TITLE NINETEEN

HEALTH

PART VI. REGULATORY PROVISIONS CONCERNING PUBLIC HEALTH

Chapter 51. Drinking Water Standards

Subchapter 1303. Virgin Islands Interim Primary Drinking Water Standards

Section 1303-11. Applicability

This chapter establishes primary drinking water regulations pursuant to Section 1412 of the Public Health Service Act, as amended by the Safe Drinking Water Act (Public Law 93-523); and related regulations applicable to public water systems.

Source. Sections 1303-11 to 1303-53: Regulations to provide for Virgin Islands Interim Primary Drinking Water Standards issued by the Department of Conservation and Cultural Affairs, dated June 16, 1977, and approved by the Governor. Filed with Lieutenant Governor June 16, 1977; File No. 986. Amended October 13, 1994 adding Sections 1303-54 through 1303-70.

Authority. 19 V.I.C. Section 1303.

Publication. The regulations set out as chapter 51, Drinking Water Standards, contained a certificate which provided such regulations shall take effect without the usual prior publication because of compelling circumstances. The promulgation of these regulations by June 24, 1977 was necessary in order to permit the transfer of primary enforcement responsibility from the United States Environmental Protection Agency to the Department of Conservation and Cultural Affairs of the Virgin Islands, effective July 1, 1977. Similarly, Amendments promulgated in 1994 updated the regulations to maintain primacy for the Virgin Islands Government for the enforcement of amended standards mandated by the Federal Safe Drinking Water Act.

Section 1303-12. Definitions

As used in this chapter, the term:

(a) "Act" means the Public Health Service Act, as amended by the Safe Drinking Water Act, Public Law 93-523.

(b) "Action level" is the concentration of lead or copper in water specified in Section1303.58(c) which determines, in some cases, the treatment requirements contained in the Lead and Copper Rule that a water system is required to complete.

(c) "Approved laboratory" means a laboratory approved by the DPNR or certified by the U.S. EPA.

(d) "Approved source" when used in reference to a bottled water plant's product water or water used in the plant's operations, means the source of water whether it be from a spring, artisan well, drilled well, public or community water system or any other source that has been inspected and the water sampled, analyzed, and found to be of safe and sanitary quality. The presence in the plant of a current certificate or notification of approval from the DPNR shall constitute approval of the source.

(e) "Artesian water" means bottled water from a well tapping a confined aquifer in which the water level stands above the water table. Artesian water shall meet the requirements of natural water.

(f) "BAT" means the best technology treatments techniques which the administrator of the U.S. Environmental Protection Agency, after examination for efficacy under field conditions and not solely under laboratory conditions, are available (taken cost into consideration). For purposes of setting maximum contaminant levels (MCLs) for Synthetic Organic Chemicals any BAT must be atleast as effective as granular activated carbon.

(g) "Bottled water" means water that is placed in a sealed container or package and is offered for sale for human consumption or other consumer uses.
(h) "Bottled water plant" means any place or establishment in which bottled water is prepared for sale.

(i) "Compliance Cycle" means the nine-year [calendar year] cycle during which public water systems must monitor. Each compliance cycle consists of three three-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; the third begins January 1, 2011 and ends December 31, 2019.

(j) "Compliance Period" means a three-year [calendar year] period within a aompliance cycle. Each compliance cycle has three three-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; the third from January 1, 1999 to December 31, 2001.

(k) "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.

(l) "Contaminant" means any physical, chemical, biological, or radiological substance or matter in water.

(m) "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.

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

(o) "Domestic or other non-distribution 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.
(p) "Dose equivalent" means the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and in its distribution in the body as specified by the International Commission on Radiological Units and Measurements (ICRU).

(q) "DPNR" means the United States Virgin Islands, Department of Planning & Natural Resources. DPNR is the regulatory entity for all provisions of the Virgin Islands Safe Drinking Water Act.
During any period when the Virgin Islands Government does not have primary enforcement responsibility pursuant to Section 1413 of the Act, the authority associated with DPNR is assumed by the Regional Administrator, U.S. Environmental Protection Agency.

(r) "Effective corrosion inhibitor residual", for the purpose of the Lead & Copper Rule, means a concentration sufficient to form a passivating film on the interior walls of a pipe.

(s) "First draw sample" means a one (1) liter sample of tap water, collected in accordance with Section1303-64(b)(2), that has been standing in plumbing pipes at least six (6) hours and is

collected without flushing the tap.

(t) "Ground water under the direct influence of surface water" means any water beneath the surface of the ground with (1) significant occurrence of insects or other macro-organisms, algae, or large-diameter pathogens such as Giardia lamblia, or (2) significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions.

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

(v) "Gross beta particle activity" means the total radioactivity due to beta particle emission as inferred from measurements on a dry sample.
(w) "Halogen" means one of the chemical elements chlorine, bromine or iodine.

(x) "Initial Compliance Period" means the first full three-year compliance period which begins at least eighteen (18) months after promulgation, except for contaminants listed at Section1303-21(b)(1, 5, 8, 11, 16), Section1303-22 (a)(19-33) and Section1303-28(a)(19-21). Initial compliance period for these contaminants will represent the first full three-year compliance period after promulgation for systems with one hundred and fifty (150) or more service connections (January 1993-December 1995), and first full three-year compliance period after the effective date of the regulation (January 1996-December 1998) for systems having fewer than one hundred and fifty (150) service connections.

(y) "Large water system", for the purpose of the Lead and Copper Rule, means a water system that serves more than 50,000 persons.

(z) "Lead service line", means a service line made of lead which connects the water main to the building inlet and any lead pigtail, gooseneck or other fitting which is connected to such lead line.

(aa) "Man-made beta particle and photon emitters" means all radionuclides emitting beta particles and/or photons listed in Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure, NBS Handbook 69, except the daughter products of thorium-232, uranium-235 and uranium-238.

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

(cc) "Maximum total trihalomethane potential (MTP)" means the maximum concentration of total trihalomethane produced in a given water containing a disinfectant residual after seven (7)

days at a temperature of 25° C or above.

(dd) "Medium-size water system", for the purpose of the Lead and Copper Rule, means a water system that serves greater than thirty-three hundred (>3,300) and less than or equal to fifty thousand (<50,000) persons.

(ee) "Natural water" means bottled spring, mineral, artesian, or well water which is derived from an underground formation and is not derived from a municipal system or public water supply.

(ff) "Near the first service connection" means at one of the twenty percent (20%) 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.

(gg) "Optimal corrosion control treatment", for the purpose of the Lead and Copper Rule, 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.

(hh) "Performance evaluation sample" means a reference sample provided to a laboratory for the purpose of demonstrating that
the laboratory can successfully analyze the sample within the limits of performance specified by the Agency where the true value of the reference material is unknown to the laboratory at the time of the analysis.

(ii) "Person" means an individual, corporation, company, association, partnership, state, and includes the Government of the Virgin Islands and any department, agency or instrumentality thereof, or Federal agency.

(jj) "Picocurie (pCi)" means that quantity of radioactive material producing 2.22 nuclear transformations per minute.

(kk) "Plant operator" means any person who owns or operates a bottled water plant.

(ll) "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 drinking water throughout the house or building.

(mm) "Point of use treatment device" means a treatment device applied to a single tap used for the purposes reducing contaminants in the drinking water at that one tap.

(nn) "Public water system" means a system for the provision to the public of piped water for human consumption, if the system has at least fifteen (15) service connections or regularly serves an average of a least twenty-five (25) individuals daily at least sixty (60) days out of the year. This term includes (1) any collection, treatment, storage, and distribution facilities under the control of the operator of the system, and (2) any collection pretreatment storage facilities not under the system's control which are used primarily in connection with the system.

(1) "Community water system" means a public water system which serves at least fifteen (15) service connections used by year-round residents or regularly serves at least twenty-five (25) year-round residents.

(2) "Non-community water system" means a public water system that does not regularly serve at least twenty-five (25) of the same persons over six (6) months per year.

(3) "Non-transient non-community water system" means a public water system that is not a community water system as defined in paragraph (e)(1) of this section, and that regularly serves at least twenty-five (25) of the same individuals over six (6) months per year.

(oo) "Rem" means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A "millirem" (mrem) is 1/1000 of a rem.

(pp) "Repeat Compliance Period" means any subsequent compliance period after the initial compliance period.

(qq) "Sanitary Survey" means an on site review of the water source, facilities, equipment, operation and maintenance of a public water system for the purpose of evaluating the adequacy of such sources, facilities, equipment, operation and maintenance for producing and distributing safe drinking water.

(rr) "Service line sample" means a one (1) liter sample of water, collected in accordance with Section1303-64(b)(3), that has been standing for at least six (6) hours in a service line.

(ss) "Single family structure," for the purpose of the Lead & Copper Rule, means a building constructed as a single-family residence that is currently used as either a residence or a place of business.

(tt) "Small water system", for the purpose of the Lead & Copper Rule, means a water system that serves 3,300 persons or fewer.

(uu) "Spring water" means water derived from an underground formation from which water flows naturally to the surface of the earth.

(vv) "Standard sample" means the aliquot of finished drinking water that is examined for the presence of coliform bacteria.

(ww) "Supplier of water" means any person who owns or operates a public water system.

(xx) "System with a single service connection" means a system which supplies water to consumers via a single service line.

(yy) "Too numerous to count" means that the total number of bacterial colonies exceeds two-hundred (200) on a 47 mm diameter membrane filter used for coliform detection.

(zz) "Total Trihalomethanes" (TTHM) 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.

(aaa) "Trihalomethane" (THM) means one of the family of organic compound, 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.

(bbb) "Water dealer" means any person who imports bottled water or causes bulk water to be transported for bottling, human consumption or other consumer uses.

Section 1303-13. Coverage

This chapter shall apply to each public water system, unless the public water system meets all of the following conditions:

(a) Consists only of distribution and storage facilities (and does not have any collection and treatment facilities);

(b) Obtains all of its water from, but is not owned or operated by, a public water system to which such regulations apply;

(c) Does not sell water to any person; and

(d) Is not a carrier which conveys passengers in interstate commerce.

Section 1303-14. Variances or Exemptions

a) Variances or Exemptions from certain provisions of these regulations may be granted, pursuant to sections 1415 and 1416 of the Act by the entity with primary enforcement responsibility. Provisions under Part 142, National Interim Primary Drinking Water Regulations Implementation-subpart E (Variances) and subpart F (Exemptions) apply where the Environmental Protection Agency has primary enforcement responsibility.

b) No variances or exemptions from the maximum contaminant level in Section 1303-24 of this chapter are permitted.

Section 1303-15. Siting requirements

Before a person may enter into a financial commitment for or initiate construction of a new public water system or increase the capacity of an existing public water system, he shall notify DPNR and, to the extent practicable, avoid locating part or all of the new or expanded facility at a site which:

(a) Is subject to significant risk from earthquakes, floods, fires or other disasters which could cause a breakdown of the public water system or a portion thereof; or

(b) Except for intake structures, is within the flood-plain of a 100-year flood or is lower than any recorded high tide where appropriate records exist. The U.S. Environmental Protection Agency will not seek to override land use decisions affecting public water systems citings which are made at state or local government levels.

Section 1303-16. Effective dates

Except as provided for in Paragraphs (a) through (e) of this section and in 1303-58 (a), the regulations set forth in this chapter shall take effect on June 24, 1977 or at the time of promulagation for regulations promulgated by any past, present and future amendments to the Act. Prior to the promulgation of any amendment the regulatory authority resides with the U.S. Environmental Protection Agency under 40 CFR, Parts 141 and 142.

(a) The effective dates for Section1303-21 are as follows:

(1) The effective date of paragraph (b)(9) is October 2, 1987.

(2) The effective date for paragraphs (b)(2), (3), (6), (7), (10), and (12) through (15) is July 30, 1992.

(3) The effective date for paragraph (b)(4) is January 1, 1993.

(4) The effective date for Paragraphs (b)(1), (5), (8), (11), and (16) is Janaury 17, 1994.

(b) The effective dates for Section1303-22 are as follows:

(1) The effective date for (a)(1) through (a)(18) is July 30, 1992

(2) The effective date for (a)(26) is August 17, 1992.

(3) The effective date for (a)(19) through (a)(25) and (a)(27) through (a)(33) is January 17, 1994

(c) The effective dates for Section1303-28 are as follows:

(1) The effective date for paragraphs (a)(1) through (a)(8) is January 9, 1989

(2) The effective date for (a)(9) through (a)(18) is July 30, 1992.

(3) The effective date for (a)(19) through (a)(21) is January 17, 1994.

(d) The effective date for Section1303-55 is as follows:

The regulations set forth in Section1303-55 shall take effect eighteen (18) months from the date of promulgation. All requirements must be completed within twelve (12) months following the effective date.

(e) The effective date for Section1303-56 is as follows:

The regulations set forth in Section1303-56 shall take effect eighteen (18) months from the date of promulgation. All requirements must be completed within twelve (12) months following the effective date.

Section 1303-17. Requirements for water used for human consumption that is transported by truck or tanker.

(a) All trucks and tankers that are engaged in the transportation of water for human

consumption shall be inspected and registered annually by the DPNR prior to being placed into service, to ensure their sanitary condition.

The first inspection shall be performed no later than sixty (60) days after the effective date of these regulations and during the month of January thereafter.

(1) It is the presumption of these regulations that any water delivered by truck or tanker to a cistern or storage tank in a public water system or a private residence is water that is being transported for human consumption.

(2) A record of the current DPNR inspection and certification, in the form of a valid inspection sticker, must be displayed in a conspicuous location on the rear of the truck. If a current sticker is not affixed to a truck that transports water for human consumption then the truck is considered in violation of this section and subject to penalties under Section 1309-1 of the Virgin Islands Rules and Regulations.

(b) All trucks or tankers that have transported any hazardous or toxic material(s) must be subject to inspection by the DPNR to ensure that such trucks or tankers are free of all hazardous or toxic material(s) before they will be allowed to transport water for human consumption.

(c) All trucks and tankers transporting water for human consumption are required to maintain records indicating the frequency of cleaning and disinfecting of the trucks or tankers and the types of chemicals and materials used in the cleaning process. All records must be made available upon request of DPNR.

(d) The truck or tanker operator must enter each load of water in a manifest which must describe, at a minimum: the source of the water; the date the water was loaded into the truck, the name and address of the recipient of the water; and the date of delivery.

(e) The truck or tanker operator must make available upon request of a customer a written certificate that the water is from a source that is in compliance with the Virgin Islands Safe Drinking Water Act, and written proof of certification by the DPNR that the truck or tanker has passed inspection and has approval from the DPNR to transport water.

(f) The Commissioner has the power, sixty (60) after this amendment goes into effect, to prohibit trucks and tankers that do not comply with these regulations from transporting water for human consumption.

(g) After the effective date of these regulations no tanker truck that has been used to carry any product other than drinking water, milk or other products utilized for human consumption

can be newly placed into service to transport potable water without express written permission from the Commissioner. All truckers and trucking companies in the business of transporting water for human consumption must maintain records of previous use for each tanker truck from its date of manufacture to the date it was put into service as a potable water hauler. These records must include any and all hazardous, toxic or special material or waste that was transported by the tanker truck in the past. These records must be made available upon request of DPNR.

(1) If records indicate that a tanker truck has previously been used for transportation of hazardous or potentially toxic materials in the past, or if records do not exist to confirm hazardous or potentially toxic materials were not transported by that tanker truck, then the Commissioner may prohibit the trucking company from using that truck for the transportation of water for human consumption.

(i) The Commissioner may require sampling of water from the inside of a truck that may have transported hazardous or potentially toxic materials to be completed prior to use of a truck for transportation of water for human consumption. This sampling may, at the discretion of the Commissioner, be for any chemical, physical, microbiological and/or radiological contaminants.

(h) After the effective date of these regulations trucks and tankers used for transporting water for human consumption may not be used for other purposes without prior written permission of the Commissioner.

(i) After the effective date of these regulations, trucks and tankers used for the transporting of water for human consumption may only be used for transporting water for human consumption from water sources approved and regulated by DPNR. To be approved by DPNR, these water sources must, at a minimum, perform all water quality monitoring required for transient public water systems. Increased monitoring for chemical constituents can be required at the discretion of the Commissioner. The owner of the water source is responsible for completing the required water quality monitoring and reporting the results to DPNR as required by Section 1303-51. The distribution of water from an unregulated source to tankers and trucks for distribution for the purposes of human consumption is prohibited. The transportation of water from an unregulated source for use for human consumption is also prohibited.

Section 1303-21. Maximum contaminant levels for inorganic chemicals

(a) The maximum contaminant levels (MCLs) for nitrate and nitrite apply to all public water systems (community, non-community and non-transient, non-community water systems). The

maximum contaminant levels for the other inorganic contaminants specified in paragraphs (b) of this section apply to community and non-transient, non-community water systems.

(b) The following are the maximum contaminant levels for inorganic chemicals:

Maximum Contaminant Levels for Inorganic Chemicals	
Contaminant	**MCL (mg/l)**
(1) **Antimony**	**0.006**
(2) Arsenic	**0.05**
(3) Asbestos	**7 Million Fibers/liter (longer than 10 m)**
(4) Barium	**2**
(5) Beryllium	**0.004**
(6) Cadmium	**0.005**
(7) Chromium	**0.1**
(8) Cyanide	**0.2**
(9) Fluoride	**4.0**
(10) Mercury	**0.002**
(11) Nickel	**0.1**
(12) Nitrate	**10 (as Nitrogen)**
(13) Nitrite	**1 (as Nitrogen)**
(14) Total Nitrate & Nitrite	**10 (as Nitrogen)**
(15) Selenium	**0.05**
(16) Thallium	**0.002**

(c) The following are identified as the best available technology (BAT), treatment technique, or other means available for achieving compliance with the maximum contaminant level for inorganic contaminants identified in paragraph (b) of this section, except fluoride:

BAT FOR INORGANIC CONTAMINANTS	
CHEMICAL NAME	**BAT(s)**
Antimony	2, 7
Asbestos	2, 3, 8
Beryllium	1, 2, 5, 6, 7
Barium	5, 6, 7, 9
Cadmium	2, 5, 6, 7
Chromium	2, 5, 6[2], 7
Cyanide	5, 7, 10
Mercury	2[1], 4, 6[1], 7[1]
Nickel	5, 6, 7
Nitrate	5, 7, 9
Nitrite	5, 7
Selenium	1, 2[3], 6, 7, 9
Thallium	1, 5

[1] BAT only if influent Hg concentrations (less than or equal to) 10 g/l.
[2] BAT for Chromium III only
[3] BAT for Selenium IV only

Key to BATs in Table

1 = Activated Alumina
2 = Coagulation/Filtration
3 = Direct and Diatomite Filtration
4 = Granular Activated Carbon
5 = Ion Exchange
6 = Lime Softening
7 = Reverse Osmosis
8 = Corrosion Control
9 = Electrodialysis
10= Chlorine

Section 1303-22. Maximum contaminant levels for synthetic organic chemicals

(a) The following are the maximum contaminant levels for synthetic organic chemicals. They apply to community and non-transient, noncommunity water systems. Compliance with maximum contaminant levels for synthetic organic chemicals is calculated pursuant to section 1303-44.

Maximum Contaminant Levels for Synthetic Organic Chemicals		
CAS No.	**Contaminant**	**MCL (mg/l)**
(1) 15972-60-8	Alachlor	0.002
(2) 116-06-3	Aldicarb	0.003
(3) 1646-87-3.	Aldicarb sulfoxide	0.004
(4) 1646-87-4	Aldicarb sulfone	0.002
(5) 1912-24-9	Atrazine	0.003
(6) 1563-66-2	Carbofuran	0.04
(7) 57-74-9	Chlordane	0.002
(8) 96-12-8	Dibromochloropropane	0.0002
(9) 94-75-7	2,4-D	0.07
(10) 106-93-4	Ethylene dibromide	0.00005
(11) 76-44-8	Heptachlor	0.0004

Maximum Contaminant Levels for Synthetic Organic Chemicals		
CAS No.	**Contaminant**	**MCL (mg/l)**
(12) 1024-57-3	Heptachlor epoxide	0.0002
(13) 58-89-9	Lindane	0.0002
(14) 72-43-5	Methoxychlor	0.04
(15) 1336-36-3	Polychlorinated biphenyls	0.0005
(16) 87-86-5	Pentachlorophenol	0.001
(17) 8001-35-2	Toxaphene	0.003
(18) 93-72-1	2,4,5-TP	0.05
(19) 50-32-8	Benzo[a]pyrene	0.0002
(20) 75-99-0	Dalapon	0.2
(21) 103-23-1	Di(2-ethylhexyl) adipate	0.4
(22)117-81-7	Di(2-ethylhexyl) phthalate	0.006
(23) 88-85-7	Dinoseb	0.007
(24) 85-00-7	Diquat	0.02
(25) 145-73-3	Endothall	0.1
(26) 72-20-8	Endrin	0.002
(27) 1071-53	Glyphosate	0.7
(28) 118-74-1	Hexachlorobenzene	0.001
(29) 77-47-4	Hexachlorocyclopentadiene	0.05
(30) 23135-22-0	Oxamyl (Vydate)	0.2
(31) 1918-02-1	Picloram	0.5
(32) 122-34-9	Simazine	0.004

Maximum Contaminant Levels for Synthetic Organic Chemicals		
CAS No.	**Contaminant**	**MCL (mg/l)**
(33) 1746-01-6	2,3,7,8-TCDD (Dioxin)	$3x10^{-8}$

(b) The maximum contaminant level for total trihalomethanes (the sum of the concentrations of bromodichloromethane, dibromo- chloromethane, tribromomethane (bromoform), and trichloromethane (chloroform)) is 0.10 mg/l, and applies only to community water systems which serve a population of 10,000 or more individuals and which add a disinfectant (oxidant) to the water in any part of the drinking water treatment process. Compliance with the maximum contaminant level for total trihalomethanes is calculated pursuant to Section 1303-44B.

Section 1303-23. Maximum contaminant levels for turbidity

The maximum contaminant levels for turbidity are applicable to both community water systems and non-community water systems using surface water sources in the whole or in part. The maximum contaminant levels for turbidity in drinking water, measured at a representative entry point(s) to the distribution system are:

(a) One (1) turbidity unit (TU), as determined by a monthly average pursuant to section 1303-42, except that five (5) or fewer turbidity units may be allowed if the supplier of water can demonstrate to DPNR that the higher turbidity does not do any of the following:

(1) Interfere with disinfection;
(2) Prevent maintenance of an effective disinfection agent throughout the distribution system; or
(3) Interfere with microbiological determinations.

(b) Five (5) turbidity units based on an average for two (2) consecutive days pursuant to section 1303-42.

Section 1303-24. Maximum microbiological contaminant levels

(a) The maximum contaminant level is based on the presence or absence of total coliforms in a sample, rather than coliform density.

(1) For a system which collects at least forty (40) samples per month, if no more than

five percent (5%) of the samples collected during a month are total coliform-positive, the system is in compliance with the MCL for total coliforms.

(2) For a system which collects fewer than forty (40) per month, if no more than one (1) sample collected during a month is total coliform-positive, the system is in compliance with the MCL for total coliforms.

(b) Any fecal coliform-positive repeat sample or E.coli positive repeat sample, or any total coliform-positive repeat sample following a fecal coliform-positive or E. coli-positive routine sample, or surveillance sample collected by DPNR constitutes a violation of the MCL for total coliforms. For purposes of the public notification requirements in Section1303-52, this is a violation that may pose an acute risk to health.

(c) A public water system shall determine compliance with the MCL for total coliforms in paragraphs (a) and (b) of this section for each month in which it is required to monitor for total coliforms.

(d) Consistent with the Administrator's determination under section 1412 of the Federal Act, the following constitutes the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant level for total coliforms in paragraphs (a) and (b) of this section:

(1) Protection of wells from contamination by coliforms by appropriate placement and construction;

(2) maintenance of a disinfectant residual throughout the distribution system;
(3) proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, and continual maintenance of positive water pressure in all parts of the distribution system;

(4) filtration and/or disinfection of surface water, as described in Subpart H of 40 CFR, or disinfection of ground water using strong oxidants such as chlorine, chlorine dioxide, or ozone;

(5) the development and implementation of an EPA-approved Wellhead Protection Program under section 1428 of the Safe Drinking Water Act (SDWA).

(e) Maximum contaminant level goal (MCLG) for microbiological contaminants.

MCLGs for the following contaminants are as indicated:

MCLGs	
CONTAMINANT	**MCLG**
Total Coliforms (including fecal coliforms and Escherichia coli	0

Section 1303-25. Maximum contaminant levels for radium-226, radium 228, and gross alpha particle radioactivity in community water systems

The following are the maximum contaminant levels for radium-226, radium-228, and gross alpha particle radioactivity:

(a) Combined radium-226 and radium-228 -- 5pCi/l.

(b) Gross alpha particle activity (including radium-226 but excluding radon and uranium) -- 15pCi/l.

Section 1303-26. Maximum contaminant levels for beta particle and photon radioactivity from man-made radionuclides in community water systems

(a) The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than four millirem/year.

(b) Except for the radionuclides listed in Table A, the concentration of man-made radionuclides causing four millirem total body or organ dose equivalents shall be calculated on the basis of a two liter per day drinking water intake using the one hundred and sixty-eight (168) hour data listed in "Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure," NBS Handbook 69 as amended August 1963, U.S. Department of Commerce. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed four millirem/year.

