CALENDAR YEAR 2002

UTAH DRINKING WATER ANNUAL COMPLIANCE REPORT

June 27, 2003

I. Introduction

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, the 1986 Amendments, and the 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 drinking 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 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. The 1996 Amendments to the SDWA require public notification to 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 the state can enforce the program requirements. Of the 57 states and territories, all but Wyoming and the District of Columbia have primacy. The EPA Regional Offices administer the PWSS Programs within these two jurisdictions.

The 1986 SDWA Amendments gave Indian Tribes the right to apply for and receive primacy. To receive primacy, a Tribe must meet the same requirements as a state. To date, only the Navajo Tribe has been granted primacy. Currently, EPA administers PWSS Programs on all other Indian lands.

Annual State PWS Report

Primacy states submit data in an electronic form to the Safe Drinking Water Information System (SDWIS/FED) on a quarterly basis. This forwarded data is formatted using identification numbers rather than names and code values representing type of violations and actions. Consequently it is not very readable. The forwarded data include PWS inventory statistics, the incidence of Maximum Contaminant Level, Major Monitoring and Treatment Technique violations, and the enforcement actions taken against violators. The annual compliance report that states are required to submit to EPA, or this report, will provide a total annual representation of the numbers of violations for each of the four categories listed in section 1414(c)(3) of the Safe Drinking Water Act reauthorization. These four categories are: MCLs, treatment techniques, variances and exemptions, and significant monitoring violations. The EPA Regional Offices report the information for Wyoming, the District of Columbia, and appropriate Indian Lands. Regional offices also report Federal enforcement actions taken. EPA stores this data in an automated database called the Safe Drinking Water Information System (SDWIS). Where the bulk of data transmitted to the Safe Drinking Water Information System (SDWIS/FED) comes the Primacy state, and where this report is produced by Utah's Division of Drinking Water, or the Primacy agency in Utah, the data should be essentially the same.

The first annual report was generated January 1, 1998, for the compliance period of calendar year 1996. Thereafter each succeeding report was generated on or around July 1st and covered the preceding calendar year. This report is the seventh annual report, and covers calendar year 2002.

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 as follows: a) community systems (such as cities and towns), b) non-transient non-community systems (such as schools or factories), or c) transient non-community systems (such as summer home subdivisions, restaurants, federal, state or local parks or highway rest stops). For the purpose of this report the acronym "PWS" means systems of all types unless, specified in greater detail.

Maximum Contaminant Level

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).

Treatment Techniques

For some regulations, the EPA establishes treatment techniques (TTs) in lieu of an MCL to control unacceptable levels of certain contaminants. For example, treatment techniques have been established for viruses, bacteria, and turbidity.

Variances 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 (including increments of progress) that the PWS will follow to come into eventual compliance with the MCL. Small systems (those serving 3,300 or fewer persons; or 10,000 or fewer persons with the Administrator's approval) 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, or restructuring or consolidation. Small systems will be allowed up to three two year periods or six years to install and operate EPA approved small system variance technology. The variance shall be reviewed every two years to determine if the system remains eligible for the variance.

A primacy state can grant an exemption to temporarily relieve 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 nor 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.

Monitoring

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 agent, a monitoring violation occurs.

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. Detailed descriptions of what constitutes a major monitoring violation for most drinking water regulations can be found in EPA's *Consolidated Summary of State Reporting Requirements for the Safe Drinking Water Information System* (SDWIS), EPA 812-B-95-001, Consolidated Summary. There are a few drinking water regulations for which the *Consolidated Summary* does not provide a definition of major monitoring violation. For those regulations, EPA has determined what constitutes a significant violation of the monitoring provisions and designed its annual SDWIS ACR computer query to include both these violations and the defined major reporting violations in the tally of significant monitoring violations in a state. Addenda to the ACR describe the additional monitoring violations EPA has determined

are significant.

II.Table of Violations

Appendix A, Violations Table, summarizes violations of the monitoring and reporting requirements, and violations of maximum contaminant levels for the State of Utah in calendar 2002. These violations are further described below.

