

## **CALIFORNIA DEPARTMENT OF HEALTH SERVICES**

### **DRINKING WATER PROGRAM**

### **PUBLIC WATER SYSTEM VIOLATIONS REPORT**

**(Calendar Year 1998)**

#### **SECTION I: Introduction**

The Safe Drinking Water Act (SDWA) Amendments of 1996 included provisions requiring States to complete annual reports on violations of primary drinking water regulations by the public water systems in their state. The report is required to include violations with respect to (1) maximum contaminant levels (MCL) of primary drinking water standards, (2) treatment techniques, (3) variances and exemptions, and (4) significant monitoring requirements. The States are also required to make this annual report available to the public and to distribute summaries of the report.

The California Department of Health Services (Department) is designated by the United States Environmental Protection Agency (USEPA) as the primacy agency to administer and enforce the requirements of the federal SDWA in California. The Department's drinking water regulatory program covers all public water systems defined under state and federal statutes. The Department has adopted standards and regulations to implement the requirements of the SDWA.

The Department has delegated the authority to administer the Drinking Water Regulatory Program to thirty-four (34) counties in California. This delegated authority only applies to public water systems serving less than 200 service connections. The delegated counties regulate approximately 5,000 small public water systems statewide. The Department retains the regulatory authority over the small public water systems in the remaining twenty-four (24) non-delegated counties.

The Department submits drinking water regulatory program data to the USEPA electronically via the Safe Drinking Water Information Systems (SDWIS) on a quarterly basis. The data includes (1) public water system inventory statistics, (2) the incidence of Maximum Contaminant Level (MCL), Major Monitoring and Treatment Technique violations, and (3) the enforcement actions taken against violators. The USEPA Regional offices also report federal enforcement actions into the SDWIS database.

This annual report is based on violations data retrieved from SDWIS for the period of January 1, 1998 through December 31, 1998. The violations data included in Appendix A covers all public water systems in California, either regulated by the Department or County Health Departments.

Public water systems are required to monitor and verify that the levels of contaminants present in their water supply does not exceed the MCL's. The failure of a water system to have its water tested as required results in a monitoring violation. A monitoring violation also results when a public water system fails to correctly report test results to the regulatory agency.

For this report, a major monitoring violation (except for the Surface Water Treatment Rule) occurs when no samples were taken or no results are reported during a compliance period. A major Surface Water Treatment Rule Monitoring /Reporting violation occurs when fewer than 10% of the required samples are taken or no results are reported during a reporting interval. A minor monitoring violation occurs when an insufficient number of the required samples are taken.

A complete copy of this report is available to the public on the Department's website at <http://www.dhs.ca.gov/org/ps/ddwem/ddwemindex.htm>. In addition, the public can request a copy of the report by contacting the Department at (916) 323-6111.

## **SECTION II: Variances and Exemptions**

The Safe Drinking Water Act Amendments of 1996 allow primacy states to issue variances and exemptions to public water systems for specific national primary drinking water regulations under certain circumstances. Public water systems are eligible to receive a variance if the characteristics of their raw water sources are such that the water system cannot meet the MCL even though the water system installs the best available technology, treatment techniques, or other approved method to meet the MCL. To issue a variance for an MCL, a state must (1) find that the variance will not result in an unreasonable risk to health, and (2) establish a schedule for the public water system to achieve compliance with the MCL. Small systems (serving 3,300 or fewer persons; or 10,000 or fewer persons with the Administrator's approval) may be granted variances if they cannot afford to comply with certain MCLs (non-microbial, promulgated after January 1, 1986) by means of treatment, alternative source of water, and restructuring or consolidation. Small systems must, within 3 years, install and operate EPA approved small system variance technology. The variance must ensure adequate protection of human health, and the variance shall be reviewed not less than every 5 years to determine whether the system remains eligible for the variance.

An exemption for an MCL and/or treatment technique may be issued to a public water system if noncompliance is the result of compelling factors and the exemption will not result in an unreasonable risk to public health. Examples of compelling factors include (1) economic circumstances of the public water system, (2) the effective date of the MCL or treatment technique occurs after the water system begins operation, (3) no reasonable alternative source of drinking water is available to the water system, or (4) management organization changes cannot reasonably be made by the water system that will result in compliance with the SDWA or improvement of drinking water quality. All public water systems that receive an exemption must achieve compliance with the MCL or treatment technique as expeditiously as practicable, but not later than 3 years after the applicable compliance date.

