ANNUAL COMPLIANCE REPORT

SOUTH DAKOTA PUBLIC WATER SYSTEM VIOLATIONS

for the period
January 1 2007 – December 31, 2007

INTRODUCTION

This annual Compliance Report has been developed to meet the requirements of section 1414 of the 1996 Amendments to the Safe Drinking Water Act. The time period covered in this report is January 1, 2007, through December 31, 2007. A copy of this report is being made available to the public.

Protecting Drinking Water in South Dakota

The U.S. Environmental Protection Agency (EPA) established a public drinking water system program under the authority of the 1974 Safe Drinking Water Act. The Safe Drinking Water Act allows States to seek EPA approval to administer their own public drinking water program. The authority to run a public drinking water system program is called primacy, a short term for primary enforcement responsibility. To receive primacy, States must meet certain requirements, 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. South Dakota met the requirements and was granted primacy by EPA in 1984.

Under the Safe Drinking Water Act and the 1986 Amendments to the Safe Drinking Water Act, both the state and EPA set limits on contaminant levels in drinking water to ensure that the water is safe for human consumption. These limits are known as drinking water standards. For some regulations, a treatment technique is established in place of a drinking water standard to control unacceptable levels of contaminants in drinking water. The State and EPA also regulate how often public water systems monitor their water for contaminants. Generally, the larger the population served by a drinking water system, the more frequent the monitoring and reporting requirements. In addition to monitoring for regulated contaminants, public water systems are also required to monitor for unregulated contaminants to provide data for future regulatory development. Finally, the State and EPA require public water systems to notify their consumers when they have a violation of the regulations. The 1996 Amendments to the Safe Drinking Water Act require that public notifications include a clear and understandable explanation of the nature of the violation. The public notice must also specify any potential adverse health effects, steps the public water system has taken or will be taking to correct the violation, and alternative water sources available during the violation.

Glossary of Terms

Filtered Systems: Water systems that have installed filtration treatment.

Inorganic Chemicals (IOCs): Non-carbon based compounds such as metals, nitrate, and asbestos. These contaminants are naturally occurring in some water, but can get into water through chemical manufacturing, farming, and other man-made pollution sources.

Lead and Copper Rule: This rule established national limits on lead and copper in drinking water. Lead and copper corrosion poses various health risks when ingested at any level and can enter drinking water from household pipes and plumbing fixtures.

Initial lead and copper tap M/R (monitoring/reporting): 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 failing to install optimal corrosion control treatment or source water treatment which would reduce lead and copper levels in water at the tap.

Public Education: A violation where a system did not provide required public education about reducing or avoiding lead intake from water.

Monitoring: EPA and the State specify what tests a water system must collect samples for and the frequency of that sample collection. A water system that does not collect the proper types of samples or does not follow the frequency schedule is in violation.

Organic Contaminants: Carbon-based compounds, such as industrial solvents and pesticides. This category includes both synthetic organic chemicals (SOCs) and volatile organic chemicals (VOCs). The contaminants generally get into water by discharge from factories and runoff from cropland.

Radionuclides: Radioactive particles that can occur naturally in water or result from man-made pollution sources.

Surface Water Treatment Rule and Interim Enhanced Surface Water Treatment Rule: These rules establish criteria under which water systems supplied by surface water, or ground water under the direct influence of surface water, must filter and disinfect their water. Violations of these rules are reported for the following four categories:

Monitoring, routine/repeat (for filtered systems): A violation for failing to carry out required tests, or reporting the results of the tests.

Treatment Techniques (for filtered systems): A violation for failing to properly treat its water.

Monitoring, routine/repeat (for unfiltered systems): A violation for failing to carry out required water tests, or reporting the results of those tests.

Failure to filter (for unfiltered systems): A violation for failing to properly treat its water.

Total Coliform Rule: This rule establishes regulations for microbiological contaminants in drinking water. These contaminants can cause immediate risks to health. If no samples are collected during the one-month compliance period, a significant monitoring violation occurs.

Acute MCL (maximum contaminant level) violation: A violation where the system found fecal coliform or E. coli, potentially harmful bacteria, in its water, thereby a violation of the rule.

Non-acute MCL violation: A violation where the system found total coliform bacteria 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, if more than 5% of the samples are positive for total coliform there is a violation.

Major routine and follow-up monitoring: A violation where a system did not perform any monitoring.