Average annual concentrations assumed to produce a total body or organ dose of four millirem/yr

Radionuclide	Critical Organ	per liter/Pci
Tritium	Total body	20,000
Strontium-90	Bone marrow	8

Section 1303-27. Prohibition on the use of lead pipes, solder and flux

(a) *In General* - Any pipe, solder or flux which is used after June 19, 1986 in the installation or repair of:

(1) Any public water system, or

(2) any plumbing in a residential or nonresidential facility providing water for human consumption which is connected to a public water system, shall be lead-free. Lead-free, for the purposes of this section, is defined, (i) when used with respect to solder and flux, as solder and flux not containing more than 0.2% lead, and (ii) when used with respect to pipe and pipe fittings as pipe and pipe fittings containing no more than 8.0% lead. This subsection shall not apply to leaded joints necessary for the repair of cast iron pipes.

(b) *Public Notice Requirements* - Each public water system shall identify and provide notice to persons that may be affected by lead contamination of their drinking water where such contamination results from either of the following:

(1) The lead content in the construction material of the public water distribution system, or

(2) corrosivity of the water supply sufficient to cause leaching of lead.

Notice shall be provided notwithstanding the absence of a violation of any national drinking water standard. The manner and form of notice are specified in Section 1303-52(g).

(c) *Enforcement* -

(1) Enforcement of the prohibition - The requirements of subsection (a) shall be effective in the Virgin Islands on June 19, 1988. The Commissioner shall enforce such

requirements through the Virgin Islands Plumbing Codes, or such other means of enforcement as the Commissioner may determine to be appropriate.

(2) Monitoring and testing requirements -

(i) If the Commissioner, in the interest of the protection of public health, deems it necessary, the owner or operator of a public water system shall be required to:

(A) Monitor, test and analyze the corrosivity level of the system's water at a frequency determined by the Commissioner.

(B) Monitor, test and analyze the lead content of the system's water at a frequency determined by the commissioner.

(C) Report findings to the Commissioner in accordance with Section 1303-51.

(D) Replace lead and lead containing materials as deemed necessary by the Commissioner in accordance with the Lead and Copper Rule.

(E) Establish and maintain monitoring and inspection records.

(ii) To carry out the purpose of these regulations, the Commissioner or his authorized representative upon presentation of his credentials:

(A) Shall have access to any premises where a public water system or any part thereof is located or any premise where records are required to be maintained;

(B) may at reasonable times have access to and copy any records required to be maintained;

(C) may inspect any solder, pipe and building materials for their lead content;

(D) and may have access to any sample for the purpose of field or laboratory analysis of any pipe, solder, flux or materials which are used in

the installation or repair of any public water system or part thereof.

Section 1303-28. Maximum contaminant levels for volatile organic chemicals

(a) The following maximum contaminant for volatile organic chemicals apply to community and non-transient, non-community water systems.

Maximum Contaminant Levels for Volatile Organic Chemicals		
CAS No.	**Contaminant**	**MCL (mg/l)**
(1) 75-01-4	Vinyl chloride	0.002
(2) 71-43-2	Benzene	0.005
(3) 56-23-5	Carbon tetrachloride	0.005
(4) 107-06-2	1,2-Dichloroethane	0.005
(5) 79-01-6	Trichloroethylene	0.005
(6) 106-46-7	Para-Dichlorobenzene	0.075
(7) 75-35-4	1,1-Dichloroethylene	0.007
(8) 71-55-6	1,1,1-Trichloroethane	0.2
(9) 156-59-2	cis-1,2-Dichloroethylene	0.07
(10) 78-87-5	1,2-Dichloropropane	0.005
(11) 100-41-4	Ethylbenzene	0.7
(12) 108-90-7	Monochlorobenzene	0.1
(13) 95-50-1	o-Dichlorobenzene	0.6
(14) 100-42-5	Styrene	0.1

Maximum Contaminant Levels for Volatile Organic Chemicals		
CAS No.	**Contaminant**	**MCL (mg/l)**
(15) 127-18-4	Tetrachloroethylene	0.005
(16) 108-88-3	Toluene	1
17) 156-60-5	trans-1 ,2-Dichloroethylene	0.1
(18) 1330-20-7	Xylenes (total)	10
(19) 75-09-2	Dichloromethane	0.005
(20) 120-82-1	1,2,4-Trichlorobenzene	0.07
(21) 79-00-5	1, 1, 2 -Trichloroethane	0.005

(b) As indicated in the Table below either granular activated carbon (GAC), packed tower aeration (PTA), or both are identified as the best technology, treatment technique, or other means available for achieving compliance with the maximum contaminant level for organic contaminants identified in paragraph (a) of this section and paragraph (a) of Section 1303-22:

BAT FOR ORGANIC CONTAMINANTS				
CAS #	**Chemical**	**GAC**	**PTA**	**OX**
15972-60-8	Alachlor	X		
116-06-3	Aldicarb	X		
1646-87-4	Aldicarb sulfone	X		
1646-87-3	Aldicarb sulfoxide	X		
1912-24-9	Atrazine	X		
71-43-2	Benzene	X	X	

BAT FOR ORGANIC CONTAMINANTS				
CAS #	**Chemical**	**GAC**	**PTA**	**OX**
1563-66-2	Carbofuran	X		
56-23-5	Carbon tetrachloride	X	X	
57-74-9	Chlordane	X		
94-75-7	2,4-D	X		
96-12-8	Dibromochloropropane	X	X	
95-50-1	o-Dichlorobenzene	X	X	
107-06-2	1,2-Dichloroethane	X	X	
156-59-2	cis-1,2-Dichloroethylene	X	X	
156-60-5	trans-1,2-Dichloroethylene	X	X	
75-35-4	1,1-Dichloroethylene	X	X	
78-87-5	1,2-Dichloropropane	X	X	
106-93-4	Ethylene Dibromide (EDB)	X	X	
100-41-4	Ethylbenzene	X	X	
76-44-8	Heptachlor	X		
1024-57-3	Heptachlor epoxide	X		
58-89-9	Lindane	X		
72-43-5	Methoxychlor	X		
108-90-7	Monochlorobenzene	X	X	

BAT FOR ORGANIC CONTAMINANTS				
CAS #	**Chemical**	**GAC**	**PTA**	**OX**
106-46-7	para-Dichlorobenzene	X	X	
1336-36-3	Polychlorinated biphenyls (PCB)	X		
87-86-5	Pentachlorophenol	X		
100-42-5	Styrene	X	X	
93-72-1	2,4,5-TP (Silvex)	X		
127-18-4	Tetrachloroethylene	X	X	
71-55-6	1,1,1-Trichloroethane	X	X	
79-01-6	Trichloroethylene	X	X	
108-88-3	Toluene	X	X	
8001-35-2	Toxaphene	X		
75-01-4	Vinyl chloride		X	
1330-20-7	Xylene	X	X	
50-32-8	Benzo[a]pyrene	X		
75-99-0	Dalapon	X		
75-09-2	Dichloromethane		X	
103-23-1	Di (2-ethylhexyl) adipate	X	X	
117-81-7	Di (2-ethylhexyl) phthalate	X		
88-85-7	Dinoseb	X		

BAT FOR ORGANIC CONTAMINANTS				
CAS #	**Chemical**	**GAC**	**PTA**	**OX**
85-00-7	Diquat	X		
145-73-3	Endothall	X		
72-20-8	Endrin	X		
1071-83-6	Glyphosate			X
118-74-1	Hexachlorobenzene	X		
77-47-3	Hexachlorocyclopentadiene	X	X	
23135-22-0	Oxamyl (Vydate)	X		
1918-02-1	Picloram	X		
122-34-9	Simazine	X		
120-82-1	1,2,4-Trichlorobenzene	X	X	
79-00-5	1,1,2-Trichloroethane	X	X	
1746-01-6	2,3,7,8-TCDD (Dioxin)	X		

(c) The following is the maximum contaminant level for total trihalomethanes (the sum of the concentrations of bromodichloromethane, dibromochloromethane, tribromomethane (bromoform) and trichloromethane (chloroform)). The maximum contaminant level for these chemicals apply to all community water systems that serve a population of 10,000 or more individuals and which add a disinfectant (oxidant) to the water in any part of the drinking water treatment process. Compliance with the maximum contaminant level of this section is calculated pursuant to Section 1303-44B.

Total trihalomethanes(the sum of the concentrations of bromodichloromethane, --	Maximum contaminant level, milligrams per liter = 0.10

dibromochloromethane,
tribromomethane (bromoform) and
trichloromethane (chloroform))

Section 1303-29. Variances and exemptions from the Maximum Contaminant Levels for Synthetic Organic Chemicals

(a) The Commissioner, pursuant to Section 1303 of the Virgin Islands Safe Drinking Water Act, identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for synthetic organic chemicals: removal using packed tower aeration; and, removal using granular activated carbon (except for vinyl chloride).

(b) As a condition for granting a variance, except as provided in paragraph (c) of this section, community water systems and non-transient, non-community water systems shall install and use a packed tower aeration or granular activated carbon (except for vinyl chloride).

(c) If a system can demonstrate through comprehensive engineering assessments, which may include pilot plant studies, that the use of packed tower aeration or granular activated carbon (except for vinyl chloride) would achieve only a deminimus reduction in contaminants, the DPNR may issue a schedule of

compliance that requires the system being granted the variance to examine other treatment methods as a condition of obtaining the variance.

(d) If the DPNR determines that a treatment method identified in paragraph (c) of this section is technically feasible, the Commissioner may require the system to install and/or use that treatment method in connection with a compliance schedule issued under the provisions of Section 1415(a)(1)(A) of the Federal Safe Drinking Water Act. The DPNR determination shall be based upon studies by the system other relevant information.

(e) The DPNR may require a water system to use bottled water, point-of-source-use-devices, or other means as a condition of granting a variance or an exemption from the requirements of 2303-28(a), to avoid unreasonable risk to health.

(f) A public water system that uses bottled water as a condition for receiving a variance or exemption from the requirements of section 1303-28 shall meet the following requirements in either paragraph (f)(l) or (f)(2) of this section in addition to the requirements of paragraph (f)(3) of this section:

(1) All bottled water shall be from a source that is in compliance with the Safe Drinking Water Act and shall not contain any constituent in quantities that may be injurious to health. The public water system shall implement a monitoring plan approved by the DPNR to reasonably assure that the bottled water meets all MCLs. The public water system shall monitor a representative sample of bottled water for all contaminants regulated under Section 1303-28 for the first quarter that it supplies the bottled water to the public, and annually thereafter. An owner or operator of a public water system that supplies bottled water shall submit the monitoring results to DPNR annually.

(2) The public water system shall obtain a certification from the bottled water company that the bottled water has been taken from an approved source as defined in 21 CFR 129.3 (a) and 19 VIR&R 1303-33 (e)(2); the bottled water company has conducted monitoring in accordance with 21 CFR 129.80 (g)(1) through (3) and 19 VIR&R 1303-33 (c); and the bottled water does not exceed any MCLs or quality limits as set out in 21 CFR 103.35, 110129, and 19 VIR&R 1303-33. The public water system shall submit the certification to DPNR the first quarter after it supplies bottled water and annually thereafter.

(3) The public water system is fully responsible for the provision of sufficient quantities of bottled water to every person supplied by the public water system, via door-to-door bottled water delivery.

(g) A public water system that uses point-of-source devices as a condition for receiving a variance or exemption must meet the same requirements for point-of entry devices as set out in Section 1303-31.

Section 1303-30. Use of other non-centralized treatment devices

A public water system shall not use bottled water or point-of-use devices to achieve compliance with an MCL. Bottled water or point-of-use devices may be used on a temporary basis to avoid an unreasonable risk to health.

Section 1303-31. Criteria and procedures for public water systems using point-of-entry devices

(a) Public water systems may use point of entry devices to comply with maximum contaminant levels only if they meet the requirements of this section.

(b) It is the responsibility of the public water system to operate and maintain the point of entry treatment system.

(c) The public water system shall develop and obtain DPNR approval for a monitoring plan before point of entry devices are installed for compliance. Under the plan approved by the DPNR, point of entry devices must provide health protection equivalent to central water treatment. "Equivalent" means that the water would meet all National Primary Drinking Water Regulations and would be of acceptable quality similar to water distributed by a well-operated central treatment plant. In addition to the VOCs, monitoring shall include physical measurements and observations such as total flow treatment and mechanical condition of the treatment equipment.

(d) Water systems shall properly apply effective technology under a plan approved by DPNR to maintain the microbiological safety of the water.

(1) The owner or operator of a water system shall certify performance of point-of-entry devices to the DPNR's satisfaction, including satisfactory evidence of field testing and thorough engineering design reviews of point of entry devices.

(2) In the selection of design and application of the point of entry device, an owner or operator of a water system shall employ measures to counteract the known tendency for increase on heterotrophic bacteria concentrations in water treated with activated carbon. To ensure that the microbiological safety of the water is not compromised, an owner or operator is required to take such necessary measures as the use of frequent back-washing, post-contractor disinfection, and Heterotrophic Plate Count monitoring.

(e) To ensure the protection of all consumers, every building connected to a system shall have a point of entry device, installed, maintained, and adequately monitored. Every building is subject to treatment and monitoring of its water system and sale of the property does not alter the rights and responsibilities of the public water system consumer.

Section 1303-32. Bottled water and point-of-use devices

(a) As a condition for granting an exemption from the requirements of section 1303-28 of this chapter, a public water system may be required to use bottled water of point of use devices.

(b) A public water system that uses bottled water as a condition of obtaining an exemption from the requirements of section 1303-28 shall meet the requirements set out in section 1303-

29(f) of this chapter.

(c) A public water system that uses point-of-use devices as a condition for receiving an exemption must meet the requirements set out in Sections 1303-29(g) and 1303-31.

Section 1303-33. Bottled water regulations

(a) Product quality

(1) All bottled water shall be from a source that is in full compliance with the drinking water regulations and shall not contain any constituent in quantities that may be injurious to health, as established by the DPNR and the Virgin Islands Safe Drinking Water Act. All bottled water shall meet standards prescribed by the DPNR.

(2) Bottled water shall not exceed any maximum contaminant levels established in Chapter 51 of the Virgin Islands Drinking Water Standards 19 VIR&R section 1303-2 et sec, or any other maximum contaminant level established by the EPA or DPNR under the Safe Drinking Water Act.

(b) Manufacturing practices and operational requirements

(1) All bottled water shall be filtered, processed and packaged in accordance with the Food and Drug Administration

(FDA) Good Manufacturing Practice Regulations (GMP's), 21 CFR Parts 110 and 129, and any other regulations prescribed by the DPNR or other authorized agencies.

(2) Bottled water production, including transporting, processing, packaging, and storage, shall be conducted under such conditions and controls as are necessary to minimize the potential for microbiological contamination of the finished product. These conditions and controls shall include the following:

(i) Bottled water shall be subject to effective germicidal treatment by ozonation or carbonation at a minimum of three (3) volumes of carbon dioxide or other equivalent disinfection approved by the DPNR.

(ii) Bottled water shall not be transported and stored in bulk tanks or processed or bottled through equipment of lines used for any non-food product.

(A) In order to minimize the potential for microbiological contamination of the finished product, non-carbonated bottled water shall not be transported,stored, processed, or bottled in or through lines or equipment through which has passed any food product other than water which is likely to contribute nutrients for microbiological growth.

(B) Bottled water shall not be transported, stored, processed, or bottled through lines or equipment through which any food product other than water has passed except under procedures approved by the DPNR that prevent the potential for microbiological contamination in bottled water.

(C) Where ozone is used as a germicidal agent for bottled water, all gaskets. o-rings, and similar flexible materials shall be made of silicon rubber, teflon, or other ozone-resistant material. These flexible parts shall be replaced whenever they show evidence of surface deterioration.

(3) Each bottled water plant operator and water dealer shall develop and maintain a procedure for product recall and implement that procedure for any product which the operator or dealer knows or has reason to believe may have been affected by the circumstances that may adversely affect safety for the consumer:

In order to facilitate product identification or recall, each bottled water product shall contain a unique code that is designed to remain affixed to the container during use and which contains either the date of manufacture or a lot or batch number (not extending for a period of longer than seven (7) days) and which identifies a specific set of primary containers or units of the same size, type and style produced under nearly uniform conditions. In addition, each bottled water product shall be affixed with a permanent date stamp indicating the date of bottling for that individual container (month and year).

(4) Artesian water may be collected with the assistance of external force to enhance the natural underground pressure so long as such measures do not alter the physical properties, composition and quality of the water.

(5) Natural water shall not be modified by blending with water of another type or by deletion or addition of dissolved solids except as related to disinfection or other treatment to reduce the concentration of any naturally-present constituent which exceeds government-sanctioned or approved safety standards or guidelines set forth by the DPNR. It may be collected and transported by pumps, pipes, tunnels, trucks or similar devices.

(6) Spring water shall be collected only at the spring or through a bore hole that is

adjacent to the point of emergence. Spring water collected with the assistance of external force to protect the water shall retain all the physical properties of and be of the same composition and quality as the water that flows naturally to the surface of the earth.

(7) A bottled water plant shall be operated under the supervision of a competent person qualified by experience, education or training to operate and maintain the plant facilities. The person supervising plants operations must demonstrate to DPNR's satisfaction that she/he has the requisite competence. Proof of competency includes but is not limited to a demonstration that the person has received training or instruction, has work experience in or holds a certificate covering training in source and product sanitation, operation and maintenance of water treatment technology, and the maintenance and monitoring of source and product water quality in accordance with these bottled water standards.

(c) Source water monitoring

(1) The plant operator shall be responsible for sampling and analysis of all approved sources for the contaminants specified in the Virgin Islands Safe Drinking Water Act to assure that product water derived from approved sources continues to comply with the Primary Drinking Water Standards. Such monitoring shall be done in accordance with the regulations for community public water systems set forth in the Virgin Islands Safe Drinking Water Act.

(2) In lieu of source monitoring required by this section and the DPNR, a plant operator using a public water system as its source may obtain and display a certificate from the system demonstrating that the public water system conducts the required monitoring.

(3) Where a bottled water plant operator, water dealer or regulatory agency (specifically DPNR) knows or has reason to believe that a contaminant not otherwise monitored is present in the source water due to a spill, release of hazardous substance, or otherwise, and its presence would create a potential health hazard to consumers, the plant operator or water dealer, upon such information, shall monitor the source water for the contaminant, and shall cease operation upon confirmation that the source has been contaminated.

(4) Detection of contaminants in source monitoring required by Section 1303 shall be followed immediately by a program of periodic monitoring to confirm the presence in the source water of said contaminants. If such listed, unregulated contaminants are confirmed to be present in the source water as to exceed a published US EPA Health Advisory or US FDA Action Level or DPNR determination of acute health risk for drinking water, the plant operator or water dealer shall employ appropriate treatment techniques to remove or to reduce said contaminant in the product water below the

concentration and shall employ a program of periodic monitoring for the contaminant in the source water until such time as the contaminant is not detectable in the source water.

(5) The required source water sampling shall be performed by qualified personnel and required analysis shall be performed by an approved laboratory. Records of the required sampling and analyses shall be maintained on file at the plant for not less than five (5) years and shall be available for official review upon the request of DPNR.

(d) Finished product monitoring

(1) To assure that bottled water complies with the Virgin Islands Safe Drinking Water Act, the following product monitoring using representative samples derived from the bottled product shall be performed:

(i) For microbiological contaminants specified in the Virgin Islands Safe Drinking Water Act, analyze weekly

a representative sample from a batch or segment of continuous production for each type of bottled water produced at the plant.

(ii) For chemical, physical and radiological contaminants specified in the Virgin Islands Safe Drinking Water Act, analyze annually a representative sample from a batch or segment of continuous production, run for each type of bottled water produced by the plant.

(2) The required product water sampling shall be performed by qualified personnel and required analyses shall be performed by a certified laboratory.

(3) Records of required sampling and analysis shall be maintained at the plant not less than five years and shall be available for official review upon request of DPNR.

(e) Labeling Requirements

(1) All bottled water shall conform to applicable territorial and federal labeling laws and regulations.

(2) Printed information or graphics relative to recognized uses of the water shall not imply properties of the product or preparation methods which are not factual.

(3) The term "pure" may appear on the label only when used to identify the contents as "purified water". Where the term is used, the method of preparation shall be stated on

the label. For purposes of this section "pure or purified water" means bottled water produced by distillation, deionization, reverse osmosis, or other suitable process and that meets the definition of purified water in the most recent edition of the United States Pharmacopeia.

Section 1303-41. Microbiological contaminant sampling and analytical requirements

(a) Routine Monitoring:

(1) All community and non-community water systems within sixty (60) days of the effective date of these regulations shall submit to DPNR a site plan for collecting samples.

(2) The site plan must include an accurate diagram of the configuration of the system.

(3) The site plan must demonstrate that the sites selected are representative of the water throughout the distribution system.

(4) Public water systems shall mail or deliver site plans to the Department of Planning & Natural Resources, Public Water Supply Supervision Program, Division of Environmental Protection. For the St. Croix Systems site plans should be sent to the St. Croix office, and for St. Thomas or St. John systems site plans should be sent to the St. Thomas office.

(5) Upon approval of a site plan, DPNR shall stamp the plan and return it by mail to the water system within thirty (30) days of receipt.

(6) If DPNR cannot approve the site plan, DPNR shall return the plan with a written explanation of the deficiencies and instructions for their correction. Upon notification of DPNR's disapproval of a site plan, the water system has fifteen (15) days to revise and resubmit the plan to DPNR.

(7) If after resubmission a site plan is not approved by DPNR, DPNR may consider the water system to be out of compliance with the requirements of this section.

(8) If the resubmitted site plan is disapproved, DPNR retains the right to modify the plan; and the water supplier shall implement the plan as modified by DPNR. DPNR is the

final arbiter in any dispute regarding the adequacy of any site plan and any activities performed under this section, and shall resolve any such dispute in the best interest of the public. DPNR retains the right to modify an approved site plan as required to abate water contamination. Notwithstanding, DPNR shall provide the water system an opportunity for a hearing on the matter.

(9) A public water system shall maintain as approved site plan at the system's premises or at a location readily accessible to the system and to DPNR's personnel.

(10) If a water system plans to modify the configuration of the system, the owner or operator of the system shall notify DPNR and submit a revised site plan to reflect the modification within sixty (60) days of such planned modification in accordance with the procedures established under paragraphs 2-8 of this subsection.

(11) DPNR shall routinely review site plans during sanitary surveys and site visits and as the Commissioner finds necessary to protect the public health.

(12) A public water system shall collect total coliform samples at sites that are representative of the water throughout the distribution system according to a written sample site plan.

(b) Total Coliform Monitoring Frequency For Community Water Systems.

The for community water systems is based on the population served by the system, as follows:

Total Coliform Monitoring Frequency For Community Water Systems	
Population served	**Minimum number of samples per month**
25 to 1,000[1]	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

Total Coliform Monitoring Frequency For Community Water Systems	
Population served	**Minimum number of samples per month**
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
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180

Total Coliform Monitoring Frequency For Community Water Systems	
Population served	**Minimum number of samples per month**
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300
1,230,001 to 1,520,000	330
1,520,001 to 1,850,000	360
1,850,001 to 2,270,000	390
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480

1. Includes Public Water Supplies which have at least fifteen (15) service connections, but serve fewer than twenty-five (25) persons.

(c) Monitoring for Non-Community Systems

The monitoring frequency for total coliforms for non-community water systems is as follows:

(1) A non-community water system using only ground water (except ground water under the direct influence of surface water, as defined in Section1303-12) and serving one-thousand (1,000) persons or fewer shall monitor each calendar quarter that the system provides water to the public.

(2) A non-community water system using only ground water (except ground water under the direct influence of surface water, as defined in Section1303-12) and serving

more than one-thousand (1,000) persons during any month shall monitor at the same frequency as a like-sized community water system, as specified in section Section1303-41(b). For systems using ground water under the direct influence of surface water, paragraph (4) of this section applies.

(3) A non-community water system using surface water, in total or in part, shall monitor at the same frequency as a like-sized community water system, as specified in section Section1303-41(b) regardless of number of persons served.

(4) A non-community water system using ground water under the direct influence of surface water, as defined in Section1303-12, shall monitor at the same frequency as a like-sized community water system, as specified in section Section1303-41(b). The system shall begin monitoring at this frequency beginning three(3) months after DPNR determines that the ground water is under the direct influence of surface water.

(5) The public water system shall collect samples at regular time intervals throughout the month, except that a system which uses only ground water (except ground water under the influence of surface water, as defined in Section1303-12), and serves four-thousand and nine-hundred (4,900)

persons or fewer, may collect all required samples on a single day if they are taken from different sites, and DPNR does not prescribe a different schedule of sampling.

(6) A public water system that uses surface water or ground water under the direct influence of surface water, as defined in Section1302-12, and does not practice filtration in compliance with Subpart H of 40 CFR shall collect at least
one sample near the first service connection each day the turbidity level of the source water, measured as specified in Section1303-74(b)(2), exceeds 1 NTU. This sample must be analyzed for the presence of total coliforms. When one or more turbidity measurements in any day exceed 1 NTU, the system shall collect this coliform sample within twenty-four (24) hours of the first exceedance. Sample results from this coliform monitoring <u>are</u> included in determining compliance with the MCL for total coliforms in Section1303-24.

(d) Special Purpose Samples.

Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair are not used to determine compliance with the MCL for total coliforms in Section1303-24. Repeat and DPNR collected surveillance samples taken pursuant to paragraph (e) of this section are not considered special purpose

samples, and must be used to determine compliance with the MCL for total coliforms in Section1303-24.

