

# Keeping Drinking Water Safe in Minnesota

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# Could this happen in Minnesota?

**Des Moines  
Water Works  
Lawsuit in  
Response to  
Escalating  
Nitrate  
Concentration  
Risks**





# Drinking Water Law Basics

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# Safe Drinking Water Act

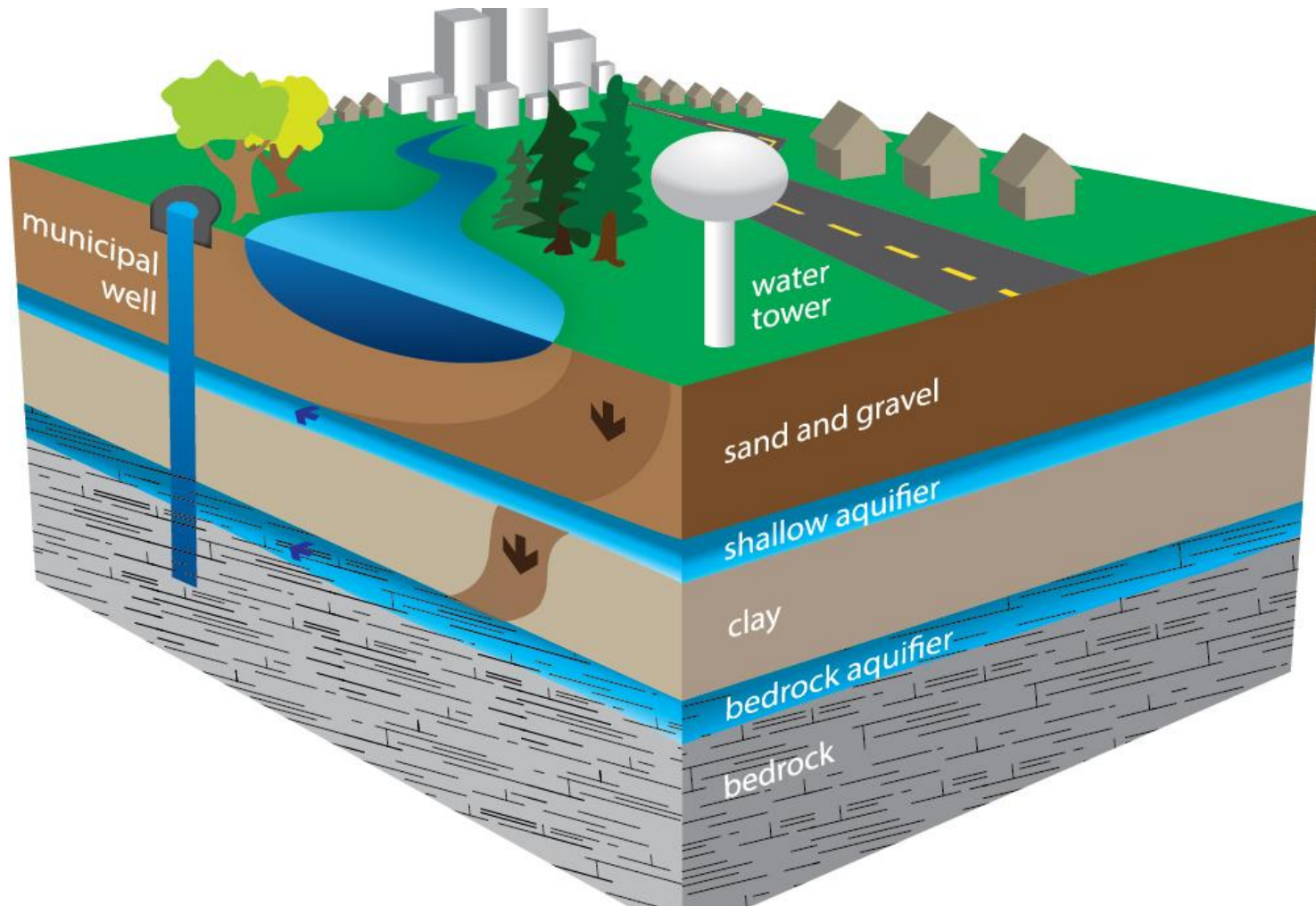
- **Cooperative Federalism**
  - **Feds set requirements/standards**
  - **States implement and enforce**



