

**SAFE DRINKING WATER ACT
ANNUAL COMPLIANCE REPORT
FOR CALENDAR YEAR 2004**



**MARYLAND DEPARTMENT
OF THE ENVIRONMENT
WATER SUPPLY PROGRAM**

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EXECUTIVE SUMMARY

The Safe Drinking Water Act reauthorization of 1996 requires states to submit annual reports of their drinking water violations. This report constitutes Maryland's annual compliance report for calendar year 2004. The report contains an overview of the State's public drinking water program, and describes some new initiatives that were undertaken in 2004. This report also provides information on water quality standards, and summarizes public water system violations that occurred during 2004. The report covers the period from January 1 through December 31, 2004.

The Maryland Department of the Environment's (MDE's) goal is to ensure that the water quality and quantity at all public water systems meets the needs of the public and is in compliance with federal and State regulations. This report describes the activities that are undertaken on a routine basis to ensure that public drinking water systems provide safe water to their consumers. Routine activities include regular on-site inspections of water systems to identify any sanitary defects in the systems and a permitting process that helps ensure that systems obtain the best possible source of water. In addition, MDE works with private contractors and local health departments to identify potential sources of contamination in close proximity to ground water and surface water supplies, so that the systems can protect their water sources before contamination occurs.

Public water systems are required to sample for a variety of contaminants on a routine basis, depending on the population served and source type of the water system. When contaminants are found at levels exceeding the federally-established "Maximum Contaminant Level" (MCL), it is considered a violation of federal and State standards. MCL violations are rare in Maryland for most types of chemical contaminants. Ninety-seven percent of Maryland's community and non-transient non-community systems were in compliance with all MCL requirements in 2004. During 2004, one system was in violation for a synthetic organic contaminant, two systems exceeded the MCL for a volatile organic contaminant, and no systems exceeded the MCL for an inorganic contaminant other than nitrate or radionuclides. Most total coliform violations occur in smaller systems where treatment may not be present or properly maintained.

Violations are also incurred for failure to monitor as required, for failure to use required treatment processes, or for failure to notify the public under certain circumstances. During 2004, there were 80 monitoring violations for inorganic contaminants, and 144 monitoring violations for total coliform.

During 2004, MDE accomplished many goals beyond its routine regulatory activities. The position of security coordinator was created to act as point of contact for security related activities, to coordinate with other agencies, and to coordinate the implementation of department-wide standard operating procedures to respond to water supply emergencies. MDE also assisted water systems in developing vulnerability assessments related to security.

Beginning in the Fall of 2003, the Water Supply Program staffed the Governor's Water Resource Management Advisory Committee, which reviewed the existing regulatory framework and resources available for management of the State's water resources, and recommended additional

actions or policies necessary to ensure the long-term use and protection of Maryland's groundwater and surface waters. A final report of findings and recommendations was submitted to the Governor on May 31, 2004.

THE DRINKING WATER PROGRAM: AN OVERVIEW

The EPA established the Public Water System Supervision (PWSS) Program under the authority of the 1974 Safe Drinking Water Act (SDWA). Under the SDWA and its 1986 and 1996 Amendments, EPA sets national limits on contaminant levels in drinking water to ensure that the water is safe for human consumption. These limits are known as Maximum Contaminant Levels (MCLs). For some regulations, EPA establishes treatment techniques in lieu of an MCL to control unacceptable levels of contaminants in water. The Agency also regulates how often public water systems (PWSs) monitor their water for contaminants and report the monitoring results to the states or EPA. Generally, the larger the population served by a water system, the more frequent the monitoring and reporting (M/R) requirements. In addition, EPA requires PWSs that serve over 10,000 persons to monitor for unregulated contaminants to provide data for future regulatory development. Finally, EPA requires PWSs to notify the public when they have violated these regulations. Public notification must include a clear and understandable explanation of the nature of the violation, its potential adverse health effects, steps that the PWS is undertaking to correct the violation and the possibility of alternative water supplies during the violation.

The SDWA applies to the 50 states, the District of Columbia, Indian Lands, Puerto Rico, the Virgin Islands, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and the Republic of Palau.

The SDWA allows states and territories to seek EPA approval to administer their own PWSS Programs. The authority to run a PWSS Program is called primacy. For a state to receive primacy, EPA must determine that the state meets certain requirements laid out in the SDWA and the regulations, including the adoption of drinking water regulations that are at least as stringent as the Federal regulations and a demonstration that they can enforce the program requirements. All of the states have primacy with the exception of Wyoming. The EPA Regional Offices report the information for Wyoming, as well as the District of Columbia and all Indian Lands but the Navaho Nation. EPA Regional offices also report Federal enforcement actions taken. Maryland received primacy for the PWSS program in 1977.

Each quarter, primacy states submit data to the Safe Drinking Water Information System (SDWIS/FED), an automated database maintained by EPA. The data submitted include, but are not limited to, PWS inventory information, the incidence of Maximum Contaminant Level, monitoring, and treatment technique violations, and information on enforcement activities related to these violations. Section 1414(c)(3) of the Safe Drinking Water Act requires states to provide EPA with an annual report of violations of the primary drinking water standards. This report provides an overview of violations in each of five categories: MCLs, treatment techniques, variances and exemptions, significant monitoring violations, and significant consumer notification violations.

MARYLAND'S WATER SUPPLY PROGRAM

The Water Supply Program (WSP) is a part of the Water Management Administration within the Maryland Department of the Environment. The mission of the Water Supply Program is to ensure that public drinking water systems provide safe and adequate water to all present and future users in Maryland, and that appropriate usage, planning and conservation policies are implemented for Maryland's water resources. This mission is accomplished through proper planning for water withdrawal, protection of water sources that are used for public water supplies, oversight and enforcement of routine water quality monitoring at public water systems, regular onsite inspections of water systems, and prompt response to water supply emergencies. In addition to ensuring that public drinking water systems meet federal and State requirements under the PWSS program, the WSP also oversees the development of Source Water Assessments for water supplies, and issues water appropriation permits for both public drinking water systems and commercial entities Statewide. Because all of these activities reside together in the WSP, Maryland has the unique opportunity to evaluate and regulate public drinking water systems from a broad perspective that includes an evaluation of the resource for both quantity and quality. The Water Supply Program's activities help to ensure safe drinking water for more than four million Marylanders.

The WSP is responsible for regulating public drinking water systems in Maryland. Public drinking water systems fall into three categories: community, non-transient non-community, and transient non-community. Community water systems (CWS) serve year-round residents, non-transient non-community water systems (NTNCWS) serve regular consumers, such as in a school or daycare setting, and transient non-community water systems (TNCWS) serve different consumers each day, such as in a campground or restaurant. During 2004, the number of public water systems remained consistent compared with previous years. Currently, Maryland has 502 community water systems, 576 non-transient non-community water systems, and 2,614 transient non-community water systems.

MDE directly regulates community water systems (county and municipal systems, small communities and mobile home parks) and non-transient non-community water systems (businesses, schools and day care centers that have their own water supply system). Transient non-community water systems such as gas stations, campgrounds and restaurants are regulated and enforced by the local county environmental health departments through State-County delegation agreements, with the exception of systems in Montgomery, Prince George's and Wicomico Counties, which are directly regulated and enforced by the Water Supply Program. Table 1 presents a summary of Maryland's statistics on public water systems and the populations served by each type of system.