Chemical Contaminants

The chemical contaminants monitored in drinking water include organic chemicals, inorganic chemicals, and radiological parameters. Monitoring requirements vary by system type and source. If a system exceeds an MCL, then quarterly monitoring is required; systems experiencing levels between the MCL and one half of the MCL, are required to monitor annually. Calendar year 2002 was the last year in a three-year compliance cycle that began in 2000.

Below is a summary of both the MCL and the monitoring and reporting violations that occurred:

Organic chemicals:

Thirty-five systems failed to monitor for one or more chemicals, representing 58 violations of the monitoring and reporting requirements, or 56% of the chemical monitoring and reporting violations identified in calendar year 2002.

Inorganic Chemicals:

Ground water systems were required to monitor for inorganic chemicals once during the compliance period 2000 through 2002, inclusive. Surface water systems are required to monitor for inorganic chemicals annually. At the end of this three-year compliance period (December 31, 2002), 24 systems had failed to report the required inorganic monitoring. The 24 failures to monitor and report translate to 24 violations, or 23% of the total chemical monitoring and reporting violations identified in calendar year 2002.

Nitrate/Nitrite:

In addition to the inorganic monitoring violations are 64 violations by 60 systems of the monitoring and reporting requirements for nitrates or combined nitrate/nitrate.

Radionuclides:

In 2002, there were 22 monitoring and reporting violations for radiological parameters.

Coliform Bacteria Violations

A total of 959 public water systems are required to monitor for the presence of coliform. For the 2002 monitoring period there were 4 violations involving 4 systems that had acute quality violations. Further there were 99 non-acute quality violations involving 79 water systems.

Also during the 2002 calendar year, 160 systems failed to take samples representing 226 separate violations. These violations resulted in system notification, increased monitoring, and/or enforcement action. In many cases further samples were submitted to verify that the water returned to a safe condition.

Surface Water Treatment Rule

Of the 46 surface water systems active in the state in 2002, 6 systems had a total of 23 violations of Treatment Technique (TT) requirements. These violations were due to either inadequate filtration resulting in high turbidity (cloudiness) of the water, or inadequate disinfection with chlorine. There were 5 systems that failed to monitor for turbidity and disinfectant residual.

Lead and Copper Rule

This rule applied to 521 public water systems and requires systems to monitor for lead and copper levels, and install corrosion control and educate consumers if appropriate. If elevated lead or copper levels are found, treatment by the PWS is required. The treatment provide is some type of corrosion control to reduce the likelihood that the water will dissolve harmful levels of either lead or copper from the individual home owner's plumbing into the drinking water.

In the 2002 sampling period, 33 systems failed to take required follow-up or routine samples and 9 systems failed to perform initial lead and copper monitoring.

Consumer Confidence Report Rule

Eighteen community public water systems failed to submit a Consumer Confidence Report covering the calendar year 2001 that was due by July 1, 2002.

III.Variances and Exemptions

There are three systems with Variances for Antimony. They are Park City, Alta and Salt Lake County Service Area #3.

IV.Conclusion

Since the 1996 Annual Compliance Report, the public water systems in Utah have improved markedly in satisfying their bacteriologic and chemical monitoring and reporting requirements.

V.List of MCL and Treatment Technique Violators

See Appendix A, attached

<u>Appendix B</u> <u>Violations Table</u>

State: UTAH

Reporting Interval: 2002

	$\frac{MCL}{(mg/P)^1}.$	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
Organic Contaminants							
1,1,1-Trichloroethane	0.2	0	0			43	31
1,1,2-Trichloroethane	.005	0	0			43	31
1,1-Dichloroethylene	0.007	0	0			43	31
1,2,4-Trichlorobenzene	.07	0	0			43	31
1,2-Dibromo-3-chloropropane (DBCP)	0.0002					State Waiver	
1,2-Dichloroethane	0.005	0	0			43	31
1,2-Dichloropropane	0.005	0	0			43	31
2,3,7,8-TCDD (Dioxin)	3x10-8					State Waiver	
2,4,5-TP	0.05	0	0			39	27
2,4-D	0.07	0	0			39	27
Acrylamide				0	0		
Alachlor	0.002					39	27
Atrazine	0.003	0	0			39	27
Benzene	0.005	0	0			43	31
Benzo[a]pyrene	0.0002	0	0			39	27

