.7	E.72	<1.0	<1.0	M	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Ca 33	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Ca 34	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Ca 34	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Cc 3	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Cc 3	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WE Cc 3	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WW Bc 8	<5.0	<2.5d	68d	<2.5d	<.50	<2.5d	<2.5d	<2.5d	E1.6d	<5.0d	4.2d	<2.5d
WW Bc 8	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
WW Bc 9	<5.0	<1.0	<1.0	<1.0	<.50	<1.0	<1.0	<1.0	<1.0	<2.0	11	<1.0
WW Bc 9	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0

Remark codes used in this table:
< -- Less than.
E -- Estimated.
M -- Presence verified but not quantified.

Value qualifier codes used in this table:
@ -- Holding time exceeded
b -- Value extrapolated at low end
c -- See laboratory comment
d -- Diluted sample: method hi range exceeded
m -- Value is highly variable by this method
n -- Below the LRL and above the LT-MDL
STL - contract laboratory
o -- Result determined by alternate method
t -- Below the long-term MDL
v -- Analyte detected in laboratory blank

Null value qualifier codes used in this table:
r -- Sample ruined in preparation

CIAT-[6-amino-2chloro-4-isprpylamino-*s* -triazine]
CEAT-[6-amino-2chloro-4-ethylamino-*s* -triazine]