# SDWA – Who's Covered? (§ 1411)

- **Public Water Systems**
  - Water systems providing water for human consumption to at least 15 service connections or at least 25 people
- **System Types**
  - **Community Water Systems**
    - E.g., Minneapolis WTDS
  - **Non-Transient Non-Community Water Systems**
    - E.g., School with own well
  - **Transient Non-Community Water Systems**
    - E.g., Campground
- **Who's NOT Covered?**
  - Private wells; bottled water

# Ground water and surface water are drinking water sources



# **SDWA – Standards** (§ 1417)

- **Primary Drinking Water Regulations (“primary standards”)**
- **Contaminants**
  - **Microorganisms, radionuclides, organic chemicals, inorganic chemicals, disinfectants...**
- **EPA regulates if Administrator finds**
  - **Possible adverse health effects**
  - **Occurs in public water system at levels and frequency to cause public health concern, and**
  - **Meaningful opportunity for health risk reduction**
- **Contaminant Candidate List**



# How Standards Are Set (§ 1417)

- **Maximum contaminant level goal (MCLG)**
- **Maximum contaminant level (MCL)**
- **Reviewed every 6 years**



## Organic Chemicals



Contaminant	MCLG <sup>1</sup> (mg/L) <sup>2</sup>	MCL or TT <sup>1</sup> (mg/L) <sup>2</sup>	Potential Health Effects from Long-Term Exposure Above the MCL (unless specified as short-term)	Sources of Contaminant in Drinking Water
<a href="#">Acrylamide</a>	zero	TT <sup>3</sup>	Nervous system or blood problems; increased risk of cancer	Added to water during sewage/wastewater treatment
<a href="#">Alachlor</a>	zero	0.002	Eye, liver, kidney or spleen problems; anemia; increased risk of cancer	Runoff from herbicide used on row crops
<a href="#">Atrazine</a>	0.003	0.003	Cardiovascular system or reproductive problems	Runoff from herbicide used on row crops
<a href="#">Benzene</a>	zero	0.005	Anemia; decrease in blood platelets; increased risk of cancer	Discharge from factories; leaching from gas storage tanks and landfills

# State Primacy

- **States and tribes may assume oversight and enforcement responsibility (§ 1413)**
  - **Adopt rules at least as stringent as federal regulations**
  - **Adequate enforcement procedures (monitoring and inspection)**
  - **Authority for administrative penalties**
  - **Inventories of water systems**
  - **Records and compliance data**
  - **Report to EPA**

# Enforcement

- **Monitoring results reported**
  - **Public water system → states → EPA**
- **State and federal administrative enforcement authorized** (§ 1414)
- **Customer notification of violations required** (§ 1414)
- **Citizen Suits** (§ 1449)
- **Judicial Review of Standards** (§ 1448)

## Minneapolis 2016 Monitoring Results

Contaminant (units)	MCLG	MCL	Level Found		Typical Source of Contaminant	Meets Standard
			Range (2016)	Average /Result*		
Fluoride (ppm)	4	4	.66-.72	.75	State of Minnesota requires all municipal water systems to add fluoride to the drinking water to promote strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories.	✓
Haloacetic Acids (HAA5) (ppb)	0	60	2.7-55.4	26.85	By-product of drinking water disinfection.	✓
Nitrate (as Nitrogen) (ppm)	10.4	10.4	N/A	.52	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	✓
TTHM (Total Trihalomethanes) (ppb)	0	80	8.7 - 33.3	25.18	By-product of drinking water disinfection.	✓
Total Coliform Bacteria	0 Present	>5% Present	N/A	1% ♥	Naturally present in the environment.	✓
Turbidity (NTU)	N/A	TT	100% for the lowest monthly % of samples meeting the Turbidity limits	0.18 NTU Highest Single Measurement	Soil runoff.	✓
Chloramine (ppm)	4 MRDLG	4 MRDLG	2.6 - 3.6 Lowest and Highest Monthly Average	3.33 Highest Quarterly Average	Water additive used to control microbes.	✓
Total Organic Carbon	25% - 30% Removal Required		Quarters below removal rate=0	55.2-64.2% Removal Achieved	Naturally present in the environment.	✓
Copper (ppm) (June 2015)	1.3	1.3 AL	90% Level .08	0 out of 54 sites over AL	Corrosion of household plumbing systems; Erosion of natural deposits.	✓
Lead (ppb) (June 2015)	0	15 AL	90% Level 1.6	0 out of 54 sites over AL	Corrosion of household plumbing systems; Erosion of natural deposits.	✓
Cryptosporidium in the river (oocysts/L)	N/A	N/A	nd-3	N/A	Human and animal fecal waste. Results are from raw water.	✓