Disinfection Byproducts (DBP) Rule: This rule applies to community water systems that add a disinfectant to their water. The rule establishes regulations for disinfection by-products formed from the use of disinfectants such as chlorine, chlorine dioxide, and ozone. Two classes of by-products are regulated, total trihalomethanes (TTHMs) and haloacetic acids (HAA5). Systems monitoring requirements depend on population served, source type (ground water vs. surface water supplies) and the number of plants that supply water to their system.

Treatment Techniques: A treatment process that leads to a reduction in the level of a contaminant sufficient to meet drinking water standards. For purposes of this report, treatment techniques are specified for the Surface Water Treatment Rule and Interim Enhanced Surface Water Treatment Rule to reduce or remove contaminants that cannot be feasibly or economically measured in a laboratory, the Disinfection Byproducts Rule for precursor removal and certified operator requirements, and for the Lead and Copper Rule to remove or reduce the corrosivity of the drinking water.

Unfiltered Systems: Water systems that do not need to filter their water before disinfecting it because the source is very clean.

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

The Drinking Water Program: An Overview

Public Water System

A public water system is defined as a water system that provides water via piping or other constructed conveyances for human consumption to at least 15 service connections or serves an average of 25 people for at least 60 days each year. There are three types of public water systems - community (towns, housing developments, rural water systems), nontransient noncommunity (schools, day care centers, factories), or transient noncommunity systems (rest stops, parks, or campgrounds). In South Dakota 453 systems are classified as Community Water Systems, 25 are classified as Nontransient Noncommunity Water Systems, and 178 are classified as Transient Noncommunity Water Systems for a total of 656.

Drinking Water Standard

Under the Safe Drinking Water Act, the State and EPA set limits on the highest amount of contaminant that is allowed in drinking water to ensure that the water is safe for human consumption. These limits are known as drinking water standards.

Treatment Techniques

For some regulations, treatment techniques are established in place of a drinking water standard to control unacceptable levels of certain contaminants. For example, treatment techniques have been established to control viruses, bacteria, and turbidity (cloudiness) in drinking water.

Monitoring

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

Significant Monitoring Violations

For this report, significant monitoring violations are defined as any major monitoring violation that has occurred during the calendar year of the report. A major monitoring violation (except for the surface water treatment rule) occurs when samples are not taken, or results are not 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 results are not reported during a reporting interval. A minor violation occurs when some, but not all, of the required numbers of samples are taken.

Consumer Notification

Every community public water system is required to prepare and provide to its customers a brief Annual Water Quality Report, also referred to as the Consumer Confidence Report. This report is to include some educational material, and will provide information on the source water, the levels of any detected contaminants, and compliance with drinking water regulations.

Significant Consumer Notification Violations

For this report, a significant public notification violation occurred if a community water system completely failed to prepare and provide it customers the required annual report.

Annual State PWS Report

South Dakota submits data to EPA on a quarterly basis. Data submitted includes: public water system inventory statistics, drinking water standards violations, major monitoring/reporting violations, treatment technique violations, and enforcement actions taken against violators. The annual compliance report that South Dakota is required to submit to EPA will provide a total annual representation of the numbers of violations for: a) drinking water standards, b) treatment techniques, c) variances and exemptions, and d) significant monitoring violations. The information in attached compliance report tables is based on data retrieved from EPA and verified against the state's database.

Compliance Report Table

The attached compliance report, Table 2, provides a listing of each contaminant regulated under the Safe Drinking Water Act with the corresponding number of drinking water standards, treatment techniques, and significant monitoring violations. Also listed is the number of systems responsible for the violations for each contaminant.

One of the annual compliance report categories to be reported is the number of violations of variances and exemptions. However, no data is provided for this category because no variances or exemptions have been issued in South Dakota.

Summary of Table Information

The overall quality of drinking water available to South Dakota public water system consumers remains good. As indicated in Table 1, there were only a few violations of organic and other chemical standards. Approximately 98% of community water systems were in compliance with the drinking water standards for total coliform during 2007.

Information on the table shows there was only one organic chemical violation. South Dakota is not an industrial state. The absence of organic chemicals in drinking water supplies, especially those associated with solvent use is not surprising. Agriculture is a principal part of the South Dakota economy. Having no pesticide violations indicates that the use of properly constructed public drinking water wells, and good chemical and land use management practices by farmers and ranchers minimizes impacts to sources of drinking water used by public water systems.

