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## **PROTECTING DRINKING WATER QUALITY THROUGH THE CLEAN WATER ACT AND THE SAFE DRINKING WATER ACT**

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### **SUMMARY**

This paper provides an overview of the programs authorized under the United States water laws designed to protect drinking water supplies. Statistical information on the number of drinking water supplies and their compliance with drinking water regulations is also given.

### **1 INTRODUCTION**

Threats to the quality of drinking water come from a variety of sources — bacteria, turbidity (caused by suspended matter in the water), overflowing storm sewers, defective storage tanks, pesticides, fertilizers, and other agricultural run-off, run-off from oil-slicked or salt-treated highways, and underground injection of wastes to name a few. Protecting the quality of drinking water sources from all these threats is a complex process which requires a variety of approaches from traditional permit and/or enforcement programs to those that rely more on education, outreach, and technical assistance. The United States has two primary laws designed to protect the quality of the nation's waters — the Clean Water Act and the Safe Drinking Water Act. The Clean Water Act deals for the most part with surface waters; the Safe Drinking Water Act deals with both surface and ground waters. While threats to and indicators of the quality of surface water are often easy to see, the same cannot be said for groundwater. Yet, protection of ground water is critical as 95% of all fresh water available on earth (excluding the polar ice caps) is groundwater and approximately 53% of the United States population relies to some extent on ground water as a source of drinking water.

This paper will briefly summarize several of the major programs designed to protect drinking water supplies — the Public Water System Supervision Program, the Underground Injection Control Program, and Source Protection Programs, including the wellhead protection program, comprehensive state groundwater protection programs, and watershed protection programs. This paper does not deal with the significant contributions made to the protection of drinking water supplies by the hazardous and solid waste law (the Resource Conservation and Recovery Act) or the hazardous waste site clean-up law (the Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as Superfund). The majority of the programs designed specifically to protect drinking water supplies are authorized by the Safe Drinking Water Act; however, as the Clean Water Act programs play a major role in controlling and improving surface water quality, this paper will briefly summarize some of the requirements of that Act as well.

Before examining specific statutes and programs, however, it is important to touch on one of the key principles in environmental regulation and enforcement— that of shared responsibility between the national government, represented by the US EPA, and the State and local governments. Under both the Clean Water Act and the Safe Drinking Water Act, EPA may delegate the primary responsibility for administering programs and enforcing requirements to

the States once the States meet certain program requirements. Delegation often makes implementation and enforcement of regulatory requirements somewhat more complex; yet it allows States some flexibility to tailor the programs to specific situations within their boundaries. Given pressures to reduce the size of the federal government, the fact that many States have developed considerable expertise in environmental protection, and the fact that many environmental problems need local solutions (for example, land use planning), there is an increasing emphasis on partnerships with State and local entities. The full impact of this trend on environmental enforcement (particularly the role of the federal government) and environmental quality will not be known for some time.

## **2 CLEAN WATER ACT PROGRAMS**

### **2.1 The National Pollutant Discharge Elimination System**

The Clean Water Act, originally passed in 1972, has as its goal the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. The Clean Water Act programs protect the sources of drinking water — they do not regulate drinking water quality directly. While the Clean Water Act established many programs, arguably one of the most successful at controlling sources of water pollution has been the National Pollutant Discharge Elimination System (NPDES) program. Under the Act, all discrete wastewater conveyances (that is, point sources) that discharge wastewater to waters of the United States must have a permit in order to discharge that wastewater. Waters of the United States include any surface water, including intermittent streams, and those underground sources which have a direct hydrologic connection to a surface stream.

Point sources are generally either industrial, that is commercial and manufacturing facilities, or municipal, also known as publicly owned treatment works. Municipal facilities include domestic wastewater directly discharged to sewers and industrial waste which is indirectly discharges to sewers. Both industrial and municipal sources can be classified as “major” or “minor” depending on their size, location, type of discharge, and other factors.