# Other SDWA Programs

- **Lead** (§ 1417)
- **Groundwater protection – Underground Injection Controls** (§ 1421)
- **Source Water Assessments** (§ 1453)
- **Vulnerability and Emergency Response** (§ 1433)

**Table 2. U.S. Code Sections of the Safe Drinking Water Act  
(Title XIV of the Public Health Service Act)**

(42 U.S.C. 300f-300j-26)



42 U.S.C.	Section Title	SDWA (as amended)	42 U.S.C.	Section Title	SDWA (as amended)
<b>Chapter 6A</b>	<b>Public Health Service</b>				
<b>Subchapter XII</b>	<b>Safety of Public Drinking Water Systems</b>		300i-3	Contaminant prevention, detection, and response	§1434
<b>Part A</b>	<b>Definitions</b>		300i-4 <sup>a</sup>	Supply disruption prevention, detection and response	§1435
300f	Definitions	§1401	<b>Part E</b>	<b>General Provisions</b>	
<b>Part B</b>	<b>Public Water Systems</b>		300j	Assurance of availability of adequate supplies of chemicals necessary for treatment of water	§1441
300g	Coverage	§1411	300j-1 <sup>a</sup>	Research, technical assistance, information, training of personnel	§1442
300g-1	National drinking water regulations	§1412	300j-2 <sup>a</sup>	Grants for state programs	§1443
300g-2	State primary enforcement responsibility	§1413	300j-3 <sup>a</sup>	Special project grants and guaranteed loans	§1444
300g-3	Enforcement of drinking water regulations	§1414	300j-4 <sup>a</sup>	Records and inspections	§1445
300g-4	Variances	§1415	300j-5	National Drinking Water Advisory Council	§1446
300g-5	Exemptions	§1416	300j-6	Federal agencies	§1447
300g-6	Prohibitions on the use of lead pipes, solder, and flux	§1417	300j-7	Judicial reviews	§1448
300g-7	Monitoring of contaminants	§1418	300j-8	Citizen civil actions	§1449
300g-8 <sup>a</sup>	Operator certification	§1419	300j-9	General provisions	§1450
300g-9 <sup>a</sup>	Capacity development	§1420	300j-11	Indian tribes	§1451
<b>Part C</b>	<b>Protection of Underground Sources of Drinking Water</b>		300j-12 <sup>a</sup>	State revolving loan funds	§1452
300h	Regulations for state programs	§1421	300j-13	Source water quality assessment	§1453
300h-1	State primary enforcement responsibility	§1422	300j-14 <sup>a</sup>	Source water petition program	§1454
300h-2	Enforcement of program	§1423	300j-15	Water conservation plan	§1455
300h-3	Interim regulation of underground injections	§1424	300j-16 <sup>a</sup>	Assistance to colonias	§1456
300h-4	Optional demonstration by states relating to oil and natural gas	§1425	300j-17	Estrogenic substances screening program	§1457
300h-5	Regulation of state programs	§1426	300j-18 <sup>a</sup>	Drinking water studies	§1458
300h-6 <sup>a</sup>	Sole source aquifer demonstration program	§1427	300j-19	Algal toxin risk assessment and management	§1459
300h-7 <sup>a</sup>	State programs to establish wellhead protection areas	§1428	300j-19a <sup>a</sup>	Assistance for small and disadvantaged communities	§1459A
300h-8 <sup>a</sup>	State ground water protection grants	§1429	300j-19b <sup>a</sup>	Reducing lead in drinking water	§1459B
<b>Part D</b>	<b>Emergency Powers</b>		<b>Part F</b>	<b>Additional Requirements to Regulate the Safety of Drinking Water</b>	
300i	Emergency powers	§1431	300j-21	Definitions	§1461
300i-1	Tampering with public water systems	§1432	300j-22	Recall of drinking water coolers with lead-lined tanks	§1462
300i-2 <sup>a</sup>	Terrorist and other intentional acts	§1433	300j-23	Drinking water coolers containing lead	§1463
			300j-24 <sup>a</sup>	Lead contamination in school drinking water	§1464