There was a significant decrease in monitoring and reporting violations for Volatile and Synthetic Organic Chemicals (VOCs and SOCs) from 2006 to 2007. This decrease was the result of working closely with systems in the Black Hills area that failed to monitor in 2006 due to expired waivers. The numbers have lowered back to more typical results and it is expected that these numbers will be similar for 2008.

The inorganic chemicals (IOCs) group continued to show a slight an increase in violations from 2006 to 2007. This increase can again be attributed to the lower arsenic standard. The standard was lowered from 50 parts per billion down to 10 parts per billion and several systems did not violate the new standard until 2007 based on an annual average of quarterly monitoring results that began in 2006 and were completed in 2007. These systems are continue to work toward returning to compliance either through changes in treatment or development of a new source of supply.

The tables indicate there were radionuclide violations at only 2% of the community water systems during 2007. The majority of the systems in violation are at or near the drinking water standard for combined radium. The department will initiate appropriate actions to address the violations of the radionuclide standards to ensure compliance with EPA's standards. Priority will be addressed given to the highest levels.

Systems that were required to comply with the Disinfection Byproduct Rule showed improvement in meeting the standards however there was an increase in the number of system that had treatment technique violations due to lack of certified operators.

Availability of Annual Compliance Report (ACR)

Electronic versions in PDF format will be available at our web address http://www.state.sd.us/denr/des/drinking/info.htm. Also available from our web site are annual compliance reports from previous years that viewers may use for comparison purposes.

South Dakota's Annual Compliance Report is also available by contacting the South Dakota Department of Environment and Natural Resources, Drinking Water Program, PMB-2020, Joe Foss Building, 523 East Capitol Ave, Pierre, SD 57501, Attention: Mark S. Mayer, P.E. (605) 773-3754 (phone) or mark.mayer@state.sd.us (email). The SD Drinking Water Program will provide a summary of this report upon request.

Annual Compliance Report
Table 1

State: South Dakota
Reporting Interval: January 1 - December 31, 2007

	Drinking Water Standards			*Treatment Techniques*			*Significant Monitoring/Reporting*		
	Total Number of Systems Required to Monitor	*Total Number of Systems in Violation*	*Percentage of Systems with NO Violations*	*Total Number of Systems Required to Monitor*	*Total Number of Systems in Violation*	*Percentage of Systems with NO Violations*	*Total Number of Systems Required to Monitor*	*Total Number of Systems in Violation*	*Percentage of Systems with NO Violations*
Volatile Organic Chemicals (VOCs)									
Community Water Systems	289	0	100%				289	1	100%
Transient Noncommunity Water Systems									
Nontransient Noncommunity Water Systems	25	0	100%				25	1	96%
Synthetic Organic Chemicals (SOCs)									
Community Water Systems	289	1	100%	20	0	100%	289	0	100%
Transient Noncommunity Water Systems									
Nontransient Noncommunity Water Systems	25	0	100%				25	1	96%
Inorganic Chemical (IOCs)									
Community Water Systems	289	11	96%				289	1	100%
Transient Noncommunity Water Systems	178	2	99%				178	3	98%
Nontransient Noncommunity Water Systems	25	2	92%				25	0	100%
Radionuclides									
Community Water Systems	289	7	98%				289	0	100%
Transient Noncommunity Water Systems									
Nontransient Noncommunity Water Systems									

Annual Compliance Report
Table 1

State: South Dakota
Reporting Interval: January 1 - December 31, 2007

	Drinking Water Standards			*Treatment Techniques*			*Significant Monitoring/Reporting*		
	Total Number of Systems Required to Monitor	*Total Number of Systems in Violation*	*Percentage of Systems with NO Violations*	*Total Number of Systems Required to Monitor*	*Total Number of Systems in Violation*	*Percentage of Systems with NO Violations*	*Total Number of Systems Required to Monitor*	*Total Number of Systems in Violation*	*Percentage of Systems with NO Violations*
Total Coliform Rule									
Community Water Systems	453	11	98%				453	21	95%
Transient Noncommunity Water Systems	178	12	93%				178	10	94%
Nontransient Noncommunity Water Systems	25	3	88%				25	1	96%
Surface Water Treatment Rule									
Community Water Systems				19	1	95%	19	0	100%
Transient Noncommunity Water Systems				1	0	100%	1	0	100%
Nontransient Noncommunity Water Systems									
Lead and Copper Rule									
Community Water Systems				453	0	100%	453	10	98%
Transient Noncommunity Water Systems									
Nontransient Noncommunity Water Systems				25	0	100%	25	1	96%
Consumer Confidence Reports									
Community Water Systems							453	31	93%
Transient Noncommunity Water Systems									
Nontransient Noncommunity Water Systems									
Disinfection By-Products Rule									
Community Water Systems	205	2	99%	205	18	91%	205	7	97%
Transient Noncommunity Water Systems									
Nontransient Noncommunity Water Systems	11	0	100%	11	1	91%	11	1	91%
Public Notification Rule									
Community Water Systems							453	73	84%
Transient Noncommunity Water Systems							178	64	64%
Nontransient Noncommunity Water Systems							25	2	92%

