ARTICLE 33-17

PUBLIC WATER SUPPLY SYSTEMS

CHAPTER 33-17-01
PUBLIC WATER SUPPLY SYSTEMS IN NORTH DAKOTA

33-17-01-01. Responsibility. It is the responsibility of any supplier of water to comply within the meaning of this chapter pursuant to North Dakota Century Code chapter 61-28.1.

General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03

33-17-01-02. Definitions. For the purpose of this chapter the following definitions shall apply:

1. "Action level" means the concentration of lead or copper in water specified in title 40, Code of Federal Regulations, part 141, subpart I, section 141.80(c), that determines, in some cases, the treatment requirements set forth under title 40, Code or Federal Regulations, part 141, subpart I, that a water system is required to complete.

2. "Bag Filters" means pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed of a non-rigid, fabric filtration media housed in a pressure vessel in which the direction of flow is from the inside of the bag to the outside.

3. "Bank Filtration" means a water treatment process that uses a well to recover surface water that has naturally infiltrated into ground water through a river bed or bank(s). Infiltration is typically enhanced by the hydraulic gradient imposed by a nearby pumping water supply or other well(s).

4. "Best available technology" or "BAT" means the best technology, treatment techniques, or other means which the department finds, after examination for efficacy under field conditions and not solely under laboratory conditions, are available (taking cost into consideration). For the purposes of setting maximum contaminant levels for synthetic organic chemicals, any best available technology must be at least as effective as granular activated carbon.

5. "Cartridge Filters" means pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media.

They are typically constructed as rigid or semi-rigid, self-supporting filter elements housed in pressure vessels in which flow is from the outside of the cartridge to the inside.

6. "Coagulation" means a process using coagulant chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs.

7. "Combined distribution system" means the interconnected distribution system consisting of the distribution systems of wholesale systems and of the consecutive systems that receive finished water.

8. "Community water system" means a public water system which serves at least fifteen service connections used by year-round residents or regularly serves at least twenty-five year-round residents.

9. "Compliance cycle" means the nine-year calendar year cycle during which public water systems must monitor for inorganic and organic chemicals excluding lead, copper, trihalomethanes, and unregulated contaminants. Each compliance cycle consists of three 3-year compliance periods. The first calendar year cycle begins January 1, 1993, and ends December 31, 2001; the second begins January 1, 2002, and ends December 31, 2010; and the third begins January 1, 2011, and ends December 31, 2019.

10. "Compliance period" means a three-year calendar year period within a compliance cycle during which public water systems must monitor for inorganic and organic chemicals excluding lead, copper, trihalomethanes, and unregulated contaminants. Each compliance cycle has three 3-year compliance periods. Within the first compliance cycle, the first compliance period runs from January 1, 1993, to December 31, 1995; the second from January 1, 1996, to December 31, 1998; and the third from January 1, 1999, to December 31, 2001.

11. "Composite correction program" or "CCP" means a systematic, comprehensive procedure for identifying, prioritizing, and remedying factors that limit water treatment plant performance as set forth in the United

States environmental protection agency handbook entitled Optimizing Water Treatment Plant Performance Using The Composite Correction Program, EPA/625/6-91/027, 1998 edition. A composite correction program consists of two phases, a comprehensive performance evaluation and comprehensive technical assistance.

12. "Comprehensive performance evaluation" or "CPE" means a thorough review and analysis of a treatment plant's performance-based capabilities and associated administrative, operation, and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements. For purposes of compliance with title 40, Code of Federal Regulations, part 141, subpart P and subpart T, the comprehensive performance evaluation shall consist of at least the following components:

    a. Assessment of plant performance;

    b. Evaluation of major unit processes;

    c. Identification and prioritization of performance limiting factors;

    d. Assessment of the applicability of comprehensive technical assistance; and

    e. Preparation of a comprehensive performance evaluation report.

13. "Comprehensive technical assistance" or "CTA" means the performance improvement phase of a composite correction program that is implemented if the comprehensive performance evaluation results indicate improved performance potential. During the comprehensive technical assistance phase, identified and prioritized factors that limit water treatment plant performance are systematically addressed and eliminated.

14. "Confluent growth" means a continuous bacterial growth covering the entire filtration area of a membrane filter, or a portion thereof, in which bacterial colonies are not discrete.

15. "Consecutive system" means a public water system that receives some or all of its finished water from one or more wholesale systems. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

16. "Contaminant" means any physical, chemical, biological, or radiological substance or matter in water.
17. "Conventional filtration treatment" means a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal.

18. "Corrosion inhibitor" means a substance capable of reducing the corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials.

19. "Cross connection" means any connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other either water of unknown or questionable safety or steam, gas, or chemical whereby there may be a flow from one system to the other, the direction of flow depending on the pressure differential between the two systems.

20. "CT" or "CT calc" means the product of residual disinfectant concentration (C) in milligrams per liter determined before or at the first customer and the corresponding disinfectant contact time (T) in minutes. If disinfectants are applied at more than one point prior to the first customer, the CT of each disinfectant sequence must be determined before or at the first customer to determine the total percent inactivation or total inactivation ratio. In determining the total inactivation ratio, the residual disinfectant concentration of each disinfection sequence and the corresponding contact time must be determined before any subsequent disinfection application points. CT ninety-nine point nine is the CT value required for ninety-nine point nine percent (three-logarithm) inactivation of giardia lamblia cysts. CT ninety-nine point nine values for a wide variety of disinfectants and conditions are

set forth under title 40, Code of Federal Regulations, part 141, subpart H. CT calculated divided by CT ninety-nine point nine is the inactivation ratio. The total inactivation ratio is determined by adding together the inactivation ratio for each disinfection sequence. A total inactivation ratio equal to or greater than one point zero is assumed to provide a three-logarithm inactivation of giardia lamblia cysts.

21. "Department" means the state department of health .

22. "Diatomaceous earth filtration" means a process resulting in substantial particulate removal in which a precoat cake of diatomaceous earth filter media is deposited on a support membrane or septum, and while the water is filtered by passing through the cake on the septum, additional filter media known as body feed is continuously added to the feed water to maintain the permeability of the filter cake.

23. "Direct filtration" means a series of processes including coagulation and filtration but excluding sedimentation resulting in substantial particulate removal.

24. "Disinfectant" means any oxidant, including, but not limited to, chlorine, chlorine dioxide, chloramines, and ozone added to water in any part of the treatment or distribution process, that is intended to kill or inactivate pathogenic microorganisms.

25. "Disinfectant contact time" (T in CT calculations) means the time in minutes that it takes for water to move from the point of disinfectant application or the previous point of disinfectant residual measurement to a point before or at the point where residual disinfectant concentration (C) is measured. Where only one C is measured, T is the time in minutes that it takes for water to move from the point of disinfectant application to a point before or at where C is measured. Where more than one C is measured, T, for the first measurement of C, is the time in minutes that it takes the water to move from the first or only point of disinfectant application to a point before or at the point where the first C is measured. For subsequent measurements of C,

T is the time in minutes that it takes for water to move from the previous C measurement point to the C measurement point for which the particular T is being calculated. Disinfectant contact time in pipelines must be calculated by dividing the internal volume of the pipe by the maximum hourly flow rate through that pipe. T within mixing basins and storage reservoirs must be determined by tracer studies or an equivalent demonstration.

26. "Disinfection" means a process which inactivates pathogenic organisms in water by chemical oxidants or equivalent agents.

27. "Disinfection profile" means a summary of daily giardia lamblia inactivation through the treatment plant. The disinfection profile shall be developed as set forth under title 40, Code of Federal Regulations, part 141, subpart P (141.172) and subpart T (141.530-141.536).

28. "Domestic or other nondistribution system plumbing problem" means a coliform contamination problem in a public water system with more than one service connection that is limited to the specific service connection from which the coliform-positive sample was taken.

