Environmental Engineering Division

West Virginia
2010 Annual Report

Introduction

The United States Environmental Protection Agency (US EPA) granted the State of West Virginia the authority to implement the Safe Drinking Water Act (SDWA) in 1976. The West Virginia Department of Health and Human Resources (WVDHHR)/ Bureau for Public Health/ Office of Environmental Health Services/ Division of Environmental Engineering, located in Charleston, West Virginia, provides program oversight through five district offices located state-wide (see Appendix D).

Annual Compliance Report

The WV Bureau for Public Health (WVBPH) collects information of all reported public water system program data and submits it to the US EPA on a quarterly basis. This includes inventory information, Maximum Contaminant Level (MCL) violations, Monitoring/Reporting (M/R) violations, and Treatment Technique (TT) violations. The annual report compiles the violations into the aforementioned categories and presents them in Appendix A and B.

Definitions

Public Water System - A public water system (PWS) is defined by the SDWA as any water supply or system that regularly supplies or offers to supply water for human consumption through pipes or other constructed conveyances, if serving at least an average of twenty-five individuals per day for at least sixty days per year. Systems are classified as "community" (towns, cities or mobile home parks), "non-community non-transient" (factories or schools) or "transient non-community" (parks, restaurants).

Maximum Contaminant Level (MCL) - Under the SDWA, national limits establish allowable contaminant levels in the drinking water to ensure that it is safe for human consumption. Appendix C identifies specific contaminant levels for the regulated analytes.

Treatment Techniques (TT) - Some regulations require specific treatment techniques, instead of MCL levels, to control contaminants. Filtration requirements are examples of methods to control viruses, bacteria, cysts and turbidity.

Monitoring/Reporting (M/R) - PWS must perform monitoring to verify that the drinking water meets SDWA standards. An M/R violation occurs if the PWS fails to monitor or report test results during the required monitoring period.

Significant (Major) Monitoring Violations - A major monitoring violation (with the exception of the Surface Water Treatment Rule) occurs when a required test result or report has not been received within ten (10) days from the end of a compliance period (a minor violation occurs when an incomplete number of test results are submitted within the proper time frame). A major Surface Water Treatment Rule M/R occurs when less than 10 percent of the required samples test results are reported during a compliance period.

West Virginia
2010 Annual Report

Drinking Water Program Initiatives

In addition to enforcing the federally mandated MCLs, treatment techniques and monitoring requirements, the West Virginia Bureau for Public Health (WVBPH) has developed additional programs to assist and assure that the drinking water distributed by the state's approximately 493 community and 436 non-community water systems (as of 10/18/10) meet the requirements of SDWA. These include:

Operator Training and Certification

The Operator Certification Program in West Virginia is one of the oldest in the nation and currently requires all public water system (PWS) operators to complete education, training and certification requirements covering basic knowledge of water treatment concepts and regulations. The US EPA approved the WV Operator Certification Program on February 20, 2002. T itle 64, Legislative Rule, Bureau for Public Health, Series 4, *Public Water Systems Operator Regulations* (effective April 18, 2007) provides the basis for program direction and enforcement authority to the Certification & Training (C&T) section of the Envi ronmental Engineering Division. C&T works closely with operators, PWS's and other state drinking water programs to ensure adequate operator coverage at each public water system. Sanitary surveys, field inspections, and routine reporting assist with compliance and enforcement. Potential violations can also be determined through queries of the SDWIS/STATE and Safe Water Operator Certification System (SWOCS) databases. C&T can suspend or revoke operator certifications if minimum requirements are not met.

WV recognizes six classes of public water systems; 1D, WD, and Class I -IV. Classification is a descriptive definition based on source, population served, and treatment requirements. The WD classification is relatively new and refers to a PWS that obt ains all of its water from another PWS, and is not owned or operated by the supplying PWS. Prior to the new regulation, WD systems were commonly referred to as purchase systems. There are seven classes of certified operators; 1D, WD, OIT, and Class I -IV. The general education, experience and training requirements for each operator certification are as follows:

Certification	Education	Experience	CEHs/Year
1D	8th Grade, 1 day class, pass exam	None	None
OIT	On-the-job experience under supervision of Chief Operator	None	6 and attempt WD or Class I exam
WD	12th Grade or GED, approved class, pass exam	1,000 hours	6
I	12th Grade or GED, 1-week Class I training, pass exam	2,000 hours	12
II	12th Grade or GED, 1 -week Class II training, pass exam	6,000 hours	24
III	12th Grade or GED, 90 CEUs, pass exam	10,000 hours	24
IV	12th Grade or GED, 180 CEUs, pass exam	12,000 hours	24

Freedom_0005668_0002

West Virginia
2010 Annual Report

All operator certifications require renewal every 2 years. There are no fees for initial operator certification or renewal. In most cases, renewal requires completion of continuing education hours (CEHs) to promote continued learning. All PWS's, excludi ng 1D systems, must designate a Chief Operator. The statistics below compare the number of operators trained and certified for the calendar years 2008 and 2009, based on the OEHS monthly report.