Annual Compliance Report
Table 2

State: South Dakota`
Reporting Interval: January 1 - December 31, 2007

	Drinking Water Standard (mg/L) [1]	*Drinking Water Standard*		*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*
Volatile Organic Chemicals (VOCs)							
Vinyl Chloride	0.002	0	0			2	2
Benzene	0.005	0	0			2	2
Carbon Tetrachloride	0.005	0	0			2	2
1,2-Dichloroethane	0.005	0	0			2	2
Trichloroethylene	0.005	0	0			2	2
p-Dichlorobenzene	0.075	0	0			2	2
1,1-Dichloroethylene	0.007	0	0			2	2
1,1,1-Trichloroethane	0.2	0	0			2	2
cis-1,2-Dichloroethylene	0.07	0	0			2	2
1,2-Dichloropropane	0.005	0	0			2	2
Ethylbenzene	0.7	0	0			2	2
Monochlorobenzene (Chlorobenzene)	0.1	0	0			2	2
o-Dichlorobenzene	0.6	0	0			2	2
Styrene	0.1	0	0			2	2
Tetrachloroethylene	0.005	0	0			2	2
Toluene	1	0	0			2	2
Trans-1,2-Dichloroethylene	0.1	0	0			2	2
Xylenes, Total	10	0	0			2	2
Dichloromethane (Methylene Chloride)	0.005	0	0			2	2
1,2,4-Trichlorbenzene	0.07	0	0			2	2
1,1,2-Trichloroethane	0.005	0	0			2	2
Subtotal		*0*	*0*			*42*	*2*

1 mg/L = milligrams per liter 2 µm = micron = a millionth of a meter 3 pCi/L = picocuries per liter 4 mrem/yr = millirems per year

* MCL is equivalent to the Drinking Water Standard

Annual Compliance Report
Table 2

State: South Dakota
Reporting Interval: January 1 - December 31, 2007

	Drinking Water Standard (mg/L) [1]	*Drinking Water Standard*		*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*
Synthetic Organic Chemicals (SOCs)							
Alachlor (Lasso)	0.002	0	0			1	1
Atrazine	0.003	0	0			1	1
Carbofuran	0.04	0	0			1	1
Chlordane	0.002	0	0			1	1
1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0	0			1	1
2,4-D	0.07	0	0			1	1
Ethylene Dibromide (EDB)	0.00005	0	0			1	1
Heptachlor	0.0004	0	0			1	1
Heptachlor epoxide	0.0002	0	0			1	1
BHC-gamma (Lindane)	0.0002	0	0			1	1
Methoxychlor	0.04	0	0			1	1
Total Polychlorinated Biphenyls (PCBs)	0.0005	0	0			1	1
Pentachlorophenol	0.001	1	1			1	1
Toxaphene	0.003	0	0			1	1
2,4,5-TP (Silvex)	0.05	0	0			1	1
Benzo (A) Pyrene	0.0002	0	0			1	1
Dalapon	0.2	0	0			1	1
Di (2-Ethylhexyl) adipate	0.4	0	0			1	1
Di (2-Ethylhexyl) phthalate	0.006	0	0			1	1
Dinoseb	0.007	0	0			1	1
Diquat	0.02	0	0			1	1
2,3,7,8-TCDD (Dioxin)	3×10^{-8}	0	0			0	0
Endothall	0.1	0	0			1	1
Endrin	0.002	0	0			1	1
Glyphosate	0.7	0	0			1	1
Hexachlorobenzene (HCB)	0.001	0	0			1	1
Hexachlorocyclopentadiene	0.05	0	0			1	1

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* MCL is equivalent to the Drinking Water Standard