29. "Dual sample set" means a set of two samples collected at the same time and same location, with one sample analyzed for Total Trihalomethanes (TTHM) and the other sample analyzed for Haloacetic Acids Five(HAA5). Dual sample sets are collected for the purpose of conducting an Initial Distribution System Evalution(IDSE) under Title 40, Code of Federal Regulations 141.600 to 141.605 inclusive and determining compliance with the TTHM and HAA5 MCLs under 40 Code of Federal Regulations 141.620 to 141.629 inclusive.

30. "Effective corrosion inhibitor residual", for the purpose of title 40, Code of Federal Regulations, part 141, subpart I only, means a concentration sufficient to form a passivating film on the interior walls of pipe.

31. "Enhanced coagulation" means the addition of sufficient coagulant for improved removal of disinfection byproduct

precursors by conventional filtration treatment.

32. "Enhanced softening" means the improved removal of disinfection byproduct precursors by precipitative softening.

33. "Filter profile" means a graphical representation of individual filter performance based on continuous turbidity measurements or total particle counts versus time for an entire filter run, from startup to backwash inclusively, that includes an assessment of filter performance while another filter is being backwashed.

34. "Filtration" means a process for removing particulate matter from water by passage through porous media.

35. "Finished water" means water that is introduced into the distribution system of a public water system and is intended for distribution and consumption without further treatment, except treatment necessary to maintain water quality in the distribution system (e.g., booster disinfection, addition of corrosion control chemicals).

36. "First draw sample" means a one-liter sample of tap water, collected in accordance with title 40, Code of Federal Regulations, part 141, section 141.86(b)(2), that has been standing in plumbing pipes at least six hours and is collected without flushing the tap.

37. "Flocculation" means a process to enhance agglomeration or collection of smaller floc particles into larger, more easily settleable particles through gentle stirring by hydraulic or mechanical means.

38. "Flowing Stream" means a course of running water flowing in a definite channel.

39. "Granular activated carbon ten" or "GAC10" means granular activated carbon filter beds with an empty-bed contact time of ten minutes based on average daily flow and a carbon reactivation frequency of every one hundred eighty days~~.~~, except that the reactivation frequency for GAC10 used as a best available technology for compliance with subpart V MCLs under 141.64(b)(2) shall be one

hundred and twenty (120) days.

40. "Granular activated carbon twenty" or *GAC 20* means granular activated carbon filter beds with an empty-bed contact time of 20 minutes based on average daily flow and a carbon reactivation frequency of every two hundred and forty (240) days.

41. "Gross alpha particle activity" means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.

42. "Ground water under the direct influence of surface water" means any water beneath the surface of the ground with significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens such as giardia lamblia or cryptosporidium. Ground water under the direct influence of surface water also means significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions.

43. "Haloacetic acids five" or "HAA5" means the sum of the concentrations in milligrams per liter of the haloacetic acid compounds monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid, rounded to two significant figures after addition.

44. "Halogen" means one of the chemical elements chlorine, bromine, or iodine.

45. "Initial compliance period" means the first full compliance period that begins January 1, 1993, during which public water systems must monitor for inorganic and organic chemicals excluding lead, copper, trihalomethanes, and unregulated contaminants.

46. "Lake/Reservoir" means a natural or man-made basin or hollow on the Earth's surface in which water collects or is stored that may or may not have a current or single direction of flow.

47. "Large water system," for the purpose of title 40, Code

of Federal Regulations, part 141, subpart I only, means a water system that serves more than fifty thousand persons.

48. "Lead service line" means a service line made of lead that connects the water main to the building inlet and any pigtail, gooseneck, or other fitting that is connected to a lead line.

49. "Legionella" means a genus of bacteria, some species of which have caused a type of pneumonia called legionnaires disease.

50. "Locational running annual average" or "LRAA" means the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

51. "Maximum contaminant level" means the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

52. "Maximum residual disinfectant level" or "MRDL" means a level of a disinfectant added for water treatment that must not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects.

53. "Maximum total trihalomethane potential" means the maximum concentration of total trihalomethanes produced in a given water containing a disinfectant residual after seven days at a temperature of twenty-five degrees Celsius [77 degrees Fahrenheit] or above.

54. "Medium-size water system," for the purpose of title 40, Code of Federal Regulations, part 141, subpart I only, means a water system that serves three thousand three hundred one to fifty thousand persons.

55. "Membrane filtration" means a pressure or vacuum driven separation process in which particulate matter larger than one (1)micrometer is rejected by an engineered barrier, primarily through a size-exclusion mechanism, and which has a measurable removal efficiency of a target organism that can be verified through the application of a direct integrity test. This definition

includes the common membrane technologies of microfiltration, ultrafiltration, nanofiltration, and reverse osmosis.

56. "Near the first service connection" means at one of the twenty percent of all service connections in the entire system that are nearest the water supply treatment facility as measured by water transport time within the distribution system.

57. "Noncommunity water system" means a public water system that is not a community water system that primarily provides service to other than year-round residents. A noncommunity water system is either a "nontransient noncommunity" or "transient noncommunity" water system.

58. "Nontransient noncommunity water system" means a noncommunity water system that regularly serves at least twenty-five of the same persons over six months per year.

59. "Optimal corrosion control treatment," for the purpose of title 40, Code of Federal Regulations, part 141, subpart I only, means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while insuring that the treatment does not cause the water system to violate any national primary drinking water regulations.

60. "Person" means an individual, corporation, company, association, partnership, municipality, or any other entity.

61. "Plant Intake" means the works or structures at the head of a conduit through which water is diverted from a source (e.g., river or lake) into the treatment plant.

62. "Point of disinfectant application" means the point where the disinfectant is applied and water downstream of that point is not subject to recontamination by surface water runoff.

63. "Point-of-entry treatment device" means a treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the

drinking water distributed throughout the house or building.

64. "Point-of-use treatment device" means a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that one tap.

65. "Potable water" means water free from impurities in amounts sufficient to cause disease or harmful physiological effects, with the physical, chemical, biological, or radiological quality conforming to applicable maximum permissible contaminant levels.

66. "Presedimentation" means a preliminary treatment process used to remove gravel, sand, and other particulate material from the source water through settling before the water enters the primary clarification and filtration processes in a treatment plant.

67. "Product" means any chemical or substance added to a public water system, any materials used in the manufacture of public water system components or appurtenances, or any pipe, storage tank, valve, fixture, or other materials that come in contact with water intended for use in a public water system.

68. "Public water system" means a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least fifteen service connections or regularly serves at least twenty-five individuals sixty or more days out of the year. A public water system includes any collection, treatment, storage, and distribution facilities under control of the operator of the system and used primarily in connection with the system; and, any collection or pretreatment storage facilities that are not under control of the operator which are used primarily in connection with the system. A public water system does not include systems that provide water through pipes or constructed conveyances other than pipes that qualify for the exclusions set forth under section 1401(4)(B)(i) and (ii) of the Federal Safe Drinking Water Act [42 U.S.C. 300f(4)(B)(i) and (ii)]. A public water system is either a "community" or a "noncommunity" water system.

69. "Repeat compliance period" means any subsequent compliance period after the initial compliance period during which public water systems must monitor for inorganic and organic chemicals excluding lead, copper, trihalomethanes, and unregulated contaminants.

70. "Residual disinfectant concentration" (C in CT calculations) means the concentration of disinfectant measured in milligrams per liter in a representative sample of water.

71. "Sampling schedule" means the frequency required for submitting drinking water samples to a certified laboratory for examination.

72. "Sanitary survey" means an onsite review of the water source, facilities, equipment, operation, and maintenance of a public water system for the purpose of evaluating the adequacy of such source, facilities, equipment, operation, and maintenance for producing and distributing safe drinking water.

73. "Sedimentation" means a process for removal of solids before filtration by gravity or separation.