Table 1. Drinking Water Statistics	
Population of Maryland (2004)	5,558,058
Individuals served by community water systems	4,846,923
Percent of population served by public water systems	87%
Percent of population served by individual wells	13%
Number of Public Water Systems	3,692
Number of Community Systems	502
Number of Non-transient Non-community Systems	576
Number of Transient Non-community Systems	2,614
Number of Systems using surface water	66
Number of Systems using only ground water	3,626

In the Water Supply Program, emphasis is placed on preventative measures instead of reactive enforcement actions in order to avert serious public health incidents. The vast majority of drinking water violations are corrected immediately, or following the initial notices of violation. Preventive measures include activities such as wellhead protection, surface water protection, monitoring schedules, reminder notices, and sanitary survey inspections. Source water protection programs are used to identify sources of potential contamination, and activities that can prevent future contamination incidents.

Program Activities

Routine oversight of public drinking water systems involves a wide range of activities. These activities focus on helping systems to obtain and protect the best available source of water, ensuring that systems comply with State and federal water quality monitoring requirements, and making certain that systems maintain sufficient treatment processes to address any water quality concerns. As EPA develops new regulations and guidelines, or as other drinking water issues arise, the Water Supply Program must respond by developing corresponding programs or adopting regulations. Table 2 presents a summary of the major regulatory activities conducted by the Water Supply Program in 2004.

During 2004, the Water Supply Program reorganized its divisions to better coordinate activities and ensure compliance with State and federal regulations. Appropriation permitting activities are now in the same division with other source-related activities such as assessments for source water protection and ground water under the influence of surface water. A new division was created for planning and policy-related activities including water resource planning, water system security oversight, and grants management.

Table 2. Water Supply Program's Major Activities for the Year 2004	
Sanitary Surveys Conducted of CWS and NTNCWS	1100
Sanitary Surveys Conducted of TNC Systems (by local govt and MDE)	418
Comprehensive Performance Evaluations Conducted	4
Technical Reviews of Water Construction Projects	50
Water Appropriation Permits Issued (New and Renewal)	1239
Individuals Certified to Sample Drinking Water	981
New Wells Sited	60
Water Quality Reports Reviewed	38,315
Source Water Assessments Mailed to Community Water Systems	30

Appropriation Permits Any person who wishes to appropriate water for agricultural (greater than 10,000 gallons per day), municipal, commercial, industrial or other non-domestic uses must obtain a Water Appropriation Permit from the WSP. Issuance of the permit involves evaluating the needs of the user and the potential impact of the withdrawal on neighboring users and the water source, in order to maximize beneficial use of the waters of the State. Permits for large appropriations often involve conducting pump tests to measure the adequacy of an aquifer and safe yield of a well, or reviewing stream flow records to determine the adequacy of a surface water source.

Arsenic in Ground Water in the Major Aquifers of the Maryland Coastal Plain Work continued in 2004 on the study of arsenic in Maryland's Coastal Plain aquifers, which is being conducted in cooperation with the Maryland Geological Survey (MGS). In previous years, samples were collected from major ground water aquifers in the Coastal Plain region in order to identify areas where arsenic levels might exceed the new standard of 10 parts per billion (ppb). Elevated arsenic levels were documented in the Aquia and Piney Point aquifers of Queen Anne's, Talbot, Dorchester, and St. Mary's Counties. Arsenic was detected only sporadically in wells from other aquifers. Additional samples were collected to determine local vertical and lateral variability in arsenic concentrations. Arsenic data from county health departments were acquired to further document geographic distribution. MGS continued work on preparation of the report narrative, maps, and data tables. This project has been delayed due to staff turnover at MGS.

Capacity Development Regulations were finalized in 1999 that require all new community and non-transient non-community water systems to have sufficient technical, managerial, and financial capacity to provide safe drinking water to their consumers prior to being issued a

construction permit. These capacity development regulations are currently being enforced by the WSP.

The WSP holds meetings with Maryland training providers to coordinate training and ensure that water system training needs are being met. During sanitary surveys, small water systems are provided technical assistance in emergency response and vulnerability assessments.

The WSP has collected capacity development information from all 500 of its community water systems through a self-assessment survey. A baseline was determined in 2002. This baseline will be used to measure improvements in water system capacity in the future. The WSP began work on the second report to the Governor on Capacity Development activities which is due September 2005.

Compliance Activities The more than 1,000 community and non-transient non-community water systems in Maryland must test for over 90 regulated contaminants on schedules which vary based on source type and population. Data is received throughout the year and reviewed for compliance with the regulations. WSP staff received and reviewed more than 41,000 water quality reports in 2004. The WSP issues notices of violations (NOVs) for maximum contaminant level and treatment technique violations as they occur. NOVs for monitoring violations are issued quarterly. The WSP maintains an inventory of more than 3,700 public water systems.

Comprehensive Performance Evaluations (CPEs) The primary purpose of a CPE is to evaluate the performance of a surface water treatment plant to determine if the plant is optimized for removal of particles and parasitic organisms such as *Giardia* and *Cryptosporidium*. In addition, the CPE will assist in identifying areas of potential improvement in the operation, maintenance and administration of the plant in order to achieve optimized plant performance. Since 1990, when WSP began using this evaluation, the process has helped improve surface water plant performance and has strengthened drinking water treatment understanding among administrators and operators across the State. Because of these benefits, WSP plans to perform CPEs, with periodic re-evaluations, at all of Maryland's surface water plants. Four CPEs were conducted in 2004, including evaluations of Ft. Detrick, Carroll County- Freedom District, City of Frostburg, and Perryville.

Consumer Confidence Reports The Consumer Confidence Report Rule requires all community systems to report water quality data in an understandable format to their consumers. Maryland adopted federal regulations for the Consumer Confidence Rule in the fall of 2000, and received full primacy for this program in September 2001. The reports must be submitted annually to the WSP by July 1st for the previous calendar year, and certification of their delivery to each resident within the system must be submitted to the WSP by October 1st of each year. No water systems received violation notices for failure to submit their 2003 reports by July 1, 2004

Copper Pinhole Task Force During the 2003 session of the Maryland General Assembly, legislators passed Senate Bill 54, which established a Task Force to study pinhole leaks in copper plumbing. The main objective of the Task Force was to help Marylanders understand the pinhole leak phenomenon, and thus deal with the consequences, including damage to walls,

electrical systems, flooring, ceilings, or furniture; mold growth; plumbing replacement; and increased premiums and/or cancellation of homeowners insurance. The Task Force was charged with issuing a report to the General Assembly on or before December 31, 2004. The final report of the Governor's Task Force to Study Pinhole Leaks in Copper Plumbing was completed in December 2004 and presented to the Governor in January 2005. Possible causes to the pinhole leak problem and a variety of remedies/ recommendations were offered in the report. The Task Force recommended that further research be conducted to better understand the pinhole leak phenomenon. The WSP provided information for the report and a WSP staff member represented MDE on the Task Force.