There are nearly 100,000 point sources discharging wastewater in the United States; there may be an additional 100,000 discharging contaminated stormwater (note, however, that these stormwater sources are by and large not yet under the same type of controls as other point sources). The permits issued to the point sources require them to meet certain limits in the wastewater which is discharged. These limits are either technology-based or water quality based. Technology-based limits are established based on the best-available technology and do not take into consideration the condition of the waterbody into which the source discharges. In other words, the source must install the technology and achieve the limits that the technology will meet. Water quality based limits are set based on the quality of the water receiving the discharge.

In addition to effluent limits, permits include both standard and site-specific compliance monitoring and reporting requirements and other site-specific conditions that EPA or the State may deem necessary to control the discharge, for example, construction schedules, best management practices, or additional monitoring for pollutants of particular concern.

In order to obtain a permit to discharge (or to modify or renew an existing permit), the owner/operator of a point source submits an application to the permitting authority (that is, either EPA or the State) 180 days before a new discharge or before an existing permit expires. The permit writer reviews the submission and drafts a permit. This draft is sent to the applicant and is published in order to notify the general public that there has been an application for a permit and to invite their comments. A public hearing on the permit may be held where there is sufficient public interest. The permit writer accepts all public comments, responds to them, and issues a

final permit. The final permit may be challenged either through an administrative process or in the courts; however, any challenge must be made within the statutory or regulatory time frames or the permit becomes final. Permits are issued for a term of five years.

EPA may issue the permits itself or may delegate the responsibility to the States. States and/or EPA determine compliance with permit limits and other permit terms through the required reports and through periodic inspections. Where a facility is not acting in compliance with its permit or if a facility is discharging without a permit, an enforcement action is usually taken.

The Clean Water Act provided EPA many tools to create an effective enforcement program. Under Section 308, EPA may issue an order requiring a source to perform sampling and provide records and reports to EPA (The required sampling may be beyond what is required in a permit.) In addition, EPA has the authority enter and inspect any facility. Under Section 309, whenever EPA has information that any person is in violation, EPA may: (1) notify the State [if the State has an approved permit program] and provide the State 30 days to take an enforcement action. If after 30 days the State has not acted, EPA "shall" issue an order or bring a civil action; (2) issue an administrative compliance order; (3) issue an administrative penalty order (the maximum administrative penalty which can be sought is \$125,000); or (4) bring a civil action for appropriate injunctive relief and penalties up to a maximum of \$25,000 per day per violation. Moreover, EPA may seek criminal penalties for negligent violations, knowing violations, knowing endangerment, or making false statements (including falsifying monitoring devices).

The type of enforcement action expected given the type and duration of a violation is clearly spelled out in this program's Enforcement Management System.

The permitting system for point source dischargers and the accompanying compliance and enforcement program have been and continue to be a major force behind many of the water quality improvements seen in recent years. They have served as a model for other water programs.

## 2.2 Other provisions of the Clean Water Act

The Clean Water Act has several other major components which are critical in protecting and improving water quality, including: (1) the water quality standards program under which States adopt EPA-approved standards for their waters. These standards define the water quality goals for water bodies and consist of the designated uses of the water body, criteria to protect those uses, and antidegradation policies to protect the existing water quality; (2) Effluent guidelines program under which EPA develops nationally consistent guidelines limiting pollutants in discharges; these guidelines are used in setting the permit limits; and (3) The development of Total Maximum Daily loads or TMDLs. A TMDL calculates allowable pollutant loadings from the contributing point and nonpoint sources to a given water body and provides a quantitative basis for the pollution reduction necessary to meet water quality standards. States develop and implement TMDLs for high priority impaired or threatened water bodies.

Each of these programs is critical in protecting water quality and could be the subject of a separate paper. They are mentioned here only to demonstrate the many elements needed in a program to protect surface water.

The Clean Water Act programs have been very successful in controlling pollution of surface water by point sources, that is, by "discernable, confined, and discrete conveyances." The major sources of pollution of surface water (and therefore of drinking water sources) which are not yet under enforceable controls are those from so called nonpoint sources, for example, agricultural runoff. These present particular challenges as the Clean Water Act did not provide EPA the authority to deal with them in the same way as with point sources; that is through a permit program and clear enforcement authorities.