74. "Service line sample" means a one-liter sample of water, collected in accordance with title 40, Code of Federal Regulations, part 141, section 141.86(b)(3), that has been standing for at least six hours in a service line.

75. "Single-family structure," for the purpose of title 40, Code of Federal Regulations, part 141, subpart I only, means a building constructed as a single-family residence that is currently used either as a residence or a place of business.

76. "Slow sand filtration" means a process involving passage of raw water through a bed of sand at low velocity resulting in substantial particulate removal by physical and biological mechanisms.

77. "Small water system," for the purpose of title 40, Code of Federal Regulations, part 141, subpart I only, means a water system that serves three thousand three hundred

or fewer persons.

78. "Specific ultraviolet absorption" or "SUVA" means specific ultraviolet absorption at two hundred fifty-four nanometers, an indicator of the humic content of water. It is a calculated parameter obtained by dividing a samples's ultraviolet absorption at a wavelength of two hundred fifty-four nanometers in meters to the minus one by its concentration of dissolved organic carbon, the fraction of the total organic carbon that passes through a zero point four five micrometer pore diameter filter, in milligrams per liter.

79. "Subpart H systems" means public water systems using surface water or ground water under the direct influence of surface water as a source that are subject to the requirements of title 40, Code of Federal Regulations, part 141, subpart H.

80. "Supplier of water" means any person who owns or operates a public water system.

81. "Surface water" means all water which is open to the atmosphere and subject to surface runoff.

82. "System with a single service connection" means a system which supplies drinking water to consumers with a single service line.

83. "Too numerous to count" means that the total number of bacterial colonies exceeds two hundred on a forty-seven millimeter membrane filter used for coliform detection.

84. "Total organic carbon" means total organic carbon in milligrams per liter measured using heat, oxygen, ultraviolet irradiation, chemical oxidants, or combinations of these oxidants that convert organic carbon to carbon dioxide, rounded to two significant figures.

85. "Total trihalomethanes" means the sum of the concentration in milligrams per liter of the trihalomethane compounds (trichloromethane [chloroform], dibromochloromethane, bromodichloromethane, and

tribromomethane [bromoform]), rounded to two significant figures.

86. "Transient noncommunity water system" means a noncommunity water system that primarily provides service to transients.

87. "Trihalomethane" means one of the family of organic compounds, named as derivatives of methane, wherein three of the four hydrogen atoms in methane are each substituted by a halogen atom in the molecular structure.

88. "Two-Stage Line Softening" means a process in which chemical addition and hardness precipitation occur in each of two distinct unit clarification processes in series prior to filtration.

89. "Uncovered finished water storage facility" means a tank, reservoir, or other facility used to store water that will undergo no further treatment to reduce microbial pathogens except residual disinfection and is open to the atmosphere.

90. "Virus" means a virus of fecal origin which is infectious to humans by waterborne transmission.

91. "Waterborne disease outbreak" means the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system which is deficient in treatment, as determined by the appropriate local or state agency.

92. "Water system" means all sources of water and their surroundings and shall include all structures, conduits, and appurtenances by means of which the water is collected, treated, stored, or delivered.

93. "Wholesale system" means a public water system that treats source water as necessary to produce finished water and then delivers some or all of that finished water to another public water system. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

History: Amended effective December 1, 1982; July 1, 1988; December 1, 1990; August 1, 1991; February 1, 1993; August 1, 1994; August 1, 2000; April 1, 2005; January 1, 2010.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-02, 61-28.1-03

33-17-01-03. Coverage. This chapter applies to all public water systems except those public water systems which meet all of the following conditions:

1. Consists only of distribution and storage facilities and does not have any collection and treatment facilities;

2. Obtains all of its water from a public water system to which these regulations apply;

3. Does not sell water to any person; and

4. Is not a carrier which conveys passengers in interstate commerce.

History: Amended effective July 1, 1988; February 1, 1993.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03

33-17-01-04. Designated responsible individuals. The owner or operating entity of each public water system shall designate an individual, or individuals, who shall be responsible for communicating with the department in matters relating to system construction or alteration, monitoring and sampling, maintenance, operation, record keeping, and reporting required by these regulations. Any changes in designated individuals or assigned responsibilities shall be promptly reported to the department.

General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03

33-17-01-05. Approved laboratories and analytical procedures. All samples shall be examined by the department or by any other laboratory certified by the department for drinking

water purposes, except that measurements for turbidity and free chlorine may be performed by any person deemed qualified by the department. Turbidity measurements shall be made by a nephelometric method approved by the department. All methods of sample preservation and analyses shall be as prescribed by the department and set forth under title 40, Code of Federal Regulations, part 141.

History: Amended effective December 1, 1982; July 1, 1988; December 1, 1990; February 1, 1993; August 1, 2000.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03, 61-28.1-07

33-17-01-06. Maximum contaminant levels, action levels, treatment technique requirements, and maximum residual disinfectant levels.

1. **Inorganic chemicals.** The maximum contaminant levels, action levels, and treatment technique requirements for inorganic chemical contaminants excluding disinfection byproducts shall be as prescribed by the department and set forth under title 40, Code of Federal Regulations, part 141, subpart G.

CONTAMINANT	MAXIMUM CONTAMINANT LEVEL MILLIGRAM(S) PER LITER	ACTION LEVEL MILLIGRAM(S) PER LITER	TREATMENT TECHNIQUES REQUIREMENTS
Antimony	0.006		
Arsenic	0.05 (until January 22, 2006) 0.010 (effective January 23, 2006)		
Asbestos	7 million fibers per liter (longer than ten micrometers)		
Barium	2		
Beryllium	0.004		
Cadmium	0.005		
Chromium	0.1		
Copper		The 90th percentile level must be less than or equal to 1.3	Source water and corrosion control treatment
Cyanide (as free cyanide)	0.2		
Fluoride	4.0		
Lead		The 90th percentile level must be less than or equal to 0.015	Source water and corrosion control treatment, public education, and lead service line replacement
Mercury	0.002		
Nickel	0.1		
Nitrate (as N)	10		
Nitrite (as N)	1		
Selenium	0.05		
Thallium	0.002		
Total Nitrate and Nitrite (as N)	10		

At the discretion of the department, nitrate levels not

to exceed twenty milligrams per liter may be allowed in a noncommunity water system if the supplier of water demonstrates to the satisfaction of the department that:

a. Such water will not be available to children under six months of age;

b. There will be continuous posting of the fact that nitrate levels exceed ten milligrams per liter and the potential health effect of exposure;

c. Local and state public health authorities will be notified annually of nitrate levels that exceed ten milligrams per liter; and

d. No adverse health effects shall result.

2. **Organic chemicals.** The maximum contaminant levels and treatment technique requirements for organic chemical contaminants excluding disinfection byproducts and disinfection byproduct precursors shall be as prescribed by the department and set forth under title 40, Code of Federal Regulations, part 141, subpart G.