Data Verification Audit In April 2003, EPA and Cadmus performed a data verification review. In February 2004, EPA provided the final report to MDE for review and comment. The WSP took corrective action as needed and provided a final response to EPA in December 2004. Policies related to implementation of the Lead and Copper Rule, and Bottled Water Systems were revised and approved by EPA.

Drought Management Since January 2001, MDE has been evaluating hydrologic conditions using a plan developed by the Statewide Water Conservation Advisory Committee. Conditions are evaluated on a regional basis, and drought status is assessed monthly during normal conditions, and more frequently during times of water shortage. Hydrologic conditions were normal for all regions during 2004.

Emergency Response WSP staff are available to respond to water supply emergencies twenty-four hours a day and may offer technical advice, special sampling, or onsite assistance. Frequently, emergency response involves evaluating the safety of the water supply and determining whether a boil-water advisory is required to protect public health.

Enforcement Strategy The strategy that has been adopted for managing enforcement is progressive enforcement. This technique has been effective in resolving violations, and reserving formal civil and criminal actions for the most serious cases. Mechanisms for obtaining compliance from a water system include:

- Voluntary compliance and correction by the system;
- Telephone calls: an effective method for obtaining complete details about the violation, which enables the State to answer any questions about system responsibilities. Many small water systems (serving less than 100 persons) are managed by volunteers who appreciate the extra assistance;
- Site visits: a system may require hands-on technical assistance by trained staff to address problems not previously encountered;
- Notice of violation: a formal action which contains information on the violation, public notification requirements, and potential enforcement actions;
- Consent agreement: a legal document prepared jointly between the water company and the State, with jointly negotiated deadlines;
- Order: a legal document which orders a water system to complete specific actions before deadlines established by the State;
- Civil and criminal judicial actions taken through the local courts;
- Administrative penalties issued by MDE;

- Financial assistance for a water system which may consist of federal Drinking Water State Revolving Loan Funds, or State Drinking Water Grant Assistance.

When there is a risk to the public's health due to failure of the treatment plant or the loss of water, progressive enforcement is not appropriate. In these types of cases, the State, in cooperation with the local health department, may issue an immediate notice to the system users through the local radio/TV stations, or by door-to-door handouts. Boil-water advisories are managed in this manner. If corrective actions are expected to take days, alternative water sources may be recommended in the notices, or a safe supply of water may be hauled to the water system. MDE works to ensure that all public water is safe for the consumer, and to assist water systems in achieving compliance with the federal and State requirements.

Enterprise Environmental Management System (EEMS) MDE has initiated the development of the Enterprise Environmental Management System, also known as EEMS. This system will become MDE's unified relational database housing the regulated entity, permitting, inspection, and enforcement activity data supporting MDE's programs, and will eventually consolidate MDE's separate permit, compliance, enforcement and other databases that correspond to the Department's various regulatory activities. EEMS is expected to eliminate the inefficiencies of maintaining multiple databases, streamline processes, and improve customer service. A private consultant worked with individual programs during 2004 to determine Departmental priorities for incorporating the various databases into EEMS. TEMPO (Tools for Environmental Management and Protection Organizations) is the primary software system that is being adapted for MDE. New Jersey, Louisiana, Mississippi, New Mexico, Kentucky utilize this software. In 2005, the well construction permit information will be incorporated into the system.

Field Operations MDE's Technical and Regulatory Services Administration (TARSA) conducts sampling operations for public water systems on a year-round basis. The samplers from TARSA collect routine compliance samples for inorganic compounds, synthetic organic compounds, volatile organic compounds, and radionuclides according to schedules and priorities established by the WSP. In addition, samplers collect special request samples as needed to follow up on MCL violations, complaints, or other situations that warrant additional sampling.

Lead in Schools Initiative MDE's Water Supply Program has been actively involved in assisting Maryland's schools to reinitiate programs for lead testing in their drinking water since Baltimore City Schools discovered high levels of lead in the drinking water in 2003.

On March 16, 2004, the Maryland State Department of Education (MSDE), with the help of MDE, the Department of Human Resources, the Department of Health and Mental Hygiene, and Friends of the Family, Inc., all of which have representatives in the Maryland Lead Poisoning Prevention Commission, sent out a survey to all Superintendents of Schools at each of Maryland's 23 counties and Baltimore City. The survey was conducted in order to evaluate the current status of lead testing efforts within Maryland's public schools. In response to the survey, many of Maryland's local Boards of Education began contacting MDE for guidance on testing for lead in the drinking water at schools that are supplied by municipal water, which are not subject to Safe Drinking Water Act monitoring requirements.

EPA recommended the protocol of the Lead Contamination Control Act (LCCA) for sampling of lead in drinking water at schools and day care facilities. On April 6, 2004, MDE notified 20 State-certified laboratories that routinely test for lead in drinking water to use the LCCA protocol. In addition, MDE included a LCCA sample collection form that was initially developed to assist Baltimore City schools. To date, one-third of Maryland's counties have confirmed with MDE that their schools are now being tested for lead in the drinking water or will be tested for lead in the near future.

After the findings of the March 16, 2004 survey were presented at the Maryland Lead Poisoning Prevention Commission on May 6, 2004, the Commission decided to send a letter to Governor Ehrlich recommending that all of Maryland's public schools, including schools supplied by municipal water, have the drinking water tested for lead.

The Water Supply Program has also been involved in developing the 2004 edition of "Environmental Compliance for MDE Schools Project Workbook" cosponsored by EPA Region III and MDE. The section of the report dealing with lead in drinking water in schools was reviewed and commented on by WSP staff. This section provides guidance to schools on how to lower lead levels in the drinking water. Training on environmental compliance was offered to public and private schools in August 2004.

Operator Certification Legislation for establishing a program to certify operators at water and wastewater facilities in Maryland was first passed in 1957. The most recent revision to the Maryland Annotated Code was in 1999 when the Board and the associated regulations were reestablished until July 1, 2011. The Code of Maryland Regulations for the Operator Certification Program was revised in January 2001, and approved by EPA on July 13, 2001. The regulations require community and non-transient non-community water systems to have State-certified operators. MDE has made no statutory or regulatory changes to the Operator Certification Program since January 2001. In February 2003, the grandparenting period for small water system operators ended.

During 2004, a total of 458 of the 502 community water systems were in compliance with the requirement to maintain a certified operator. Of the 576 active nontransient noncommunity water systems, 463 systems employed certified operators. Compliance with the operator certification regulations increased from 59% of water systems in the 2001 baseline to 83% of the water systems in 2004. All water systems that serve populations over 3,300 employ certified water operators.

MDE received funding from EPA to reimburse operators at small water systems for the expense of training, taking certification examinations and renewing certifications. Certification costs incurred after January 1, 2004 are eligible for reimbursement. The grant request was approved by EPA in November 2003. Reimbursement of expenses related to operator certification started in 2004 and is expected to continue for a few years until the grant is expended.

Regulations On January 8, 2004, EPA granted primacy to Maryland for the Public Notification Rule and the Lead and Copper Rule Minor Revisions. On April 16, 2004, EPA granted primacy for the Filter Backwash Recycling Rule, the Stage 1 Disinfectants and Disinfection Byproducts

Rule, the Interim Enhanced Surface Water Treatment Rule, the Arsenic Rule, and the Radionuclides Rule.

On November 24, 2004, EPA's determination became effective for approval of the Maryland's Administrative Penalty Authority.