Given the statutory limitations on dealing with nonpoint sources and a growing consensus among many that water quality problems are best solved at a watershed level, EPA and many states have over the past several years been pursuing a “watershed approach” to water quality management. Specifically, this means that managers are encouraged to examine all factors contributing to water quality impairment and apply a coordinated, holistic approach to solving the problem. States and/or EPA Regions using this approach target watersheds where pollution poses the greatest risk to human health, ecological resources, or desirable uses of the water; involve all parties with a stake in the watershed in the analysis of problems and the implementation of solutions; and draw on a full range of available methods and tools (including compliance and enforcement activities) to solve the problem.

For example, Watershed A is targeted for attention by a State since it: (a) contains a river which is a source of drinking water, home to several species of fish, and serves as a place for recreation; (b) has two facilities with NPDES permits which discharge into the river; (c) has farms lining large segments of the river; and (d) currently does not fully meet the water quality standards set for the river or river segments. The State managers begin a comprehensive analysis of sources of pollution and their effects on water quality. They determine that, in fact, the permittees and the agricultural runoff are the primary sources of pollution. The managers review the compliance status of the permittees and determine that one is in violation of its permit limits and one is not. An enforcement action is taken against the violator. That action requires the violator to comply with permit limits and to perform a supplemental environmental project which further improves water quality in the area. Additional review and analysis of the other permit, however, indicates that the permit will be up for reissuance soon and that levels of particular pollutants being discharged need to be tightened. As the permit process occurs, more stringent limits for particular pollutants are proposed and are placed in the final permit. Finally, outreach and technical assistance activities are directed at the agricultural community in order to fully educate them about the effects of pesticide and other runoff and the management practices which can be implemented to control the runoff. All these actions, taken in a coordinated fashion, serve to improve the water quality in the watershed.

This watershed approach thus protects the drinking water by protecting the quality of the source water. Protection of the drinking water source may reduce the need for treatment by the drinking water system, for example, by reducing the level of pesticides which run off into the source water, the drinking water treatment needs are reduced. The approach requires both traditional permit programs as well as those which rely on education and outreach in order to be effective.

Given this very brief overview of the Clean Water Act programs and how they generally protect the surface waters which are sources of drinking water, we will now turn to a discussion of the Safe Drinking Water Act and those programs which have been specifically designed to protect drinking water supplies.

### **3 SAFE DRINKING WATER ACT (SDWA)**

The Safe Drinking Water Act was originally passed in 1974. The statute established several programs to insure drinking water quality — the public water system supervision program, the underground injection control program, and other groundwater protection programs, including the wellhead protection program and comprehensive state groundwater protection programs.

### 3.1 Public Water System Supervision (PWSS) Program

Under this program, EPA regulates public water systems — those systems which provide “piped water for human consumption” and regularly serve at least 25 individuals or have at least 15 service connections. EPA establishes national primary drinking water regulations with which all public water systems must comply. These regulations set the health standards for water which is delivered to the consumers. They also include the monitoring and reporting requirements and the methods which must be used in analyzing water samples. States which have been approved to administer the program must have regulations which are “no less stringent” than the federal requirements.

#### 3.1.1 Nature of the regulated community

In the United States, there are approximately 186,000 public water systems. In order to manage this vast number, the program divides water systems into three types: (a) community water systems — those that provide water to the same population year-round; (b) nontransient noncommunity water systems — those that serve at least 25 of the same people at least six months of the year, for example, schools and factories that have their own water supplies; and (c) transient noncommunity water systems — these provide water to transitory customers in nonresidential areas such as campgrounds and highway rest areas which have their own water systems. There are approximately 56,000 community water systems, 24,000 nontransient noncommunity water systems and 106,000 transient noncommunity water systems.