CONTAMINANT	MAXIMUM CONTAMINANT LEVEL MILLIGRAM(S) PER LITER	TREATMENT TECHNIQUE REQUIREMENTS
Nonvolatile Synthetic Organic Chemicals:		
Acrylamide		The combination (or product) of dose and monomer level may not exceed 0.05 percent dosed at 1 part per million (or equivalent)
Alachlor	0.002	
Atrazine	0.003	
Benzo (a) pyrene	0.0002	
Carbofuran	0.04	
Chlordane	0.002	
Dalapon	0.2	
Dibromochloropropane (DBCP)	0.0002	
Di (2-ethylhexyl) adipate	0.4	
Di (2-ethylhexyl) phthalate	0.006	
Dinoseb	0.007	
Diquat	0.02	

Endothall	0.1	
Endrin	0.002	
Epichlorohydrin		The combination (or product) of dose and monomer level may not exceed 0.01 percent dosed at 20 parts per million (or equivalent)
Ethylene dibromide (EDB)	0.00005	
Glyphosate	0.7	
Heptachlor	0.0004	
Heptachlor epoxide	0.0002	
Hexachlorobenzene	0.001	
Hexachlorocyclopentadiene	0.05	
Lindane	0.0002	
Methoxychlor	0.04	
Oxamyl (Vydate)	0.2	
Polychlorinated biphenyls (PCBs)	0.0005	
Pentachlorophenol	0.001	
Picloram	0.5	
Simazine	0.004	
Toxaphene	0.003	
2,3,7,8-TCDD (Dioxin)	0.00000003	
2,4-D	0.07	
2,4,5-TP Silvex	0.05	

Volatile Synthetic Organic Chemicals:

Benzene	0.005
Carbon tetrachloride	0.005
p-Dichlorobenzene	0.075
o-Dichlorobenzene	0.6
1,2-Dichloroethane	0.005
1,1-Dichloroethylene	0.007
cis-1,2-Dichloroethylene	0.07
trans-1,2-Dichloroethylene	0.1
Dichloromethane	0.005
1,2-Dichloropropane	0.005
Ethylbenzene	0.7
Monochlorobenzene	0.1
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1
1,2,4-Trichlorobenzene	0.07
1,1,1-Trichloroethane	0.2
1,1,2-Trichloroethane	0.005
Trichloroethylene	0.005
Vinyl chloride	0.002
Xylenes (total)	10

3. **Filtration and disinfection treatment.**

a. General requirements. All subpart H systems that utilize surface water sources shall provide filtration and disinfection treatment. All subpart H systems that

utilize ground water sources deemed by the department to be under the direct influence of surface water shall provide disinfection treatment and shall either comply with filtration avoidance criteria or provide filtration treatment.

b. Treatment technique requirements. The department hereby identifies filtration and disinfection as treatment techniques to protect against the potential adverse health effects of exposure to giardia lamblia, cryptosporidium, legionella, viruses, heterotrophic plate count bacteria, and turbidity. The treatment techniques apply only to subpart H systems. Subpart H systems that serve ten thousand or more persons shall be deemed to be in compliance with the treatment techniques if the requirements set forth under title 40, Code of Federal Regulations, part 141, subparts H and P, are met. Subpart H systems that serve fewer than ten thousand persons shall be deemed to be in compliance with the treatment techniques if the requirements set forth under title 40, Code of Federal Regulations, part 141, subpart H, are met.

4. **Radioactivity.** The maximum contaminant levels for radioactivity are as follows:

CONTAMINANT	MAXIMUM CONTAMINANT LEVEL (MCL)
Combined radium-226 and radium-228	5 picocuries per liter (pCi/L)
Gross alpha particle activity (including radium-226, but excluding radon and uranium)	15 picocuries per liter (pCi/L)
Uranium	30 micrograms per liter (ug/L)

5. **Microbiological.** The maximum contaminant levels for coliform bacteria are as follows:

a. Monthly maximum contaminant level violations.

(1) No more than one sample per month may be total

coliform-positive for systems collecting less than forty samples per month.

(2) No more than five point zero percent of the monthly samples may be total coliform-positive for systems collecting forty or more samples per month.

All routine and repeat total coliform samples must be used to determine compliance. Special purpose samples, such as those taken to determine whether disinfection practices following pipe placement, replacement, or repair are sufficient, and samples invalidated by the department, may not be used to determine compliance.

b. Acute maximum contaminant level violations.

(1) No repeat sample may be fecal coliform or E.coli-positive.

(2) No repeat sample may be total coliform-positive following a fecal coliform or E.coli-positive routine sample.

c. Compliance must be determined each month that a system is required to monitor. The department hereby identifies the following as the best technology, treatment techniques, or other means generally available for achieving compliance with the maximum contaminant levels for total coliform bacteria: protection of wells from contamination by appropriate placement and construction; maintenance of a disinfection residual throughout the distribution system; proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, cross-connection control programs, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, and continual maintenance of a positive water pressure in all parts of the distribution system; filtration and disinfection or disinfection of surface water and disinfection of ground water using strong oxidants such as chlorine, chlorine dioxide, or ozone; and the development and

implementation of a department-approved wellhead protection program.

6. **Disinfectants.** The maximum residual disinfectant levels for disinfectants are as follows:

DISINFECTANT	MAXIMUM RESIDUAL DISINFECTANT LEVEL IN MILLIGRAMS PER LITER
Chlorine	4.0 as free chlorine
Chloramines	4.0 as combined chlorine
Chlorine dioxide	0.8 as chlorine dioxide

The department identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum residual disinfectant levels: control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels.

7. **Disinfection byproducts.** The maximum contaminant levels for total trihalomethanes, haloacetic acids five, bromate, and chlorite are as follows:

DISINFECTION BYPRODUCT	MAXIMUM CONTAMINANT LEVEL IN MILLIGRAMS PER LITER
Total trihalomethanes	0.080
Haloacetic acids five	0.060
Bromate	0.010
Chlorite	1.0

The department identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the ~~final~~ maximum contaminant level for total trihalomethanes and the maximum contaminant levels for haloacetic acids five, bromate, and chlorite: for total trihalomethanes and haloacetic acids five, enhanced coagulation, enhanced softening, or granular

activated carbon ten with chlorine as the primary and residual disinfectant; for bromate, control of the ozone treatment process to reduce production of bromate; and for chlorite, control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels. All best available technology and compliance shall be prescribed by the department and set forth under title 40 Code of Federal Regulations part 141.64.

8. **Disinfection byproduct precursors.** The department hereby identifies enhanced coagulation and enhanced softening as treatment techniques to control the level of disinfection byproduct precursors in drinking water treatment and distribution systems. The treatment techniques apply only to subpart H community and nontransient noncommunity water systems that use conventional treatment. Such systems shall be deemed to be in compliance with the treatment techniques if the requirements set forth under title 40, Code of Federal Regulations, part 141, subpart L, are met.

9. **Confirmation sampling.** The department may require confirmation samples and average confirmation sample results with initial sample results to determine compliance. At the discretion of the department, sample results due to obvious monitoring errors may be deleted prior to determining compliance.

History: Amended effective December 1, 1982; July 1, 1988; December 1, 1990; February 1, 1993; August 1, 1994; August 1, 2000; December 1, 2003; April 1, 2005; January 1, 2010.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03

33-17-01-07. Inorganic chemical sampling and monitoring requirements.

1. **Sampling frequency for community and nontransient noncommunity water systems.**

   a. Inorganics excluding lead and copper. Community and nontransient noncommunity water systems shall

conduct monitoring to determine compliance with the maximum contaminant levels for the inorganic chemicals, excluding lead and copper, as set forth under title 40, Code of Federal Regulations, part 141, subpart C.

b. Lead and copper. Community and nontransient noncommunity water systems shall comply with the monitoring and treatment technique requirements for lead and copper set forth under title 40, Code of Federal Regulations, part 141, subpart I, as amended July 1, 2009.

c. Unregulated contaminants. Community and nontransient noncommunity water systems shall monitor for sulfate as set forth under title 40, Code of Federal Regulations, part 141, subpart E.

d. Monitoring waivers. With the exception of arsenic, copper, lead, nitrate, and nitrite, the department may grant community and nontransient noncommunity water systems waivers from the monitoring requirements for the inorganic chemicals as set forth under title 40, Code of Federal Regulations, part 141, subparts C and E. The department may issue monitoring waivers only if the conditions set forth under title 40, Code of Federal Regulations, part 142, subpart B, are fully met.

2. **Sampling frequency for transient noncommunity water systems.** Transient noncommunity water systems shall conduct monitoring to determine compliance with the maximum contaminant levels for nitrate and nitrite as set forth under title 40, Code of Federal Regulations, part 141, subpart C.

History: Amended effective July 1, 1988; February 1, 1993; August 1, 1994; August 1, 2000.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03

33-17-01-08. Organic chemical sampling and monitoring requirements.