In April 2004, MDE signed an extension agreement with EPA Region III for the enforcement responsibilities under the Long Term 1 Surface Water Treatment Rule (LT1SWTR). During 2004, Maryland drafted and proposed drinking water regulations for the LT1SWTR. On April 15, 2005, Maryland published the final regulations for the LT1SWTR. The effective date of the regulation is April 25, 2005.

Sanitary Survey Inspections A sanitary survey is an onsite inspection of a water system, including the source, treatment, storage, and distribution systems, as well as a review of the operations and maintenance of the system. These inspections are conducted for the purpose of determining the adequacy and reliability of the water system to provide safe drinking water to its customers. The sanitary survey can be used to follow up known or suspected problems or on a routine basis to assess the water system's viability and prevent future problems from occurring. Inspectors may require system upgrades if sanitary deficiencies are identified. The WSP strives to inspect community and non-transient non-community water systems once each year. A total of 1100 sanitary surveys were completed for community and non-transient non-community water systems in 2004.

Water Supply Program staff also conduct sanitary survey inspections for transient noncommunity systems in the three counties where MDE has direct oversight. Five sanitary surveys were conducted at these systems during 2004. An additional 413 inspections were conducted by county health departments for transient noncommunity water systems in their jurisdictions.

Small System Technical Assistance MDE continued funding for the seventh year of a circuit rider for the Maryland Rural Water Association (MRWA) to train operators of small water systems. MDE refers systems in need of assistance to the MRWA, and the MRWA's circuit rider provides hands-on training to system operators for chemical feed systems, leak detection, corrosion control, and consumer confidence reporting.

Source Water Assessments The Safe Drinking Water Act reauthorization of 1996 requires each state to develop and submit to EPA a plan for conducting source water assessments for all public water supplies. Maryland's Source Water Assessment Plan was approved by EPA in November 1999. Maryland is conducting studies to define areas of contribution for each public water supply, identify potential sources of contamination within those areas, and assess the vulnerability of the supply to those sources of contamination.

By the end of 2004, source water assessment reports had been drafted and sent out for 436 community water systems and 1,762 non-community water systems. The remainder of the assessments for community water systems are scheduled to be completed by July 2005, and noncommunity water systems by December 2005.

Transient Non-community Water System Oversight Transient water systems, such as churches, campgrounds, rest stops and restaurants, account for about 72% of Maryland's public water systems. In 2003, twenty of Maryland's twenty-three counties had delegated authority for oversight of transient non-community systems in their jurisdictions, and received funding from MDE through the State Revolving Loan Fund set-asides. Transient systems in the delegated counties accounted for almost 96% of the total number of transient systems in 2003. The 114 systems in the remaining three counties are directly regulated by the Water Supply Program.

Counties with delegated authority have overseen this program since 1998. The Water Supply Program has provided delegated counties with written and verbal guidance, and has offered several training opportunities to educate the county programs about the federal and State requirements for these systems. Beginning in 2001, the Water Supply Program initiated routine program evaluations of the delegated counties in order to provide additional direction. The program evaluations involve visiting each county for a file review, interviewing county staff regarding program operations, and preparing a written evaluation of each program. All twenty delegated county programs have undergone one program review, and a second round of evaluations will begin in 2005. Guidance and technical assistance are provided to the counties as needed.

Water and Sewer Plan Evaluations Based on recommendations of the Governor's Water Resource Management Advisory Committee, the Water Supply Program began coordinating with other MDE programs to provide more thorough reviews of County Water and Sewer Plans. The reviews will address local planning issues pertaining to source water protection, water supply capacity, and Safe Drinking Water Act requirements. Actual review of water and sewer plans is expected to begin in January 2005.

Water Conservation Act As water appropriation permits for large water systems are renewed or expanded, they are being modified to require these utilities to conduct annual audits of their water use. During 2004, one permit was modified to include this special provision; this was for the Carroll County- Freedom District permit. The Maryland Water Conservation Act, passed during the 2002 legislative session, required MDE to produce guidelines on water conservation best management practices for water utilities. This document was published in October 2003 and is available on MDE's website at www.mde.state.md.us.

Water Resource Management Advisory Committee In April 2003, Executive Order 01.01.2003.08 created the Advisory Committee on the Management and Protection of the State's Water Resources. The Committee, comprised of representatives from five State agencies, local government, academia, water suppliers, and the environmental community, met from the Fall 2003 through the Spring 2004. This committee reviewed the existing regulatory framework and resources available for management of the State's resources, and recommended additional actions or policies necessary to ensure the long-term use and protection of Maryland's groundwater and surface waters. A final report of findings and recommendations was submitted to the Governor on May 28, 2004, and is available on MDE's website at www.mde.state.md.us. The Water Supply Program has developed an action plan based on the committee's recommendations, and began implementation of the action plan in 2004. One of the committee's

recommendations was to continue the work of evaluating existing efforts and recommending appropriate activities and policies. It is expected that a second committee will be formed in 2005.

Water System Security Planning In 2004, public water systems serving populations greater than 3,300 people were required under the Bioterrorism Act of 2002 to complete vulnerability assessments (VAs). Systems also had to certify that they have prepared emergency response plans (ERPs). VAs and ERP certifications were submitted to the EPA by December 2004 because the EPA has been designated as the sector specific agency for drinking water protection. EPA Region III staff reported that Maryland had 100% compliance with VA submission for the large systems (serving >100,000 people) and 100% compliance for the medium size systems (serving between 50,000- 99,999 people). Maryland's compliance rate for the large and medium systems represents compliance for a population of nearly 3.9 million people. The small systems ranging in size from 3,300-49,999 achieved 100% compliance with the VA process, however, the rate for ERP submission is estimated to be nearly 85%

WSP staff provide on-going technical assistance to water systems on vulnerability assessments, emergency response plans, sampling protocols and resources. In addition, WSP passes along security related updates and federal security alerts to water systems. WSP gathers information from the Water Information Sharing and Analysis Center (WaterISAC), which disseminates information on threats to water and wastewater facilities. WSP also monitors the daily infrastructure reports produced by the Department of Homeland Security to remain cognizant of any relevant drinking water security information.

In December 2004, the Water Security and Sewerage Systems Advisory Council submitted a security report to Governor Ehrlich that studied and assessed vulnerabilities within Maryland to drinking water and wastewater facilities. The Council was established by legislation (House Bill 659, 2002 Session), and was formed in January 2004. WSP staff provided support to the Council and were responsible for producing the security report. The Council made findings and recommendations on water and wastewater security in satisfaction of the Bill.

Since the security report was written, WSP staff have been active in coordinating a Joint Water Security Committee to explore funding avenues for raw and source water monitoring. Participating agencies on the new security committee include staff from the federal Department of Homeland Security, Maryland State Police, Maryland Emergency Management Agency, US Geological Survey, and the non-profit foundation Safe Waterways in Maryland.