Public water systems can be either publicly or privately owned. A great number of the small community water systems and the nontransients are in fact privately owned.

A review of some information on the nature of the regulated community in the drinking water program as well as compliance statistics will enable a better understanding of the program and some of the difficulties in implementation and enforcement. Because EPA and the States focus most of their attention on the community water systems, the following discussion will deal only with the community water systems and reflects the fiscal year 1994 compliance data.

EPA frequently classifies community water systems into five size categories for analysis (See Table 1).

**Table 1. Categories of Water Systems Based on Population Served**

<b>System Size</b>	<b>Population Served</b>
Very Small	25 - 500
Small	501 - 3,300
Medium	3,301 - 10,000
Large	10,001 - 100,000
Very Large	More than 100,000

The vast majority (87%) of the community water systems are systems which serve less than 3,300 persons, that is, the small and very small systems. However, although there are over 49,000 of these systems, they serve only 11% of the population served by community water systems. Conversely, the other 13% of the community water systems serve 89% of the population; in fact the 317 systems which serve more than 100,000 persons serve 44% of the population.

Many of the small and very small public water systems experience particular difficulties in complying with the drinking water regulations. Because they serve few people, they have a small rate base; therefore they have little or no money for system improvements which may be required due to the regulations or even for routine maintenance. Many do not have full time operators; and, in some cases, even where they have operators, the operators are not technical experts. Finally, the systems are often located in rural or isolated areas and therefore consolidation with another system (either physical or managerial) is not an option as a means of coming into compliance.

Lack of financial capability is not limited to the small and very small systems. Many of the medium, large, and very large systems, especially those owned and/or operated by municipalities, although they may have a large number of customers, have difficulties raising revenue needed for major improvements. The Safe Drinking Water Act, unlike the Clean Water Act with its Construction Grant and State Revolving Fund programs, did not authorize a federal grant or a loan mechanism which would make it possible for water systems to obtain funds for needed improvements. Several of the States have developed programs of financial assistance; however, the lack of funding has contributed to difficulties in achieving compliance with regulations.

Compliance with federal regulations, while high, has been declining in recent years. In fiscal year 1990, 73%, almost three-quarters of the community water systems reported no violations of federal regulations. In fiscal year 1994, only 66% reported no violations. There are numerous factors contributing to this trend. One of the major ones is the full implementation of many new regulations which were promulgated under the Safe Drinking Water Act Amendments of 1986, including the surface water treatment rule and the lead and copper rule. These complex rules have lead to an increase in the number of systems with violations, especially monitoring and reporting violations. Another factor is that over this period there has been more complete reporting of violations from the States to EPA. This enables EPA and the States to have a better understanding of the nature of the noncompliance.

Some specific information on community water systems with violations in fiscal year 1994 may be useful. In fiscal year 1994, over 19,500 community water systems reported a total of over 88,000 violations. The majority of the systems in violation (90%) were the very small and small systems (i.e., those that serve less than 3,300 persons). However, this is not surprising since the vast majority of water systems in the United States are in that size category. The most common types of violations were monitoring and reporting violations of the total coliform rule (the basic rule of the program) and the lead and copper rule (a relatively new regulation which required all systems to monitor for lead and copper at a certain number of targeted sites). The next most common violation is the violation of the total coliform maximum contaminant level (an indicator of microbiological contamination).

The large number of systems in violation indicates that much work, using all the compliance and enforcement tools available to both federal, State, and local officials, remains to be done in the drinking water program.

### 3.1.2 Implementation and enforcement challenges

Implementation and enforcement of the Safe Drinking Water Act and the national primary drinking water regulations are complex due the nature of the regulated community described in the previous section and due to statutory and regulatory constraints. As noted in the previous

section, EPA sets the national regulations which cover approximately 186,000 public water systems. The Safe Drinking Water Act, unlike the Clean Water Act, did not set up a national permit program for public water systems; therefore, all of the requirements for all public water systems must be in the national regulations. There is generally no separate process or mechanism for specifying the limits and or the monitoring/ reporting requirements with which a system must comply.