1. **Volatile and nonvolatile synthetic organic chemicals.**

   a. Coverage. Community and nontransient noncommunity water systems shall conduct monitoring to determine compliance with the maximum contaminant levels for the volatile and nonvolatile synthetic organic chemicals.

   b. Sampling frequency. The number and frequency of samples shall be as prescribed by the department and set forth under title 40, Code of Federal Regulations, part 141, subpart C.

   c. Compliance. Compliance for each point that is sampled shall be prescribed by the department and set forth under title 40, Code of Federal Regulations, part 141, subpart C.

2. **Unregulated contaminants.**

   a. Coverage. Community and nontransient noncommunity water systems shall monitor for unregulated organic contaminants.

   b. Monitoring requirements. Systems shall monitor for unregulated organic contaminants as set forth under title 40, Code of Federal Regulations, part 141, subpart E.

3. **Monitoring waivers.** With the exception of acrylamide and epichlorohydrin, the department may grant community and nontransient noncommunity water systems waivers from the monitoring requirements for the organic chemicals as set forth under title 40, Code of Federal Regulations, part 141, subpart C. The department may issue waivers only if the conditions set forth under title 40, Code of Federal Regulations, part 142, subpart B, are fully met.

History: Amended effective December 1, 1982; July 1, 1988; December 1, 1990; August 1, 1994; August 1, 2000; April 1, 2005.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03

33-17-01-08.1. Disinfectants, Disinfectant residuals,

disinfection byproducts, and disinfection byproduct precursors.

Public water systems shall conduct monitoring to determine compliance with maximum contaminant levels, maximum residual disinfectant levels, and treatment technique requirements for disinfectants, disinfection residuals, disinfection byproducts, and disinfection byproduct precursors as set forth under title 40, Code of Federal Regulations, Part 141, subparts L and V. Public water systems shall also comply with the requirements for conducting an initial distribution system evaluation as set forth under title 40, Code of Federal Regulations, Part 141, subpart U.

History: Effective August 1, 2000; amended effective January 1, 2010.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03

33-17-01-09. Filtration and disinfection treatment sampling and monitoring requirements.

1. Coverage. All subpart H systems shall conduct monitoring to determine compliance with the treatment technique requirements for filtration and disinfection.

2. Systems utilizing surface water sources. All subpart H systems that utilize surface water sources shall comply with the turbidity and residual disinfectant concentration sampling and monitoring requirements set forth under title 40, Code of Federal Regulations, part 141, subpart H. Those systems serving ten thousand or more persons shall also comply with the disinfection profiling and benchmarking requirements set forth under title 40, Code of Federal Regulations, part 141, subpart P. Beginning January 1, 2002, those systems that serve ten thousand or more persons and provide conventional filtration treatment or direct filtration shall also comply with the individual filter sampling and monitoring requirements set forth under title 40, Code of Federal Regulations, part 141, subpart P. Those systems serving fewer than ten thousand persons shall also comply with the requirements set forth under title 40, Code of Federal Regulations, part 141, subpart T and the Federal Register Volume 69, Number 124, Tuesday,

June 29, 2004, pages 38850-38857.

3. Systems utilizing ground water sources under the direct influence of surface water. The following sampling and monitoring requirements apply to subpart H systems that utilize ground water sources deemed by the department to be under the direct influence of surface water:

   a. All systems that provide filtration treatment shall comply with the turbidity and residual disinfectant concentration sampling and monitoring requirements set forth under title 40, Code of Federal Regulations, part 141, subpart H. Those systems serving ten thousand or more persons shall also comply with the disinfection profiling and benchmarking requirements set forth under title 40, Code of Federal Regulations, part 141, subpart P. Beginning January 1, 2002, those systems that serve ten thousand or more persons and provide conventional filtration treatment or direct filtration shall also comply with the individual filter sampling and monitoring requirements set forth under title 40, Code of Federal Regulations, part 141, subpart P. Those systems serving fewer than ten thousand persons shall also comply with the requirements set forth under title 40, Code of Federal Regulations, part 141, subpart T and the Federal Register Volume 69, Number 124, Tuesday, June 29, 2004, pages 38850-38857.

   b. All systems that do not provide filtration treatment shall comply with the filtration avoidance criteria and applicable disinfection sampling and monitoring requirements set forth under title 40, Code of Federal Regulations, part 141, subpart H. Those systems serving ten thousand or more persons shall also comply with the disinfection profiling and benchmarking requirements and, beginning January 1, 2002, the filtration avoidance criteria set forth under title 40, Code of Federal Regulations, part 141, subpart P. Those systems serving fewer than ten thousand persons shall also comply with the requirements set forth under title 40, Code of Federal Regulations, part 141, subpart T and the Federal Register Volume

69, Number 124, Tuesday, June 29, 2004, pages 38850-38857.

4. Recycle provisions. All Subpart H systems that utilize conventional filtration or direct filtration treatment and that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes must meet the requirements as prescribed by the department and set forth under title 40, Code of Federal Regulations, part 141.76, subpart H.

5. Enhanced treatment for Cryptosporidium. All public water systems that utilize a surface water source or a ground water source under the direct influence of surface water shall meet the treatment technique requirements for Cryptosporidium set forth under title 40, Code of Federal Regulations, part 141, subpart W. These requirements are in addition to requirements found in title 40, Code of Federal Regulations, part 141, subparts H, P and T.

History: Amended effective December 1, 1982; July 1, 1988; February 1, 1993; August 1, 2000; December 1, 2003; April 1, 2005; January 1, 2010.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03

33-17-01-10. Radioactivity monitoring and compliance. Community water systems shall sample for gross alpha particle activity, radium-226, radium-228 and uranium. Monitoring frequency and compliance shall be as prescribed by the department and set forth under title 40, Code of Federal Regulations, part 141.26 and 141.66.

History: Amended effective July 1, 1988; December 1, 2003.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03

33-17-01-11. Microbiological sampling and monitoring requirements.

1. **Routine Monitoring.**

a. General. Suppliers of water for public water systems shall collect routine samples for total coliform bacteria analysis at sites which are representative of the water throughout the distribution system according to a written sample siting plan. The plan is subject to department review and revision.

The routine samples must be collected at regular time intervals throughout the month except that systems using ground water not under the direct influence of surface water, as determined by the department, serving four thousand nine hundred people or less may collect all of the required samples on a single day if the samples are collected from different sites.

At the discretion of the department, systems that use surface water or ground water under the direct influence of surface water that do not filter in compliance with title 40, Code of Federal Regulations, part 141, subpart H, shall collect at least one sample for total coliform bacteria analysis each day that the turbidity level of the source water exceeds one nephelometric turbidity unit. The sample must be collected near the first service connection within twenty-four hours of the first exceedance unless the department determines that the system, due to logistical or other problems beyond its control, cannot have the sample analyzed within thirty hours of collection. The sample results must be included in determining compliance with the maximum contaminant levels for total coliform bacteria.

b. Community water systems. Suppliers of water for community water systems shall sample for total coliform bacteria at a frequency established by the department. The number of samples required must be determined by the population served by the system and in no event may the frequency be less than that set forth below. The population range of twenty-five to one thousand includes public water systems which have at least fifteen service connections but that serve less than twenty-five persons.