Water System Security Preparedness In 2003, WSP created the position of security coordinator to act as point of contact for security related activities; to coordinate with other agencies; and coordinate the implementation of department-wide standard operating procedures to respond to water supply emergencies. In May 2005, WSP awarded a contract for security services from a private consulting firm to create a statewide strategic emergency response plan; conduct simulated disaster exercises and provide follow up analyses; conduct a high-level security conference and lead training sessions for essential water industry employees. WSP will continue to refine and coordinate emergency sampling procedures and protocols with State agencies and private labs to prepare for events involving biological terrorism agents and consequence

management. Identification of high priority biological and chemical agents, rapid detection techniques and the development of an integrated action plan are key elements to WSP's bioterrorism planning.

Watershed Management Several of the largest water systems in Maryland, including the City of Baltimore, City of Cumberland, and the Washington Suburban Sanitary Commission, rely on surface water sources. All of these systems currently have formalized watershed management programs in place. The purpose of watershed management programs is to ensure the high quality of water in streams and reservoirs used for drinking water. This is accomplished in a variety of ways, including the formation of watershed technical groups, the promotion of agricultural and urban best management practices (BMPs), the purchase of conservation easements and buffers along waterways, implementation of low-development zoning, and public education. In 2004, Carroll County adopted a water resources ordinance that specifically targets protection of the City of Baltimore's and the City of Westminster's watersheds. The Water Supply Program is currently completing source water assessments; these assessments include recommendations for the establishment of new watershed management plans for Maryland communities that rely on surface water sources. Efforts to initiate a protection program has begun for the City of Frederick, Linganore Creek water supply source. Frederick County is actively involved in this effort.

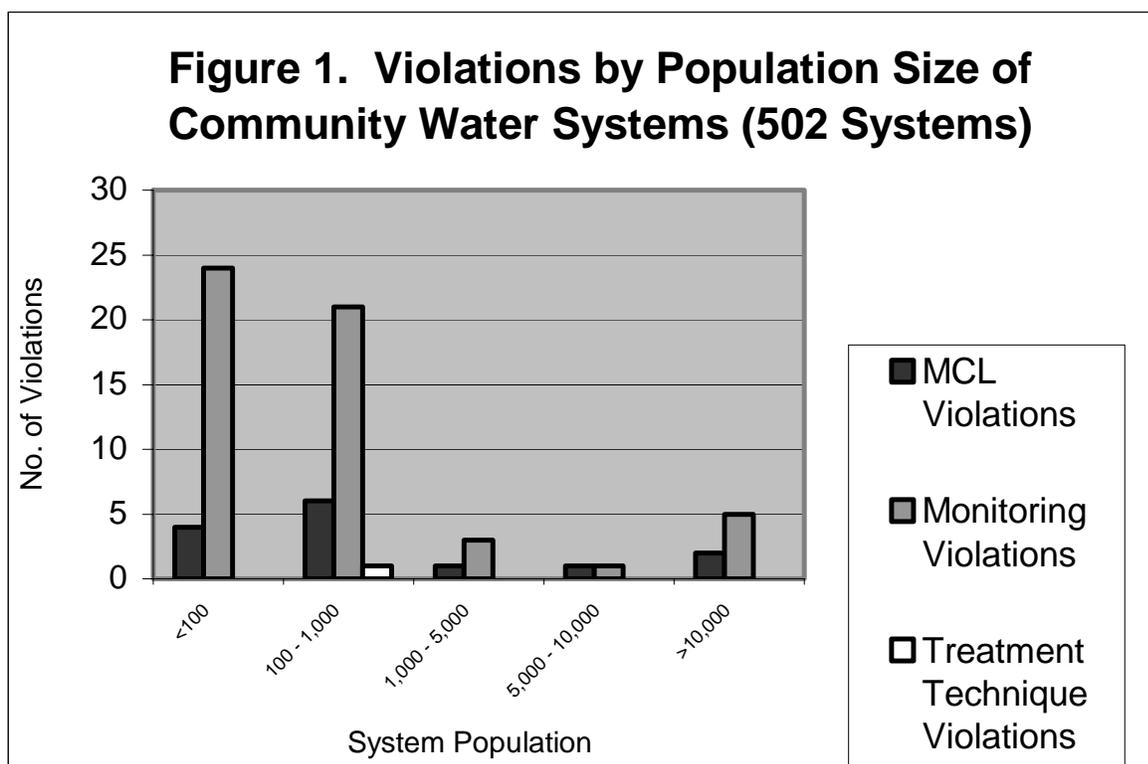
Well Siting One important step in protecting a ground water supply is to identify the best possible location for the well. WSP staff conduct joint site inspections with local Health Department personnel to assist systems in locating new wells at community and non-transient non-community water systems. In 2004, approximately 60 well sites were approved by the WSP.

Wellhead Protection Maryland's Wellhead Protection (WHP) Program was approved by EPA in 1991. Delineations of areas of contribution have been completed for more than 400 ground water systems. To date, 37 systems are implementing protection measures for their ground water supplies. These systems serve approximately 150,000 residents in Maryland (see Table 3). The City of Aberdeen adopted a wellhead protection ordinance in 2004 to reduce the risk of future contamination.

Table 3. Source Water Protection in Maryland For the Year 2004		
System Type	No. of Systems	Population Benefited
Systems with Active WHP Programs	37	150,000
Systems with Active Watershed Management Programs	15	2,601,000

ANNUAL COMPLIANCE INFORMATION

This report includes violation data for calendar year 2004. MCL violations are reported for all types of public water systems. Monitoring violations are reported for all systems that are directly overseen by MDE, including all community water systems, all non-transient non-community water systems, and transient non-community water systems in Montgomery, Prince George's and Wicomico Counties. Figure 1 presents the various types of violations incurred by community water systems in 2004 based on the population size. If a water system has multiple violations in the same category for 2004, it is counted once. Summaries of the various violations for all public water systems in 2004 are presented in Tables 4 through 10.



Typically, both MCL and monitoring violations occur more frequently in smaller systems, which have fewer resources and less technical expertise for operating the systems. MDE inspectors regularly visit systems where water quality problems occur to advise and assist system owners to meet their regulatory and water quality requirements.

Maximum Contaminant Level Compliance

Under the Safe Drinking Water Act (SDWA), the EPA sets national limits on contaminant levels in drinking water to ensure that the water is safe for human consumption. These limits are known as Maximum Contaminant Levels (MCLs). Contaminants are categorized into several categories: Inorganic Contaminants, Organic Contaminants, Lead & Copper, and Bacteria.

Table 4 presents a summary of inorganic contaminant (IOC) violations. Twelve systems exceeded the MCL of 10 mg/L for nitrate. The MCL for gross alpha radioactivity was exceeded at Chapel Point Woods in Charles County. The system is in the process of designing a reverse osmosis treatment system for the removal of Polonium, a gross alpha emitter that is a daughter of Radium 226. An ongoing violation of the MCL for radium-226 and -228 at the Golden Kay Apartments in Cecil County, and Concord Estates in Frederick County has not yet been resolved. The Glen Burnie water system in Anne Arundel County has taken the well with elevated radiums off-line until treatment can be installed.

Table 5 presents a summary of volatile organic contaminant (VOC) violations. Two systems exceeded the MCL for any organic contaminant in 2004. The MCL for methylene chloride, a VOC, was exceeded at Headquarters I/Headquarters II, located in Anne Arundel County. The MCL for trichloroethylene was exceeded at Colwell-Maryland, a business in Harford County. The water system is providing bottled water to employees until treatment can be installed.