Because the regulations are national regulations and because EPA has recognized that circumstances vary widely across the country, EPA has in writing the regulations, attempted to provide some flexibility to States to deal with the specific circumstances of water systems in their State. In addition, in these regulations EPA has tried to make some of the requirements less onerous for small systems and has given them more time to comply, for example, by making monitoring requirements effective later for the small systems. The need to make the national regulations cover all situations and yet provide flexibility has made the federal regulations very complex.

Moreover, because the regulations attempt to provide some flexibility, many parts of them are not self-implementing; that is, they require a decision or other action by the State or federal agency with responsibility for administering the program before the public water system is required to comply; for example, the State may need to set a monitoring schedule or determine if a monitoring waiver is allowable. This places an additional burden on EPA and State staffs to make those decisions and document them. In many cases, the procedural requirements for making these decisions are not clearly spelled out in the regulations. While the regulations require that States (or EPA regions where EPA is running the program) keep records of determinations made with respect to water systems, there is often not one place where one can easily go to determine precisely what a water system must do to comply — i.e., there is no permit. In many instances there is also not the opportunity for public comment and participation as on a discharge permit. This system does not compare well to the relatively straightforward system described earlier for discharge permits. The combination of all of these factors make the drinking water regulations difficult to implement and enforce.

There is, however, one area where the drinking water regulations may arguably be easier to implement than the wastewater permits — that is in the area of national standards. All drinking water systems must meet at least the same health standards. This insures a base level of health protection throughout the United States. In the wastewater permit program, however, different permittees may meet different effluent limits and these limits are set and can be debated in each permit.

The difficulties of enforcing the drinking water regulations are compounded by the fact that the enforcement authorities provided to EPA for the drinking water program are, unlike those provided under the Clean Water Act, quite limited. Prior to the 1986 amendments to the Safe Drinking Water Act, the only enforcement authority available to EPA was the civil judicial action. In the 1986 amendments, EPA was provided the authority to issue administrative orders to compel compliance with the national primary drinking water regulations. However, the statute requires a three step process to issue a compliance order — a notice of violation to the State and the violator, a proposed administrative order and the opportunity for a public hearing, and then a final administrative order. EPA may assess an administrative penalty only if the final administrative order is violated and the penalty is limited to \$5,000. EPA may also initiate civil judicial actions for violations of the regulations. These actions may seek both injunctive relief and penalties of up to \$25,000 per day per violation.

EPA does have broad emergency authority under the Safe Drinking Water Act to deal with “imminent and substantial endangerments” to public health. Under these provisions, whenever EPA has information that a contaminant which is present in or is likely to enter a public water

system or an underground source of drinking water may present an imminent and substantial endangerment to public health, and the State and local authorities have not acted sufficiently to protect public health, EPA may take such actions as deemed necessary to protect public health. These provisions have been interpreted very broadly and EPA has used the authority on numerous occasions to deal with contaminated or potentially contaminated drinking water.

Even with the substantial difficulties in enforcing the drinking water regulations, EPA has made drinking water enforcement a priority at both the State and the federal level. This has been a bit of a struggle given the background of the drinking water program. Drinking water programs were State programs until the 1974 Safe Drinking Water Act— there were no federal requirements. In the early years of the program, EPA did not really focus on enforcement as a tool for achieving compliance. State programs relied almost totally on technical assistance. Enforcement actions were reserved for the most recalcitrant violators. With the 1986 amendments and the additional enforcement authorities provided, EPA began to look more closely at the State and federal drinking water enforcement programs and attempted to balance the technical assistance and enforcement programs. Many State drinking water programs, however, still see enforcement as an indication of the failure of their technical assistance programs. The federal position has always been that the drinking water program needs a balance of technical assistance and enforcement; both are tools to be used to protect public health and should be used in appropriate circumstances.

EPA and the States have seen some successes in strengthening enforcement programs. The following tables display some of the statistics on State and federal formal enforcement actions.