POPULATION SERVED	MINIMUM NUMBER OF SAMPLES PER MONTH
25 to 1,000	1
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100

Community water systems using a ground water source serving twenty-five to one thousand persons may, with written permission from the department, reduce this sampling frequency to one sample per quarter provided that:

(1) The system has no history of total coliform contamination in its current configuration; and

(2) A sanitary survey conducted by the department in the past five years shows that the system is supplied solely by a protected ground water source that is free of sanitary defects.

c. Noncommunity water systems. Suppliers of water for noncommunity water systems using only ground water, and not ground water under the direct influence of surface water, serving one thousand people or less

shall sample for total coliform bacteria in each calendar quarter that the system provides water to the public. The department may, in writing, reduce this routine monitoring frequency to no less than once per year based on sanitary survey results, accumulated analytical data, or the existence of additional safeguards such as a protective and enforced well code, disinfection, or an approved wellhead protection program. The frequency must be confirmed or changed based on subsequent sanitary surveys or data. The frequency may not be reduced until:

(1) A sanitary survey conducted by the department shows that the system is free of sanitary defects; and

(2) The system has performed at least one total coliform bacteria analysis of its drinking water and is in compliance with the microbiological maximum contaminant levels.

Suppliers of water for noncommunity water systems using only ground water, and not ground water under the direct influence of surface water, serving more than one thousand people during any month, shall sample for total coliform bacteria at the same frequency as like-sized community water systems. With written permission from the department, noncommunity water systems may reduce this monitoring frequency for any quarter that one thousand people or less are served. The reduced frequency must be one total coliform bacteria sample in each calendar quarter that water is provided to the public.
Suppliers of water for noncommunity water systems using ground water under the direct influence of surface water shall sample for total coliform bacteria at the same frequency as like-sized community water systems. Monitoring must begin within six months after the department determines that the ground water is under the direct influence of surface water.

Suppliers of water for noncommunity water systems using surface water, in total or in part, shall sample for total coliform bacteria at the same frequency as like-sized community water systems regardless of the number of people served.

2. **Repeat Monitoring.**

a. General. Suppliers of water for public water systems shall collect a set of repeat samples for total coliform bacteria analysis for each total coliform-positive routine sample.

Systems which collect more than one routine sample per month shall collect at least three repeat samples for each routine sample that is total coliform-positive. Systems which collect one routine sample per month or less shall collect at least four repeat samples for each routine sample that is total coliform-positive.

Systems may, with the approval of the department, count routine samples as repeat samples rather than routine samples provided that:

(1) The routine samples are collected within five service connections of the initial total coliform-positive sample; and

(2) The routine samples are collected before the system learns that the initial sample was total coliform-positive.

b. Repeat monitoring time period. The required set of repeat samples must be collected within twenty-four hours of notification by the department of the total coliform-positive result. The department may specify a longer time limit if it determines that the system cannot collect the repeat samples within twenty-four hours due to logistical or other problems beyond its control.

The repeat samples must be collected on the same day except that the department may allow systems with a single service connection to:

(1) Collect the required set of repeat samples over a four-day period; or

(2) Collect a larger volume repeat sample in one or more sample containers of any size as long as the total volume collected is at least four hundred milliliters for systems that collect one or less routine sample per month and three hundred milliliters for systems that collect more than one routine sample per month.

c. Repeat monitoring location. The repeat samples must be collected at the following locations:

(1) At least one repeat sample must be collected from the original sampling tap that was total coliform-positive.

(2) At least one repeat sample must be collected from a tap within five service connections upstream of the original total coliform-positive sampling tap.

(3) At least one repeat sample must be collected from a tap within five service connections downstream of the original total coliform-positive sampling tap.

(4) Systems required to collect four repeat samples shall collect the fourth repeat sample within five service connections upstream or downstream of the original total coliform-positive sampling tap.

The department may waive the requirement to collect at least one repeat sample upstream and downstream of the original total coliform-positive sampling site and specify alternate sampling locations if the original sampling site is at or one away from the end of the distribution system.

d. Additional sets of repeat samples. If one or more samples in the set of required repeat samples is total coliform-positive, an additional set of

repeat samples must be collected meeting the same time and location requirements as for the original set of repeat samples.

Additional sets of repeat samples must be collected until no total coliform bacteria are detected in one complete set or the department determines that the maximum contaminant level for total coliform bacteria has been exceeded. The supplier of water shall report to the department and notify the public when a maximum contaminant level is exceeded.

3. **Next-month samples.** Suppliers of water for public water systems that collect four or fewer routine samples per month that have one or more total coliform-positive routine or repeat samples shall collect at least five routine samples the next month that water is provided to the public. The department may waive this requirement only if one of the following conditions is met:

   a. The department or an agent approved by the department, but not an employee of the system, conducts an onsite visit before the end of the next month that the system serves water to the public and determines that additional monitoring or corrective action is not warranted;

   b. The department, in a written decision made available to the public, determines why total coliform-positive samples occurred and establishes that the system has corrected or will correct the problem before the end of the next month that water is served to the public.

   c. The department invalidates the original total coliform-positive routine sample.

   Routine total coliform bacteria samples normally collected the next month that water is provided to the public may be counted towards the set of five routine samples required the next month.

4. **Fecal coliform or E.coli analysis.** Suppliers of water for public water systems shall analyze each total

coliform-positive routine or repeat sample for either fecal coliform bacteria or E. coli.

Systems shall notify the department by the end of the business day, or by the end of the next business day if the department offices are closed, once notified of a positive fecal coliform bacteria or E.coli result.

5. **Invalidation of total coliform samples.**

a. Invalidation by the department. The department may invalidate a total coliform-positive sample only if one of the following conditions is met:

(1) The laboratory establishes that the total coliform-positive result was caused by improper sample analysis;

(2) The department determines, based upon the results of the required repeat samples, that the total coliform-positive sample resulted from a domestic or other nondistribution system problem. This provision shall apply only to systems that have more than one service connection and only if:

(a) All repeat samples collected at the same tap as the original total coliform-positive sample are also total coliform-positive; and

(b) All repeat samples collected within five service connections of the original total coliform-positive sample tap are total coliform-negative.

(3) The department, in a written decision made available to the public, determines that substantial grounds exist to indicate that the coliform-positive result was due to a circumstance or condition not reflective of the water quality in the distribution system. Invalidation must be based on the absence of total coliform-positive repeat samples and other factors as determined by the department.

Invalidation may not be based solely on the grounds that all required repeat samples are total coliform-negative.

Total coliform-positive samples invalidated by the department may not count towards meeting the minimum monitoring requirements. Department invalidation of a total coliform-positive sample nullifies subsequent fecal coliform or E.coli results for the same sample.

b. Invalidation by the laboratory. All total coliform bacteria samples examined by the department or by any other laboratory certified by the department must be invalidated, unless total coliform bacteria are detected, if:

(1) The sample produces a turbid culture in the absence of gas production using an analytical technique where gas formation is examined;

(2) The sample produces a turbid culture in the absence of an acid reaction in the presence-absence coliform test; or

(3) The sample exhibits confluent growth or produces colonies too numerous to count with an analytical technique using a membrane filter.

Suppliers of water for public water systems shall collect a replacement sample for total coliform bacteria analysis from the same location as the original sample if the original sample is invalidated by the department or any other laboratory certified by the department. Replacement samples must be collected within twenty-four hours of notification by the department and submitted for analysis until a valid result is obtained. The department may waive the twenty-four-hour time limit on a case-by-case basis.

6. **Sanitary surveys.**

a. Coverage and effective dates. Community and noncommunity water systems that collect four or

less routine total coliform bacteria samples per month shall undergo an initial sanitary survey by June 29, 1994, and June 29, 1999, respectively.

b. Repeat frequency. Community and noncommunity water systems shall undergo an additional sanitary survey every five years following the initial sanitary survey, except that noncommunity water systems using only protected and disinfected ground water, as determined by the department, shall undergo subsequent sanitary surveys at least every ten years following the initial sanitary survey.

c. Responsibilities. Sanitary surveys must be performed by the department or an agent approved by the department. Information collected on sources of contamination within a delineated wellhead protection area during the development and implementation of an approved wellhead protection program, if available, shall be considered when conducting sanitary surveys.

The department shall review the sanitary survey results to determine if increased monitoring for total coliform bacteria or other measures are needed to protect or improve drinking water quality.