Table 6 presents a summary of synthetic organic contaminant (SOC) violations. One system (Headquarters I/Headquarters II, located in Anne Arundel County) exceeded an MCL for ethylene dibromide during 2004; a new well is scheduled to be drilled in 2005.

Violation summaries for the total coliform rule are presented in Table 7. The raw data indicates that the 40 MCL violations for thirty community and nontransient noncommunity water systems were consistent with previous years (39 reported in 2003, compared with 39 in 2002). The majority of the MCL violations are related to transient noncommunity water systems which typically have little or no treatment. There were a total of 276 Total Coliform Rule MCL violations at transient facilities in 2004, compared with 316 MCL violations in 2003.

Monitoring Compliance

A PWS is required to monitor and verify that the levels of contaminants present in the water do not exceed the MCL. If a PWS fails to have its water tested as required or fails to report test results correctly to the primacy state, a monitoring violation occurs.

Water systems are notified annually by MDE of their monitoring requirements. In addition, a reminder notice is sent to the systems about one month before the end of the year if reports are not received. If a system fails to report or complete the required testing, a violation letter is sent to the water system. If there is no response after about one month, a second notice of violation letter is sent by certified mail to the water system; this letter will typically contain a requirement for public notification, and potential fines. Phone calls and visits by the technical staff are also used to provide assistance to water systems.

Significant Monitoring Violations For this report, significant monitoring violations are generally defined as any major monitoring violation that occurred during the calendar year of the report. A major monitoring violation, with rare exceptions, occurs when no samples were taken or no results were reported during a compliance period. The tables in this report include monitoring violations for community water systems, non-transient non-community water systems, and the transient non-community water systems in Montgomery, Prince George's and

Wicomico Counties, which were overseen directly by MDE. During 2004, there were 80 monitoring violations for IOCs, no monitoring violations for VOCs, one monitoring violation for SOCs, and 144 monitoring violations for total coliform (see Tables 4, 5 and 7). Twenty-six systems failed to collect their initial tap sample for lead and copper, and seventy-four systems failed to collect follow-up sampling for lead and copper (see Table 9).

Table 4. Inorganic Contaminant Violations

Contaminant		MCL Violations			Monitoring Violations			
Code	Name	MCL (mg/L)	# of Vios	# Vios RTC	# of Systems with Vios	# of Vios	# Vios RTC	# of Systems with Vios
1074	Antimony*	0.006	0	0	0	3	2	3
1005	Arsenic	0.05	0	0	0	1	1	1
1094	Asbestos	7 mil. fibers/L	0	0	0	0	0	0
1010	Barium*	2	0	0	0	3	2	3
1075	Beryllium*	0.004	0	0	0	3	2	3
1015	Cadmium*	0.005	0	0	0	3	2	3
1020	Chromium*	0.1	0	0	0	3	2	3
1024	Cyanide	0.2	0	0	0	0	0	0
1025	Fluoride	4	0	0	0	0	0	0
1035	Mercury*	0.002	0	0	0	3	2	3
1040	Nitrate-N	10	12	8	12	51	42	46
1041	Nitrite-N	1	0	0	0	4	2	4
1045	Selenium*	0.05	0	0	0	3	2	3
1085	Thallium*	0.002	0	0	0	3	2	3
4000	Gross Alpha Radioactivity	15 pCi/L	1	0	1	0	0	0
4100	Gross Beta Radioactivity	4 mrem	0	0	0	0	0	0
4010	Combined Radium 226 +228	5 pCi/L	3	1	3	0	0	0
	Totals		16	8	16	80	61	75

MCL = maximum contaminant level
 RTC = returned to compliance

Table 5. Violations for Volatile Organic Contaminants

Contaminant			MCL Violations			Monitoring Violations		
Code	Name	MCL (mg/L)	# of Vios	# Vios RTC	# of Systems with Vios	# of Vios	# Vios RTC	# of Systems with Vios
2977	1,1-Dichloroethylene	0.007	0	0	0	0	0	0
2981	1,1,1-Trichloroethane	0.2	0	0	0	0	0	0
2985	1,1,2-Trichloroethane	0.005	0	0	0	0	0	0
2980	1,2-Dichloroethane	0.005	0	0	0	0	0	0
2983	1,2-Dichloropropane	0.005	0	0	0	0	0	0
2378	1,2,4-Trichlorobenzene	0.07	0	0	0	0	0	0
2990	Benzene	0.005	0	0	0	0	0	0
2982	Carbon Tetrachloride	0.005	0	0	0	0	0	0
2380	cis-1,2-Dichloroethylene	0.07	0	0	0	0	0	0
2964	Dichloromethane (methylene chloride)	0.005	1	0	1	0	0	0
2992	Ethylbenzene	0.7	0	0	0	0	0	0
2989	Monochlorobenzene	0.1	0	0	0	0	0	0
2968	o-Dichlorobenzene	0.6	0	0	0	0	0	0
2969	p-Dichlorobenzene	0.075	0	0	0	0	0	0
2996	Styrene	0.1	0	0	0	0	0	0
2987	Tetrachloroethylene	0.005	0	0	0	0	0	0
2991	Toluene	1	0	0	0	0	0	0
2979	trans-1,2-Dichloroethylene	0.1	0	0	0	0	0	0
2984	Trichloroethylene	0.005	1	0	1	0	0	0
2976	Vinyl Chloride	0.002	0	0	0	0	0	0
2955	Xylenes (Total)	10	0	0	0	0	0	0
	Totals		2	0	2	0	0	0

MCL = maximum contaminant level
 RTC = returned to compliance

Table 6. Violations for Synthetic Organic Contaminants

Contaminant			MCL Violations			Monitoring Violations		
Code	Name	MCL (mg/L)	# Vios	# Vios RTC	# of Systems with Vios	# Vios	# Vios RTC	# of Systems with Vios
2063	2,3,7,8-TCDD(dioxin)	3x10-8	0	0	0	0	0	0
2105	2,4-D (Formula 40, Weedar 64)	0.07	0	0	0	0	0	0
2110	2,4,5-TP (Silvex)	0.05	0	0	0	0	0	0
2051	Alachlor (Lasso)	0.002	0	0	0	0	0	0
2050	Atrazine (Atranax, Crisazina)	0.003	0	0	0	0	0	0
2306	Benzo(a)pyrene	0.0002	0	0	0	0	0	0
2046	Carbofuran (Furdan, 4F)	0.04	0	0	0	0	0	0
2959	Chlordane	0.002	0	0	0	0	0	0
2031	Dalapon	0.2	0	0	0	0	0	0
2035	Di(2-ethylhexyl)adiphate	0.4	0	0	0	0	0	0
2039	Di(2-ethylhexyl)phthalate	0.006	0	0	0	0	0	0
2931	Dibromochloropropane (DBCP, Nemaflume)	0.0002	0	0	0	0	0	0
2041	Dinoseb	0.007	0	0	0	0	0	0
2032	Diquat	0.02	0	0	0	0	0	0
2033	Endothall	0.1	0	0	0	0	0	0
2005	Endrin	0.002	0	0	0	0	0	0
2946	Ethylene Dibromide (EDB, Bromofume)	0.00005	1	0	1	1	0	1
2034	Glyphosate	0.7	0	0	0	0	0	0
2065	Heptachlor (H-34, Heptox)	0.0004	0	0	0	0	0	0
2067	Heptachlor Epoxide	0.0002	0	0	0	0	0	0
2274	Hexachlorobenzene	0.001	0	0	0	0	0	0
2042	Hexachlorocyclopentadiene	0.05	0	0	0	0	0	0
2010	Lindane	0.0002	0	0	0	0	0	0
2015	Methoxychlor (DMDT, Marlata)	0.04	0	0	0	0	0	0
2036	Oxamyl (Vydate)	0.2	0	0	0	0	0	0
2326	Pentachlorophenol	0.001	0	0	0	0	0	0
2040	Picloram	0.5	0	0	0	0	0	0
2384	Polychlorinated biphenyls (PCB, Aroclor)	0.0005	0	0	0	0	0	0
2037	Simazine	0.004	0	0	0	0	0	0
2020	Toxaphene	0.003	0	0	0	0	0	0
	Totals		0	0	0	1	0	1