### STATE AND FEDERAL ENFORCEMENT ACTIONS (FISCAL YEARS 1990 - 1994)

**Table 2. State Enforcement Actions**

	BCAs*	Aos**	Civil Referrals	Criminal Filings	Total
1990	240	1,004	175	3	1,422
1991	427	1,358	156	7	1,948
1992	303	1,009	51	20	1,383
1993	375	968	182	7	1,532
1994	474	930	62	25	1,491

\*BCA: Bilateral Compliance Agreement — an agreement signed between a State and a public water system which provides the system a schedule for coming into compliance.

\*\*AO: State administrative order, either with or without a penalty.

**Table 3. Federal Enforcement Actions**

	NOVs	PAOs	1431 FAOs	Orders	CFPs	New Refs	Total
1990	453	312	149	**	14	11	939
1991	2,448	443	303	**	16	7	3,217
1992	1,485	539	352	9	32	6	2,423
1993	1,466	629	364	8	37	13	2,517
1994	2,831	838	309	8	44	6	4,036

NOVs: Notices of Violation

PAOs: Proposed Administrative Orders

FAOs: Final Administrative Order

(Note that EPA tracks all stages of the administrative action, since the Safe Drinking Water Act requires the agency to issue Notices and Proposed Orders before issuing a final order.)

1431 Order: An emergency order, issued under Section 1431 of the Safe Drinking Water Act

CFPs: Complaint for an administrative penalty for a violation of an administrative order

New Refs: New Civil Referrals to the Department of Justice

\*\* In 1990 and 1991, the program did not track 1431 orders separately from other final administrative orders; so any 1431 orders issued are counted in the final order column.

The statistics on State and federal enforcement show that there is a good deal of administrative enforcement in the program, but not a large number of judicial actions. Over the past few years, there have been several initiatives to deal with specific noncompliance issues (for example, lead and copper monitoring). States and EPA continue to focus their enforcement efforts on those regulations which provide the greatest protection for public health. In addition, State and federal programs have worked and continue to work to build the enforcement infrastructure needed for a successful program; for example, EPA has developed many basic enforcement policies and procedures and many States which did not have administrative enforcement authorities have worked to obtain them from their legislatures.

The drinking water program as can be seen from this brief overview, regulates the systems that supply drinking water and controls the quality of the water ultimately provided to consumers. The health standards do not apply to the source water — in fact they do not apply to those entities which may be responsible for contaminating source water. The presumption is that it is the responsibility of the public water system to provide water to consumers that meets the health standards. If the source water contains contaminants at levels above the health standards, then public water system must treat the water to insure that it meets those standards. Protection of source water is dealt with under the Clean Water Act programs as described above and under the ground water protection programs which will be described shortly. The challenge in creating an effective drinking water protection program is the integration of all these programs.

## 3.2 Ground Water Protection

### 3.2.1 Underground Injection Control Program

The Underground Injection Control program is designed to protect underground sources of drinking water by regulating underground injection, which is defined by as the subsurface emplacement of fluids by well injection. Underground injection is a way of disposing of both hazardous and nonhazardous wastes. The Underground Injection Control (UIC) program regulates more than 400,000 injection wells which dispose of approximately 11% of the fluid waste generated in the United States.

Control of such disposal is critical to protecting the ground water. Injection wells may threaten the ground water if the fluids do not stay within the well and the intended injection zone. The Safe Drinking Water Act (SDWA) states that underground injection endangers drinking water sources “if such injection may result in the presence in underground water which supplies or can reasonably be expected to supply any public water system of any contaminant, and if the presence of such contaminant may result in such system’s not complying with any national primary drinking water regulation or may otherwise adversely affect the health of persons.”

Underground injection is authorized by permit issued by either EPA or the State (if the state has received the authority to administer an underground injection control program), and in some cases, by regulations. The overriding concern in developing regulations or issuing permits

is to prevent injection from endangering a drinking water source. Rules and/or permits allowing injection include enforceable inspection, monitoring, record keeping, and reporting requirements. They also may include siting, construction, and operating requirements.