The Department did not report the issuance of any variances or exemptions into the SDWIS database for calendar year 1998. Current federal reporting requirements do not include a requirement for states to provide data into SDWIS regarding the issuance of variances and exemptions. However, it is the intent of the Department to incorporate information regarding variances and exemptions into subsequent annual reports.

## **SECTION III: Summary of Violations**

This section identifies the categories of violations and summarizes the SDWIS violations information provided in Appendix A. In addition, a brief explanation of the violations is provided.

### **Organic Contaminants**

Fifty-nine (59) organic contaminants were monitored by public water systems in California during 1998 for compliance with primary drinking water standards. There were no reported MCL violations for the fifty-nine (59) organic contaminants during 1998.

### **Inorganic Contaminants**

Seventeen (17) inorganic contaminants were monitored by public water systems in California during 1998 for compliance with primary drinking water standards. Of those seventeen (17) inorganic contaminants monitored, violations were reported for three (3) of the inorganic contaminants: asbestos,

cadmium, and nitrate. A total of forty-five (45) violations of these inorganic contaminants were reported by forty public water systems. One public water system reported the asbestos MCL violation, one public water system reported the cadmium MCL violation, and forty (40) additional public water systems reported forty-three (43) nitrate MCL violations. The violations are summarized in Appendix A. A list of the water systems reporting MCL violations of inorganic contaminants is included in Appendix B.

### Radionuclides

During 1998, there were no reported MCL violations for the six (6) radionuclide contaminants monitored by public water systems in California. The monitored radionuclide primary drinking water standards include Gross alpha, gross beta, radium-226 and 228, tritium, strontium-90, and uranium.

### **Total Coliform Rule**

The Total Coliform Rule violations data identifies the presence of microbiological contamination in drinking water supplies. Public water systems are required to monitor for coliform bacteria as the basis for establishing compliance with the bacteriological MCL. During 1998, a total of 688 bacteriological MCL violations were reported in California. These violations were reported by five hundred twelve (512) public water systems. An additional 711 significant monitoring and/or reporting violations were reported by 519 public water systems during the year as shown in Appendix A.

Fifty-seven (57) public water systems reported fifty-nine (59) acute MCL violations, and four hundred fifty-five (455) public water systems reported six hundred twenty-nine (629) non-acute MCL violations. An acute MCL violation indicates that a water system detected fecal coliform or E. coli bacteria in their water supply. A non-acute MCL violation indicates that a water system found total coliform bacteria in their water supply. A list of the public water systems reporting the bacteriological MCL and monitoring violations is included in Appendix B.

The seven hundred eleven (711) major monitoring violations identified by five hundred nineteen (519) water systems indicate that these water systems did not complete the required bacteriological monitoring for their water systems for at least one month during the year. The list of water systems in violation was not available to the Department.

### **Surface Water Treatment Rule**

The Surface Water Treatment Rule establishes treatment techniques in lieu of MCL's for Giardia lamblia, viruses, bacteria, Legionella, heterotrophic plate count, and turbidity. Eleven (11) public water systems using filtration reported thirteen (13) violations of the treatment technique that had been established for their water system. Two of these eleven water systems reported multiple violations of their treatment technique. A list of the public water systems reporting treatment technique violations is included in Appendix B.

An additional fifty-four (57) unfiltered public water systems have violated the requirement to install filtration for their water supply. A list of the public water systems that have not installed filtration is included in Appendix B.

### **Lead and Copper Rule**

In May 1991, National Primary Drinking Water Regulations for Lead and Copper were promulgated by the USEPA. The State of California did not adopt regulations implementing the federal Lead and Copper Rule until September 16, 1996. Consequently, the USEPA assumed the responsibility for administering the Lead and Copper Rule in California from 1991 through late 1996. The currently available violation data from SDWIS reflects violations that occurred during 1992 through 1994 as

provided by the USEPA into the SDWIS database at that time. The SDWIS database does not have available any violations data which reflects the Lead and Copper Rule compliance status for calendar year 1998. Consequently, this annual report does not include information regarding the Lead and Copper Rule violations in California during 1998.

The USEPA awarded primacy to California for administering the Lead and Copper Rule in late 1996 and transferred all regulatory compliance data to the Department at that time. The Department is currently working with the USEPA to evaluate the current status of Lead and Copper Rule violations in California and to update the SDWIS database. Subsequent annual reports will include Lead and Copper Rule violation data when the SDWIS database has been updated.