	$\frac{MCL}{(mg/P)^1}$	M	CLs	Treatment Techniques		Significant Monitoring/Reporting	
	(ing/1).	Number of Violations	Number of Systems With Violations	Number of Violations			Number of Violations
Chlordane	0.002	0	0			39	27
cis-1,2-Dichloroethylene	0.07	0	0			43	31
Dalapon	0.2	0	0			39	27
Di(2-ethylhexyl)adipate	0.4	0	0			39	27
Di(2-ethylhexyl)phthalate	0.006	0	0			39	27
Dichloromethane	0.005	0	0			43	31
Dinoseb	0.007	0	0			39	27
Diquat	0.02	0	0			State Waiver	
Endothall	0.1	0	0			State Waiver	
Endrin	0.002	0	0			39	27
Epichlorohydrin				0	0		
Ethylbenzene	0.7	0	0			43	31
Ethylene dibromide	0.00005	0	0			State Waiver	
Glyphosate	0.7	0	0			State Waiver	
Heptachlor	0.0004	0	0			39	27
Heptachlor epoxide	0.0002	0	0			39	27
Hexachlorobenzene	0.001	0	0		-	39	27
Methoxychlor	0.04	0	0			39	27
Monochlorobenzene	0.1	0	0			43	31

1. Values are in milligrams per liter (mg/P), unless otherwise specified

	$\frac{MCL}{(mg/P)^{1}}$	M	CLs	Treatment	It Techniques Significant Mon		itoring/Reporting
	(g, 2) .	MCLs	Treatment Techniques	Significant Monitoring/Repo rting		MCL (mg/P) ¹ .	MCLs
		Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
para-Dichlorobenzene	0.075	0	0			43	31
Pentachlorophenol	0.001	0	0			39	27
Picloram	0.5	0	0			39	27
Simazine	0.004	0	0			39	27
Styrene	0.1	0	0			43	31
Tetrachloroethylene	0.005	0	0			43	31
Toluene	1	0	0			43	31
Total polychlorinated biphenyls	0.0005	0	0			39	27
Toxaphene	0.003	0	0			39	27
trans-1,2-Dichloroethylene	0.1	0	0			43	31
Trichloroethylene	0.005	0	0			43	31
Vinyl chloride	0.002	0	0			43	31
Xylenes (total)	10	0	0			43	31
Total trihalomethanes	0.10	0	0			0	0

	MCL (mg/P) ¹ .	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
Inorganic Contaminants							
Antimony	0.006	0	0			36	24
Arsenic	0.05	0	0			36	24
Asbestos	7 million fibers/P # 10 μm long	0	0			69	68
Barium	2	0	0			36	24
Beryllium	0.004	0	0			36	24
Cadmium	0.005	0	0			36	24
Chromium	0.1	0	0			36	24
Cyanide (as free cyanide)	0.2	0	0			36	24
Fluoride	4.0	0	0			36	24
Mercury	0.002	0	0			36	24
Nitrate	10 (as Nitrogen)	0	0			55	51
Nitrite	1 (as Nitrogen)	0	0			9	9
Selenium	0.05	0	0			36	24
Thallium	0.002	0	0			36	24
Total nitrate and nitrite	10 (as Nitrogen)	0	0			55	51

	$\frac{MCL}{(mg/P)^1}.$	MCLs		Treatment	Techniques	Significant Monitoring/Reporting	
		Number of Violations	Number of Systems With	Number of Violations	Number of Systems With	Number of Violations	Number of Systems With
			Violations		Violations		Violations
Radionuclide MCLs							
Gross alpha	15 pCi/P	0	0			33	22
Radium-226 and radium-228	5 pCi/P	0	0			33	22
Gross beta	4 mrem/yr	0	0			33	22
Subtotal		0	0			99	22