Enforcement of the underground injection control program requirements is done by both EPA and the States. Violations of these requirements are taken seriously given the potential effect on drinking water sources. In an enforcement action, EPA or the States compel compliance with the regulations and may require closure of the well. EPA enforcement authorities for this program are much like those under the Clean Water Act — EPA has the authority to issue administrative orders, administrative penalty orders (up to a maximum of \$125,000), bring civil actions, or criminal actions if a violation is willful. EPA may also use the authorities under Section 1431 of the Safe Drinking Water Act (as described earlier) to take steps to prevent contamination of the ground water; this could include immediate shut down of the well.

The underground injection control program is similar in many ways to the Clean Water Act program regulating discharges to surface waters from point sources; however, there are many other situations which result in contamination of groundwater, including leaking underground storage tanks, septic tanks, municipal landfills, agricultural activities and abandoned hazardous waste sites. While other statutes specifically set out requirements for some of these situations, the Safe Drinking Water Act provides holistic approaches for dealing with groundwater protection. Two particular examples of this are the Wellhead Protection Program and Comprehensive State Ground Water Protection Programs. These programs are similar in concept to the watershed approach for surface waters.

### 3.2.2 Wellhead protection programs

The Safe Drinking Water Act requires that States adopt a program to protect wellhead areas from contaminants which may have an adverse effect on human health. The States were required to determine “wellhead protection areas” which are defined as the surface and subsurface areas surrounding a water well or well field supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or well field. The extent of a wellhead protection area is influenced by factors such as the depth of draw down of the water table by the well or well field and the time or rate of travel of various contaminants in various hydrologic conditions. The States were also required to identify all potential sources of contamination in the wellhead protection area which may have an adverse effect on human health and then develop a program that contains, as appropriate, technical assistance, financial assistance, implementation of control measures, education, training and demonstration projects to protect the water supply within wellhead protection areas from such contaminants.

Wellhead protection programs as a whole are not federally enforceable — there is no “violation” at the federal level of violations of wellhead protection requirements. They were designed to be state or local programs. If the wellhead protection program includes, for example, underground injection control requirements and hazardous waste program requirements, then these requirements would be enforceable as other federal requirements.

### 3.2.3 Comprehensive State Ground Water Protection Programs

Comprehensive State Ground Water Protection Programs seek to integrate all the statutes and programs which play roles in protecting groundwater, including the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation, and Liability Act, the Safe Drinking Water Act, the laws regulating pesticides and toxic substances, and the nonpoint source management programs under the Clean Water Act. The comprehensive program is voluntary. It is composed of strategic activities — establishing a prevention-oriented goal, establishing priorities based on the characterization of the groundwater and identification

of sources of contamination, defining roles and responsibilities for the various stakeholders and coordinating their activities, implementing all necessary efforts to protect groundwater, measuring progress and reevaluating priorities as needed and improving public education and participation in ground water protection activities. Once a State develops and EPA endorses a comprehensive program, EPA will seek to provide more deference to state priorities in groundwater protection.

Comprehensive programs are being developed at State levels and EPA has endorsed several State programs. EPA continues to support the programs and to believe that they are important in protecting sources of drinking water.

#### **4 CONCLUSION**

EPA and the States protect drinking water quality through a variety of mechanisms, from the traditional permits and compliance and enforcement to voluntary mechanisms and those tools which seek to deal in a comprehensive fashion with all the threats to the drinking water supply. This comprehensive evaluation of the quality of the water, the threats to it, and the plans for dealing with those threats, whether it is called the "watershed" approach for surface waters or the "wellhead approach" or "comprehensive state ground water protection programs" for groundwater sources, is clearly the direction in which programs are moving. Such a direction holds tremendous promise for further protecting and improving water quality. Whether such promises can be realized is a question of time, of maintaining and strengthening the traditional compliance and enforcement functions and then of going beyond the traditional programs where needed, and of fostering the understanding among all persons that their activities affect the quality of their water.