(e) Repeat Monitoring.

For the purpose of these rule and regulations "force majeure" means any cause which prevents performance of any of the activities under these rules and regulations due to causes which are outside the control of the public water system and cannot be avoided by the exercise of reasonable diligence, and includes: Acts of God-acts occasioned exclusively by violence of nature without the interference of any human agency; war; riot and strikes.

(1) If a routine or surveillance monitoring sample collected by DPNR is total coliform-positive, the public water system shall collect a set of repeat samples within twenty-four (24) hours of being notified of the positive result. DPNR shall waive the twenty-four (24) hour resampling period when a force majeure event occurs. DPNR shall extend the time of resampling to the first business day after the force majeure event is over. A system that collects more than one (1) routine sample/month shall collect no fewer than three (3) repeat samples for each total coliform-positive sample found. A system that normally collects one (1) routine sample/month or fewer shall collect no fewer than four (4) repeat samples for each total coliform-positive sample found.

(2) The system shall collect at least one (1) repeat sample from the sampling tap where the original total coliform-positive sample was taken, and at least one (1) repeat sample at a tap within five (5) service connections upstream and at least one (1) repeat sample at a tap within five (5) service connections downstream of the original sampling site.

(3) The system shall collect all repeat samples on the same day, except that a system with a single service connection shall collect the required set of repeat samples over a four-day period or subject to DPNR's approval, may collect a larger volume repeat sample(s) in one (1) or more sample containers of any size, as long as the total volume collected is at least 400ml (300ml for systems which collect more than one (1) routine sample/month).

(4) If one (1) or more repeat samples in the set is total coliform-positive, the public water system shall collect an additional set of repeat samples in the manner specified in paragraphs (e)(1)-(3) of this section. The additional samples must be collected within twenty-four (24) hours of being notified of the positive result. DPNR shall waive the twenty-four (24) hour resampling period in an event of force majeure. DPNR shall extend the time for resampling to the first business day after the force majeure event is over. The system shall repeat this process until either total coliforms are not detected in

one complete set of repeat samples or the system determines that the MCL for total coliforms in Section1303-24 has been exceeded and notifies DPNR.

(5) If a system collecting fewer than five (5) routine samples/month has one (1) or more total coliform-positive samples and DPNR does not invalidate the sample(s) under paragraph (f) of this section, the system shall collect at least five (5) routine samples during the next month the system provides water to the public.

(6) After a system collects a routine sample, and before it learns the results of the analysis of that sample, if it collects another routine sample(s) from within five (5) adjacent service connections of the initial sample, and the initial sample after analysis is found to contain total coliforms, then the system may count the subsequent sample(s) as a repeat sample instead of as a routine sample.

(7) In determining compliance with the MCL for total coliforms in Section1303-24(a), DPNR shall include results of all routine and repeat samples, DPNR-collected surveillance samples and all samples that have not been invalidated.

(f) Invalidation of total coliform samples.

A total coliform-positive sample invalidated under this paragraph does not count towards meeting the minimum monitoring requirements of this section.

(1) DPNR shall invalidate a total coliform-positive sample only if the conditions of paragraph (i), (ii), or (iii) of this section are met. DPNR may not invalidate a total coliform-positive sample solely on the ground that all repeat samples are total coliform-negative.

(i) The laboratory establishes that improper sample analysis caused the total coliform-positive result.
(ii) DPNR on the basis of the results of repeat samples collected as required by paragraphs (1)-(4) of section Section1303-41(e), determines that the total coliform-positive sample resulted from a domestic or other non-distribution system plumbing problem. DPNR may not invalidate a sample on the basis of repeat sample results, unless all repeat samples collected at the same tap as the original total coliform-positive sample are also total coliform-positive, and all repeat samples collected within five (5) service connections of the original tap are total coliform-negative (e.g., DPNR shall invalidate a total coliform-positive sample on the basis of repeat samples if all the repeat samples are total coliform-negative, or if the public water system has only one (1) service connection).

(iii) DPNR has substantial grounds to believe that a total coliform-positive result is due to a circumstance or a condition which does not reflect water quality in the distribution system. In this case, the system shall still collect all repeat samples required under paragraphs (1)-(4) of Section1303-41(e), and use them to determine compliance with the MCL for total coliforms in Section1303-24.

(iv) To invalidate a total coliform-positive sample under this subsection, the Commissioner shall issue a written, signed Notice of Invalidation, which states the specific cause of the total coliform invalidation and specifies the actions taken or to be taken by the
system to correct the problem. The Notice of Invalidation must be made available to EPA and the public.

(2) A laboratory shall invalidate a total coliform sample (unless total coliforms are detected) if the sample produces a turbid culture in the absence of gas production using an analytical method where gas formation is examined (e.g., the Multiple-Tube Fermentation Technique), produces a turbid culture in the absence of an acid reaction in the Presence-Absence (P-A) Coliform Test, or exhibits confluent growth or produces colonies too numerous to count with an analytical method using a membrane filter (e.g. Membrane Filter Technique). If a laboratory invalidates a sample because of such interference, the system shall collect another sample from the same location as the original sample within twenty-four (24) hours of being notified of the interference problem, and have it analyzed for the presence of total coliforms. The system shall continue to re-sample within twenty-four (24) hours and have the samples analyzed until it obtains a valid result. The Commissioner shall waive the twenty-four (24) hour time limit for reasons of <u>force majeure</u> on a case by case basis.

(g) Sanitary Surveys.

(1) Public water systems which do not collect five or more routine samples/month shall undergo an initial sanitary survey by June 29, 1994 for community public water systems and June 24, 1996 for non-community water systems. Thereafter, a system shall undergo another sanitary survey every five years. DPNR shall review the results of each sanitary survey to determine whether the existing monitoring frequency is adequate and what additional measures, if any, the system needs to undertake to improve drinking water quality.

(2) Sanitary surveys shall be performed by DPNR personnel.

(h) Fecal coliforms/Escherichia coli (E. coli) testing.

(1) If any routine, repeat, or DPNR collected surveillance sample is total coliform-positive, the system or DPNR, as appropriate, shall analyze that total coliform-positive culture medium to determine if fecal coliforms are present, except that the system may test for E. Coli in lieu of fecal coliforms. If fecal coliforms or E. Coli are present, the system shall notify DPNR by the end of the day when the system is notified of the test result. If the system is

notified of the result after the DPNR office is closed, the system shall notify DPNR before the end of the next business day.

(i) Analytical methodology.

(1) The standard sample volume required for total coliform analysis regardless of analytical method used is 100ml.

(2) A public water system need only determine the presence or absence of total coliforms. A determination of total coliform density is not required.

(3) Public water systems must conduct total coliform analyses in accordance with one of the analytical methods in the following table. These methods are contained in the 18th edition of Standard Methods for the Examination of Water and Wastewater, 1992, American Public Health Association, 1015 Fifteenth Street NW., Washington DC 20005. A description of the Colisure Test may be obtained from the Millipore Corporation, Technical Services Department, 80 Ashby Road, Bedford, MA 01730.

Organism	Methodology	Citation
Total Coliforms[1]	Total Coliform Fermentation Technique[2,3,4]	9221A, B.
	Total Coliform Membrane Filter Technique	9222A, B, C
	Presence-Absence (P-A) Coliform Test[4,5]	9221D.
	ONPG-MUG Test[6]	9223.
	Colisure Test[7]	

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[1]The time from sample collection to initiation of analysis may not exceed thirty (30) hours

[2]Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system conducts at least twenty-five (25) parallel tests between this medium and lauryl tryptose broth using the water normally tested, and this comparison demonstrates that the false-positive rate for total coliforms, using lactose broth, is less than 10 percent (10%).
[3]If inverted tubes are used to detect gas production, the media should cover these tubes at least one-half to two-thirds after the sample is added.
[4]No requirement exists to run the completed phase on ten percent (10%) of all total coliform-positive confirmed tubes.
[5]Six-times formulation strength may be used if the medium is filter-sterilized rather than autoclaved.
[6]The ONPG-MUG Test is also known as the Autoanalysis Colilert System.
[7]The Colisure Test must be incubated for twenty-eight (28) hours before examining the results. If an examination of the results at twenty-eight (28) hours is not convenient, then the results may be examined at any time between twenty-eight (28) and forty-eight (48) hours.
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(4) [Reserved]

(5) Public water systems shall conduct fecal coliform analysis in accordance with the following procedures. When the MTF Technique or Presence-Absence (P-A) Coliform Test is used to test for total coliforms, shake the lactose-positive presumptive tube or P-A bottle vigorously and transfer the growth with a sterile 3mm loop or sterile applicator stick into a brilliant green lactose bile broth and EC medium to determine the presence of total and fecal coliforms, respectively. For EPA-approved analytical methods which use a membrane filter, remove the membrane containing the total coliform colonies from the substrate with a sterile forceps and carefully curl and insert the membrane into a tube of EC medium. (The laboratory may first remove a small portion of selected colonies for verification). Gently shake the inoculated EC tubes to insure adequate mixing and incubate in a water bath at 44.5 0.2^{o}C for twenty-four (24) two (2) hours. Gas production of any amount in the inner fermentation tube of the EC medium indicates a positive fecal coliform test. The preparation of EC medium is described in the 18th edition of Standard Methods for the Examination of Water and Wastewater, 1992, Method 9221E --

pp. 9-52, paragraph 1a. Public water systems need only determine the presence or absence of fecal coliforms; a determination of fecal coliform density is not required.

(6) Public water systems must conduct analysis of Escherichia Coli in accordance with one of the following analytical methods:

(i) EC medium supplemented with 50 g/ml of 4-methylumbelliferyl-beta-D-glucuronide (MUG) (final concentration). EC medium is described in the 18th edition of Standard Methods for the Examination of Water and Wastewater, 1992,

Method 9221E-p.9-52, paragraph 1a. MUG may be added to the EC medium before autoclaving. EC medium supplemented with 50 g/ml of MUG is commercially available. At least 10 ml of EC medium supplemented with MUG must be used. The inner inverted fermentation tube may be omitted. The procedure for transferring a total coliform-positive culture to EC medium supplemented with MUG shall be as specified in paragraph (i)(5) of this section for transferring a total coliform-positive culture to EC medium. Observe fluorescence with an ultraviolet light (366 nm) in the dark after incubating the tube at 44.5 +/- 0.2 ^{o}C for 24 +/- 2 hours; or

(ii) Nutrient agar supplemented with 100 g/ml 4-methylumbelliferyl-beta-D-glucuronide (MUG) (final concentration). Nutrient agar is described in the 18th edition of Standard Methods for the Examination of Water and Wastewater, 1992, p.9-47 to 9-48. This test is used to determine if a total coliform-positive sample, as determined by the Membrane Filter Technique or any other method in which a membrane filter is used, contains E. Coli. Transfer the membrane filter containing a total coliform colony(ies) to nutrient agar supplemented with 100 g/ml (final concentration) of MUG. After incubating the agar plate at 35 ^{o}C for 4

hours, observe the colony(ies) under ultraviolet light (366nm) in the dark for flourescence. If flourescence is visible, E. Coli are present.

(iii) Minimal medium ONPG-MUG (MMO-MUG) Test, as set forth in the article "National Field Evaluation of a Defined Substrate Method for the Simultaneous Detection of Total Coliforms and E. Coli from Drinking Water: Comparison with Presence-Absence Techniques" (Edberg et al.), Applied and Environmental Microbiology, Volume 55, pp. 1003-1008, April 1989. (Note: The Autoanalysis Colilert System is an MMO-MUG test). If the MMO-MUG test is total coliform-positive after a 24-hour incubation, test the medium for flourescence with a 366-nm ultraviolet light (preferably with a 6-watt lamp) in the dark. If flourescence is observed, the sample is E. Coli- positive. If flourescence is questionable (cannot definitively read) after 24 hours incubation, incubate the culture for an additional 4 hours (but not to exceed 28 hours total), and again test the medium for flourescence. The MMO-MUG Test with the hepes buffer in lieu of the phosphate buffer is the only approved formulation for the detection of E. Coli.

(iv) The Colisure Test. A description of the Colisure Test may be obtained from the Millipore Corporation, Technical Services Department, 80 Ashby Road,

Bedford, MA 01730.

(7) As an option to paragraph (i)(6)(iii) of this section, a system with a total coliform-positive, MUG-negative, MMO-MUG test may further analyze the culture for the presence of E. Coli by transferring a 0.1 ml, 28-hour MMO-MUG culture to EC medium + MUG with a pipet. The formulation and incubation conditions of EC medium + MUG, and observation of the results are described in paragraph (i)(6)(i) of this section.

Section 1303-42. Turbidity sampling and analytical requirements

(a) Samples shall be taken by suppliers of water for both community water systems and non-community water systems at a representative entry point(s) to the water distribution system at least once per day, for the purpose of making turbidity measurements to determine compliance with section 1303-23. If DPNR determines that a reduced sampling frequency in a non-community system will not pose a risk to the public health, it can reduce the required sampling frequency. The option of reducing the turbidity frequency shall be permitted only in those public water systems that practice disinfection and which maintain an active residual disinfectant in the distribution system, and in those cases where DPNR has indicated in writing that no unreasonable risk to health exists under the circumstances of this option. The turbidity analysis shall be made by the Nephelometric Method in accordance with the recommendations set forth in Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 18th Edition, 1992 or "Methods for the Determination of Inorganic Substances in Environmental Samples", EPA-600/R-93-100, August 1993. Analytical test procedures contained in Technical Notes on Drinking Water Methods, EPA-600/R-94-173, October 1994 shall be utilized.

(b) If the result of a turbidity analysis indicates that the maximum allowable limit has been exceeded, the sampling and measurement shall be confirmed by resampling as soon as practicable and preferably within one (1) hour. If the repeat sample confirms that the maximum allowable limit has been exceeded, the supplier of water shall report to DPNR within forty-eight (48) hours. The repeat sample shall be the sample used for the purpose of calculating the monthly average. If the monthly average of the daily samples exceeds the maximum allowable limit, or if the average of two (2) samples taken on consecutive days exceeds 5TU, the supplier of water shall report to DPNR and notify the public as directed in section 1303-51 and section 1303-52.

(c) Sampling for non-community water systems shall begin within two (2) years after the effective date of this chapter.

(d) The requirements of this section 1303-42 shall apply only to public water systems which use water obtained in whole or in part from surface sources.

Section 1303-43. Inorganic chemical sampling and analytical requirements

Community water systems and non-transient, non-community water systems shall conduct monitoring to determine compliance with the maximum contaminant levels specified in Section 1303-21 in accordance with this section. Non-community water systems shall conduct monitoring to determine compliance with the nitrate and nitrite maximum contaminant levels in Section 1303-21 (as appropriate) in accordance with this section.

(a) Analyses for the purpose of determining compliance with Section 1303-21 are required as follows:

(1) GROUNDWATER SAMPLING POINTS: Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point) beginning in the initial compliance period. The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(2) SURFACE WATER SAMPLING POINTS: Surface water systems [Note: For purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources] shall take a minimum of one (1) sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment (hereafter called a sampling point) beginning in the initial compliance

period. The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(3) MULTIPLE SOURCES: If a system draws water from more than one (1) source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).

(4) COMPOSITE SAMPLING: DPNR may reduce the total number of samples which must be analyzed by allowing the use of compositing. Composite samples from a maximum of five (5) sampling points are allowed provided that the detection limit of the method used for analysis is less than one-fifth of the MCL. Compositing of samples must

be done in the laboratory.

(i) If the concentration in the composite sample is greater than or equal to one-fifth of the MCL of any inorganic chemical, then a follow-up sample must be analyzed within fourteen (14) days from each sampling point included in the composite. These samples must be analyzed for the contaminants which exceeded one-fifth of the MCL in the composite sample. Detection limits for each analytical method are the following:

DETECTION LIMITS FOR INORGANIC CONTAMINANTS		
Contaminant	**MCL (mg/l)**	**Detection Limit (mg/l)**
Antimony	0.006	Atomic Absorption; Furnace 0.003(0.0008)[6] Atomic Absorption; Platform
Asbestos	7 MFL[2]	Transmission Electron Microscopy 0.01 MFL
Barium	2	Atomic Absorption; furnace technique: 0.002 Atomic Absorption; direct aspiration: 0.1 Inductively Coupled Plasma: 0.002(0.001[1])
Beryllium	0.004	Atomic Absorption; Furnace 0.0002 Atomic Absorption; Platform 0.00002[6] Inductively Coupled Plasma[3] 0.0003
Cadmium	0.005	Atomic Absorption; furnace technique 0.0001 Inductively Coupled Plasma 0.001[1]
Chromium	0.1	Atomic Absorption; furnace technique 0.001 Inductively Coupled Plasma 0.007(0.001)[1]
Cyanide	0.2	Distillation, Spectrophotometric[4] 0.02 Distillation, Automated, Spectrophotometric[4] 0.005 Distillation, Selective Electrode[4] 0.05 Distillation, Amenable, Spectrophotometric[5] 0.02
Mercury	0.002	Manual Cold Vapor Technique 0.0002 Automated Cold Vapor Technique 0.0002
Nickel	0.1	Atomic Absorption; Furnace 0.001(0.0006)[6]

DETECTION LIMITS FOR INORGANIC CONTAMINANTS		
Contaminant	**MCL (mg/l)**	**Detection Limit (mg/l)**
		Atomic Absorption; Platform Inductively Coupled Plasma[3] 0.005 ICP-Mass spectrometry 0.0005
Nitrate	10 (as N)	Manual Cadmium Reduction 0.01 Automated Hydrazine Reduction 0.01 Automated Cadmium Reduction 0.05 Ion Selective Electrode 1 Ion Chromatography 0.01
Nitrite	1 (as N)	Spectrophotometric 0.01 Automated Cadmium Reduction 0.05 Manual Cadmium Reduction 0.01 Ion Chromatography 0.004
Selenium	0.05	Atomic Absorption; furnace 0.002 Atomic Absorption; gaseous hydride 0.002
Thallium	0.002	Atomic Absorption; Furnace 0.001(0.0007)[6] Atomic Absorption; Platform ICP-Mass Spectrometry

1 Using concentration technique in Appendix A to EPA Method 200.7.
2 MFL = million fibers per liter > 10 m.
3 Using a 2X preconcentration step as noted in method 200.7. Lower MDLs may be achieved when using a 4x preconcentration.
4 Screening methods for total cyanides.
5 Measures"free" cyanides
6 Lower MDLs are reported using stabilized temperature graphite furnace atomic adsorption

(ii) If the population served by the system is > (greater than) 3,300 persons, then compositing may only be permitted by DPNR at sampling points within a single system. In systems serving (less than or equal to) 3,300 persons, DPNR may permit compositing among different systems provided the five (5) sample limit is maintained.

(iii) If duplicates of the original sample taken from each sampling point used in the composite are available, the system may use these instead of resampling. The duplicates must be analyzed and the results reported to DPNR within fourteen (14) days of collection.

(5) LOCATION OF IOC MONITORING REQUIREMENTS: The frequency of monitoring for asbestos shall be in accordance with paragraph (b) of this section; the frequency of monitoring for antimony, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium and thallium shall be in

accordance with paragraph (c) of this section; the frequency of monitoring for nitrate shall be in accordance with paragraph (d) of this section; and the frequency of monitoring for nitrite shall be in accordance with paragraph (e) of this section.

(b) The frequency of monitoring conducted to determine compliance with the maximum contaminant level for **asbestos** specified in Section 1303-21 shall be conducted as follows:

(1) INITIAL SAMPLING FREQUENCY: Each community and non-transient, non-community water system is required to monitor for asbestos during the first three-year compliance period of each nine-year compliance cycle beginning in the compliance period starting January 1, 1993.

(2) SAMPLING DURING WAIVER: If the system believes it is not vulnerable to either asbestos contamination in its source water or due to corrosion of asbestos-cement pipe, or both, it may apply to DPNR for a waiver of the monitoring requirement in paragraph (b)(1) of this section. If DPNR grants the waiver, the system is not required to monitor.

(3) BASIS FOR AN ASBESTOS WAIVER: DPNR may grant a waiver based on a consideration of the following factors:

(i) Potential asbestos contamination of the water source, and

(ii) the use of asbestos-cement pipe for finished water distribution and the corrosive nature of the water.

(4) EFFECT OF AN ASBESTOS WAIVER: A waiver remains in effect until the completion of the three-year compliance period. Systems not receiving a waiver must monitor in accordance with the provisions of paragraph (b)(1) of this section.

(5) DISTRIBUTION SYSTEM VULNERABILITY FOR ASBESTOS: A system vulnerable to asbestos contamination due solely to corrosion of asbestos-cement pipe shall take one (1) sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

(6) SOURCE WATER VULNERABILITY FOR ASBESTOS: A system vulnerable to asbestos contamination due solely to source water shall monitor in accordance with the provision of paragraph (a) of this section.

(7) COMBINED ASBESTOS VULNERABILITY: A system vulnerable to asbestos contamination due both to its source water supply

and corrosion of asbestos-cement pipe shall take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

(8) VIOLATION OF THE ASBESTOS MCL: A system which exceeds the maximum contaminant levels as determined in Section 1303-43(i) of this section shall monitor quarterly beginning in the next quarter after the violation occurred.

(9) ASBESTOS RELIABLY & CONSISTENTLY BELOW THE MCL: DPNR may decrease the quarterly monitoring requirement to the frequency specified in paragraph (b)(1) provided DPNR has determined that the system is reliably and consistently below the maximum contaminant level. In no case can DPNR make this determination unless a groundwater system takes a minimum of two (2) quarterly samples and a surface (or combined surface/ground) water system takes a minimum of four (4) quarterly samples.

(10) GRANDFATHERED ASBESTOS DATA: If monitoring data collected after January 1, 1990 are generally consistent with the requirements of Section1303-43(b), then DPNR may allow systems to use that data to satisfy the monitoring requirement for the initial compliance period beginning January 1, 1993.

(c) The frequency of monitoring conducted to determine compliance with the maximum contaminant levels in Section1303-43(i) for **antimony**, **barium**, **beryllium**, **cadmium**, **chromium**, **cyanide**, **fluoride**, **mercury**, **nickel**, **selenium**, and **thallium** shall be as follows:

(1) IOCS SAMPLING FREQUENCY: Groundwater systems with one hunred and fifty (150) service connections or more shall take one sample at each sampling point for all contaminants in Section1303-28(c) during each compliance period (during each compliance period) beginning in the compliance period starting January 1, 1993. Surface water systems (or combined surface/ground) with one hundred and fifty (150) service connections or more shall take one (1) sample annually for all contaminants in Section1303-28(c) at each

sampling point beginning January 1, 1993. Groundwater systems with less than one hundred and fifty (150) service connections shall take one sample at each sampling point for barium, cadmium, chromium, fluoride, mercury, and selenium during each compliance period (once every three (3) years) beginning in the compliance period starting January 1, 1993 and for antimony, beryllium, cyanide, nickel, and thallium beginning in the compliance period starting January 1, 1996. Surface water systems (or combined surface/ground) with less than one hundred and fifty (150) service connections shall take one (1) sample annually for barium, cadmium, chromium, fluoride, mercury, and selenium beginning in the compliance period starting January 1, 1993 and for antimony, beryllium, cyanide, nickel, and thallium beginning in the compliance period starting January 1, 1996.

(2) IOCS SAMPLING WAIVER: The system may apply to DPNR for a waiver from the monitoring frequencies specified in paragraph (c)(1) of this section. DPNR may grant a public water system a waiver for monitoring of cyanide, provided DPNR determines that the system is not vulnerable due to a lack of an industrial cyanide source.

(3) IOC SAMPLING DURING A WAIVER: A condition of the waiver shall require that a system shall take a minimum of one (1) sample while the waiver is effective. The term during which the waiver is effective shall not exceed one (1) compliance cycle (i.e., nine (9) years).

(4) BASIS FOR AN IOC WAIVER & GRANDFATHERED DATA: DPNR may grant a waiver provided surface water systems have monitored annually for at least three (3) years and groundwater systems have conducted a minimum of three (3) rounds of monitoring. (At least one (1) sample shall have been taken since January 1, 1990.) Both surface and groundwater systems shall demonstrate that all previous analytical results were less than the maximum contaminant level. Systems that use a new water source are not eligible for a waiver until three rounds of monitoring from the new source have been completed.

(5) BASIS FOR THE IOC SAMPLING FREQUENCY DURING A WAIVER: In determining the appropriate reduced monitoring frequency, DPNR shall consider:

(i) Reported concentrations from all previous monitoring;

(ii) the degree of variation in reported concentrations; and

(iii) other factors which may affect contaminant concentrations such as

changes in groundwater pumping rates, changes in the system's configuration, changes in the system's operating procedures, or changes in stream flows or characteristics.

(6) EFFECT OF AN IOC WAIVER: A decision by DPNR to grant a waiver shall be made in writing and shall set forth the basis for the determination. The determination may be initiated by DPNR or upon an application by the public water system. The public water system shall specify the basis for its request. DPNR shall review and, where appropriate, revise its determination of the appropriate monitoring frequency when the system submits new monitoring data or when other data relevant to the system's appropriate monitoring frequency become available.

(7) EXCEEDANCE OF AN IOC MCL: Systems which exceed the maximum contaminant levels as calculated in Section 1303-43(i) of this section shall monitor quarterly beginning in the next quarter after the violation occurred.