MCL = maximum contaminant level
 RTC = returned to compliance

Table 7. Total Coliform Rule Violations

Violation Name	MCL	# of Vios	# Vios RTC	# of Systems with Vios**
MCL, Acute (Fecal Coliform)	Absence	26	23	25
MCL, Monthly (Total Coliform)	Absence	290	210	269
Monitoring, Routine and Repeat Major *	N/A	144	125	75
Totals		460	358	369

MCL = maximum contaminant level

RTC = returned to compliance

* Monitoring violations in this report include all CWS, all NTNC, and TNC systems in Montgomery, Prince George's and Wicomico Counties.

** For a system that serves fewer than 33,000 people and collects less than 40 samples per month, two positive samples in one compliance period is a violation. For a system that serves more than 33,000 people, greater than 5% of the samples testing positive in one compliance period is a violation.

Disinfection Byproduct Rule Compliance

Surface water systems that serve 10,000 or more persons are required to sample for haloacetic acids (HAA5) and total trihalomethane (TTHM). Beginning in 2004, all water systems that disinfect the drinking water with chlorine, chlorine dioxide, or ozone are required to monitor for disinfection byproducts. In 2004, three systems had violations for Disinfection Byproduct (DBP) Rule requirements.

Table 8. Disinfection Byproduct Rule Violations

Contaminant			MCL Violations			Monitoring Violations		
Code	Name	MCL (mg/L)	# of Vios	# Vios RTC	# of Systems with Vios	# of Vios	# Vios RTC	# of Systems with Vios
TTHM	Total Trihalomethanes	0.08	3	1	2	4	2	4
HAA5	Haloacetic Acids (5)	0.06	1	1	1	4	2	4

After the initial round of monitoring for the DBP Rule was completed, 378 of the groundwater systems that serve fewer than 10,000 persons were reduced to triennial monitoring frequency due to the low concentration of DBPs. Consecutive water systems were not required to monitor under the DBP Rule.

Treatment Technique Compliance

For some regulations, the EPA establishes treatment techniques (TTs) in lieu of an MCL to control unacceptable levels of certain contaminants. In 2003, there were three Surface Water Treatment Rule (SWTR) treatment technique violations and no Lead & Copper treatment technique violations, as outlined in Tables 9 & 10.

Lead and Copper Rule Community and non-transient non-community water systems are required to treat their water if it is found to be corrosive. Based on a system’s population, five to one hundred samples are collected at homes or sample locations with the highest probability of elevated lead concentrations. This is determined based on a survey of when homes were constructed and/or when plumbing is installed and/or if the service line leading to the home contains lead. Lead solder was prohibited from use in water systems beginning in the mid-1980s. A water system’s results for the compliance period cannot exceed the action level in more than 10% of the samples. In 2004, 55 systems exceeded the action level for lead and/or copper. Although exceeding the action level is not a violation, follow-up actions are required. In 2004, 7 systems failed to conduct required public education activities (see Table 9).

Table 9. Lead and Copper Violations			
Violation Name	# of Vios	# Vios RTC	# of Systems with Vios
Initial Tap Sampling for Lead and Copper (51)	29	14	26
Follow-up or Routine Tap Sampling (52, 56)	74	35	74
OCCT Installation/Demo & SOWT Installation (57)	0	0	0
Public Education (65)	7	1	7
Totals	110	50	105

OCCT = Optimum Corrosion Control Treatment

SOWT = Source Water Treatment

RTC = returned to compliance

of vios = Number of violations that occurred in 2004 plus number of ongoing, unresolved violations

Surface Water Treatment Rule Water systems that use surface water as their drinking water source are required to provide filtration and disinfection. The treatment process is monitored throughout each day, and reported monthly to the State. Table 10 outlines the Surface Water Treatment Rule violations for 2004. Three systems exceeded the turbidity MCLs indicating that their treatment systems may not be functioning properly, and two systems failed to install required filtration systems to meet federal and State regulations. One of these systems has achieved compliance. A second surface water system has not yet installed treatment.

Table 10. Surface Water Treatment Rule Violations				
Type of System	Violation Type	# of Vios	# Vios RTC	# of Systems with Vios
Filtered Water Systems	Treatment Technique	3	1	3
Filtered Water Systems	Monitoring, Filtered	0	0	0
Unfiltered Water Systems	Failure to Filter	2	1	2
Totals		5	2	5

RTC = returned to compliance

Variations and Exemptions

A primacy state can grant a PWS a variance from a primary drinking water regulation if the characteristics of the raw water sources reasonably available to the PWS do not allow the system to meet the MCL. To obtain a variance, the system must agree to install the best available technology, treatment techniques, or other means of limiting drinking water contamination that the Administrator finds are available (taking costs into account), and the state must find that the variance will not result in an unreasonable risk to public health. At the time the variance is granted, the State must prescribe a schedule the PWS will follow to come into eventual compliance with the MCL. Small systems may also be granted variances if they cannot afford (as determined by application of the Administrator's affordability criteria) to comply with certain MCLs (non-microbial, promulgated after January 1, 1986) by means of treatment, alternative source of water, restructuring or consolidation. Small systems will be allowed three years to install and operate EPA approved small system variance technology. The variance shall be reviewed not less than every five years to determine if the system remains eligible for the variance.

A primacy state can grant an exemption temporarily relieving a PWS of its obligation to comply with an MCL, treatment technique, or both if the system's noncompliance results from compelling factors (which may include economic factors) and the system was in operation on the effective date of the

MCL or treatment technique requirement. A new PWS that was not in operation on the effective date of the MCL or treatment technique requirement by that date may be granted an exemption only if no reasonable alternative source of drinking water is available to the new system. Neither an old or a new PWS is eligible for an exemption if management or restructuring changes can reasonably be made that will result in compliance with the SDWA or improvement of water quality, or if the exemption will result in an unreasonable risk to public health. The State will require the PWS to comply with the MCL or treatment technique as expeditiously as practicable, but not later than three years after the otherwise applicable compliance date. Maryland did not provide variances or exemptions for any water system in 2004.

In September 2004, MDE distributed information to the water systems that were impacted by the new Arsenic Rule standard of 0.010 milligrams per liter in the drinking water. The guidance document provided information to water systems on obtaining an exemption as allowed in the regulations. Exemption requests for Arsenic are to be reviewed by the end of 2005.