Community and noncommunity water systems are responsible for ensuring that the required sanitary surveys are conducted.

History: Amended effective December 1, 1982; July 1, 1988; December 1, 1990; August 1, 1991.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03

33-17-01-12. Monitoring of consecutive public water systems. When a public water system supplies water to one or more other public water systems, the department may modify the monitoring requirements imposed to the extent that the interconnection of the systems justifies treating them as a single system for monitoring purposes. Any modified monitoring

shall be conducted pursuant to a schedule specified by the department.

General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03

33-17-01-13. Public notification. All public water systems are required to notify the public they serve when they fail to comply with the requirements of the National Primary Drinking Water Regulations (NPDWRs), fail to comply with the requirements of any schedule prescribed pursuant to a variance or exemption, or incur other situations posing a risk to public health. Owners and operators must follow the form, manner, frequency, and content of a public notice as prescribed by the department and set forth under title 40, Code of Federal Regulations, part 141, subpart Q, as amended July 1, 2009.

History: Amended effective December 1, 1982; July 1, 1988; December 1, 1990; August 1, 1991; February 1, 1993; August 1, 1994; August 1, 2000; December 1, 2003.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03, 61-28.1-05

33-17-01-13.1. Consumer confidence reports.

1. **Coverage and general requirements.** Community water systems shall deliver an annual consumer confidence report to all billing units or service connections provided drinking water by the system. The report shall contain information on the quality of the drinking water delivered by the system and characterize risks from exposure to contaminants detected in the drinking water. For the purpose of the report, detected means at or above the levels set forth under title 40, Code of Federal Regulations, part 141, subpart O, as amended July 1, 2009.

2. **Effective dates.** Existing community water systems shall deliver ~~the first report by October 19, 1999, and subsequent~~ annual reports by July first of each year. ~~The first report shall contain information collected by December 31, 1998. Subsequent~~ Annual reports shall

contain information collected by December thirty-first of the previous calendar year.

New community water systems shall deliver the first report by July first of the year after its first full calendar year in operation and subsequent reports by July first of each year. Community water systems that sell water to other community water systems shall provide applicable information to the buyer systems as set forth under title 40, Code of Federal Regulations, part 141, subpart O, as amended July 1, 2009.

3. **Content.** Each report shall contain the information set forth under title 40, Code of Federal Regulations, subpart O, as amended July 1, 2009.

4. **Report delivery.** Community water systems shall comply with the report delivery requirements set forth under title 40, Code of Federal Regulations, subpart O, as amended July 1, 2009.

History: Effective August 1, 2000.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03

33-17-01-14. Reporting and recordkeeping requirements.

1. **Reporting requirements.** Except when a shorter reporting period is specified, the system shall report to the department the result of any test, measurement, or analysis required within the first ten days following the month in which the results are received or the first ten days following the end of the required monitoring period as stipulated by the department, whichever of these is shorter.

   The system shall notify the department within forty-eight hours of the failure to comply with any primary drinking water regulations including failure to comply with monitoring requirements, except that failure to comply with the maximum contaminant levels for total coliform bacteria must be reported to the department no later than the end of the next business day after the system learns of the violation.

Community water systems required to comply with title 40, Code of Federal Regulations Part 141, subpart G shall report the results of all analyses to the department within thirty days of the system's receipt of the results. Subpart H systems shall comply with the reporting requirements for filtration and disinfection treatment set forth under title 40, Code of Federal Regulations, part 141, subparts H, P, T, and W. Community and nontransient noncommunity water systems shall comply with the reporting requirements for lead and copper set forth under title 40, Code of Federal Regulations, part 141, subpart I. Community, nontransient noncommunity, and transient noncommunity water systems shall comply with the applicable reporting requirements for disinfectants, disinfection byproducts, and disinfection byproduct precursors set forth under title 40, Code of Federal Regulations, part 141, subparts L, U, and V.

The system is not required to report analytical results to the department in cases when the department performed the analysis.

Within ten days of completing the public notification requirements set forth under title 40, Code Federal Regulations, part 141, Subpart Q for the initial public notice and any repeat notices, public water systems must submit to the department a certification that the system has fully complied with the public notification regulations. The public water system must include with this certification a representative copy of each type of notice distributed, published, posted, and made available to persons served by the system and to the media.

The system shall submit to the department, within the time stated in the request, copies of any records required to be maintained by the department or copies of any documents then in existence which the department is entitled to inspect under the provisions of state law.

2. **Recordkeeping requirements.** Subpart H systems shall comply with the recordkeeping requirements for filtration and disinfection treatment set forth under

title 40, Code of Federal Regulations, part 141, subparts H, P, T, and W. Community and nontransient noncommunity water systems shall comply with the recordkeeping requirements for lead and copper set forth under title 40, Code of Federal Regulations, part 141, subpart I. Community, nontransient noncommunity, and transient noncommunity water systems shall comply with the applicable recordkeeping requirements for disinfectants, disinfection byproducts, and disinfection byproduct precursors set forth under title 40, Code of Federal Regulations, part 141, subparts L, U, and V. Community water systems shall retain copies of consumer confidence reports for no less than three years.

All public water systems shall retain on their premises or at a convenient location near their premises, the following additional records to document compliance with the remaining provisions of this chapter:

a. Bacteriological and chemical analyses. Records of bacteriological analyses and turbidity analyses shall be kept for not less than five years. Records of chemical analyses shall be kept for not less than ten years. Actual laboratory reports may be kept, or data may be transferred to tabular summaries, provided that the following information is included:

   (1) The date, place, and time of sampling and the name of the person who collected the sample;

   (2) Identification of the sample as to whether it was a routine distribution system sample, check sample, or raw or other special purpose sample;

   (3) Date of analysis;

   (4) Laboratory and person responsible for performing analysis;

   (5) The analytical technique or method used; and

   (6) The result of the analysis.

b. Corrective actions taken. Records of action taken by the system to correct violations shall be kept for a period of not less than three years after the last action taken with respect to the particular violation involved.

c. Reports and communications. Copies of any written reports, summaries, or communications relating to sanitary surveys of the system conducted by the system itself, by a private consultant, or by any local, state, or federal agency, shall be kept for a period not less than ten years after completion of the sanitary survey involved.

d. Variances and exemptions. Records concerning a variance or exemption granted to the system shall be kept for a period ending not less than five years following the expiration of such variance or exemption.

e. Public notices and certifications. Copies of public notices issued pursuant to title 40, Code of Federal Regulations, part 141, Subpart Q and certifications made to the department pursuant to title 40, Code of Federal Regulations, part 141.31 must be kept for three years after issuance.

f. Copies of monitoring plans developed pursuant to this part shall be kept for the same period of time as the records of analyses taken under the plan are required to be kept under paragraph (a) of this section, except as specified elsewhere in this part.

History: Amended effective July 1, 1988; December 1, 1990; February 1, 1993; August 1, 2000; December 1, 2003; April 1, 2005; January 1, 2010.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03, 61-28.1-05

33-17-01-15. Variances and exemptions.

1. **General authority and limitations.** The department may grant a variance to a public water system from any

maximum contaminant level or treatment technique requirement except the maximum contaminant level for coliform bacteria and the treatment technique requirements for filtration and disinfection set forth under title 40, Code of Federal Regulations, part 141, subpart H. The department may grant an exemption to a public water system from any maximum contaminant level or treatment technique requirement except the maximum contaminant level for coliform bacteria and the disinfection treatment requirements set forth under title 40, Code of Federal Regulations, part 141, subpart H, section 141.72(a)(3) and (b)(2).

2. **Variances.** Variances for public water systems serving ten thousand or more persons shall comply with section 1415(a) of the Federal Safe Drinking Water Act [42 U.S.C. 300g-4(a)]. Variances for public water systems serving fewer than ten thousand persons shall comply with one of the following: section 1415(a) of the Federal Safe Drinking Water Act [42 U.S.C. 300g-4(a)]; or section 1415(e) of the Federal Safe Drinking Water Act [42 U.S.C. 300g-4(e)] and title 40, Code of Federal Regulations, part 142, subpart K.