(8) IOCS RELIABLY & CONSISTENTLY BELOW THE MCL: DPNR may decrease the quarterly monitoring requirement to the frequencies specified in paragraphs (c)(1) and (c)(2) provided it has determined that the system is reliably and consistently below the maximum contaminant level. In no case can DPNR make this determination unless a ground water

system takes a minimum of two (2) quarterly samples and a surface water system takes a minimum of four quarterly samples.

(d) All public water systems (community; non-transient, non-community; and non-community systems) shall monitor to determine compliance with the maximum contaminant level for **nitrate** in Section1303-21.

(1) INITIAL NITRATE SAMPLING: Community and non-transient, non-community water systems served by groundwater systems shall monitor annually beginning January 1, 1993; systems served by surface water shall monitor quarterly beginning January 1, 1993.

(2) GROUNDWATER REPEAT NITRATE SAMPLING FREQUENCY: For community and non-transient, non-community water systems, the repeat monitoring frequency for ground water systems shall be quarterly for at least one (1) year following any one sample in which the concentration is fifty percent (50%) of the MCL. DPNR may allow a groundwater system to reduce the sampling frequency to annually after four (4) consecutive quarterly samples are reliably and consistently less than the MCL.

(3) SURFACE WATER REPEAT NITRATE SAMPLING FREQUENCY: For community and non-transient, non-community water systems, DPNR may allow a surface water system to reduce the sampling frequency to annually if all analytical results from four (4) consecutive quarters are < fifty percent (50%) of the MCL. A surface water system shall return to quarterly monitoring if any one sample is fifty percent (50%) of the MCL.

(4) TRANSIENT NON-COMMUNITY WATER SYSTEM NITRATE SAMPLING FREQUENCY: Each transient non-community water system shall monitor annually beginning January 1, 1993.

(5) SCHEDULING ANNUAL NITRATE REPEAT SAMPLES: After the initial round of quarterly sampling is completed, each community and non-transient non-community system which is monitoring annually shall take subsequent samples during the quarter(s) which previously resulted in the highest analytical result.

(e) All public water systems (community; non-transient, non-community; and transient, non-community systems) shall monitor to determine compliance with the maximum contaminant level for **nitrite** in Section1303-21 (b).

(1) INITIAL NITRITE SAMPLING: All public water systems shall take one (1) sample at each sampling point in the compliance
period beginning January 1, 1993 and ending December 31, 1995.

(2) UNDER THE NITRITE TRIGGER LEVEL: After the initial sample, systems where an analytical result for nitrite is < fifty percent (50%) of the MCL shall monitor at the frequency specified by DPNR.

(3) ABOVE THE NITRITE TRIGGER LEVEL: For community, non-transient, non-community, and transient non-community water systems, the repeat monitoring frequency for any water system shall be quarterly for at least one (1) year following any one (1) sample in which the concentration is fifty percent (50%) of the MCL. DPNR may allow a system to reduce the sampling frequency to annually after determining the system is reliably and consistently less than the MCL.

(4) SCHEDULING OF ANNUAL NITRITE REPEAT SAMPLES: Systems which are monitoring annually shall take each subsequent sample during the quarter(s) which previously resulted in the highest analytical result.

(f) Confirmation Sampling.

(1) DEADLINE FOR IOCS CONFIRMATION SAMPLES: Where the results of sampling for

antimony, arsenic, asbestos, barium, beryllium cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium indicate an exceedance of the maximum contaminant level, DPNR may require that one
additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two (2) weeks) at the same sampling point.

(2) DEADLINE FOR NITRATE & NITRITE CONFIRMATION SAMPLES: Where nitrate or nitrite sampling results indicate an exceedance of the maximum contaminant level, the system shall take a confirmation sample within twenty-four (24) hours of the system's receipt of notification of the analytical results of the first sample. Systems unable to comply with the twenty-four (24) hour sampling requirement must immediately notify the consumers served by the area served by the public water system in accordance with Section1303-52. Systems exercising this option must take and analyze a confirmation sample within two (2) weeks of notification of the analytical results of the first sample.

(3) COMPLIANCE CALCULATIONS & CONFIRMATION SAMPLES: If a DPNR-required confirmation sample is taken for any contaminant, then the results of the initial and confirmation sample shall be averaged. The resulting average shall be used to determine the system's compliance in accordance with paragraph (i) of this section. DPNR has the discretion to delete results of obvious sampling errors.

(g) DPNR may require more frequent monitoring than specified in paragraphs (b), (c), (d) and (e) of this section or may require confirmation samples for positive and negative results at its discretion.

(h) Systems may apply to DPNR to conduct more frequent monitoring than the minimum monitoring frequencies specified in this section.

(i) Compliance with Section 1303-21 shall be determined based on the analytical result(s) obtained at each sampling point.

(1) SAMPLING FREQUENCIES GREATER THAN ANNUAL: For systems which are conducting monitoring at a frequency greater than annual, compliance with the maximum contaminant levels for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium is determined by a running annual average at each sampling point. If the average at any sampling point is greater than the MCL, then the system is out of compliance. If any one sample would cause the annual average to be exceeded, then the system is out of compliance immediately. Any sample below the method detection limit shall be calculated at zero for the purpose of determining the annual average.

(2) SAMPLING FREQUENCIES OF ANNUAL OR LESS: For systems which are monitoring annually, or less frequently, the system is out of compliance with the maximum contaminant levels for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium if the level of a contaminant at any sampling point is greater than the MCL. If a confirmation sample is required by DPNR, the determination of compliance will be based on the average of the two (2) samples.

(3) COMPLIANCE CALCULATIONS FOR NITRATE & NITRITE: Compliance with the maximum contaminant levels for nitrate and nitrite is determined based on one (1) sample if the levels of these contaminants is below the MCLs. If the levels of nitrate or nitrite exceed the MCLs in the initial sample, a confirmation sample is required in accordance with paragraph (f)(2) of this section, and compliance shall be determined based on the average of the initial and confirmation samples.

(4) SEPARABLE DISTRIBUTION SYSTEMS: If a public water system has a distribution system separable from other parts of the distribution system with no interconnections, DPNR may allow the system to give public notice to only the area served by that portion of the system which is out of compliance.

(j) Each public water system shall monitor at the time designated by DPNR during each compliance period.

(k) Inorganic Analysis.

(1) ANALYTICAL METHODS FOR IOCS: Analysis for the following contaminants shall be conducted in accordance with the methods in the following Table, or their equivalent as determined by DPNR. Criteria for analyzing barium, beryllium, cadmium, calcium, chromium, copper, lead, selenium, sodium and thallium with digestion or directly without digestion, and other analytical test procedures are contained in Technical Notes on Drinking Water Methods, EPA-600/R-94-173, October 1994. This document also contains approved analytical test methods which remain available for compliance monitoring until July 1, 1996. These methods will not be available for use after July 1, 1996.

INORGANIC CONTAMINANTS ANALYTICAL METHODS					
Contaminant	**Methodology**	**EPA**	**ASTM[3]**	**SM[4]**	**Other**

INORGANIC CONTAMINANTS ANALYTICAL METHODS					
Contaminant	**Methodology**	**EPA**	**ASTM[3]**	**SM[4]**	**Other**
Antimony	ICP-Mass Spectrometry	[2]200.8			
	Hydride-Atomic Absorption	---------	D-3697-92		
	Atomic Absorption; Platform	[2]200.9			
	Atomic Absorption; Furnace	---------		3113B	
Arsenic	Inductively Coupled Plasma	[2]200.7		3120B	
	ICP-Mass Spectrometry	[2]200.8			
	Atomic Absorption; Platform	[2]200.9			
	Atomic Absorption; Furnace	---------	D-2972-93C	3113B	
	Hydride Atomic Absorption	---------	D-2972-93B	3114B	
Asbestos	Transmission Electron Microscopy	[9]100.1			
	Transmission Electron Microscopy	[10]100.1			
Barium	Inductively Coupled Plasma	[2]200.7		3120B	
	ICP-Mass Sprectrometry	[2]200.8			
	Atomic Absorption; Direct	---------		3111D	
	Atomic Absorption; Furnace	---------		3113B	
Beryllium	Inductively Coupled Plasma	[2]200.7		3120B	
	ICP-Mass Sprectrometry	[2]200.8			
	Atomic Absorption; Platform	[2]200.9			
	Atomic Absorption; Furnace	---------	D-3645-93B	3113B	
Cadmium	Inductively Coupled Plasma	[2]200.7			

INORGANIC CONTAMINANTS ANALYTICAL METHODS					
Contaminant	**Methodology**	**EPA**	**ASTM[3]**	**SM[4]**	**Other**
	ICP-Mass Spectrometry	[2]200.8			
	Atomic Absorption; Platform	[2]200.9			
	Atomic Absorption; Furnace	---------		3113B	
Chromium	Inductively Coupled Plasma	[2]200.7		3120B	
	ICP-Mass Spectrometry	[2]200.8			
	Atomic Absorption; Platform	[2]200.9			
	Atomic Absorption; Furnace	---------		3113B	
Cyanide	Manual Distillation followed by	---------		4500-CN-C.	
	Spectrophotometric Amenable	---------	D2036-91B	4500CN-G	
	Spectrophotometric Manual	---------	D2036-91A	4500-CN-E	[5]I-3300-85
	Semi-automated	[6]335.4			
	Selective Electrode	---------		4500CN-F	
Flouride	Ion Chromatography	[6]300.0	D4327-91	4110B	
	Manual Distill; Color. SPADNS	---------		4500F-B,D.	
	Manual Electrode	---------	D1179-93B	4500F-C.	
	Automated Electrode	---------			[11]380-75WE
	Automated Alizarin	---------		4500F-E	[11]129-71W
Mercury	Manual, Cold Vapor	[2]245.1	D3223-91	3112B	
	Automated, Cold Vapor	[1]245.2			

INORGANIC CONTAMINANTS ANALYTICAL METHODS					
Contaminant	**Methodology**	**EPA**	**ASTM[3]**	**SM[4]**	**Other**
	ICP-Mass Spectrometry	[2]200.8			
Nickel	Inductively Coupled Plasma	[2]200.7		3120B	
	ICP-Mass Spectrometry	[2]200.8			
	Atomic Absorption; Platform	[2]200.9			
	Atomic Absorption; Direct	---------		3111B	
	Atomic Absorption; Furnace	---------		3113B	
Nitrate	Ion Chromatography	[6]300.0	D4327-91	4110B	[8]B-1011
	Automated Cadmium Reduction	[6]353.2	D3867-90A	4500-NO_3-F	
	Ion Selective Electrode	---------		4500-NO_3-D	[7]601
	Manual Cadmium Reduction				
Nitrite	Ion Chromatography	[6]300.0	D4327-91	4110B	[8]B-1011
	Automated Cadmium Reduction	[6]353.2	D3867-90A	4500-NO3-F	
	Manual Cadmium Reduction	---------	D3867-90B	4500-NO3-E	
	Spectrophotometric	---------		4500-NO2-B	
Selenium	Hydride-Atomic Absorption	---------	D3859-93A	3114B	
	ICP-Mass Spectrometry	[2]200.8			
	Atomic Absorption; Platform	[2]200.9			
	Atomic Absorption; Furnace	---------	D3859-93B	3113B	

INORGANIC CONTAMINANTS ANALYTICAL METHODS					
Contaminant	**Methodology**	**EPA**	**ASTM[3]**	**SM[4]**	**Other**
Thallium	ICP-Mass Spectrometry	[2]200.8			
	Atomic Absorption; Platform	[2]200.9			
Lead	Atomic Absorption; Furnace	---------	D3559-90D	3113B	
	ICP-Mass Spectrometry	[2]200.8			
	Atomic Absorption; Platform	[2]200.9			
Copper	Atomic Absorption; Furnace	---------	D1688-90C	3113B	
	Atomic Absorption; Direct Aspiration	---------	D1688-90A	3111B	
	ICP	[2]200.7		3120B	
	ICP-Mass Spectrometry	[2]200.8			
	Atomic Absorption; Platform	[2]200.9			
pH	Electrometric	[1]150.1	D1293-84	4500-H^+-B	
	----------	[1]150.2			
Conductivity	Conductance	---------	D1125-91A	2510B	
Calcium	EDTA Titimetric	---------	D511-93A	3500-Ca-D	
	Atomic Absorption; Direct Aspiration	---------	D511-93B	3111B	
	Inductively-Coupled Plasma	[2]200.7		3120B	
Alkalinity	Titrimetric	---------	D1067-92B	2320B	
Ortophos-phate12	Electrometric Titration	---------		----------	[5]I-1030-85

INORGANIC CONTAMINANTS ANALYTICAL METHODS					
Contaminant	**Methodology**	**EPA**	**ASTM[3]**	**SM[4]**	**Other**
	Colorimetric, automated, ascorbic acid	[6]365.1		4500-P-F	
	Clorimetric, ascorbic acid, single reagent	---------	D515-88A	4500-P-E	
	Colorimetric, phosphomolybdate;	---------		----------	[5]I-1601-85
	automated-segmented flow;	---------		----------	[5]I-2601-90
	automated discrete	---------		----------	[5]I-2598-85
	Ion Chromatography	[6]300.0	D4327-91	4110	
Silica	Colorimetric, molybdate blue;	---------		----------	[5]I-1700-85
	automated-segmented flow	---------		----------	[5]I-2700-85
	Colorimetric	---------	D859-88		
	Molybdosilicate	---------		4500-Si-D	
	Heteropoly blue	---------		4500-Si-E	
	Automated method for molybdate-reactive silica	---------		4500-Si-F	
	Inductively-coupled plasma	[2]200.7		3120B	
Temperature	Thermometric	---------		2550B	
Sodium	Inductively-Coupled Plasma	[2]200.7			
	Atomic Absorption; direct aspiration	---------		3111B	

[1] Methods 150.1, 150.2 and 245.2 are available from US EPA, EMSL, Cincinnati, OH 45268. The identical methods were formerly in "Methods for Chemical Analyses of Water and Wastes", EPA-600/4-79-020, March 983, which is available at NTIS, PB84-128677.

[2] "Methods for the Determination of Metals in Environmental Samples-Suppplement I", EPA -600/R-94-111, May 1994. Available at NTIS, PB 94-184942.
[3] The procedures shall be done in accordance with the *Annual Book of ASTM Standards*, 1994, Vols. 11.01 and 11.02, American Society for Testing and Materials. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be obtained from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103. Copies may be inspected at EPA's Drinking Water Docket, 401 M Street, SW., Washington, DC 20460; or at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC.
[4]The procedures shall be done in accordance with the 18th edition of *Standard Methods for the Examination of Water and Wastewater*, 1992, American Public Helath Association. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be obtained from the American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005. Copies may be inspected at EPA's Drinking Water Docket, 401 M Street, SW., Washington, DC 20460; or at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC.
[5]Available from Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, CO 80225-0425.
[6] "Methods for the Determination of Inoprganic Substances in Environmental Samples", EPA-600/R-93-100, August 1993. Available at NTIS, PB94-121811.
[7] The procedure shall be done in accordance with the Technical Bulletin 601 "Standard Method of Test for Nitrate in Drinking Water", July 1994, PN 221890-001, Analytical Technology, Inc. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be obtained form ATI Orion, 529 Main Street, Boston, MA 02129. Copies my be inspected at EPA's Drinking Water Docket, 401 M Street, SW., Washington, DC 20460; or at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC.
[8] Method B-100.1, "Waters Test Method for Determination of Nitrite/Nitrate in Water Using Single Column Ion Chromatography", Millipore Corporation, Waters Chromatography Division, 34 Maple Street, Milford, MA 01757.
[9] Method 100.1, "Analytical Method for Determination of Asbestos Fibers in Water", EPA-600/4-83-043, EPA, September 1983. Available at NTIS, PB83-260471.
[10]Method 100.2, "Determination of Asbestos Structure Over 10- m In Lenght In Drinking Water", EPA-600/R-94-134, June 1994. Available at NTIS, PB83-260471.
[11] The procedures shall be done in accordance with the Industrial Method No. 129-71W, "Fluoride in Water and Wastewater", December 1972, and Method No. 380-75WE, "Fluoride in Water and Wastewater", February 1976, Technicon Industrial Systems. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be obtained from the Technicon Industrial Systems, Tarrytown, NY 10591. Copies may be obtained form ATI Orion, 529 Main Street, Boston, MA 02129. Copies my be inspected at EPA's Drinking Water Docket, 401 M Street, SW., Washington, DC 20460; or at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC.
[12] Unfiltered, no digestion of hydrolysis.

(2) Sample Collection Procedures for IOCs: Sample collection for antimony, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium under this section shall be conducted using the sample preservation, container, and maximum holding time procedures specified in the table below:

Contaminant	Preservative[1]	Container[2]	Time[3]

Contaminant	Preservative[1]	Container[2]	Time[3]
Antimony	Conc HNO_3 to pH<2	P or G	6 months
Asbestos	Cool, 4 C	P or G	
Barium	Conc HNO_3 to pH<2	P or G	6 months
Beryllium	Conc HNO_3 to pH<2	P or G	6 months
Cadmium	Conc HNO_3 to pH<2	P or G	6 months
Chromium	Conc HNO_3 to pH<2	P or G	6 months
Cyanide	Cool, 4 C, NAOH to pH >12[4]	P or G	14 days
Fluoride	None	P or G	1 month
Mercury	Conc HNO_3 to pH<2	P or G	28 days
Nickel	Conc HNO_3 to pH<2	P or G	6 months
Nitrate	Chlorinated Cool, 4 C	P or G	28 days.
	Non-chlorinated Conc H_2SO_4 to pH<2	P or G	14 days
Nitrite	Cool, 4 C	P or G	48 hours.
Selenium	Conc HNO_3 to pH<2	P or G	6 months
Thallium	Conc HNO_3 to pH<2	P or G	6 months

1. If HNO_3 cannot be used because of shipping restrictions, sample may be initially preserved by icing and immediately shipping it to the laboratory. Upon receipt in the laboratory, the sample must be acidified with con HO_3 to pH <2. At time of analysis, sample container should be thoroughly rinsed with 1:1 HNO_3; washings should be added to sample.

2. P = plastic, hard or soft; G = glass, hard or soft.

3. In all cases, samples should be analyzed as soon after collection as possible.

4. See method(s) for the information for preservation.

(3) LABORATORY CERTIFICATION: Analysis under this section shall only be conducted by laboratories that have received approval by EPA or DPNR.

Laboratories may conduct sample analysis under provisional certification until January 1, 1996. To receive approval to conduct analyses for antimony, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium the laboratory must:

(i) Analyze Performance Evaluation samples which include those substances provided by EPA Environmental Monitoring and Support Laboratory or equivalent samples provided by DPNR.

(ii) Achieve quantitative results on the analyses that are within the following acceptance limits:

Contaminant	Acceptance Limit
Antimony	6Pound30 at 0.006 mg/l
Asbestos	2 standard deviations based on study statistics
Barium	15% at 0.15 mg/l
Beryllium	15% at 0.001 mg/l
Cadmium	20% at 0.002 mg/l
Chromium	15% at 0.01mg/l
Cyanide	25% at 0.1mg/l
Fluoride	10% at 1 to 10 mg/l
Mercury	30% at 0.0005 mg/l
Nickel	15% at 0.01 mg/l
Nitrate	10% at 0.4 mg/l
Nitrite	15% at 0.4 mg/l

Contaminant	Acceptance Limit
Selenium	20% at 0.01 mg/l
Thallium	30% at 0.002 mg/l

(l) Analyses for the purpose of determining compliance with Section1303-21(a) shall be conducted using the requirements specified in paragraphs (l) through (q) of this section.

(1) Analyses for all community water systems utilizing surface water sources shall be completed by June 24, 1978. These analyses shall be repeated at yearly intervals.

(2) Analyses for all community water systems utilizing only ground water sources shall be completed by June 24, 1979. These analyses shall be repeated at three-year intervals.

(3) For non-community water systems, whether supplied by surface or ground sources, analyses for nitrate shall be completed by December 24, 1980. These analyses shall be repeated at intervals determined by DPNR.

(4) DPNR has the authority to determine compliance or initiate enforcement action based upon analytical results and other information compiled by their sanctioned representatives and agencies.

(m) If the result of an analysis made under paragraph (l) of this section indicates that the level of any contaminant listed in Section1303-21(a) exceeds the maximum contaminant level, the supplier of the water shall report to DPNR within seven (7) days and initiate three (3) additional analyses at the same sampling point within one (1) month.

(n) When the average of four (4) analyses made pursuant to paragraph (m) of this section, rounded to the same number of significant figures as the maximum contaminant level for the substance in question, exceeds the maximum contaminant level, the supplier of water shall notify DPNR pursuant to Section1303-51 and give notice to the public pursuant to Section1303-52. Monitoring after public notification shall be at a frequency designated by DPNR and shall continue until the maximum contaminant level has not been exceeded in two (2) successive samples or until a monitoring schedule as a condition to a variance, exemption or enforcement action shall become effective.

(o) The provisions of paragraphs (m) and (n) of this section notwithstanding, compliance with the maximum contaminant level for nitrate shall be determined on the basis of the mean of

two (2) analyses. When a level exceeding the maximum contaminant level for nitrate is found, a second analysis shall be initiated within twenty-four (24) hours, and if the mean of the two (2) analyses exceeds the maximum contaminant level, the supplier of water shall report his findings to DPNR pursuant to Section1303.51 and shall notify the public pursuant to Section1303-52.

(p) For the initial analyses required by paragraph (l)(1), (2) or (3) of this section, data for surface waters acquired within one (1) year prior to the effective date and data for ground waters acquired within three (3) years prior to the effective date of this part may be substituted at the discretion of DPNR.

(q) [Reserved]

Section 1303-44A. Organic chemicals other than trihalomethanes, sampling and analytical requirements

(a)-(d) Reserved.

(e) Analyses for the contaminants in this section shall be conducted using the following EPA methods or their equivalent as approved by DPNR or EPA. Methods 502.2, 505, 507, 508, 508A, 515.1 and 531.1 are in Methods for the Determination of Organic Compounds In Drinking Water, EPA-600/4-88-039, December 1988, Revised, July 1991. Methods 506, 547, 550, 550.1 and 551 are in Methods for the Determination of Organic Compounds In Drinking Water-Supplement I, EPA-600/R-90-020, July 1990. Methods 515.2, 524.2, 548.1, 549.1, 552.1 and 555 are in Methods for the Determination of Organic Compounds In Drinking Water-Supplement II, EPA-600/R-92-129, August 1992. Method 1613 is titled "Tetra-through Octa-Chlorinated Dioxins and Furans by Isotope-Dilution HRGC/HRMS", EPA-821-B-94-005, October 1994. Method 6651, shall be followed in accordance with the 18th edition of Standard Methods for the Examination of Water and Wastewater, 1992, American Public Health Association. Method 6610, shall be followed in accordance with the 18th edition of Standard Methods for the Examination of Water and Wastewater, 1994, American Public Health Association. Other analytical test procedures are contained in Technical Notes on Drinking Water Methods, EPA-600/R-94-173, October 1994. This document contains approved analytical methods which remain available for compliance monitoring until July 1, 1996. These methods will not be available for use after July 1, 1996. EPA Methods 504.1, 508.1 and 525.2 are available from EPA EMSL, Cincinnati, OH 45268.

CONTAMINANT	METHOD

CONTAMINANT	METHOD
Benzene	502.2, 524.2
Carbon Tetrachloride	502.2, 524.2, 551
Chlorobenzene	502.2, 524.2
1,2-Dichlorobenzene	502.2, 524.2
1,4-Dichlorobenzene	502.2, 524.2
1,2-Dicloroethane	502.2, 524.2
cis-Dichloroethylene	502.2, 524.2
trans-Dichloroethylene	502.2, 524.2
Dichloromethane	502.2, 524.2
1,2-Dichloropropane	502.2, 524.2
Ethylbenzene	502.2, 524.2
Styrene	502.2, 524.2
Tetrachloroethylene	502.2, 524.2, 551
1,1,1-Trichloroethane	502.2, 524.2, 551
Trichloroethylene	502.2, 524.2, 551
Toluene	502.2, 524.2
1,2,4-Trichlorobenzene	502.2, 524.2
1,1-Dichloroethylene	502.2, 524.2
1,1,2-Trichloroethane	502.2, 524.2
Vinyl Chloride	502.2, 524.2
Xylenes (total)	502.2, 524.2
2,3,7,8-TCDD (dioxin)	1613
2,4-D	515.2, 555, 515.1

CONTAMINANT	METHOD
2,4,5-TP (Silvex)	515.2, 555, 515.1
Alachlor	505[1], 507, 525.2, 508.1
Atrazine	505[1], 507, 525.2, 508.1
Benzo(a)pyrene	525.2, 550, 550.1
Carbofuran	531.1, 6610
Chlordane	505, 508, 525.2, 508.1
Dalapon	552.1, 515.1
Di(2-ethylhexyl) adipate	506, 525.2
Di(2-ethylhexyl) phthalate	506, 525.2
Dibromochloropropane (DBCP)	504.1, 551
Dinoseb	515.2, 555, 515.1
Diquat	549.1
Endothall	548.1
Endrin	505, 507, 525.2, 508.1
Ethylene dibromide (EDB)	504.1, 551
Glyphosate	547, 6651
Heptachlor	505, 507, 525.2, 508.1
Heptachlor Epoxide	505, 507, 525.2, 508.1
Hexachlorobenzene	505, 507, 525.2, 508.1
Hexachlorocyclopentadiene	505, 507, 525.2, 508.1
Lindane	505, 507, 525.2, 508.1
Methoxychlor	505, 507, 525.2, 508.1
Oxamyl	531.1, 6610

CONTAMINANT	METHOD
PCBs[2] (as decachlorobiphenyl)	508A
PCBs[2] (as Aroclors)	505, 508
Pentachlorophenol	515.2, 525.2, 555, 515.1
Picloram	515.2, 555, 515.1
Simazine	505[1], 507, 525.2, 508.1
Toxaphene	505,508,525.2
Total Trihalomethanes	502.2, 524.2, 551

[1]A nitrogen-phosphorous detector should be substituted for the electron capture detector in Method 505 (or another approved method should be used) to determine alachlor, atrazine and simazine, if lower detection limits are required.