Subject	Year 2009	Year 2010
Operators Trained	411	400
Operators Certified	992	1250

To improve operator training and increase exam relevancy, C&T "chairs" the Drinking Water Exam Review Committee (comprised of State regulators, educators, and current Class IV operators). This committee will validate at least 3 versions of each operator exam and continues to review and revise the exams to ensure t hat baseline knowledge is established for each certification level. All exam questions are based on what operators indicate they "need to know" for the job.

To improve communication of operator related information, C&T has a website (http://www.wvdhhr.org/oehs/eed/swap/training&certification/) which contains forms, certification information, training and testing schedules, study materials , regulations, and continuing education opportunities. C&T also provides an exhibit and program representatives at operator -related events such as WV Expo, WV Section of American Water Works Association & Water Environment Association Joint Annual Conference, WV Rural Water Association Annual Conf erence, and Public Health Day.

Compliance and Enforcement

This Section is made up of the Central Office located in Charleston, West Virginia, and five (5) District Offices strategically located throughout the State. They provide technical help to PWS operators (compliance) while issuing violations (enforcement) to return recalcitrant systems to compliance.

The Central Office focuses primarily on returning water systems to compliance with Federal and State Drinking Water regulations. Enforcement tools presently used include violation letters, Administrative Orders w/o penalty, Food Permit Suspension Requests (for those water systems with food permits), and Food Permit Suspension Warning Letters.

The Food Permit Suspension (FS) Request, developed by t he Central Office in early 2005 and implemented in conjunction with county sanitarians, suspends the food (and accompanying liquor license) of a PWS until it returns to compliance for all outstanding violations. It has been highly effective in returning to compliance water systems that have been chronic violators.

The Food Permit Suspension Warning (FSW) Letter is a n enforcement tool that informally warns the water system of an impending Food Permit suspension if it does not quickly comply. It has the advantage of not requiring Upper Management signatures to implement (faster turnaround), does not require action from the County Sanitarian, and does not disrupt the water system's business. So far, the response from the water systems in returning to compliance has been very good.

Freedom_0005668_0003

West Virginia
2010 Annual Report

Thirteen (13) FSW letters were issued resulting in seven (7) water systems returning to compliance or showing significant progress. Sixteen (16) administrative orders (AO's) without penalties were issued against water systems in 2010 as compared to thirty-two (35) AO's in 2009. In addition seven (7) state administrative orders relating to state violations were issued in 2010. Nine (9) systems either returned to compliance or showed significant progress towards compliance, seven (7) systems, with limited management and financial resources (basket cases), are being assisted by Capacity Development.

Subject	Year 2009	Year 2010
Violation Letters	4519	2412
Administrative Orders w/o Penalty	35	23
Food Permit Suspend Request	1	2
Food Permit Warning Letter	16	13

In addition to the enforcement side, the group encouraged PWS compliance by: (1) mailing annual monitoring schedules to them and (2) providing technical assistance on PWS violation, public notice, and testing issues.

Sanitary Surveys and Inspections – The five (5) District Offices, located throughout the State, conduct comprehensive sanitary surveys to ascertain PWS compliance with State and Federal Drinking Water Standards.

Community surface and groundwater-under-the-influence water systems are surveyed every three years; community groundwater, purchase, non-community surface water systems, and groundwater-under-the-influence systems are surveyed every five years; and non-community ground and purchase systems are surveyed every ten years.

Annual inspections are conducted to inspect surface water treatment plants, and other site visits are conducted to respond to specific problems and to provide assistance to systems' requests. Disinfection By-Product (DBP) compliance is a prime example of this more hands-on approach.

Upon completion of the inspection or survey, the Engineer outlines his/her findings, conclusions, and recommendations in a report sent to the PWS. State code mandates that the PWS respond to significant sanitary survey deficiencies, in writing within forty-five (45) days from date of report for surface water systems and thirty (30) days from the date of report receipt for ground water systems, with an implementation plan (including possible equipment procurement, benchmark schedule, etc) to correct the deficiencies.