Annual Compliance Report
Table 2

State: South Dakota
Reporting Interval: January 1 – December 31, 2007

	Drinking Water Standard (mg/L) [1]	*Drinking Water Standard*		*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*
Oxamyl (Vydate)	0.2	0	0			1	1
Picloram	0.5	0	0			1	1
Simazine	0.004	0	0			1	1
Acrylamide				0	0		
Epichlorohydrin				0	0		
Total Trihalomethanes	*0.1*	*0*	*0*			*0*	*0*
Subtotal		*1*	*1*	*0*	*0*	*29*	*1*
Inorganic Chemical (IOCs)							
Antimony	0.006	0	0			0	0
Arsenic	0.010	32	9			1	1
Barium	2	0	0			0	0
Beryllium	0.004	0	0			0	0
Cadmium	0.005	0	0			0	0
Chromium	0.1	0	0			0	0
Fluoride	4.0	3	1			0	0
Mercury	0.002	0	0			0	0
Nickel	NA					0	0
Nitrate	10	6	5			3	3
Nitrite	1	0	0			0	0
Selenium	0.05	0	0			0	0
Thallium	0.002	0	0			0	0
Cyanide	0.2	0	0			0	0
Asbestos (fibers α10 μm long) [2]	7 million fibers/L	0	0			0	0
Subtotal		*41*	*15*			*4*	*4*
Radionuclides							
Gross alpha	15 pCi/L [3]	7	3			0	0
Combined Radium 226 / Radium 228	5 pCi/L	17	5			0	0
Combined Uranium	30	1	1			0	0
Gross Beta	4 mrem/yr	0	0			0	0
Subtotal		*25*	*7*			*0*	*0*

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* MCL is equivalent to the Drinking Water Standard

Annual Compliance Report
Table 2

State: South Dakota
Reporting Interval: January 1 - December 31, 2007

	Drinking Water Standard (mg/L) [1]	*Drinking Water Standard*		*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*
Total Coliform Rule							
Acute MCL *	Presence	4	4				
Non-acute MCL (monthly)	Presence	36	26				
Major routine and follow up monitoring						40	32
Subtotal		*40*	*26*			*40*	*32*
Surface Water Treatment Rule							
Filtered Systems							
Monitoring, routine/repeat						0	0
Treatment Techniques				1	1		
Unfiltered Systems							
Monitoring, routine/repeat						0	0
Failure to filter				0	0		
Subtotal				*1*	*1*	*0*	*0*
Lead and Copper Rule							
Initial lead and copper tap M/R						2	2
Follow-up or routine lead and copper tap M/R						9	9
Treatment installation				0	0		
Public Education				0	0		
Subtotal				*0*	*0*	*11*	*11*
Disinfection Byproducts Rule (DBP)							
THMs/HAA5s	80 µg/l / 60 µg/l	3	2	0	0	4	2
Chlorine Residuals	4	0	0			9	7
Precursor Removal/Operator Certification	N/A			19	19	0	0
Subtotal		*3*	*2*	*19*	*19*	*13*	*9*
Consumer Confidence Reports							
Complete failure to report						*32*	*31*
Public Notification							
Complete failure to report						*420*	*139*

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Annual Compliance Report
Table 2 Totals

State: South Dakota
Reporting Interval: January 1 - December 31, 2007

Contaminant Group	*Drinking Water Standard*		*Treatment Techniques*		*Significant Monitoring/Reporting*		*Consumer Notification*	
	Number of Violations	*Number of Systems with Violations*	*Number of Violations*	*Number of Systems with Violations*	*Number of Violations*	*Number of Systems with Violations*	*Number of Violations*	*Number of Systems with Violations*
Chemical Rules								
Volatile Organic Chemicals (VOCs)	0	0			42	2		
Synthetic Organic Chemicals (SOCs)	1	1	0	0	29	1		
Inorganic Chemicals (IOCs)	41	15			4	4		
Radiological Chemicals (Rads)	25	7			0	0		
Chemicals Subtotal	67	22	0	0	75	7		
Total Coliform Rule subtotal	40	26			40	32		
Surface Water Treatment Rule subtotal			1	1	0	0		
Lead/Copper Rule subtotals			0	0	11	11		
Disinfection Byproducts Rule (DBP) subtotal	3	2	19	19	13	9		
Consumer Notification Rule (CCR)							32	31
Public Notification Rule (PN)							420	139
Totals	*110*	*47*	*20*	*20*	*139*	*50*	*452*	*155*

Note: Although a public water system may be out of compliance with more than one contaminant group or rule, when calculating totals, it is counted no more than once within the population being totaled. Therefore, the sum of **Number of Systems with Violations** over the various contaminant groups or rules may not add up to the total.