[2]PCBs are quantitatively identified as Aroclors and measured for compliance purposes as decachlorobiphenyl.

(f) Beginning on January 1, 1993: analysis of the contaminants listed in Section1303-28 (a)(1) through (18), and beginning January 1, 1996: analysis of the contaminants listed in Section1303-28(a)(19) through (21), for the purpose of determining compliance with the maximum contaminant level shall be conducted as follows:

(1) VOC GROUNDWATER MONITORING PROTOCOLS: Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.

(2) VOC SURFACE WATER MONITORING PROTOCOLS: Surface water systems (or combined surface/ground) shall take a minimum of one (1) sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment (hereafter called a sampling point). Each sample must be taken at the same

sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.

(3) MULTIPLE SOURCES: If the system draws water from more than one (1) source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water representative of all sources is being used).

(4) INITIAL VOCS SAMPLING FREQUENCY: Each community and non-transient non-community water system shall take four (4) consecutive quarterly samples for each contaminant listed in Section1303-28(a)(2) through (18) during each compliance period, beginning in the compliance period starting January 1, 1993 and (19) through (21) beginning in the compliance period starting on January 1, 1996.

(5) GRANDFATHERED VOC DATA WITH NO DETECTS: If the initial monitoring for contaminants listed in Section1303-28(a)(1) through (8) and the monitoring for the contaminants listed in Section1303-28(a)(9) through (18) as allowed in paragraph (f)(18) has been completed by December 31, 1992, and the system did not detect any contaminant listed in Section1303-28(a)(1) through (18), then each ground and surface water system may take one (1) sample annually beginning January 1, 1993. If the initial monitoring for contaminants listed in Section1303-28(a)(19) through (21) as allowed in paragraph (f)(18) has been completed by December 31, 1995, and the system did not detect any contaminant listed in Section1303-28(a)(19) through (21), then each ground and surface water system may take one (1) sample annually beginning January 1, 1996

(6) REDUCED VOC SAMPLING FOR GROUNDWATER SYSTEMS: After a minimum of three (3) years of annual sampling, DPNR may allow groundwater systems with no previous detection of any contaminant listed in Section1303-28(a) to take one (1) sample during each compliance period.

(7) VOC SAMPLING WAIVERS: Each community and non-transient, non-community groundwater system which does not detect a contaminant listed in Section1303-28(a)(1) through (21) may apply to DPNR for a waiver from the requirements of paragraphs (f)(5) and (f)(6) of this section after completing the initial monitoring. For the purposes of this section, detection is defined as 0.0005 mg/l. A waiver shall be effective for no more than six (6) years (two (2) compliance periods). DPNR may also issue waivers to small systems for the initial round of sampling for 1,2,4-trichlorobenzene.

(8) BASIS FOR A VOC SAMPLING WAIVER: DPNR may grant a waiver after evaluating the following factor(s):

(i) Knowledge of previous use (including transport, storage, or disposal) of the contaminant within the watershed or zone of influence of the system. If a determination by DPNR reveals no previous use of the contaminant within the watershed or zone of influence, a waiver may be granted.

(ii) If previous use of the contaminant is unknown or it has been used previously, then the following factors shall be used to determine whether a waiver is granted.

(A) Previous analytical results.

(B) The proximity of the system to a potential point or non-point source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities.

(C) The environmental persistence and transport of the contaminants.

(D) The number of persons served by the public water system and the proximity of a smaller system to a larger system.

(E) How well the water source is protected against contamination, such as whether it is a surface or groundwater system. Groundwater systems must consider factors such as depth of the well, the type of soil, and wellhead protection. Surface water systems must consider watershed protection.

(9) VOC WAIVER REQUIREMENTS FOR GROUNDWATER SYSTEMS: As a condition of the waiver a groundwater system must take one (1) sample at each sampling point during the time the waiver is effective (i.e., one (1) sample during two (2) compliance periods or six (6) years) and update its vulnerability assessment considering the factors listed in paragraph (8) of this section. Based on this vulnerability assessment DPNR must reconfirm that the system is non-vulnerable. If DPNR does not make this reconfirmation within three years of the initial determination, then the waiver is invalidated and the system is required to sample annually as specified in paragraph (5) of this section.

(10) VOC WAIVER REQUIREMENTS FOR SURFACE WATER SYSTEMS: Each community and non-transient surface water system which does not detect a contaminant listed in Section1303-28(a)(1) through (21) may apply to DPNR for a waiver from the requirements of (f)(5) of this section after completing the initial monitoring. Systems meeting this criteria must be
determined by the DPNR to be non-vulnerable based on a vulnerability assessment during each compliance period. Each system receiving a waiver shall sample at the frequency specified by DPNR (if any).

(11) DETECTION OF A VOC: If a contaminant listed in Section1303-28(a)(2) through (21) is detected at a level exceeding 0.0005 mg/l in any sample, then:

(i) The system must monitor quarterly at each sampling point which resulted in a detection.

(ii) DPNR may decrease the quarterly monitoring requirement specified in paragraph (11)(i) of this section provided it has determined that the system is reliably and consistently below the maximum contaminant level. In no case shall DPNR make this determination unless a groundwater system takes a minimum of two (2) quarterly samples and a surface water system takes a minimum of four (4) quarterly samples.

(iii) If DPNR determines that the system is reliably and consistently below the MCL, DPNR may allow the system to monitor annually. Systems which monitor annually must monitor during the quarter(s) which previously yielded the highest analytical result.

(iv) Systems which have three (3) consecutive annual samples with no detection of a contaminant may apply to DPNR for a waiver as specified in paragraph (f)(7) of this section.

(v) Groundwater systems which have detected one (1) or more of the following two-carbon organic compounds: trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, or 1,1-dichloroethylene shall monitor quarterly for vinyl chloride. A vinyl chloride sample shall be taken at each sampling point at which one (1) or more of the two-carbon organic compounds was detected. If the results of the first analysis do not detect vinyl chloride, DPNR may reduce the quarterly monitoring frequency of vinyl chloride monitoring to one (1) sample during each compliance period. Surface water systems are required to monitor for vinyl chloride as specified by DPNR.

(12) MCL VIOLATION WITH FOLLOW UP RELIABLY & CONSISTENTLY BELOW THE MCL: Systems which violate the requirements of Section1303-28(a)(1) through (21), as determined by paragraph (15) of this section, must monitor quarterly. After a minimum of four (4) consecutive quarterly samples which show the system is in compliance as specified in paragraph (15) of this section the system and DPNR determines that the system is reliably and consistently below the maximum contaminant level, the system may monitor at the frequency and time specified in paragraph (11)(iii) of this section.

(13) VOC CONFIRMATION SAMPLES: DPNR may require a confirmation sample for positive or negative results. If a confirmation sample is required by DPNR, the result must be averaged with the first sampling result and the average is used for the compliance determination as specified by paragraph (15). DPNR has the discretion to delete results of obvious sampling errors from this calculation.

(14) VOC COMPOSITE SAMPLES: DPNR may reduce the total number of samples a system must analyze by allowing the use of compositing. Composite samples from a maximum of five (5) sampling points are allowed, provided that the detection limit of the method used for analysis is less than one-fifth of the MCL. Compositing of samples must be done in the laboratory and analyzed within fourteen (14) days of sample collection.

(i) If the concentration in the composite sample is 0.0005 mg/l for any contaminant listed in Section1303-28(a), then a follow-up sample must be taken and analyzed within fourteen (14) days from each sampling point included in the composite.

(ii) If duplicates of the original sample taken from each sampling point used in the composite are available, the system may use these instead of resampling. The duplicate must be analyzed and the results reported to DPNR within fourteen (14) days of collection.

(iii) Compositing may only be permitted by DPNR at sampling points within a single system, unless the population served by the system is 3,300 persons. In systems serving 3,300 persons, DPNR may permit compositing among different systems provided the five (5) sample limit is maintained.

(iv) Compositing samples prior to GC analysis.

(A) Add 5 ml or equal larger amounts of each sample (up to five (5) samples are allowed) to a 25 ml glass syringe. Special precautions must be made to maintain zero headspace in the syringe.

(B) The samples must be cooled at 4 C during this step to minimize volatilization losses.

(C) Mix well and draw out a 5 ml aliquot for analysis.

(D) Follow sample introduction, purging, and desorption steps described in the method.

(E) If less than five (5) samples are used for compositing, a

proportionately small syringe may be used.

(v) Compositing samples prior to GC/MS analysis.

(A) Inject 5 ml or equal larger amounts of each aqueous sample (up to five samples are allowed) into a 25 ml purging device using the sample introduction technique described in the method.

(B) The total volume of the sample in the purging device must be 25 ml.

(C) Purge and desorb as described in the method.

(15) VOC COMPLIANCE CALCULATIONS: Compliance with Section1303-28(a)(1) through (21) shall be determined based on the analytical results obtained at each sampling point.

(i) For systems which are conducting monitoring at a frequency greater than annual, compliance is determined by a running annual average of all samples taken at each sampling point. If the annual average of any sampling point is greater than the MCL, then the system is out of compliance. If the initial sample or a subsequent sample would cause the annual average to be exceeded, then the system is out of compliance immediately.

(ii) If monitoring is conducted annually, or less frequently, the system is out of compliance if the level of a contaminant at any sampling point is greater than the MCL. If a confirmation sample is required by DPNR, the determination of compliance will be based on the average of two (2) samples.

(iii) If a public water system has a distribution system separable from other parts of the distribution system with no interconnections, DPNR may allow the system to give public notice to only that area served by that portion of the system which is out of compliance.

(16) [Reserved]

(17) LABORATORY CERTIFICATION: Analysis under this section shall only be conducted by laboratories that are certified by EPA or DPNR according to the following conditions (Laboratories may conduct sample analysis under provisional certification until Janaury 1, 1996):

(i) To receive certification to conduct analyses for the contaminants in Section1303-28(a)(2) through (21) the laboratory must:

(A) Analyze Performance Evaluation samples which include these substances provided by EPA Environmental Monitoring and Support Laboratory or equivalent samples provided by DPNR.

(B) Achieve the quantitative acceptance limits under paragraphs (f)(17)(i)(C) and (D) of this section for at least eighty percent (80%) of the regulated organic chemicals listed in Section1303-28(a)(2) through (21).

(C) Achieve quantitative results on the analyses performed under (f)(17)(i)(A) that are within twenty percent (20%) of the actual amount of the substances in the Performance Evaluation sample when the actual amount is greater than or equal to 0.010 mg/l.

(D) Achieve quantitative results on the analyses performed under (f)(17)(i)(A) of this section that are within forty percent (40%) of the actual amount of the substances in the Performance Evaluation sample when the actual amount is less than 0.010 mg/l.

(E) Achieve a method detection limit of 0.0005 mg/l according to EPA procedures in Appendix B of Part 136 of 40 CFR Chapter 1.

(F) Be currently approved by EPA or DPNR for the analyses of trihalomethanes Section 1303-50.

(ii) To receive certification for vinyl chloride, the laboratory must:

(A) Analyze Performance Evaluation samples provided by EPA Environmental Monitoring and Support Laboratory or equivalent samples provided by DPNR.

(B) Achieve quantitative results on the analyses performed under (f)(17)(ii)(A) of this section that are within forty percent (40%) of the actual amount of vinyl chloride in the Performance Evaluation sample.

(C) Achieve a method detection limit of 0.0005 mg/l, according to EPA procedures in Appendix B of Part 136 of 40 CFR Chapter 1.

(D) Obtain certification for the contaminants listed in Section 1303-28(a) (1) through (21).

(18) GRANDFATHERED VOC DATA: DPNR may allow the use of monitoring data collected after January 1, 1988 required under section 1445 of the Act for purposes of initial monitoring compliance. If the data are generally consistent with the other requirements in this section, DPNR may use these data (i.e., a single sample rather than four (4) quarterly samples) to satisfy the initial monitoring requirement of paragraph (f)(4) of this section. Systems which use grandfathered samples and did not detect any contaminants listed in Section1303-28(a)(19) through (21) shall begin monitoring annually in accordance with paragraph (f)(5) of this section beginning January 1, 1996.

(19) INCREASED VOC SAMPLING: DPNR may increase required monitoring where necessary to detect variations within the system.

(20) LABORATORY CERTIFICATION: Each certified laboratory must determine the method detection limit (MDL), as defined in 40 CFR Chapter 1, Appendix B to Part 136, at which it is capable of detecting VOCs. The acceptable MDL is 0.0005 mg/l. This concentration is the detection concentration for purposes of this section.

(21) DPNR DESIGNATED VOC SAMPLING SCHEDULES: Each public water system shall monitor at the time designated by DPNR within each compliance period.

(g) For systems in operation before January 1, 1993, for purposes of initial monitoring, analysis of the contaminants listed in Section1303-28(a)(1) through (8) for purposes of determining compliance with the maximum contaminant levels shall be conducted in the same manner listed in Section1303-44A (f). However, monitoring frequency for these systems should occur as follows:

All community water systems and non-transient, non-community water systems serving more than 10,000 people shall analyze all distribution or entry-point samples, as appropriate, representing all source waters beginning no later than January 1, 1988. All community water systems and non-transient non-community water systems serving from 3,300 to 10,000 people shall analyze all distribution or entry-point samples, as required in this paragraph (g), representing source waters no later than January 1, 1989. All other community and non-transient, non-community water systems shall analyze distribution or entry-point samples, as required in this paragraph (g), representing all source waters beginning no later than January 1, 1991.

(h) Analysis of the contaminants listed in Section1303-22(a) for the purposes of determining compliance with the maximum contaminant level shall be conducted as follows [Note: monitoring for the contaminants aldicarb, aldicarb sulfoxide, and aldicarb sulfone shall be conducted in accordance with Section1303-57]:

(1) SOC GROUNDWATER MONITORING PROTOCOLS: Groundwater systems shall take a minimum of one (1) sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(2) SOC SURFACE WATER MONITORING PROTOCOLS: Surface water systems [Note: For purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources] shall take a minimum of one (1) sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment (hereafter called a sampling point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(3) MULTIPLE SOURCES: If the system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water representative of all sources is being used).

(4) SOC MONITORING FREQUENCY:

(i) Each community and non-transient non-community water system shall take four consecutive quarterly samples for contaminants listed in Section1303-22(b)(1)and (5) through (18) during each compliance period beginning with the initial compliance period. Each community and non-transient non-community water system shall take four (4) consecutive quarterly samples for contaminants listed in Section1303-22(b)(19) through (33) during each compliance period beginning with the compliance period starting January 1, 1996.

(ii) Systems serving more than 3,300 persons which do not detect a contaminant in the initial compliance period, may reduce the sampling frequency to a minimum of two (2) quarterly samples in one (1) year during each repeat compliance period.

(iii) Systems serving less than or equal to 3,300 persons which do not detect a contaminant in the initial compliance period may reduce the sampling frequency to a minimum of one (1) sample during each repeat compliance period.

(5) SOC SAMPLING WAIVERS: Each community and non-transient water system may apply to DPNR for a waiver from the requirement of paragraph (4) of this section. A system must reapply for a waiver for each compliance period.

(6) BASIS FOR AN SOC SAMPLING WAIVER: DPNR may grant a waiver after evaluating the following factor(s): Knowledge of previous use (including transport, storage, or disposal) of the contaminant within the watershed or zone of influence of the system. If a determination by DPNR reveals no previous use of the contaminant within the watershed or zone of influence, a waiver may be granted. If previous use of the contaminant is unknown or it has been used previously, then the following factors shall be used to determine whether a waiver is granted.

(i) Previous analytical results.

(ii) The proximity of the system to a potential point or non-point source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities. Non-point sources include the use of pesticides to control insect and weed pests on agricultural areas, forest lands, home and gardens, and other land application uses.

(iii) The environmental persistence and transport of the pesticide or PCBs.

(iv) How well the water source is protected against contamination due to such factors as depth of the well and the type of soil and the integrity of the well casing.

(v) Elevated nitrate levels at the water supply source.

(vi) Use of PCBs in equipment used in the production, storage, or distribution of water (i.e., PCBs used in pumps, transformers, etc.).

(7) DETECTION OF AN SOC: If an organic contaminant listed in Section1303-22(a) is detected (as defined by paragraph (18) of this section) in any sample, then:

(i) Each system must monitor quarterly at each sampling point which resulted in a detection.

(ii) DPNR may decrease the quarterly monitoring requirement specified in

paragraph (7)(i) of this section provided it has determined that the system is reliably and consistently below the maximum contaminant level. In no case shall DPNR make this determination unless a groundwater system takes a minimum of two (2) quarterly samples and a surface water system takes a minimum of four (4) quarterly samples.

(iii) After DPNR determines the system is reliably and consistently below the maximum contaminant level DPNR may allow the system to monitor annually. Systems which monitor annually must monitor during the quarter that previously yielded the highest analytical result.

(iv) Systems which have three (3) consecutive annual samples with no detection of a contaminant may apply to DPNR for a waiver as specified in paragraph (f) of this section.

(v) If monitoring results in detection of one (1) or more of certain related contaminants (aldicarb, aldicarb sulfone, aldicarb sulfoxide and heptachlor, heptachlor epoxide), then subsequent monitoring shall analyze for all related contaminants.

(8) MCL VIOLATION WITH FOLLOW UP RELIABLY/CONSISTENTLY BELOW THE MCL: Systems which violate the requirements of Section 1303-22(a) as determined by paragraph (11) of this section must monitor quarterly. After a minimum of four (4) quarterly samples show the system is in compliance and DPNR determines the system is reliably and consistently below the MCL, as specified in paragraph (11) of this section, the system shall monitor at the frequency specified in paragraph (7)(iii) of this section.

(9) SOC CONFIRMATION SAMPLING: DPNR may require a confirmation sample for positive or negative results. If a confirmation sample is required by DPNR, the result must be averaged with the first sampling result and the average used for the compliance determination as specified by paragraph (11). DPNR has discretion to delete results of obvious sampling errors from this calculation.

(10) COMPOSITE SOC SAMPLING: DPNR may reduce the total number of samples a system must analyze by allowing the use of compositing. Composite samples from a maximum of five (5) sampling points are allowed, provided that the detection limit of the method used for analysis is less than one-fifth of the MCL. Compositing of samples must be done in the laboratory and analyzed within fourteen (14) days of sample collection.

(i) If the concentration in the composite sample detects one (1) or more contaminants listed in Section1303-22(a), then a follow-up sample must be taken

and analyzed within fourteen (14) days from each sampling point included in the composite.

(ii) If duplicates of the original sample taken from each sampling point used in the composite are available, the system may use these duplicates instead of resampling. The duplicate must be analyzed and the results reported to DPNR within fourteen (14) days of collection.

(iii) If the population served by the system is > 3,300 persons, then compositing may only be permitted by DPNR at sampling points within a single system. In systems serving 3,300 persons, DPNR may permit compositing among different systems provided the five (5) sample limit is maintained.

(11) SOC COMPLIANCE CALCULATIONS: Compliance with Section1303-22(a) shall be determined based on the analytical results obtained at each sampling point.

(i) For systems which are conducting monitoring at a frequency greater than annual, compliance is determined by a running annual average of all samples taken at each sampling point. If the annual average of any sampling point is greater than the MCL, then the system is out of compliance. If the initial sample or a subsequent sample would cause the annual average to be exceeded, then the system is out of compliance immediately. Any samples below the detection limit shall be calculated as zero for purposes of determining the annual average.

(ii) If monitoring is conducted annually, or less frequently, the system is out of compliance if the level of a contaminant at any sampling point is greater than the MCL. If a confirmation sample is required by DPNR, the determination of compliance will be based on the average of two (2) samples.

(iii) If a public water system has a distribution system separable from other parts of the distribution system with no interconnections, DPNR may allow the system to give public notice to only that portion of the system which is out of compliance.

(12) [Reserved]

(13) ANALYSIS FOR PCBS: Analysis for PCBs shall be conducted using the methods in paragraph (e) of this section:

(i) Each system which monitors for PCBs shall analyze each sample using either Method 505 or Method 508.

(ii) If PCBs (as one of seven Aroclors) are detected (as designated in this paragraph) in any sample analyzed using Methods 505 or 508, the system shall reanalyze the sample using Method 508A to quantitate PCBs (as decachlorobiphenyl).

Aroclor	Detection Limit (mg/l)
1016	0.00008
1221	0.02
1232	0.0005
1242	0.0003
1248	0.0001
1254	0.0001
1260	0.0002

(iii) Compliance with the PCB MCL shall be determined based upon the quantitative results of analyses using Method 508A.

(14) GRANDFATHERED SOC DATA: If monitoring data collected after January 1, 1990, are generally consistent with the requirements of Section1303-57, then DPNR may allow systems to use that data to satisfy the monitoring requirement for the initial compliance periods.

(15) DPNR DESIGNATED SAMPLING SCHEDULES: Each public water system shall monitor at the time designated by DPNR within each compliance period.

(16) DPNR AUTHORITY: DPNR has the authority to determine compliance or initiate enforcement action based upon analytical results and other information compiled by its sanctioned representatives and agencies.

(17) DPNR DESIGNATED SOC MONITORING SCHEDULE: Each public water system shall monitor at the time designated by DPNR within each compliance period.

(18) SOC DETECTION LIMITS: Detection as used in this paragraph shall be defined as

greater than or equal to the following concentrations for each contaminant.

SOC DETECTION LIMITS

Contaminant	Detection limit (mg/l)
Alachlor	0.0002
Aldicarb	0.0005
Aldicarb sulfoxide	0.0005
Aldicarb sulfone	0.0008
Atrazine	0.0001
Benzo[a]pyrene'	0.00002
Carbofuran	0.0009
Chlordane	0.0002
Dalapon	0.001
Dibromochloropropane (DBCP)	0.00002
Di (2-ethylhexyl) adipate	0.0006
Di (2-ethylhexyl) phthalate	0.0006
Dinoseb	0.0002
Diquat	0.0004
2,4-D	0.0001
Endothall	0.009
Endrin	0.00001
Ethylene dibromide (EDB)	0.00001
Glyphosate	0.006
Heptachlor	0.00004
Heptachlor epoxide	0.00002
Hexachlorobenzene.	0.0001

Contaminant	Detection limit (mg/l)
Hexachlorocyclopentadiene	0.0001
Lindane	0.00002
Methoxychlor	0.0001
Oxamyl	0.002
Picloram	0.0001
Polychlorinatedbiphenyls (PCBs) (as decachlorobiphenyl)	0.0001
Pentachlorophenol	0.00004
Simazine	0.00007
Toxaphene	0.001
2,3,7,8-TCDD (Dioxin)	$5x10^{-9}$
2,4,5-TP (Silvex)	0.002

(19) LABORATORY CERTIFICATION: Analysis under this section shall only be conducted by laboratories that have received certification by EPA or DPNR and have met the following conditions:

(i) To receive certification to conduct analyses for the contaminants in Section 1303-22(a) the laboratory must:

(A) Analyze Performance Evaluation samples which include those substances provided by EPA Environmental Monitoring and Support Laboratory or equivalent samples provided by DPNR.

(B) Achieve quantitative results on the analyses that are within the following acceptance limits:

Acceptance Limits	
Contaminant	**Acceptance limit**
DBCP	40.
EDB	40

Acceptance Limits	
Contaminant	**Acceptance limit**
Alachlor	45.
Atrazine	45.
Benzo[a]pyrene	2 standard deviations.
Carbofuran	45.
Chlordane	45.
Dalapon	2 standard deviations.
Di(2-ethylhexyl)adipate	2 standard deviations.
Di(2-ethylhexyl)phthalate	2 standard deviations.
Dinoseb	2 standard deviations
Diquat	2 standard deviations
Endothall	2 standard deviations
Endrin	30.
Glyphosate	2 standard deviations.
Heptachlor	45.
Heptachlor epoxide	45.
Hexachlorobenzene	2 standard deviations.
Hexachloro-cyclopentadiene	2 standard deviations.
Lindane	45
Methoxychlor	45
Oxamyl	2 standard deviations.
Hexachlorobenzene	2 standard deviations.
Hexachloro-cyclopentadiene	2 standard deviations.
PCBs (as Decachlorobiphenyl)	0-200.
Picloram	2 standard deviations.

Acceptance Limits	
Contaminant	**Acceptance limit**
Simazine	2 standard deviations
Toxaphene	45.
Aldicarb	2 standard deviations
Aldicarb sulfoxide	2 standard deviations.
Aldicarb sulfone	2 standard deviations
Pentachlorophenol	50.
2,3,7,8-TCDD (Dioxin)	2 standard deviations
2,4-D	50
2,4-TP	50

Section 1303-44B. Total trihalomethanes sampling, analytical and other requirements

(a) Community Water Systems which serve a population of 10,000 or more individuals and which add a disinfectant (oxidant) to the water in any part of the drinking water treatment process shall sample and analyze for total trihalomethanes in accordance with this section. Sampling and analyses shall begin immediately after the date of promulgation of this regulation. Compliance with this regulation shall be achieved within one year of the date of promulgation. For the purpose of this section, the minimum number of samples required to be taken by the system shall be based on the number of treatment plants used by the system except that multiple wells drawing raw water from a single aquifer may, with DPNR's approval, be considered one treatment plant for determining the minimum number of samples. All samples taken within an established frequency shall be collected within a twenty-four (24) hour period.