   In granting variances pursuant to section 1415(a) of the Federal Safe Drinking Water Act [42 U.S.C. 300g-4(a)], the department identifies as best technology, treatment techniques, or other means generally available for achieving compliance with the maximum contaminant levels and treatment technique requirements those set forth under title 40, Code of Federal Regulations, part 142, subpart G. In granting variances pursuant to section 1415(e) of the Federal Safe Drinking Water Act [42 U.S.C. 300g-4(e)], the department identifies as acceptable technologies those established under section 1412(b)(15) of the Federal Safe Drinking Water Act [42 U.S.C. 300g-1(b)(15)].

3. **Exemptions.** Exemptions for public water systems shall comply with section 1416 of the Federal Safe Drinking Water Act [42 U.S.C. 300g-5] and title 40, Code of Federal Regulations, part 142, subpart G.

4. **Procedures.** Actions to consider a variance or exemption may be initiated by the department or by a public water

system through a written request to the department. The department shall act on any written variance or exemption request submitted by a public water system within ninety days receipt of the request. The department shall provide notice and opportunity for a public hearing before granting any variance and before prescribing a compliance schedule for any variance or exemption.

History: Amended effective December 1, 1982; July 1, 1988; December 1, 1990; August 1, 1991; February 1, 1993; August 1, 2000.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03, 61-28.1-05

33-17-01-16. Siting. All new, altered, or expanded public water systems including wells, treatment and storage facilities necessary for the continuous operation of the system shall be located so as to:

1. Minimize potential breakdowns as a result of floods, fires, or other disasters;

2. Except for intake structures, not be within the floodplain of a one hundred year flood;

3. Prevent contamination of the water supply by existing sources of pollution; and

4. Provide sufficient property for water supply facilities to allow proper operation, maintenance, replacement, and storage of system components.

History: Amended effective December 1, 1982; July 1, 1988.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-04

33-17-01-17. Plans and specifications.

1. **Submission of plans.** Plans and specifications shall be prepared for all new public water systems and for alterations or extensions to existing systems. Such plans and specifications, together with other pertinent

information, shall be submitted to the department for review and approval prior to awarding of contracts. Such plans and specifications shall:

a. Be submitted in triplicate and in sufficient time to permit at least a two-week period for review and comment and with additional time to incorporate changes, if required;

b. Be presented in legible form and of sufficient scale to facilitate review;

c. Include supplemental information pertaining to basis of design, description of existing facilities, appraisal of future needs and such other information normally included in an engineer's report, as may be requested by the department; and

d. Be replaced by "as-built" plans when change orders result in major changes in the facilities.

2. **Submission of revised plans, change orders, and addendums.** Any deviation from the approved plans and specifications, or use of alternate equipment, which would affect capacity, hydraulic conditions, operating units, the functioning of the water treatment process or distribution system or the quality of water to be delivered, will require department approval prior to contract for alternate equipment or any construction which is affected by such change. Revised plans and specifications, change orders, or addendums, along with pertinent supplemental information, are to be submitted to the department for review and approval.

3. **Approval of plans.** Plans and specifications reviewed by the department will be approved only when such plans and specifications fully meet and comply with existing statutes and such standards and guidelines as have been or may be established by the department.

4. **Compliance with plan approval.** Systems shall be constructed in accordance with the plans, specifications, and applicable change orders approved by the department. The department reserves the right to

remove from service all or any part of a system found not to be constructed in accordance with approved plans, specifications, or change orders, or for which plans, specifications, or change orders were not approved.

5. **Operation and maintenance manual.** An operation and maintenance manual shall be prepared and supplied by the appropriate party to new or modified water supply facilities or systems. A copy of this manual shall be submitted to the department for review prior to initial operation of the new or modified facility or system.

History: Amended effective December 1, 1982; July 1, 1988.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03, 61-28.1-04

33-17-01-18. Operation and maintenance. Public water systems shall be supervised by competent personnel and modified, operated, and maintained in accordance with guidelines that may be developed or amended by the department. Certified operators are required for all water systems serving five hundred or more users under North Dakota Century Code chapter 23-26. Beginning July 1, 1994, North Dakota Century Code chapter 23-26 requires certified operators for all public water systems except those that serve other than year-round residents and meet all of the following conditions:

1. The water supply is obtained solely from ground water sources that the department has determined are not under the direct influence of surface water.

2. Treatment, if provided, consists strictly of disinfection, fluoridation, sequestration, corrosion control, or other processes that involve simple chemical addition and minor operational control.

3. The water supply system is not required by the federal Safe Drinking Water Act or its implementing regulations to be operated by qualified personnel.

History: Amended effective July 1, 1988; February 1, 1993.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03

33-17-01-19. Protection of public water systems.

1. **Cross-connection control.**

   a. Cross connections are prohibited except when and where, as approved by the authority having jurisdiction, suitable protective devices are installed, tested, and maintained to ensure proper operation on a continuing basis.

   b. A system shall be designed, installed, and maintained in such a manner as to prevent nonpotable liquids, solids, or gases from being introduced into the water through cross connections or any other piping connections to the system.

2. **Interconnections.**

   a. Interconnection between two or more systems shall be permitted only with the written approval of the department.

   b. Interconnection between a nonpublic and public water system shall not be permitted unless specifically approved in writing by the department.

3. **Return of used water prohibited.** Water used for cooling, heating, or other purposes shall not be returned to the system. Such water may be discharged into an approved drainage system through an airgap or may be used for nonpotable purposes.

4. **Products in contact with water.** All products that may come into contact with water intended for use in a public water system must meet American national standards institute/national sanitation foundation international standards 60-1988 and 61-1991. Suppliers of water for public water systems may not willfully introduce or permit the introduction of a product into the public water system which has not first been determined to meet these standards. At the discretion of the department, suppliers of water for public water systems shall compile and maintain on file for inspection by the department a list of all products used

by the system. Prior to using a product not on the list, suppliers of water for public water systems shall either determine that the product meets appropriate American national standards institute/national sanitation foundation international standards or notify the department of the type, name, and manufacturer of the product. A product will be considered as meeting these standards if so certified by an organization accredited by the American national standards institute to test and certify such products.

5. **Used materials.** Containers, piping, or materials which have been used for any purpose other than conveying potable water shall not be used.

6. **Water storage structures.** Finished water storage structures shall have a watertight cover which excludes the entrance of birds, animals, insects, and excessive dust. Beginning February 16, 1999, public water systems shall not begin construction of uncovered finished water storage facilities.

7. **Turbidity control.** Subpart H systems that provide conventional filtration treatment or direct filtration shall develop individual filter profiles, perform individual filter self-assessments, and arrange for the completion of comprehensive performance evaluations as set forth under title 40, Code of Federal Regulations, subparts P and T. At the direction of the department, systems that are required to conduct a comprehensive performance evaluation shall arrange for the completion of a full composite correction program and implement followup recommendations that result from the composite correction program. Comprehensive performance evaluations and composite correction programs shall be conducted by a party other than the system which is approved by the department.

History: Effective December 1, 1982; amended effective July 1, 1988; August 1, 1994; August 1, 2000; April 1, 2005.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03

33-17-01-20. Ground Water System - Source Requirements.

In addition to remaining provisions of this chapter, public water systems utilizing ground water sources shall comply with the monitoring and treatment technique requirements and undergo sanitary surveys as set forth under title 40, Code of Federal Regulations, part 141, subpart S. This applies to public water systems that are consecutive users but not to subpart H systems and systems that combine all of their ground water with surface water prior to treatment.

History: Effective January 1, 2010.
General Authority: NDCC 61-28.1-03
Law Implemented: NDCC 61-28.1-03