#### **SECTION IV: Conclusions**

Overall the drinking water quality provided by the public water systems in California generally meets all of the federal drinking water standards and is safe to drink. The significance of the identified violations for each contaminant categories are as follows.

##### **Organic Contaminants**

100% of California's population served by PWS received drinking water that satisfied all of the primary drinking water standards for organic contaminants.

##### **Inorganic Contaminants**

Approximately 99.5% of California's population served by PWS received drinking water that satisfied all of the primary drinking water standards for inorganic contaminants.

The inorganic contaminant MCL violations were reported by forty-two (42) public water systems for three (3) inorganic contaminants: asbestos, cadmium, and nitrate. A single asbestos MCL violation (7 MF < 10 MM) was reported by a water system serving a population of 53 which represents less than 0.01% of the state total population. Consuming/ingesting drinking water for prolonged periods with asbestos concentrations greater than 7MF larger than 10 MM could cause cancer and other adverse health effects.

A single cadmium MCL violation (0.005 mg/l) was reported by a water system serving a population of 300, which represents less than 0.01% of the state total population. Consuming/ingesting drinking water for prolonged periods with cadmium concentrations greater than 0.005 mg/l could increase the risk of kidney damage.

Nitrate MCL violations (greater than 10.0 mg/l) were reported by forty (40) water systems which serve a total population of approximately 177,923. The affected population represents 0.51% of the state total population. Excessive nitrate levels in drinking water can cause serious illness and possible death in infants less than 6 months of age.

##### **Total Coliform Rule**

Approximately ninety-seven percent (97%) of California's population received drinking water from PWS that satisfied the primary drinking water standards for bacteriological quality continuously throughout the year.

The fifty-seven (57) water systems that reported acute bacteriological MCL violations serve a total population of approximately 110,338, which represents 0.32% of the state population. These water systems reported fifty-nine (59) acute bacteriological MCL violations.

Fifty-five (55) public water systems reported single acute bacteriological MCL violations, one water system reported two single non-consecutive violations, and only one of the water system reported two consecutive violations. The single violations indicate that the circumstances causing the violations were corrected immediately. As a result of these violations, the affected population was briefly exposed to a significant public health risk due to bacteriological contamination of their water supplies.

The four hundred fifty-five (455) water systems with six hundred twenty-nine (629) that reported non-acute bacteriological MCL violations serve a total population of approximately 880,443, which represents 2.52% of the state population. These non-acute bacteriological violations do not necessarily indicate that the affected population was exposed to a public health risk. Typically, these violations are the result of improper water sampling and/or inadequate cleaning of water distribution systems.

The five hundred nineteen (519) water systems reported seven hundred eleven (711) bacteriological monitoring violations. The failure to complete the required bacteriological monitoring does not enable the water system to determine compliance with the primary drinking water standards for bacteriological quality.

### **Surface Water Treatment Rule**

Approximately 97.7% of California's population served by PWS received drinking water that satisfied the filtration treatment and monitoring provisions of the Surface Water Treatment Rule continuously throughout the year.

The eleven (11) water systems that reported treatment technique violations serve a total population of 804,182, which represents 2.3% of the state population. Nine (9) of these water systems reported the violation for only one (1) month and met the requirement during the remaining eleven months of the year. Two water system reported violations for two (2) months of the year. Treatment technique violations are typically reported as a result of raised turbidity levels in the water or a failure to maintain the required level of disinfection. High turbidity levels or inadequate disinfection are indicators of potential breakthrough of cryptosporidium, giardia, bacteria, or viruses in the treatment process.

The fifty-four (54) water systems with "failure to filter" violations represent unfiltered water systems which have not complied with the USEPA requirement to install filtration. The total population served by these unfiltered water systems is approximately 134,187. The failure of these water systems to install filtration may expose the affected population to a potential health risk from cryptosporidium, giardia, viruses, and bacteria in the drinking water supply.

The Department has issued compliance orders or agreements to enforce the required installation of filtration treatment for all fifty-four (54) unfiltered water systems in violation.

### Enforcement Activities

In response to the identified violations of the Safe Drinking Water Act during 1998, the Department issued 1069 enforcement letters, 414 citations, and 27 compliance orders and the local primacy agency issued a combined 1419 enforcement letters, citations, and compliance orders to the affected water systems. This aggressive enforcement is a key element of the Department's overall Drinking Water Regulatory Program strategy to bring all public water systems into full compliance with the drinking water regulations and ensure that all Californians receive safe drinking water.