(b) (1) For all community water systems utilizing surface water sources in whole or in part, and for all community water systems utilizing only groundwater sources that have not been determined by DPNR to qualify for the monitoring requirements of paragraph (c) of this section, analyses for total trihalomethanes shall be performed at quarterly intervals on at least four water samples for each treatment plant used by the system. At least twenty-

five percent (25%) of the samples shall be taken at locations within the distribution system reflecting the maximum residence time of the water in the system. The remaining seventy-five percent (75%) shall be taken at representative locations in the distribution system, taken into account number of persons served, different sources of water and different treatment methods employed. The results of all analyses per quarter shall be arithmetically averaged and reported to DPNR within thirty (30) days of the system's receipt of such results. Results shall also be reported to EPA until such monitoring requirements have been adopted by the Government of the Virgin Islands. All samples collected shall be used in the computation of the average, unless the analytical results are invalidated for technical reasons. Sampling and analyses shall be conducted in accordance with the methods listed in paragraph (e) of this section.

(2) Upon the written request of a community water system, the monitoring frequency required by paragraph (b)(1) of this section may be reduced by DPNR to a minimum of one sample analyzed for TTHMs per quarter taken at a point in the distribution system reflecting the maximum residence time of the water in the system, upon a written determination by DPNR that the data from at least one (1) year of monitoring in accordance with paragraph (b)(1) of this section and local conditions demonstrate that total trihalomethane concentrations will be consistently below the maximum contaminant level.

(3) If at any time during which the reduced monitoring frequency prescribed under this paragraph applies, the results from any analysis exceed 0.10 mg/l of TTHMs and such results are received, or if the system makes any significant change to its source of water or treatment program, the system shall immediately begin monitoring in accordance with the requirements of paragraph (b)(1) of this section, which monitoring shall continue for at least one (1) year before the frequency may be reduced again. At the option of DPNR, a system's monitoring frequency may and should be increased above the minimum in those cases where it is necessary to detect variations of TTHM levels within the distribution system.

(c) (1) Upon written request to DPNR, a community water system utilizing only ground water sources may seek to have the monitoring frequency required by paragraph (b)(1) of this section reduced to a minimum of one (1) sample for maximum TTHM potential per year for each treatment plant used by the system taken at a point in the distribution system reflecting maximum residence time of the water in the system. The system shall submit to DPNR the results of atleast one (1) sample analyzed for maximum TTHM potential for each treatment plant used by the system taken at a point in the distribution system reflecting the maximum residence time of the water in the system. The system's monitoring frequency may only be reduced upon written determination by DPNR that,

based upon the data submitted by the system, the system has a maximum TTHM potential of less than 0.10 mg/l and that, based upon assessment of the local conditions of the system, the system is not likely to approach or exceed the maximum contaminant level for total TTHMs. The results of all analyses shall be reported to DPNR within thirty (30) days of the system's receipt of such results. Results shall also be reported to EPA until such monitoring requirements have been adopted by the Government of the Virgin Islands. All samples collected shall be used for determining whether the system must comply with the monitoring requirements of paragraph (b) of this section, unless the analytical results are invalidated for technical reasons. Sampling and analysis shall be conducted in accordance with the methods listed in paragraph (e) of this section.

(2) If at any time during which the reduced monitoring frequency prescribed under paragraph (c)(1) of this section applies, the results from any analysis taken by the system for maximum TTHM potential are equal to or greater than 0.10 mg/l, and such results are confirmed by at least one (1) check sample taken promptly after such results are received, the system shall immediately begin monitoring in accordance with the requirements of paragraph (b) of this section and such monitoring shall continue for at least one (1) year before the frequency may be reduced again. In the event of any significant change to the system's raw water or treatment program, the system shall immediately analyze an additional sample for maximum TTHM potential taken at a point in the distribution system reflecting maximum residence time of the water in the system for the purpose of determining whether the system must comply with the monitoring requirements of paragraph(b) of this section. At the option of DPNR, monitoring frequencies may and should be increased above the minimum in those cases where this is necessary to detect variation of TTHM levels within the distribution system.

(d) Compliance with Section1303-28(c) shall be determined based on a running annual average of quarterly samples collected by the system as prescribed in paragraph (b)(1) or (2) of this section. If the average of samples covering any twelve (12) month period exceeds the Maximum Contaminant Level, the supplier of water shall report to DPNR pursuant to Section1303-51 and notify the public pursuant to Section1303-52. Monitoring after public notification shall be at a frequency designated by DPNR and shall continue until a monitoring schedule as a condition to a variance, exemption or enforcement action shall become effective.

(e) Sampling and analyses made pursuant to this section shall be conducted by the total trihalomethane methods as directed in Section 1303-44A(e), and in Technical Notes on Drinking Water Methods, EPA-600/R-94-173, October 1994.

(f) Before a community water system makes any significant modifications to its existing treatment process for the purposes of achieving compliance with 1303-28(c), such system must submit and obtain DPNR approval of a detailed plan setting forth its proposed modification and those safeguards that it will implement to ensure that the bacteriological quality of the drinking water served by such system will not be adversely affected by such modification.

Each system shall comply with the provisions set forth in the DPNR-approved plan. At a minimum, a DPNR approved plan shall require the system modifying its disinfection practice to:

(1) Evaluate the water system for sanitary defects and evaluate the source water for biological quality.

(2) Evaluate its existing treatment practices and consider improvements that will minimize disinfectant demand and optimize finished water quality throughout the distribution system.

(3) Provide baseline water quality survey data of the distribution system. Such data should include the results from monitoring for coliform and fecal coliform bacteria, fecal streptococci, standard plate counts at 35 C and 20 C, phosphate, ammonia nitrogen and total organic carbon. Virus studies should be required where source waters are heavily contaminated with sewage effluent.

(4) Conduct additional monitoring to assure continued maintenance of optimal biological quality in finished water, for example, when chlorimines are introduced as disinfectants or when prechlorination is being discontinued. Additional monitoring may also be required by DPNR for chlorate, chlorite and chlorine dioxide when chlorine dioxide is used. Standard plate count analyses should also be required by the DPNR as appropriate before and after any modifications.

(5) Consider inclusion in the plan of provisions to maintain an active disinfectant residual throughout the distribution system at all times during and after modification.

Section 1303-45. Analytical methods for radioactivity

(a) The methods specified in "Interim Radiochemical Methodology for Drinking Water," Environmental Monitoring and Support Laboratory, EPA-600/4-75-008, USEPA, Cincinnati, Ohio 45268, or those listed below, are to be used to determine compliance with sections 1303-25 and 1303-26 (radioactivity) except in cases where alternative methods have been approved in accordance with section 1303-47.

(1) Gross Alpha and Beta-Method 302 "Gross Alpha and Beta Radioactivity in Water." "Standard Methods for the Examination of Water and Wastewater," 13th Edition, American Public Health Association, New York, N.Y., 1971.

(2) Total Radium-Method 304 "Radium in Water by Precipitation," Ibid.

(3) Radium-226-Method 305 "Radium-226 by Radon in Water," Ibid.

(4) Strontium-89, 90-Method 303 "Total Strontium and Strontium-90 in Water," Ibid.

(5) Tritium-Method 306 "Tritium in Water," Ibid.

(6) Cesium-134-ASTM D-2459 "Gamma Spectrometry in Water," 1975 Annual Book of ASTM Standards, Water and Atmospheric Analysis, Part 31, American Society for Testing and Materials, Philadelphia, Pennsylvania (1975).

(7) Uranium-ASTM D-2907 "Microquantities of Uranium in Water by Fluorometry," Ibid.

(b) When the identification and measurement of radionuclides other than those listed in paragraph (a) is required, the following references are to be used, except in cases where alternative methods have been approved in accordance with section 1303-47.

(1) Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions, H.L. Krieger and S. Gold, EPA-R4-73-014. USEPA, Cincinnati, Ohio, May 1973.

(2) HASL Procedure Manuel, Edited by John H. Harley, HASL 300, ERDA Health and Safety Laboratory, New York, N.Y., 1973

(c) For the purpose of monitoring radioactivity concentrations in drinking water, the required sensitivity of the radioanalysis is defined in terms of a detection limit. The detection limit shall be that concentration which can be counted with a precision of plus or minus one hundred percent (100%) at the ninety-five percent (95%) confidence level (1.96 where is the standard deviation of the net counting rate of the sample).

(1) To determine compliance with section 1303-25(a) the detection limit shall not exceed 1 pCi/l. To determine compliance with section 1303-25(b) the detection limit shall not exceed 3 pCi/l.

(2) To determine compliance with section 1303-26 the detection limits shall not exceed the concentration listed in the table below.

Detection Limits for Man-Made Beta Particle and Photon Emitters	
Radionuclide	**Detection Limit**
Tritium	1,000 pCi/l
Strontium-89	10 pCi/l
Strontium-90	2 pCi/l
Iodine-131	1 pCi/l
Cesium-134	10 pCi/l
Gross beta	4 pCi/l
Other radionuclides	1/10 of the applicable limit

(d) To judge compliance with the maximum contaminant levels listed in sections 1303-25 and 1303-26, averages of data shall be used and shall be rounded to the same number of significant figures as the maximum contaminant level for the substances in question.

Section 1303-46. Monitoring frequency for radioactivity in community water systems.

(a) Monitoring requirements for gross alpha particle activity, radium-226 and radium-228.

(1) Initial sampling to determine compliance with section 1303-25 shall begin within two years of the effective date of these regulations and the analysis shall be completed within three years of the effective date of these regulations. Compliance shall be based on the analysis of an annual composite of four (4) consecutive quarterly samples or the average of the analyses of four (4) samples obtained at quarterly intervals.

(i) A gross alpha particle activity measurement may be substituted for the required radium-226 and radium-228 analysis, provided, that the measured gross alpha particle activity does not exceed 5 pCi/l at a confidence level of ninety-five percent (95%) (1.65

where is the standard deviation of the net counting rate of the sample). In localities where radium-228 may be present in drinking water, it DPNR may require radium-226 and/or radium-228 analyses when the gross alpha particle activity exceeds 2 pCi/l.

(ii) When the gross alpha particle activity exceeds 5pCi/l, the same or an equivalent sample shall be analyzed for radium-226. If the concentration of radium-226 exceeds 3pCi/l the same or an equivalent sample shall be analyzed for radium-228.

(2) For the initial analysis required by paragraph (a)(1), data acquired within one (1) year prior to the effective date [June 24, 1977] of this chapter may be substituted at the discretion of DPNR.

(3) Suppliers of water shall monitor at least once every four (4) years following the procedure required by paragraph (a)(1). At the discretion of DPNR, when an annual record taken in conformance with paragraph (a)(1) has established that the average annual concentration is less than half the maximum contaminant levels established by section 1303-25, analysis of a single sample may be substituted for the quarterly sampling procedure required by paragraph (a)(1).

(i) More frequent monitoring shall be conducted when ordered by DPNR in the vicinity of mining or other operations which may contribute alpha particle radioactivity to either surface or ground water sources of drinking water.

(ii) A supplier of water shall monitor in conformance with paragraph (a)(1) within one (1) year of the introduction of a new water source for a community water system. More frequent monitoring shall be conducted when ordered by DPNR in the event of possible contamination or when changes in the distribution system or treatment processing occur which may increase the concentration of radioactivity in finished water.

(iii) A community water system using two or more sources having different concentrations of radioactivity shall monitor source water, in addition to water from a free-flowing tap, when ordered by DPNR.

(iv) Monitoring for compliance with section 1303-25 after the initial period need not include radium-228 except when required by DPNR, provided, that the average annual concentration of radium-228 has been assayed at least once using the quarterly sampling procedure required by paragraph (a)(1).

(v) Suppliers of water shall conduct annual monitoring of any community water system in which the radium-226 concentration exceeds # pCi/l, when ordered by DPNR.

(4) If the average annual maximum contaminant level for gross alpha particle activity or total radium as set forth in section 1303-25 is exceeded, the supplier of a community water system shall give notice to DPNR pursuant to section 1303-51 and notify the public as required by section 1303-52. Monitoring at quarterly intervals shall be continues until the annual average concentration no longer exceed the maximum contaminant level or until a monitoring schedule as a condition to a variance, exemption or enforcement action shall become effective.

(b) Monitoring requirements for man-made radioactivity in community water systems.

(1) Within two (2) years of the effective date [June 24, 1977] of this chapter, systems using surface water sources and serving more than 100,000 persons and such other community water systems as are designated by DPNR shall be monitored for compliance with section 1303-26 by analysis of a composite of four (4) consecutive quarterly samples or analysis of four quarterly samples. Compliance with section 1303-26 may be assumed without further analysis if the average annual concentration of gross beta particle activity is less than 50 pCi/l and if the average annual concentrations of tritium and strontium-90 are less than those listed in Table A, provided, that if both radionuclides are present the sum of their annual dose equivalents to bone marrow shall not exceed 4 millirem/year.

(i) If the gross beta particle activity exceeds 50 pCi/l, an analysis of the sample must be performed to identify the radioactive constituents present and the appropriate organ and total body doses shall be calculated to determine compliance with section 1303-26.

(ii) Suppliers of water shall conduct additional monitoring, as ordered by DPNR, to determine the concentration of manmade radioactivity in principal watersheds designated by DPNR.

(iii) At the discretion of DPNR, suppliers for water utilizing only ground waters may be required to monitor for man-made radioactivity.

(2) For the initial analysis required by paragraph (b)(1) data acquired within one (1) year prior to the effective date [June 24, 1977] of this chapter may be substituted at the discretion of DPNR.

(3) After the initial analysis required by paragraph (b)(1) suppliers of water shall monitor at least every four (4) years following the procedure given in paragraph (b)(1).

(4) Within two (2) years of the effective date of these regulations the supplier of any community water system designated by DPNR as utilizing waters contaminated effluents from nuclear facilities shall initiate quarterly gross beta particle and iodine-131 radioactivity and annual monitoring for strontium-90 and tritium.

(i) Quarterly monitoring for gross beta particle activity shall be based on the analysis of monthly samples or the analysis of a composite of three (3) monthly samples. The former is recommended. If the gross beta particle activity in a sample exceeds 15 Pci/l, the same or an equivalent sample shall be analyzed for strontium-89 and cesium-134. If the gross beta particle activity exceeds 50 pCi/l, an analysis of the sample must be performed to identify the major radioactive constituents present and the
appropriate organ and total body doses shall be calculated to determine compliance with section 1303-26.

(ii) For iodine-131, a composite of five (5) consecutive daily samples shall be analyzed once each quarter. As ordered by DPNR, more frequent monitoring shall be conducted when iodine-131 is identified in the finished water.

(iii) Annual monitoring for strontium-90 and tritium shall be conducted by means of the analysis of a composite of four (4) consecutive quarterly samples or analysis of four (4) quarterly samples. The latter procedure is recommended.

(iv) DPNR may allow the substitution of environmental surveillance data taken in conjunction with a nuclear facility for direct monitoring of man-made radioactivity by the supplier of water where DPNR determines such data is applicable to a particular community water system.

(5) If the average annual maximum contaminant level for man-made radioactivity set forth in section 1303-26 is exceeded, the operator of a community water system shall give notice to DPNR pursuant to section 1303-51 and to the public as required by section 1303-52. Monitoring at monthly intervals shall be continued until the concentration no longer exceeds the maximum contaminant level or until a monitoring schedule as a condition to a variance, exemption or enforcement action shall become effective.

Section 1303-47. Alternative analytical technique

With the written permission of DPNR, concurred on by the Administrator of the U.S.

Environmental Protection Agency, an alternative analytical technique may be employed. An alternative technique shall be acceptable only if it substantially equivalent to the prescribed test in both precision and accuracy as it relates to the determination of compliance with any maximum contaminant level. The use of the alternative technique shall not decrease the frequency of monitoring required by this chapter.

Section 1303-48. Approved laboratories

For the purpose of determining compliance with sections 1303-41 through 1303-47, samples may be considered only if they have been analyzed by a laboratory approved by DPNR except that measurements for turbidity and free chlorine residual may be performed by any person acceptable to DPNR.

Section 1303-49. Monitoring of consecutive public water systems

When a public water system supplies water to one or more public water systems, DPNR may modify the monitoring requirements imposed by this part 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 DPNR and concurred in by the Administrator of the U.S. Environmental Protection Agency.

Section 1303-51. Reporting requirements

(a) Except where a shorter reporting period is specified in this chapter, the supplier of water shall report to DPNR within forty (40) days following a test, measurement or analysis required to be made by this chapter, the results of that test, measurement or analysis.

(b) The supplier of water shall report to DPNR within forty-eight (48) hours the failure to comply with any primary drinking water regulation (including failure to comply with monitoring requirements) set forth in this chapter.

(c) A public water system that has exceeded the MCL for total coliforms in Section1303-24 shall report the violation to DPNR no later than the end of the next business day after the system learns of the violation, and shall notify the public in accordance with Section1303-52. The public water system that has failed to comply with the sampling site plan requirements and required monitoring shall report the violation to DPNR within two (2) days after the system discovers, or should have discovered, the violation and shall notify the public in accordance with

Section 1303-52.

(d) The supplier of water is not required to report analytical results to DPNR in cases where a DPNR certified laboratory performs the analysis and reports the results directly to DPNR which would normally receive such notification from the supplier. However, the responsibility of assuring that DPNR is notified resides with the public water system.

(e) The water supply system, within ten (10) days of completion of each public notification required pursuant to 1303-52 shall submit to DPNR a representative copy of each type of notice distributed, published, posted, and/or made available to the persons served by the system and/or to the media.

(f) The water supply system shall submit to DPNR within the time stated in the request, copies of any records required to be maintained under 1303-53 hereof or copies of any documents then in existence which DPNR of EPA is entitled to inspect pursuant to the authority of Section 1445 of the Safe Drinking Water Act or the equivalent provisions of Virgin Island law.

(g) Reporting requirements for tap water monitoring for lead and copper and for water quality parameter monitoring are as follows:

(1) A water system shall report the information specified below for all tap water samples within the first ten (10) days following the end of each applicable monitoring period specified in Section1303-64 and Section1303-65 and Section1303-66 (i.e., every six (6) months, year, or three (3) years).

(i) The results of all tap samples for lead and copper including the location of each site and the criteria under Section1303-64(a)(3),(4),(5),(6), and/or (7) under which the site was selected for the system's sampling pool.

(ii) A certification that each first draw sample collected by the water system is one (1) liter in volume and, to the best of their knowledge, has stood motionless in the service line, or in the interior plumbing of a sampling site, for at least six (6) hours.

(iii) Where residents collected samples, a certification that each tap sample collected by the residents was taken after the water system informed them of proper sampling procedures specified in Section1303-64(b)(2).

(iv) The 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period

(calculated in accordance with Section1303-58(c)(3)).

(v) With the exception of initial tap sampling conducted pursuant to Section1303-64(d)(1), the system shall designate any site which was not sampled during previous monitoring periods, and include an explanation of why sampling sites have changed.

(vi) The results of all tap samples for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected under Section1303-65(b)-(e).

(vii) The results of all samples collected at the entry point(s) to the distribution system for applicable water quality parameters under Section1303-65(b)-(e).

(2) By the applicable date in Section1303-64(d)(1) for commencement of monitoring, each community water system which does not complete its targeted sampling pool with tier 1 sampling sites meeting the criteria in Section1303-64(a)(3) shall send a letter to DPNR justifying its selection of tier 2 and/or tier 3 sampling sites under Section1303-64 (a)(4) and/or (a)(5).

(3) By the applicable date in Section1303-64(d)(1) for commencement of monitoring, each non-transient, non-community water system which does not complete its sampling pool with tier 1 sampling sites meeting the criteria in Section1303-64(a)(6) shall send a letter to DPNR justifying its selection of sampling sites under Section1303-64(a)(7).

(4) By the applicable date in Section1303-64(d)(1) for commencement of monitoring, each water system with lead service lines that is not able to locate the number of sites served by such lines required under Section1303-64(a)(9) shall send a letter to DPNR demonstrating why it was unable to locate a sufficient number of such sites based upon the information listed in Section1303-64(a)(2).

(5) Each water system that requests that DPNR reduce the number and frequency of sampling shall provide the information required under Section1303-64(d)(4).

(h) Source water <u>lead and copper</u> monitoring reporting requirements are as follows:

(1) A water system shall report the sampling results for all source water samples collected in accordance with Section1303-66 within the first ten (10) days following the end of each

source water monitoring period (i.e., annually, per compliance period, per compliance cycle) specified in Section1303-66.

(2) With the exception of the first round of source water sampling conducted pursuant to Section1303-66(b), the system shall specify any site which was not sampled during previous monitoring periods, and include an explanation of why the sampling point has changed.

(i) By the applicable dates under Section1303-59, systems shall report the following information regarding corrosion control treatment reporting requirements:

(1) For systems demonstrating that they have already optimized corrosion control, information required in Section1303-60(b) (2) or (3).

(2) For systems required to optimize corrosion control, their recommendation regarding optimal corrosion control treatment under Section1303-60(a).

(3) For systems required to evaluate the effectiveness of corrosion control treatments under Section1303-60(c), the information required by that paragraph.

(4) For systems required to install optimal corrosion control designated by DPNR under Section1303-60(d), a letter certifying that the system has completed installing that treatment.

(j) By the applicable dates in Section1303-61, systems shall provide the following information regarding source water treatment for lead and copper reporting requirements to DPNR:

(1) If required under Section1303-61(b)(1), their recommendation regarding source water treatment.

(2) For systems required to install source water treatment under Section1303-61(b)(2), a letter certifying that the system has completed installing the treatment designated by DPNR within twenty-four (24) months after DPNR designated the treatment.

(k) Systems shall report the following information to DPNR to demonstrate compliance with the lead service line replacement reporting requirements of Section1303-62:

(1) Within twelve (12) months after a system exceeds the lead action level in

sampling referred to in Section1303-62(a), the system shall demonstrate in writing to DPNR that it has conducted a materials evaluation, including the evaluation in Section1303-64(a), to identify the initial number of lead service lines in its distribution system, and shall provide DPNR with the system's schedule for replacing annually at least seven percent (7%) of the initial number of lead service lines in its distribution system.

(2) Within twelve (12) months after a system exceeds the lead action level in sampling referred to in Section1303-62(a), and every twelve (12) months thereafter, the system shall demonstrate to DPNR in writing that the system has either:

(i) Replaced in the previous twelve (12) months at least seven percent (7%) of the initial lead service lines (or a greater number of lines specified by DPNR under Section1303-62(f)) in its distribution system, or

(ii) Conducted sampling which demonstrates that the lead concentration in all service line samples from an individual line(s), taken pursuant to Section1303-64(b)(3), is less than or equal to 0.015 mg/L. In such cases, the total number of lines replaced and/or which meet the criteria in Section1303-62(b) shall equal at least seven percent (7%) of the initial number of lead lines identified under paragraph (a) of this section (or the percentage specified by DPNR under Section1303-62(f)).

(3) The annual letter submitted to DPNR under paragraph (e)(2) of this section shall contain the following information:

(i) The number of lead service lines scheduled to be replaced during the previous year of the system's replacement schedule.

(ii) The number and location of each lead service line replaced during the previous year of the system's replacement schedule.

(iii) If measured, the water lead concentration and location of each lead service line sampled, the sampling method, and the date of sampling.

(4) As soon as practicable, but in no case later than three months after a system exceeds the lead action level in sampling referred to in Section1303-62(a), any system seeking to rebut the presumption that it has control over the entire lead service line pursuant to Section1303-62(d) shall submit a letter to DPNR describing the legal authority (e.g., Virgin Islands statutes, public service contracts or other applicable legal

authority) which limits the system's control over the service lines and the extent of the system's control.

(l) Public education program reporting requirements are as follows:

By December 31st of each year, any water system that is subject to the public education requirements in Section1303-63 shall submit a letter to DPNR demonstrating that the system has delivered the public education materials that meet the content requirements in Section1303-63(a) and (b) and the delivery requirements in Section1303-63(c). This information shall include a list of all the newspapers, radio stations, television stations, facilities and organizations to which the system delivered public education materials during

the previous year. The water system shall submit the letter required by this paragraph annually for as long as it exceeds the lead action level.

(m) Reporting of additional monitoring data is as follows:

Any system which collects sampling data in addition to that required by the Lead and Copper Rule shall report the results to DPNR within the first ten (10) days following the end of applicable monitoring period under SectionSection1303-64, 1303-65 and Section1303-66 during which the samples are collected.

(n) Special Reports:

(1) DPNR shall report to EPA by May 15, August 15, November 15 and February 15 of each year the following information related to each system's compliance with the treatment techniques for lead and copper under 40 CFR Part 141, Subpart I during the preceding calendar quarter. Specifically, DPNR shall report the name and PWS identification number of:

(i) Each public water system which exceeded the lead and copper action levels and the date upon which the exceedance occurred.

(ii) Each public water system required to complete the corrosion control evaluations specified in Section1303-60(c) and the date DPNR received the results of the evaluations from each system.

(iii) Each public water system for which DPNR has designated optimal corrosion control treatment under Section1303-60(d), the date of the determination, and each system that completed installation of treatment as

certified under Section1303-51.