Consumer Confidence Report Compliance

Every community water system is required to deliver to its customers a brief annual water quality report. This report is required to include some educational material, and provides information on the source water, the levels of any detected contaminants, and compliance with drinking water regulations. For 2004, notices of violation were issued to systems that failed to submit their CCRs by the July 1 compliance deadline. Table 11 presents a summary of the Consumer Confidence Report Reporting Violations.

Table 11. Consumer Confidence Reporting Violations			
Violation Name	# of Vios	# Vios RTC	# of Systems with Vios
Consumer Notification	4	4	4

Conclusion

Maryland public water systems maintain a high level of compliance with all Safe Drinking Water Act requirements. In general, compliance is more difficult for smaller systems, which struggle both financially and technically to meet a continually increasing number of complex regulations. MDE's technical assistance approach is aimed at helping all public drinking water systems to achieve the highest possible level of public health protection.

DEFINITIONS

Filtered Systems Water systems that have installed filtration treatment [40 CFR 141, Subpart H].

Inorganic Contaminants Non-carbon-based compounds such as metals, nitrates, and asbestos. These contaminants are naturally occurring in some water, but can get into water through farming, chemical manufacturing, and other human activities. EPA has established MCLs for 15 inorganic contaminants [40 CFR 141.62].

Lead and Copper Rule This rule established national limits on lead and copper in drinking water [40 CFR 141.80-91]. Lead and copper corrosion pose various health risks when ingested at any level, and can enter drinking water from household pipes and plumbing fixtures. States report violations of the Lead and Copper Rule in the following four categories:

Initial lead and copper tap monitoring and reporting: SDWIS Violation Code 51 indicates that a system did not meet initial lead and copper testing requirements, or failed to report the results of those tests to the State.

Follow-up or routine lead and copper tap monitoring and reporting: SDWIS Violation Code 52 indicates that a system did not meet follow-up or routine lead and copper tap testing requirements, or failed to report the results.

Treatment installation: SDWIS Violation Codes 58 and 62 indicate a failure to install optimal corrosion control treatment system (58) or source water treatment system (62) which would reduce lead and copper levels in water at the tap.

Public education: SDWIS Violation Code 65 shows that a system did not provide required public education about reducing or avoiding lead intake from water.

Maximum Contaminant Level (MCL) The highest amount of a contaminant that EPA allows in drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. MCLs are defined in milligrams per liter (parts per million) unless otherwise specified.

Monitoring EPA specifies which water testing methods the water systems must use, and sets schedules for the frequency of testing. A water system that does not follow EPA's schedule or methodology is in violation [40 CFR 141].

States must report monitoring violations that are significant as determined by the EPA Administrator and in consultation with the states. For purposes of this report, significant monitoring violations are major violations and they occur when no samples are taken or no results are reported during a compliance period. A major monitoring violation for the surface water treatment rule occurs when at least 90% of the required samples are not taken or results are not reported during the compliance period.

Organic Contaminants Carbon-based compounds, such as industrial solvents and pesticides. These contaminants generally get into water through farm cropland or discharge from factories. EPA has set legal limits on 54 organic contaminants that are to be reported [40 CFR 141.61].

Public Water System A Public Water System (PWS) is defined as a system that provides water via piping or other constructed conveyances for human consumption to at least 15 service connections or serves an average of at least 25 people for at least 60 days each year. There are three types of PWSs. PWSs can be community (such as towns), non-transient non-community (such as schools or factories), or transient non-community systems (such as rest stops or parks). For this report when the acronym “PWS” is used, it means systems of all types unless specified in greater detail.

Radionuclides Radioactive particles that can occur naturally in water or result from human activity. EPA has set legal limits on four types of radionuclides: radium-226, radium-228, gross alpha, and beta particle/photon radioactivity [40 CFR 141]. Violations for these contaminants are to be reported using the following three categories:

Gross alpha: SDWIS Contaminant Code 4000 for alpha radiation above MCL of 15 picoCuries/liter (pCi/L). Gross alpha includes radium-226 but excludes radon and uranium.

Combined radium-226 and radium-228: SDWIS Contaminant Code 4010 for combined radiation from these two isotopes above MCL of 5 pCi/L.

Gross beta: SDWIS Contaminant Code 4100 for beta particle and photon radioactivity from man-made radionuclides above 4 millirem/year.

Uranium: SDWIS Contaminant Code 4006 for total Uranium above MCL of 30 µg/L.

Reporting Interval The WSP Annual Compliance Report is submitted to EPA by July 1 of each year, and reports violations for the previous calendar year.

SDWIS Code Specific numeric codes from the Safe Drinking Water Information System (SDWIS) have been assigned to each violation type included in this report. The violations to be reported include exceeding contaminant MCLs, failure to comply with treatment requirements, and failure to meet monitoring and reporting requirements. Four-digit SDWIS Contaminant Codes have also been included in the chart for specific MCL contaminants.

Surface Water Treatment Rule The Surface Water Treatment Rule establishes criteria under which water systems supplied by surface water sources, or ground water sources under the direct influence of surface water, must filter and disinfect their water [40 CFR 141, Subpart H]. Violations of the Surface Water Treatment Rule are to be reported for the following four categories:

Monitoring, routine/repeat (for filtered systems): SDWIS Violation Code 36 indicates a system’s failure to carry out required tests, or to report the results of those tests.

Treatment techniques: SDWIS Violation Code 41 shows a system’s failure to properly treat its water. States report Code 41 for filtered and unfiltered systems to EPA.

Failure to filter (for unfiltered systems): SDWIS Violation Code 42 shows a system’s failure to properly treat its water.

Monitoring, routine/repeat (for unfiltered systems): SDWIS Violation Code 31 indicates a system's failure to carry out required water tests, or to report the results of those tests.

Total Coliform Rule (TCR) The Total Coliform Rule establishes regulations for microbiological contaminants in drinking water. These contaminants can cause short-term health problems. If no samples are collected during the one month compliance period, a significant monitoring violation occurs. States are to report four categories of violations:

Acute MCL violation: SDWIS Violation Code 21 indicates that the system found fecal coliform or E. coli, potentially harmful bacteria, in its water, thereby violating the rule.

Non-acute MCL violation: SDWIS Violation Code 22 indicates that the system found total coliform in samples of its water at a frequency or at a level that violates the rule. For systems collecting fewer than 40 samples per month, more than one positive sample for total coliform is a violation. For systems collecting 40 or more samples per month, more than 5% of the samples positive for total coliform is a violation.

Major routine and follow-up monitoring: SDWIS Violation Codes 23 and 25 show that a system did not perform any monitoring.

Sanitary Survey: SDWIS Violation Code 28 indicates a sanitary survey was not performed.

Treatment Technique A water treatment process that EPA requires instead of an MCL for contaminants that laboratories cannot adequately measure. Failure to meet other operational and system requirements under the Surface Water Treatment and the Lead and Copper Rules have also been included in this category of violation for purposes of this report.

Unfiltered Systems Water systems that do not need to filter their water before disinfecting it because the source is very clean [40 CFR, Subpart H].

Violation A failure to meet any State or federal drinking water regulation.