	MCL (mg/P) ¹ .	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of	Number of	Number of	Number of	Number of	Number of
		Violations	Systems With	Violations	Systems With	Violations	Systems With
			Violations		Violations		Violations
Total Coliform Rule							
Acute MCL violation	Presence	4	4				
Non-acute MCL violation	Presence	99	79				
Major routine and follow up						226	160
monitoring			·				
Sanitary survey ²						44	44
Subtotal		103	103			270	270

1. Values are in milligrams per liter (mg/P), unless otherwise specified

2. Number of major monitoring violations for sanitary survey under the Total Coliform Rule.

	$\frac{\text{MCL}}{(\text{mg/P})^{1}}$	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
Surface Water Treatment Rule							
Filtered systems							
Monitoring, routine/repeat						8	5
Treatment techniques				23	6		
Unfiltered systems							
Monitoring, routine/repeat						0	0
Failure to filter				0	0		
Subtotal				23	6	8	5

1. Values are in milligrams per liter (mg/P), unless otherwise specified

2. Number of major monitoring violations for sanitary survey under the Total Coliform Rule.

	MCL (mg/P) ¹ .	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
Lead and Copper Rule							
Initial lead and copper tap M/R						9	9
Follow-up or routine lead and copper tap M/R						33	33
Treatment installation				0	0		
Public education				0	0		
Subtotal				0	0	42	42

1. Values are in milligrams per liter (mg/P), unless otherwise specified

2. Number of major monitoring violations for sanitary survey under the Total Coliform Rule.

State of Utah Notes on the 2002 Report

The number of bacteriological violations have decreased for the year 2002?***.

The significant increase in the pesticide monitoring and reporting violations is due to the pesticide monitoring waivers being tied to the source protection plans starting in the year 2000. Based on individual source protection plans many sources have lost their monitoring waivers for pesticides. Many water system managements are currently working to budget for and complete their required pesticide samples.***

Definitions for Summary of Violations Table

The following definitions apply to the Summary of Violations table.

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 six categories:

Initial lead and copper tap M/R: A violation where 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 M/R: A violation where a system did not meet follow-up or routine lead and copper tap testing requirements, or failed to report the results.

Treatment installation: Violations for a failure to install optimal corrosion control treatment system or source water treatment system which would reduce lead and copper levels in water at the tap. [One number is to be reported for the sum of violations in both categories].

Lead service line replacement: A violation for a system's failure to replace lead service lines on the schedule required by the regulation.

Public education: A violation where 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 runoff from cropland or discharge from factories. EPA has set legal limits on 54 organic contaminants that are to be reported [40 CFR 141.61].

Radionuclides: Radioactive particles which 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: A violation for alpha radiation above MCL of 15 picocuries/liter. Gross alpha includes radium-226 but excludes radon and uranium.

Combined radium-226 and radium-228: A violation for combined radiation from these two isotopes above MCL of 5 pCi/L.

Gross beta: A violation for beta particle and photon radioactivity from man-made radionuclides above 4 millirem/year.

Reporting Interval: The reporting interval for violations to be included in the first PWS Annual Compliance Report, which is to be submitted to EPA by January 1, 1998, is from July 1, 1996 through June 30, 1997. This interval will change for future annual reports. See guidance language for these intervals.

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): A violation for a system's failure to carry out required tests, or to report the results of those tests.

Treatment techniques (for filtered systems): A violation for a system's failure to properly treat its water.

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

Failure to filter (for unfiltered systems): A violation for a system's failure to properly treat its water. Data for this violation code will be supplied to States by EPA.

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: A violation where the system found fecal coliform or E. coli, potentially harmful bacteria, in its water, thereby violating the rule.

Non-acute MCL violation: A violation where 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: A violation where a system did not perform any monitoring. [One number is to be reported for the sum of violations in these two categories.]

Sanitary Survey: A major monitoring violation if a system fails to collect 5 routine monthly samples if sanitary survey is not performed.

Treatment Techniques: A water disinfection 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.