(iv) Each public water system for which DPNR has designated optimal water quality parameters under Section1303-60(f) and the date of the determination.
(v) Each public water system which DPNR has required to install source water treatment under Section1303-61(b)(2), the date of the determination, and each system that completed installation of treatment as certified under Section1303-51.

(vi) Each public water system for which DPNR has specified maximum permissible source water levels under Section1303-61(b)(4).

(vii) Each public water system required to begin replacing lead service lines as specified in Section1303-62, each public water system for which DPNR has established a replacement schedule under Section1303-62(f), and each system reporting compliance with its replacement schedule under Section1303-51.

Section 1303-52. Public Notification

(a) The owner or operator of a public water system who fails to comply with an applicable MCL or treatment technique established by the Virgin Islands Safe Drinking Water Act and Rules and Regulations, or fails to comply with the requirements of any schedule prescribed in conformity with a variance or exemption, shall notify persons served by the system as follows:

(1) Except as provided in paragraph (a)(3) of this section, the owner or operator of a public water system shall give notice:

(i) By publication for not less than three (3) consecutive days in a daily newspaper of general circulation in the area served by the system as soon as possible, but in no case later than fourteen (14) days after the violation or failure. If the area served by a public water system is not served by a daily newspaper of general circulation, notice shall instead be given by publication in a weekly newspaper of general circulation serving the area; and

(ii) By mail delivery (by direct mail or with the water bill), or by hand delivery, not later than forty-five (45) days after the violation or failure. The DPNR may waive mail or hand delivery if it determines that the owner or operator of the public water system in violation has corrected the violation or failure within the forty-five (45) day period. The DPNR must make the waiver in writing and within the forty-five (45) day period; and

(iii) For violations of the MCLs for contaminants that may pose an acute risk to human health, by furnishing a copy of the notice to the radio and television stations serving the area served by the public water system as soon as possible but in no case later than seventy-two (72) hours after the violation. The following violations are acute violations:

(A) Any violations specified by the DPNR as posing an acute risk to human health.

(B) Violation of the MCL for nitrate or nitrite as defined in Section1303-43(d) and 1303-43 (d)(1) and determined according to Section1303-43(i)(3).

(C) Violation of the MCL for total coliforms when fecal coliforms or E. Coli are present in the water distribution system, as specified in Section 1303-24.

(2) Except as provided in paragraph (a)(3) of this section, following the initial notice given under paragraph (a)(1) of this section, the owner or operator of the public water system shall give notice at least once every three (3) months by mail delivery (by direct mail or with the water bill) or by hand delivery, for as long as the violation or failure exists.

(3) (i) In lieu of the requirements of paragraphs (a)(1) and (a)(2) of this section, the owner or operator of a community water system in an area that is not served by a daily or weekly newspaper of general circulation shall give notice by hand delivery or by continuous posting in conspicuous places within the area served by the system. Notice by hand delivery or posting shall begin as soon as possible, but no later than seventy-two (72) hours after the violation or failure for acute violations (as defined in paragraph (a)(1)(iii) of this section), or fourteen (14) days after the violation or failure for any other violation. Posting shall continue for as long as the violation or failure exists. Notice by hand delivery shall be repeated at least every three (3) months for as long as the violation or failure exists.

(ii) In lieu of the requirements of paragraphs (a)(1) and (a)(2) of this section, the owner or operator of a non-community water system may give notice by hand delivery or by continuous posting in conspicuous places within the area served by the system. Notice by hand delivery or posting shall begin as soon as possible, but no later than seventy-two (72) hours after the violation or failure for acute violations (as defined in paragraph (a)(1)(iii) of this section), or fourteen (14) days after the violation or failure for any other violation. Posting must continue for as

long as the violation or failure exists. Notice by hand delivery shall be repeated at least every three (3) months for as long as the violation or failure exists.

(b) Other violations, variances and exemptions: The owner or operator of a public water system who fails to perform monitoring as required by Section 1303(c) of the Virgin Islands Safe Drinking Water Act and the Virgin Islands Interim Primary Drinking Water Standards, or fails to comply with a testing procedure established by this Chapter, or is subject to a variance or exemption under 19 V.I.C. Subsection 1304, shall notify the public served as follows:

(1) Except as provided in paragraph (b)(3) or (b)(4) of this section, the owner or operator of a public water system shall give notice within three (3) months of the violation or granting of a variance or exemption by publication in a daily newspaper of general circulation in the area served by the system. If the area served by a public water system is not served by a daily newspaper of general circulation, notice shall instead be given by publication in a weekly newspaper of general circulation serving the area.

(2) Except as provided in paragraph (b)(3) or (b)(4) if this section, following the initial notice given under paragraph (b)(1) of this section, the owner or operator of the public water system shall give notice at least once every three (3) months by mail delivery (by direct mail or with the water bill) or by hand delivery, for as long as the violation or failure exists. Repeat notice of the existence of a variance or exemption shall be given every three (3) months for as long as a variance or exemption remains in effect.

(3) (i) In lieu of the requirements of paragraphs (b)(1) and (b)(2) of this section, the owner or operator of a community water system in an area that is not served by a daily or weekly newspaper of general circulation shall give notice within three (3) months of the violation or granting of a variance or exemption, by hand delivery or by continuous posting in conspicuous places within the area served by the system. Posting must continue for as long as the violation exists or a variance or exemption remains in effect. Notice by hand delivery shall be repeated at least every three (3) months for as long as the violation exists or a variance or exemption remains in effect.

(ii) In lieu of the requirements of paragraphs (b)(1) and (b)(2) of this section, the owner or operator of a non-community water system may give notice within three (3) months of the violation or the granting of the variance or exemption by hand delivery or by continuous posting in conspicuous places within the area served by the system. Posting shall continue for as long as the violation exists or a variance or exemption remains in effect. Notice by hand delivery shall be repeated at least every three (3) months for as long as the violation exists or a variance or

exemption remains in effect.

(c) Notice to new billing: The owner or operator of a community water system shall give a copy of the most recent public notice for any outstanding violation of any maximum contaminant level, or any treatment technique requirements, or any variance or exemption schedule, to all new billing units or new hookups prior to or at the time service begins.

(d) General content of public notice: Each notice required by this section shall provide a clear and readily understandable explanation of the violation, any potential adverse health effects, the population at risk, the steps that the public water system is taking to correct such violation, the necessity for seeking alternative water supplies, if any, and any preventive measures the consumer should take until the violation is corrected. Each notice shall be conspicuous and shall not contain unduly technical language, unduly small print, or similar problems that frustrate the purpose of the notice. Each notice shall include the telephone number, physical address and mailing address of the owner, operator, or designee of the public water system as a source of additional information concerning the notice. Where appropriate, the notice shall be multilingual.

(e) Mandatory health effects language: When providing the information on potential adverse health effects required by paragraph (d) of this section in notices of violation of maximum contaminant levels or treatment technique requirements, or notices of the granting or the continued existence of exemptions or variances, or notices of failure to comply with a variance or exemption schedule, the owner or operator of a public water system shall include the language specified below for each

contaminant. (If language for a particular contaminant is nor specified below at the time notice is required, this paragraph does not apply).

(1) Trichloroethylene. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that trichloroethylene is a health concern at certain levels of exposure. This chemical is a common metal cleaning and dry cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set forth the enforceable drinking water standard for trichloroethylene at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(2) Carbon Tetrachloride. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that carbon tetrachloride is a health concern at certain levels of exposure. This chemical was once a popular household cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set forth the enforceable drinking water standard for carbon tetrachloride at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(3) 1,2-Dichloroethane. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,2-dichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaning fluid for fats, oils, waxes and resins. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set forth the enforceable drinking water standard for 1,2-dichloroethane at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(4) Vinyl chloride. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that vinyl chloride is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been associated with significantly increased risks of cancer among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical has also been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set forth the enforceable drinking water standard for vinyl chloride at 0.002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and

laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(5) Benzene. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that benzene is a health concern at certain levels of exposure. This chemical is used as a solvent and degreaser of metals. It is also a major component of gasoline. Drinking water contamination generally results from leaking underground gasoline and petroleum tanks or improper waste disposal. This chemical has been associated with significantly increased risk of leukemia among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical has also been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set forth the enforceable drinking water standard for benzene at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(6) 1,1-Dichloroethylene. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,1-dichloroethylene is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals which cause adverse effects in laboratory animals also may cause adverse effects in humans who are exposed at lower levels over long periods of time. EPA has set forth the enforceable drinking water standard for 1,1-dichloroethylene at 0.007 parts per million (ppm) to reduce the risk of adverse health effects which have been observed in
laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(7) Para-dichlorobenzene. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that para-dichlorobenzene is a health concern at certain levels of exposure. This chemical is a component of deodorizers, mothballs, and pesticides. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed at high levels over

their lifetimes. Chemicals which cause adverse health effects in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for para-dichlorobenzene at 0.075 parts per million (ppm) to reduce the risk of these adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(8) 1,1,1-Trichloroethane. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,1,1-trichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaner and degreaser of metals. It generally get into drinking water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during their working careers also suffered damage to the liver, nervous system, and circulatory system. Chemicals which cause adverse effects among exposed industrial workers and in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for 1,1,1-trichloroethane at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(9) Total Coliforms. (To be used when there is a violation of Section1303-24(a), and not a violation of Section1303-24(b)): The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the presence of total coliforms is a possible health concern. Total coliforms are common in the environment and are generally not harmful themselves. The presence of these bacteria in drinking water, however, generally is a result of a problem with water treatment or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. EPA has set an enforceable drinking water standard for total coliforms to reduce the risk of these adverse health effects. Under this standard, no more than five percent (5%) of samples collected during a month can contain these bacteria, except that systems collecting fewer than forty (40) samples/month that have one total coliform-positive sample per month are not violating the standard. Drinking water which meets this standard is usually not associated with a health risk from disease-causing bacteria and should be considered safe. DPNR

recommends that consumers take the following precautions. [To be inserted by the public water system, according to instructions from DPNR]. For additional information, contact Public Water Supply Supervision, Department of Planning & Natural Resources, Division of Environmental Protection on either St. Thomas or St. Croix.

(10) Fecal Coliform/E. Coli. (To be used when there is a violation of Section1303-24(b) or both Section1303-24(a) and (b): The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the presence of fecal coliforms or E. coli is a serious health concern. Fecal coliforms and E. coli are generally not harmful themselves, but their presence in drinking water is serious because they are usually associated with sewage or animal wastes. The presence of these bacteria in drinking water is generally a result of a problem with water treatment or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. EPA has set an enforceable drinking water standard for fecal coliforms and E. coli to reduce the risk of these adverse health effects. Under this standard, all drinking water samples must be free of these bacteria. Drinking water which meets this standard is associated with little or none of this risk and should be considered safe. DPNR recommends that consumers take the following precautions. [To be inserted by the public water system, according to instructions from DPNR]. For additional information, contact Public Water Supply Supervision, Department of Planning & Natural Resources, Division of Environmental Protection on either St. Thomas or St. Croix.

(11) Turbidity. (To be used when there is a violation of Section1303-23(a) and (b)): The United States Environmental Protection Agency sets drinking water standards and has determined that turbidity is a potential health concern. Turbidity is the measure of the amount of suspended particles in drinking water. High levels of turbidity may interfere with disinfection measures, allowing harmful bacteria to remain in the water system. EPA has set an enforcement standard for turbidity to reduce the risk of adverse effects. Under this standard, all drinking water samples must not exceed one turbidity unit, as determined by a monthly average. Drinking water which meets this standard is associated with little or no risk of ineffective disinfection and should be considered safe. DPNR recommends that consumers take the following precautions [to be inserted by the public water system] for additional information, please call Public Water Supply Supervision, Department of Planning & Natural Resources, Division of Environmental Protection on either St. Thomas or St. Croix.

(12) Lead. The United States Environmental Protection Agency (EPA) sets drinking

water standards and has determined that lead is a health concern at certain exposure levels. Materials that contain lead have frequently been used in the construction of water supply distribution systems, and plumbing systems in private homes and other buildings. The most commonly found materials include service lines, pipes, brass and bronze fixtures, and solders and fluxes. Lead in these materials can contaminate drinking water as a result of the corrosion that takes place when water comes into contact with those materials. Lead can cause a variety of adverse health effects in humans. At relatively low levels of exposure, these effects may include interference with red blood cell chemistry, delays in normal physical and mental development in babies and young children, slight deficits in the attention span, hearing, and learning abilities of children, and slight increases in the blood pressure of some adults. EPA's national primary drinking water regulation requires all public water systems to optimize corrosion control to minimize lead contamination resulting from the corrosion of plumbing materials. Public water systems serving 50,000 people or fewer that have lead concentrations below 15 parts per billion (ppb) in more than ninety percent (90%) of tap water samples (the EPA "action level") have optimized their corrosion control treatment. Any water system that exceeds the action level must also monitor their source water to determine whether treatment to remove lead in source water is needed. Any water system that continues to exceed the action level after installation of corrosion control and/or source water treatment must eventually replace all lead service lines contributing in excess of 15 ppb of lead to drinking water. Any water system that exceeds the action level must also undertake a public education program to inform consumers of ways they can reduce their exposure to potentially high levels of lead in drinking water.

(13) Copper. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that copper is a health concern at certain exposure levels. Copper, a reddish-brown metal, is often used to plumb residential and commercial structures that are connected to water distribution systems. Copper contaminating drinking water as a corrosion by-product occurs as the result of the corrosion of copper pipes that remain in contact with water for a prolonged period of time. Copper is an essential nutrient, but at high doses it has been shown to cause stomach and intestinal distress, liver and kidney damage, and anemia. Persons with Wilson's disease may be at a higher risk of health effects due to copper than the general public. EPA's national primary drinking water regulation requires all public water systems to install optimal corrosion control to minimize copper contamination resulting from the corrosion of plumbing materials. Public water systems serving 50,000 people or fewer that have copper concentrations below 1.3 parts per million (ppm) in more than ninety percent (90%) of tap water samples (the EPA "action level") are not required to install or improve their treatment. Any water system that exceeds the action level must also monitor their source water to determine whether treatment to remove copper in source water is needed.

(14) Asbestos. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that asbestos fibers greater than 10 micrometers in length are a health concern at certain levels of exposure. Asbestos is a naturally occurring mineral. Most asbestos fibers in drinking water are less than 10 micrometers in length and occur in drinking water from natural sources and from corroded asbestos-cement pipes in the distribution system. The major uses of asbestos were in the production of cements, floor tiles, paper products, paint, and caulking; in transportation-related applications; and in the production of textiles and plastics. Asbestos was once a popular insulating and fire retardant material. Inhalation studies have shown that various forms of asbestos have produced lung tumors in laboratory animals. The available information on the risk of developing gastrointestinal tract cancer associated with the ingestion of asbestos from drinking water is limited. Ingestion of intermediate-range chrysotile asbestos fibers greater than 10 micrometers in length is associated with causing benign tumors in male rats. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for asbestos at 7 million long fibers per liter to reduce the potential risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to asbestos.

(15) Barium. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that barium is a health concern at certain levels of exposure. This inorganic chemical occurs naturally in some aquifers that serve as sources of ground water. It is also used in oil and gas drilling muds, automotive paints, bricks, tiles and jet fuels. It generally gets into drinking water after dissolving from naturally occurring minerals in the ground. This chemical may damage the heart and cardiovascular system, and is associated with high blood pressure in laboratory animals such as rats exposed to high levels during their lifetimes. In humans, EPA believes that effects from barium on blood pressure should not occur below 2 parts per million (ppm) in drinking water. EPA has set the drinking water standard for barium at 2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to barium.

(16) Cadmium. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that cadmium is a health concern at certain levels of exposure. Food and the smoking of tobacco are common sources of general exposure. This inorganic metal is a contaminant in the metals used to galvanize pipe. It generally gets into water by corrosion of galvanized pipes or by improper waste disposal. This chemical has been shown to damage the kidney in animals such as rats and mice

when the animals are exposed at high levels over their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the kidney. EPA has set the drinking water standard for cadmium at 0.005 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to cadmium.

(17) Chromium. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that chromium is a health concern at certain levels of exposure. This inorganic metal occurs naturally in the ground and is often used in the electroplating of metals. It generally gets into water from runoff from old mining operations and improper waste disposal from plating operations. This chemical has been shown to damage the kidney, nervous system, and the circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels. Some humans who were exposed to high levels of this chemical suffered liver and kidney damage, dermatitis and respiratory problems. EPA has set the drinking water standard for chromium at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to chromium.

(18) Mercury. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that mercury is a health concern at certain levels of exposure. This inorganic metal is used in electrical equipment and some water pumps. It usually gets into water as a result of improper waste disposal. This chemical has been shown to damage the kidney of laboratory animals such as rats when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for mercury at 0.002 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to mercury.

(19) Nitrate. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that nitrate poses an acute health concern at certain levels of exposure. Nitrate is used in fertilizer and is found in sewage and wastes from human and/or farm animals and generally gets into drinking water from those activities. Excessive levels of nitrate in drinking water have caused serious illness and sometimes death in infants under six months of age. The serious illness in infants is caused because nitrate is converted to nitrite in the body. Nitrite interferes with the oxygen carrying capacity of the child's blood. This is an acute disease in that symptoms can develop rapidly in infants. In most cases, a health deteriorates over a period of days. Symptoms include shortness of breath and blueness of the skin. Clearly, expert medical advice should be sought immediately if these symptoms occur. The purpose of this notice is to

encourage parents and other responsible parties to provide infants with an alternate source of drinking water. Local and State health authorities are the best source for information concerning alternate sources of drinking water for infants. EPA has set the drinking water standard at 10 parts per million (ppm) for nitrate to protect against the risk of these adverse effects. EPA has also set a drinking water standard for nitrite at 1 ppm. To allow for the fact that the toxicity of nitrate and nitrite are additive, EPA has also established a standard for the sum of nitrate and nitrite at 10 ppm. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to nitrate.

(20) Nitrite. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that nitrite poses an acute health concern at certain levels of exposure. This inorganic chemical is used in fertilizers and is found in sewage and wastes from humans and/or farm animals and generally gets into drinking water as a result of those activities. While excessive levels of nitrite in drinking water have not been observed, other sources of nitrite have caused serious illness and sometimes death in infants under six months of age. The serious illness in infants is caused because nitrite interferes with the oxygen carrying capacity of the child's blood. This is an acute disease in that symptoms can develop rapidly. However, in most cases, health deteriorates over a period of days. Symptoms include shortness of breath and blueness of the skin. Clearly, expert medical advice should be sought immediately if these symptoms occur. The purpose of this notice is to encourage parents and other responsible parties to provide infants with an alternate source of drinking water. Local and State health authorities are the best source for information concerning alternate sources of drinking water for infants. EPA has set the drinking water standard at 1 part per million (ppm) for nitrite to protect against the risk of these adverse effects. EPA has also set a drinking water standard for nitrate (converted to nitrite in humans) at 10 ppm and for the sum of nitrate and nitrite at 10 ppm. Drinking water that meets the EPA standard is

associated with little to none of this risk and is considered safe with respect to nitrite.

(21) Selenium. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that selenium is a health concern at certain high levels of exposure. Selenium is also an essential nutrient at low levels of exposure. This inorganic chemical is found naturally in food and soils and is used in electronics, photocopy operations, the manufacture of glass, chemicals, drugs, and as a fungicide and a feed additive. In humans, exposure to high levels of selenium over a long period of time has resulted in a number of adverse health effects, including a loss of feeling and control in the arms and legs. EPA has set the drinking water standard for selenium at 0.05 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk

and is considered safe with respect to selenium.

(22) Acrylamide. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that acrylamide is a health concern at certain levels of exposure. Polymers made from acrylamide are sometimes used to treat water supplies to remove particulate contaminants. Acrylamide has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. Sufficiently large doses of acrylamide are known to cause neurological injury. EPA has set the drinking water standard for acrylamide using a treatment technique to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. This treatment technique limits the amount of acrylamide in the polymer and the amount of the polymer which may be added to drinking water to remove particulates. Drinking water systems which comply with this treatment

technique have little to no risk and are considered safe with respect to acrylamide.

(23) Alachlor. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that alachlor is a health concern at certain levels of exposure. This organic chemical is a widely used pesticide. When soil and climatic conditions are favorable, alachlor may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for alachlor at 0.002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to alachlor.

(24) Aldicarb. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that aldicarb is a health concern at certain levels of exposure. Aldicarb is a widely used pesticide. Under certain soil and climatic conditions (e.g., sandy soil and high rainfall), aldicarb may leach into ground water after normal agricultural applications to crops such as potatoes or peanuts or may enter drinking water supplies as a result of surface runoff. This chemical has been shown to damage the nervous system in laboratory animals such as rats and dogs exposed to high levels. EPA has set the drinking water standard for aldicarb at 0.003 parts per million (ppm) to protect against the risk of adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with

respect to aldicarb.

(25) Aldicarb sulfoxide. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that aldicarb sulfoxide is a health concern at certain levels of exposure. Aldicarb is a widely used pesticide. Aldicarb sulfoxide in ground water is primarily a breakdown product of aldicarb. Under certain soil and climatic conditions (e.g., sandy soil and high rainfall), aldicarb sulfoxide may leach into ground water after normal agricultural applications to crops such as potatoes or peanuts or may enter drinking water supplies as a result of surface runoff. This chemical has been shown to damage the nervous system in laboratory animals such as rats and dogs exposed to high levels. EPA has set the drinking water standard for aldicarb sulfoxide at 0.004 parts per million (ppm) to protect against the risk of adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to aldicarb sulfoxide.

(26) Aldicarb sulfone. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that aldicarb sulfone is a health concern at certain levels of exposure. Aldicarb is a widely used pesticide. Aldicarb sulfone is formed from the breakdown of aldicarb and is considered for registration as a pesticide under the name aldoxycarb. Under certain soil and climatic conditions (e.g., sandy soil and high rainfall), aldicarb sulfone may leach into ground water after normal agricultural applications to crops such as potatoes or peanuts or may enter drinking water supplies as a result of surface runoff. This chemical has been shown to damage the nervous system in laboratory animals such as rats and dogs exposed to high levels. EPA has set the drinking water standard for aldicarb sulfone at 0.002 parts per million (ppm) to protect against the risk of adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to aldicarb sulfone.

(27) Atrazine. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that atrazine is a health concern at certain levels of exposure. This organic chemical is a herbicide. When soil and climatic conditions are favorable, atrazine may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to affect offspring of rats and the heart of dogs. EPA has set the drinking water standard for atrazine at 0.003 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to atrazine.

(28) Carbofuran. The United States Environmental Protection Agency (EPA) sets

drinking water standards and has determined that carbofuran is a health concern at certain levels of exposure. This organic chemical is a pesticide. When soil and climatic conditions are favorable, carbofuran may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the nervous and reproductive systems of laboratory animals such as rats and mice exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical during their working careers also suffered damage to the nervous system. Effects on the nervous system are generally rapidly reversible. EPA has set the drinking water standard for carbofuran at 0.04 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to carbofuran.

(29) Chlordane. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that chlordane is a health concern at certain levels of exposure. This organic chemical is a pesticide used to control termites. Chlordane is not very mobile in soils. It usually gets into drinking water after application near water supply intakes or wells. This chemical has been shown to cause to cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for chlordane at 0.002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to chlordane.

(30) Dibromochloropropane (DBCP). The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that DBCP is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, dibromochloropropane may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for DBCP at 0.0002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to DBCP.

(31) o-Dichlorobenzene. The United States Environmental Protection Agency (EPA)

sets drinking water standards and has determined that o-dichlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a solvent in the production of pesticides and dyes. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney and the blood cells of laboratory animals such as rats and mice exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the liver, nervous system, and circulatory system. EPA has set the drinking water standard for o-dichlorobenzene at 0.6 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to o-dichlorobenzene.

(32) cis-1,2-Dichloroethylene. The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that cis-1,2-dichloroethylene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and intermediate in chemical production. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and circulatory system of laboratory animals such as rats and mice when exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set the drinking water standard for cis-1,2-dichloroethylene at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to cis-1,2-dichloroethylene.

(33) trans-1,2-Dichloroethylene. The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that trans-1,2-dichloroethylene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and intermediate in chemical production. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and the circulatory system of laboratory animals such as rats and mice when exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set the drinking water standard for trans-1,2-dichloroethylene at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to trans-1,2-dichloroethylene.

(34) 1,2-Dichloropropane. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,2-dichloropropane is a health concern at certain levels of exposure. This organic chemical is used as a solvent and

pesticide. When soil and climatic conditions are favorable, 1,2-dichloropropane may get into drinking water by runoff into surface water or by leaching into ground water. It may also get into drinking water through improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for 1,2-dichloropropane at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to 1,2-dichloropropane.

(35) 2,4-D. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 2,4-D is a health concern at certain levels of exposure. This organic chemical is used as a herbicide and to control algae in reservoirs. When soil and climatic conditions are favorable, 2,4-D may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the liver and kidney of laboratory animals such as rats exposed at high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set the drinking water standard for 2,4-D at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to 2,4-D.

(36) Epichlorohydrin. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that epichlorohydrin is a health concern at certain levels of exposure. Polymers made from epichlorohydrin are sometimes used in the treatment of water supplies as a flocculent to remove particulates. Epichlorohydrin generally gets into drinking water by improper use of these polymers. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for epichlorohydrin using a treatment technique to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. This treatment technique limits the amount of epichlorohydrin in the polymer and the amount of the polymer which may be added to drinking water as a flocculent to remove particulates. Drinking water systems which comply with this treatment technique have little to no risk and are considered safe with respect to epichlorohydrin.