Technical Assistance – In addition to inspections, the Engineers, Technicians, and District Sanitarians provide technical assistance regarding water quality, source protection, water treatment, and water distribution issues in an effort to improve PWS compliance. District office locations and their service areas are shown on Appendix D.

Freedom_0005668_0004

West Virginia
2010 Annual Report

Subject	Year 2009	Year 2010
Sanitary Surveys	245	304
Annual Site Visits	107	53
DBP Visits (Technical Assistance)	194	172
Turbidity (Technical Assistance)	74	86
Town Council Meetings Attended	10	15

Source Water Assessment and Protection Program (SWAP)

This Program protects West Virginia streams, rivers, lakes, reservoirs, and ground waters (used for public drinking water) from future contamination by providing educational information aimed at reducing potential water contamination. This information is provided to water systems, and to other local groups (i.e., local watershed protection organizations) that are interested in implementing source water and water sy stem protection. SWAP continually assesses new PWS potential contamination, and revisits existing systems when source water changes.

The Wellhead Protection Program (WHP), a subset of SWAP, protects against groundwater supply contamination by assisting the PWS in identifying and managing potential sources of contamination within a designated area surrounding drinking water wells. This area is the land area that allows surface water to recharge the underground well aquifer.

The program taps into local a nd county, state regulatory (i.e., Department of Environmental Protection, and educational (i.e., West Virginia University) resources and expertise to meet its objectives.

Ongoing projects:

- Source Water Protection Technical Help Program (SWPTHP) helps P WSs across the state for the purpose of developing and implementing the components of a local Source Water Protection (SWP) program. A t otal of 166 (56% of community) systems will be completed by contractors; remaining systems will be completed by office staff.

- Source Water Protection Grants Program provides funding for surface water and ground water community PWSs to help establish and implement water protection programs. From 2007 and 2010 a total of 34 grants have been reviewed and /or awarded to PWSs. Currently planning 2011 – 2012 SWAP grant programs.

- SWAP Website is regularly reviewed and updated, which provides PWSs and the public additional access to information. A link to the community source water assessment reports has been placed on the website to provide access to these documents. Also a secure, password protected SWAP geographic information system (GIS) website has been developed through an agreement with the West Virginia State GIS Technical Center,

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providing source water protection information for use by our agency, other utilities, state emergency management, and other state and federal agencies.

- OEHA p rovides funding for the West Virginia Department of Environmental Protection Underground Injection class V program to locate Class V wells in source water protection and sensitive hydrological areas within WV. This work also includes an inventory of underground and above ground storage tanks in the source water and wellhead protection areas. OEHS will continue to fund the DEP UIC Class V program.

- OEHS continues to work with other state and federal programs and agencies to align source water preservation and pr otection with their priorities , including holding a water protection planned conference in fall 2011, bringing together various groups to help leverage programs to preserve, and protecting drinking water supplies.

Water System Construction Permitting - OEHS e valuates new PWS water wells or intakes to assure that they are located in areas where contamination threats are minimal. Permits for new public water wells now require an initial survey for potential sources of contamination within 2,000 feet of proposed well location with site-specific information used when available.

West Virginia Alternative Monitoring Strategy Program (AMSP) - OEHS continues to participate in the West Virginia Alternative Monitoring Strategy Program (AMSP), which determines future monitoring frequency reductions and is dependent on having a SWAP/WHP program in place.

The Ground Water Under the Direct Influence (GWUDI) Program - OEHS implements monitoring requirements (bacteria tests) to determine which ground water sources are affected by surface water sources, and to designate them as GWUDI sources (GWUDI sources are subject to more extensive monitoring requirements than ground water sources).

The West Virginia Bureau for Public Health had classified one hundred percent of all public groundwater sources in service prior to January 1, 2004. New sources will be tested / classified within eighteen (18) months of being activated.

Infrastructure and Capacity Development Section

The Infrastructure and Capacity Development Section supports PWS compliance with the SDWA through the following groups: (1) Capacity Development, (2) Water System Construction Permitting, (3) Drinking Water Treat ment Revolving Fund (DWTRF), and (4) State and Tribal Assistance Grants (STAG).

Capacity Development - The Capacity Development Group supports compliance by: (1) performing PWS capacity development assessments, (2) tracking consumer confidence report (C CR) submittals, (3) providing direct PWS assistance and referring PWS to third party assistance providers, (4) implementing a new PWS capacity development managerial and financial review, (5) conducting on -site assistance visits at systems classified by EP A as significant non -compliers (SNC), and writing articles for various newspapers and magazines. The SNC systems, being helped by Capacity Development, are generally small water systems with no designated

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Administrative Contact and very little resources. U sually, a number of governmental agencies, including Capacity Development, coordinate efforts to assist these SNC systems.

The Group performs capacity development assessments (CDAs) and evaluates a water system's technical, managerial, and financial capa bilities. The PWS receives a detailed report providing the Group's conclusions and recommendations. Implementing the report recommendations will lead the water system to long term stability and viability. A CDA is mandatory for water systems seeking

DWTRF funds. However, the Group will perform the assessment for any PWS asking for this assistance.

The Group is also responsible for assisting water systems with their annual Consumer Confidence Report (CCR). The CCR provides customers drinking water qu ality information and must be completed annually. The Group, in cooperation with the West Virginia Rural Water Association, conducted five (5) CCR workshops in 2009 to assist water systems with this requirement. W ater system CCR completion from 2008 to 2010 has been 96%, 88%, and 94% respectively. Last year 55 CCRs were submitted late, and resulted in 467 CCRs eventually being completed.

The Group provides direct PWS assistance and also serves as a clearinghouse, providing shared information and ideas am ong water systems. Follow-up calls and tracking have resulted in additional assistance requests and direct, on -site PWS assistance. Idea sharing has been facilitated through an informal and informative public forum, CAPDEV (**C**apacity **A**ssistance **P**artnership **D**eveloping **E**ssential **V**iability). CAPDEV is a unique PWS gathering and discussion venue where technical, managerial, and financial activities are discussed. PWS's, attending CAPDEV meetings, network with their drinking water neighbors and are encouraged to pursue Mutual Aid Agreements. Two CAPDEV meetings were held in 2010.

In order to further improve the technical, financial, and managerial capabilities of water systems the Group is currently pursuing a Request for Quote (RFQ) so a qualified vendor can per form on-site assistance to water systems with the West Virginia Water System Evaluation Tool (WVWSET). The WVWSET is a computer based interactive self assessment tool which will assess, score, and provide direct feedback to water systems. This assessment tool will also help focus the Group's on-going assistance efforts.

The West Virginia University Research Corporation (WVURC) is continuing its work on the West Virginia Utility Management Institute (UMI) training program to provide a comprehensive prog ram to improve the management skills of water system managers. The development of UMI was completed in late 2010.

All proposed new PWSs are reviewed by the Group. Any proposed PWS meeting EPA's new water system definition must complete *Form EW-100 Addendum to Permit Application to Install, Extend, or Modify a Community or Non -Community Non -transient Public Water System – Capacity Development Requirements (EW -100 Addendum)* and include it with their construction permit application. Through this process, t he new PWS must demonstrate adequate managerial and financial capability before a construction permit will be issued.

West Virginia
2010 Annual Report

Water System Construction Permitting Plan Reviews – This Group ensures compliance with Federal and State Water Treatment Construction De sign Standards by requiring that new and existing facilities, being modified, obtain a "Permit to Construct" from the WVBPH prior to construction. The number of water construction permits increased slightly from the prior year.

Drinking Water Treatment R evolving Fund (DWTRF) - This Group assists water systems in upgrading their facilities to achieve compliance with the Safe Drinking Water Act. Since its inception through 2010, the DWTRF has funded seventy -two loans, totaling nearly $124 million. From 2009 to 2010, the number of DWTRF loans inc reased by 20 . During the same period, the amount of loans increased to $40 million.

State and Tribal Assistance Grants (STAG) - This Group provides oversight capabilities for the Federal EPA in administering Co ngressional grants approved for water treatment projects. Two projects were approved as STAG earmarks in 2010 for $654,664.

Subject	**2009**	**2010**
1. CDA's Completed	20	25
2. PWS Subject to CCR Rule	502	494
3. CCR's Completed	443	467
4. Water Permits Approved	186	158
5. DWTRF Loans	8	20
6. DWTRF Loan $	18.4M	40M
7. STAG Grants Administered*	34	36
8. STAG Grant $ Administered*	29.2M	29.8M
9. Follow-Up Contacts for prior CDA's	5	52
10. Participating water systems in CAPDEV Meetings	11	19

Note: all data is for calendar year except those marked with *, which are cumulative.

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