(37) Ethylbenzene. The United States Environmental Protection Agency (EPA) sets

drinking water standards and has determined ethylbenzene is a health concern at certain levels of exposure. This organic chemical is a major component of gasoline. It generally gets into water by improper waste disposal or leaking gasoline tanks. This chemical has been shown to damage the kidney, liver, and nervous system of laboratory animals such as rats exposed to high levels during their lifetimes. EPA has set the drinking water standard for ethylbenzene at 0.7 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to ethylbenzene.

(38) Ethylene dibromide (EDB). The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that EDB is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, EDB may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for EDB at 0.00005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to EDB.

(39) Heptachlor. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that heptachlor is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, heptachlor may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standards for heptachlor at 0.0004 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to heptachlor.

(40) Heptachlor epoxide. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that heptachlor epoxide is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, heptachlor epoxide may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice

when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standards for heptachlor epoxide at 0.0002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to heptachlor epoxide.

(41) Lindane. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that lindane is a health concern at certain levels of exposure. This organic chemical is used as a pesticide. When soil and climatic conditions are favorable, lindane may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the liver, kidney, nervous system, and immune system of laboratory animals such as rats, mice and dogs exposed at high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system and circulatory system. EPA has established the drinking water standard for lindane at 0.0002 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to lindane.

(42) Methoxychlor. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that methoxychlor is a health concern at certain levels of exposure. This organic chemical is used as a pesticide. When soil and climatic conditions are favorable, methoxychlor may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the liver, kidney, nervous system, and reproductive system of laboratory animals such as rats exposed at high levels during their lifetimes. It has also been shown to produce growth retardation in rats. EPA has set the drinking water standard for methoxychlor at 0.04 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to methoxychlor.

(43) Monochlorobenzene. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that monochlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a solvent. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney and nervous system of laboratory animals such as rats and mice exposed to high levels during their lifetimes. EPA has set the drinking water standard for monochlorobenzene at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with

little to none of this risk and is considered safe with respect to monochlorobenzene.

(44) Polychlorinated biphenyls (PCBs). The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that polychlorinated biphenyls (PCBs) are a health concern at certain levels of exposure. These organic chemicals were once widely used in electrical transformers and other industrial equipment. They generally get into drinking water by improper waste disposal or leaking electrical industrial equipment. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for PCBs at 0.0005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to PCBs.

(45) Pentachlorophenol. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that pentachlorophenol is a health concern at certain levels of exposure. This organic chemical is used as a wood preservative, herbicide, disinfectant, and defoliant. It generally gets into drinking water by runoff into surface water or leaching into ground water. This chemical has been shown to produce adverse reproductive effects and to damage the liver and kidneys of laboratory animals such as rats exposed to high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the liver and kidneys. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for pentachlorophenol at 0.001 parts per million (ppm) to protect against the risk of cancer or other adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to pentachlorophenol.

(46) Styrene. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that styrene is a health concern at certain levels of exposure. This organic chemical is commonly used to make plastics and is sometimes a component of resins used for drinking water treatment. Styrene may get into drinking water from improper waste disposal. This chemical has been shown to damage the liver and nervous system in laboratory animals when exposed at high levels during their lifetimes. EPA has set the drinking water standard for styrene at 0.1 parts per million (ppm) to protect against the risk of

these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to styrene.

(47) Tetrachloroethylene. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that tetrachloroethylene is a health concern at certain levels of exposure. This organic chemical has been a popular solvent, particularly for dry cleaning. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for tetrachloroethylene at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to tetrachloroethylene.

(48) Toluene. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that toluene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and in the manufacture of gasoline for airplanes. It generally gets into water by improper waste disposal or leaking underground storage tanks. This chemical has been shown to damage the kidney, nervous system, and circulatory system of laboratory animals such as rats and mice exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the liver, kidney and nervous system. EPA has set the drinking water standard for toluene at 1 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to toluene.

(49) Toxaphene. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that toxaphene is a health concern at certain levels of exposure. This organic chemical was once a pesticide widely used on cotton, corn, soybeans, pineapples and other crops. When soil and climatic conditions are favorable, toxaphene may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for toxaphene at 0.003 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is

considered safe with respect to toxaphene.

(50) 2,4,5-TP. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 2,4,5-TP is a health concern at certain levels of exposure. This organic chemical is used as a herbicide. When soil and climatic conditions are favorable, 2,4,5-TP may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the liver and kidney of laboratory animals such as rats and dogs exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the nervous system. EPA has set the drinking water standard for 2,4,5-TP at 0.05 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to 2,4,5-TP.

(51) Xylenes. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that xylene is a health concern at certain levels of exposure. This organic chemical is used in the manufacture of gasoline for airplanes and as a solvent for pesticides, and as a cleaner and degreaser of metals. It usually gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney and nervous system of laboratory animals such as rats and dogs exposed to high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set the drinking water standard for xylene at 10 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to xylene.

(52) Antimony. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that antimony is a health concern at certain levels of exposure. This inorganic chemical occurs naturally in soils, ground water and surface waters and is often used in the flame retardant industry. It is also used in ceramics, glass, batteries, fireworks and explosives. It may get into drinking water through natural weathering of rock, industrial production, municipal waste disposal or manufacturing processes. This chemical has been shown to decrease longevity, and altered blood levels of cholesterol and glucose in laboratory animals such as rats exposed to high levels during their lifetimes. EPA has set the drinking water standard for antimony at 0.006 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to antimony.

(53) Beryllium. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that beryllium is a health concern at certain levels of exposure. This inorganic metal occurs naturally in soils, ground water and surface waters and is often used in electrical equipment and electrical components. It generally gets into water from runoff from mining operations, discharge from processing plants and improper waste disposal. Beryllium compounds have been associated with damage to the bones and lungs and induction of cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. There is limited evidence to suggest that beryllium may pose a cancer risk via drinking water exposure. Therefore, EPA based the health assessment on noncancer effects with an extra uncertainty factor to account for possible carcinogenicity. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for beryllium at 0.004 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to beryllium.

(54) Cyanide. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that cyanide is a health concern at certain levels of exposure. This inorganic chemical is used in electroplating, steel processing, plastics, synthetic fabrics and fertilizer products. It usually gets into water as a result of improper waste disposal. This chemical has been shown to damage the spleen, brain and liver of humans fatally poisoned with cyanide. EPA has set the drinking water standard for cyanide at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to cyanide.

(55) Nickel. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that nickel poses a health concern at certain levels of exposure. This inorganic metal occurs naturally in soils, ground water and surface waters and is often used in electroplating, stainless steel and alloy products. It generally gets into water from mining and refining operations. This chemical has been shown to damage the heart and liver in laboratory animals when the animals are exposed to high levels over their lifetimes. EPA has set the drinking water standard at 0.1 parts per million (ppm) for nickel to protect against the risk of these adverse effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to nickel.

(56) Thallium. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that thallium is a health concern at certain high levels of exposure. This inorganic metal is found naturally in soils and is used in

electronics, pharmaceuticals, and the manufacture of glass and alloys. This chemical has been shown to damage the kidney, liver, brain and intestines of laboratory animals when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for thallium at 0.002 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to thallium.

(57) Benzo[a]pyrene. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that benzo[a]pyrene is a health concern at certain levels of exposure. Cigarette smoke and charbroiled meats are common source of general exposure. The major source of benzo[a]pyrene in drinking water is the leaching from coal tar lining and sealants in water storage tanks. This chemical has been shown to cause cancer in animals such as rats and mice when the animals are exposed at high levels. EPA has set the drinking water standard for benzo[a]pyrene at 0.0002 parts per million (ppm) to protect against the risk of cancer. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to benzo[a]pyrene.

(58) Dalapon. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dalapon is a health concern at certain levels of exposure. This organic chemical is a widely used herbicide. It may get into drinking water after application to control grasses in crops, drainage ditches and along railroads. This chemical has been shown to cause damage to the kidney and liver in laboratory animals when the animals are exposed to high levels over their lifetimes. EPA has set the drinking water standard for dalapon at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to dalapon.

(59) Dichloromethane. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dichloromethane (methylene chloride) is a health concern at certain levels of exposure. This organic chemical is a widely used solvent. It is used in the manufacture of paint remover, as a metal degreaser and as an aerosol propellant. It generally gets into drinking water after improper discharge of waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for dichloromethane at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water

which meets this standard is associated with little to none of this risk and should be considered safe with respect to dichloromethane.

(60) Di (2-ethylhexyl)adipate. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that di(2-ethylhexyl)adipate is a health concern at certain levels of exposure. Di(2-ethylhexyl)adipate is a widely used plasticizer in a variety of products, including synthetic rubber, food packaging materials and cosmetics. It may get into drinking water after improper waste disposal. This chemical has been shown to damage liver and testes in laboratory animals such as rats and mice exposed to high levels. EPA has set the drinking water standard for di(2-ethylhexyl)adipate at 0.4 parts per million (ppm) to protect against the risk of adverse health effects. Drinking water which meets the EPA standards is associated with little to none of this risk and should be considered safe with respect to di(2-ethylhexyl)adipate.

(61) Di(2-ethylhexyl)phthalate. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that di(2-ethylhexyl)phthalate is a health concern at certain levels of exposure. di(2-ethylhexyl)phthalate is a widely used plasticizer, which is primarily used in the production of polyvinyl chloride (PVC) resins. It may get into drinking water after improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice exposed to high levels over their lifetimes. EPA has set the drinking water standard for di(2-ethylhexyl)phthalate at 0.004 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to di(2-ethylhexyl)phthalate.

(62) Dinoseb. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dinoseb is a health concern at certain levels of exposure. Dinoseb is a widely used pesticide and generally gets into drinking water after application on orchards, vineyards and other crops. This chemical has been shown to damage the thyroid and reproductive organs in laboratory animals such as rats exposed to high levels. EPA has set the drinking water standard for dinoseb at 0.007 parts per million (ppm) to protect against the risk of adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to dinoseb.

(63) Diquat. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that diquat is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control terrestrial and aquatic weeds. It may get into drinking water by runoff into surface water. This chemical has

been shown to damage the liver, kidney and gastrointestinal tract and causes cataract formation in laboratory animals such as dogs and rats exposed at high levels over their lifetimes. EPA has set the drinking water standard for diquat at 0.02 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to diquat.

(64) Endothall. The United States Environmental Protection Agency (EPA) has determined that endothall is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control terrestrial and aquatic weeds. It may get into water by runoff into surface water. This chemical has been shown to damage the liver, kidney, gastrointestinal tract and reproductive system of laboratory animals such as rats and mice exposed at high levels over their lifetimes. EPA has set the drinking water standard for endothall at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to endothall.

(65) Endrin. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that endrin is a health concern at certain levels of exposure. This organic chemical is a pesticide no longer registered for use in the United States. However, this chemical is persistent in treated soils and accumulates in sediments and aquatic and terrestrial biota. This chemical has been shown to cause damage to the liver, kidney and heart in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for endrin at 0.002 parts per million (ppm) to protect against the risk of these adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to endrin.

(66) Glyphosate. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that glyphosate is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control grasses and weeds. It may get into drinking water by runoff into surface water. This chemical has been shown to cause damage to the liver and kidneys in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for glyphosate at 0.7 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to glyphosate.

(67) Hexachlorobenzene. The United States Environmental Protection Agency (EPA)

sets drinking water standards and has determined that hexachlorobenzene is a health concern at certain levels of exposure. This organic chemical is produced as an impurity in the manufacture of certain solvents and pesticides. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels during their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for hexachlorobenzene at 0.001 parts per million (ppm) to protect against the risk of cancer and other adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to hexachlorobenzene.

(68) Hexachlorocyclopentadiene. The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that hexachlorocyclopentadiene is a health concern at certain levels of exposure. This organic chemical is used as an intermediate in the manufacture of pesticides and flame retardants. It may get into water by discharge from production facilities. This chemical has been shown to damage the kidney and the stomach of laboratory animals when exposed at high levels over their lifetimes. EPA has set the drinking water standard for hexachlorocyclopentadiene at 0.05 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to hexachlorocyclopentadiene.

(69) Oxamyl. The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that oxamyl is a health concern at certain levels of exposure. This organic chemical is used as a pesticide for the control of insects and other pests. It may get into drinking water by runoff into surface water or leaching into ground water. This chemical has been shown to damage the kidneys of laboratory animals such as rats when exposed at high levels over their lifetimes. EPA has set the drinking water standard for oxamyl at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to oxamyl.

(70) Picloram. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that picloram is a health concern at certain levels of exposure. This organic chemical is used as a pesticide for broadleaf weed control. It may get into drinking water by runoff into surface water or leaching into ground water as a result of pesticide application and improper waste disposal. This

chemical has been shown to cause damage to the kidneys and liver in laboratory animals such as rats when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for picloram at 0.5 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to picloram.

(71) Simazine. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that simazine is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control annual grasses and broadleaf weeds. It may leach into ground water or runs off into surface water after application. This chemical may cause cancer in laboratory animals such as rats and mice exposed at high levels during their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for simazine at 0.004 parts per million (ppm) to reduce the risk of cancer or other adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to simazine.

(72) 1,2,4-Trichlorobenzene. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,2,4-trichlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a dye carrier and as a precursor in herbicide manufacture. It generally gets into drinking water by discharges from industrial activities. This chemical has been shown to cause damage to several organs, including the adrenal glands. EPA has set the drinking water standard for 1,2,4-trichlorobenzene at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to 1,2,4-trichlorobenzene.

(73) 1,1,2-Trichloroethane. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined 1,1,2-trichloroethane is a health concern at certain levels of exposure. This organic chemical is an intermediate in the production of 1,1-dichloroethylene. It generally gets into water by industrial discharge of wastes. This chemical has been shown to damage the kidney and liver of laboratory animals such as rats exposed to high levels during their lifetimes. EPA has set the drinking water standard for 1,1,2-trichloroethane at 0.005 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to 1,1,2-trichloroethane.

(74) 2,3,7,8-TCDD (Dioxin). The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dioxin is a health concern at certain levels of exposure. This organic chemical is an impurity in the production of some pesticides. It may get into drinking water by industrial discharge of wastes. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for dioxin at 0.00000003 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe with respect to dioxin.

(f) Public Notice Requirements Pertaining to Fluoride:

(1) Whenever a public water system has violated the maximum contaminant level for fluoride, is subject to a variance or exemption from maximum contaminant levels for fluoride or has failed to comply with variance and exemption schedules for the maximum contaminant level for fluoride, the system shall issue notice to persons served by the system that may be affected by fluoride contamination of their drinking water.

(2) Manner of Notice. Notice shall be given by mail with water bill or in a separate mailing annually, and to all new billing units at the time service begins.

(3) General Content of Notice.

(i) Notices issued under this section shall provide a clear and readily understandable explanation of the potential source of fluoride in drinking water, potential adverse health effects, reasonably available methods of mitigating known or potential fluoride content in drinking water, any steps the water system is taking to mitigate fluoride content in drinking water, and the necessity for seeking alternative water supplies,if any. Use of the mandatory language in paragraph (f)(4) of this section will be sufficient to explain potential adverse health effects.

(ii) Each notice shall be conspicuous and shall not contain unduly technical language, unduly small print, or similar problems that frustrate the purpose of the notice. Each notice shall contain the telephone number, physical address and mailing address of the owner, operator, or designee of the public water system as a source of the of additional information regarding the notice. Where appropriate,

the notice shall be multilingual.

(iii) Each notice shall advise that the only way one can be sure of the amount of fluoride in the household water is to have the water tested by a competent laboratory. As appropriate, the notice should provide information on testing.

(4) Mandatory Health Effects Information. When providing the information in the public notices required under paragraph (f)(3) on the potential adverse health effects of fluoride in drinking water, the owner or operator of the water system shall include the following specific language in the notice:

The U.S. Environmental Protection Agency requires that we send you this notice on the level of fluoride in your drinking water. The drinking water in your community has a fluoride concentration in excess of the secondary maximum contaminant level of 2.0 mg/l. The water system is also required to include the actual result which triggered the notification.

Federal regulations require that fluoride, which occurs naturally in your water supply, not exceed a concentration of 4.0 mg/l in drinking water. This is an enforceable standard called a Maximum Contaminant Level (MCL), and it has been established to protect the public health. Exposure to drinking water levels above 4.0 mg/l for many years may result in some cases of crippling skeletal fluorosis, which is a serious bone disorder.

Federal law also requires that we notify you when monitoring indicates that the fluoride in your drinking water exceeds 2.0 mg/l. This is intended to alert families about dental problems that might affect children under nine years of age. The fluoride concentration of your water exceeds this federal guideline.

Fluoride in children's drinking water at levels of approximately 1.0 mg/l reduces the number of dental cavities. However, some children exposed to levels of fluoride greater than about 2.0 mg/l may develop dental fluorosis. Dental fluorosis, in its moderate and severe forms, is a brown staining and/or pitting of the permanent teeth.

Because dental fluorosis occurs only when developing teeth (before they erupt from the gums) are exposed to elevated fluoride levels, households without children are not expected to be affected by this level of fluoride. Families with children under the age of nine are encouraged to seek other sources of drinking water for their children to avoid the possibility of staining and pitting.

Your water supplier can lower the concentration of fluoride in your water so that you will still receive the benefits of preventing cavities while the possibility of stained and pitted teeth is minimized. Removal of fluoride may increase your water costs. Treatment systems are also commercially available for home use. Information on such systems is available at the address given below. Low fluoride bottled drinking water that would meet all standards is also commercially available.

For further information, contact: [*insert a person's name, address, and telephone number for consumers to contact the owner or operator of the public water supply.*]

(g) Public Notice Requirements Pertaining to Lead:

(1) Applicability of Public Notice Requirement. Except as provided in paragraph (g)(2), by June 19, 1988, the owner or operator of each community water system and each non transient water system shall issue notice to persons served by the system that may be affected by lead contamination of their drinking water.

The owner or operator shall provide notice under this section even if there is no violation of the national primary drinking water regulation for lead.

Where the Commissioner determines the necessity, subsequent notices may be required.

(2) Notice under paragraph (g)(1) is not required if the system demonstrates to the Department that the water system, including the residential and nonresidential portions connected to the water system, are lead free. For the purposes of this paragraph, the term "lead free" when used with respect to solders and flux refers to solders and flux containing not more than 0.2 percent lead, and when used with respect to pipes and pipe fittings refers to pipes and pipe fitting containing not more than 8.0 percent lead.

(3) Manner of notice. Notice shall be given to persons served by the system either by: (a) three newspaper notices (one for each of three consecutive months and the first no later than June 19, 1988); or (b) once by mail notice with the water bill or in a separate mailing by June 19, 1988; or

(c) once by hand delivery by June 19, 1988. For non-transient, non-community water systems, notice may be given by continuous posting. If posting is used, the notice shall be posted in a conspicuous place in the area served by the system, and shall start no later than June 19, 1988, and shall continue for three months.

(4) General content of notice.

(i) Notices issued under this section shall provide a clear and readily understandable explanation of the potential sources of lead in drinking water, potential adverse health effects, reasonably available methods of mitigating known or potential lead content in drinking water, any steps the water system is taking to mitigate lead content in drinking water, and the necessity for seeking alternative water supplies, if any. Use of the mandatory language in paragraph (g)(5) in the notice will be sufficient to explain potential adverse health effects.

(ii) Each notice shall also include specific advice on how to determine if materials containing lead have been used in homes or the water distribution system and how to minimize exposure to water likely to contain high levels of lead. Each notice shall be conspicuous and shall not contain unduly technical language, unduly small print, or similar problems that frustrate the purpose of the notice. Each notice shall contain the telephone number, physical address and mailing address of the owner, operator, or designee of the public water system as a source of additional information regarding the notice. Where appropriate, the notice shall be multilingual.

(iii) Each notice shall advise persons served by the system to use only the cold water faucet for drinking and for use in cooking or preparing baby formula, and to run the water until it gets as cold as it is going to get before each use. If there has recently been major water use in the household, such as showering or bathing, flushing toilets, or doing laundry with cold water, flushing the pipes should take five (5) to thirty (30) seconds; if no such use has recently taken place, flushing the pipes could take as long as several minutes.

(iv) Each notice shall advise persons served by the system to check to see if lead pipes, solder, or flux have been used in plumbing that provides tap water and to ensure that new plumbing and plumbing repairs use lead-free materials.

(v) Each notice shall also advise that the only way one can be sure of the amount of lead in the household water is to have the water tested by a competent laboratory. Testing is especially important to apartment dwellers because flushing may not be effective in high-rise buildings that have lead-soldered central piping. As appropriate, the notice should provide information on testing.

(5) Mandatory Health Effects Information. When providing the information in the public notices required under paragraph (f)(4) on the potential adverse effects of lead in drinking water, the owner or operator of the water system shall include the following

specific language in the notice:

> The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that lead is a health concern at certain levels of exposure. There is currently a standard of 0.050 parts per million (ppm). Based on a new health information, EPA is likely to lower this standard significantly.
>
> Part of the purpose of this notice is to inform you of the potential adverse health effects of lead. This is being done even though your water may not be in violation of the current standard.
>
> EPA and others are concerned about lead in drinking water. Too much lead in the human body can cause serious damage to the brain, kidneys, nervous system, and red blood cells. The greatest risk, even with short-term exposure, is to young children and pregnant women.
>
> Lead levels in your drinking water are likely to be highest:
>
> * if your home or water system has lead pipes, or
> * if your home has copper pipes with lead solder,
> * your home is less than five years old, or
> * you have soft or acidic water, or
> * your water sits in the pipes for several hours.

(6) Notice by the Virgin Islands. The Commissioner may give the public notice as required by this section on behalf of the owner or operator of a water system. However, the owner or operator of the water system remains legally responsible for ensuring that the requirements of this section are met.

(h) Reporting and Public Notification for Certain Unregulated Contaminants:

(1) The requirements of this section apply only to the contaminants listed in Section 1303-57(e)

(2) The owner or operator of a community water system or non-transient system who is required to monitor under Section 1303-57 shall send a copy of the results of the monitoring, and any public notice under paragraph (d) of this section, within thirty (30) days after receipt of the monitoring results, to the Department. For each sample analyzed under Section 1303-57, the following information shall be furnished:

(i) Results of all analytical methods, including negatives;

(ii) Name and address of the system that supplied the samples;

(iii) Contaminant(s);

(iv) Analytical method(s) used;

(v) Date of sample; and

(vi) Date of analysis.

(3) The owner or operator shall notify persons served by the system of the availability of the results of sampling conducted under section 1303-57 by including a notice in the first set of water bills issued by the system after the receipt of the results or written notice within three (3) months. The notice shall identify a person and shall supply a telephone number and address to contact for information on the monitoring results. For surface water systems, public notification is required only after the first quarter's monitoring and shall include a statement that additional monitoring will be conducted for three (3) more quarters with the results available upon request.

(i) Public Notification by the Department: DPNR may give notice to the public required by Section 1303-52 on behalf of the owner or operator of a public water system any time a MCL or non-monitoring violation occurs, as long as DPNR complies with the requirements of this section. In any case in which DPNR gives notification to the public, the owner and operator of the public water system remains legally responsible for insuring that the requirements of Section 1303-52 are met.

The owner or operator of the public water system is also liable for reimbursement of all expenses incurred by DPNR in publishing this public notice. This reimbursement may be collected through an Administrative Order issued by the Commissioner.

Section1303-53. Record maintenance

Any system subject to the requirements of this chapter and the Lead and Copper Rule shall retain on its premises or at a convenient location near its premises the following records:

(a) Records of bacteriological analyses made pursuant to this chapter shall be kept for not less than five (5) years. Records of chemical analyses made pursuant to this chapter shall be kept for not less than ten (10) 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, a check sample, raw or process water sample or other special purpose sample;

(3) Date of analysis;

(4) Laboratory and person responsible for performing analysis;

(5) The analytical technique/method used; and

(6) The results of the analysis.

(b) Records of action taken by the system to correct violations of primary drinking water regulations shall be kept for a period not less than three (3) years after the last action taken with respect to the particular violation involved.

(c) 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 (10) years after completion of the sanitary survey.

(d) 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) (1) Records of the currently applicable or most recent DPNR determinations, including all supporting information and an explanation of the technical basis for each decision, made under the following provisions of Section1303, The Lead and Copper Rule for the control of lead and copper:

(i) Section 1303-60(b)-- decisions to require a water system to conduct corrosion control treatment studies;

(ii) Section 1303-60 (d) -- designations of optimal corrosion control treatment;

(iii) Section 1303-60(f) -- designations of optimal water quality parameters;

(iv) Section 1303-60(h) -- decisions to modify a public water system's optimal corrosion control treatmentor water quality parameters;

(v) Section 1303-61(b) (2) -- determinations of source water treatment; and

(vi) Section 1303-61(b)(4) -- designations of maximum permissible lead and copper concentrations in source water.

(vii) Section 1303-62(e) -- determinations that a system does not control entire lead service lines.

(viii) Section 1303-62-(f) -- determinations establishing a shorter lead service line replacement schedule than required by Section1303-62

(2) Records of reports and any other information submitted by PWSS under Section1303-51;

(3) Records of the territory activities, and the results thereof, to verify compliance with DPNR determinations issued under Section1303-60(f), 1303-60(h), 1303-61(b)(2), and 1303-61(b)(4) and compliance with lead service line replacement schedules under Section1303-62.

(4) Records of each system's currently applicable or most recently designated monitoring requirements. If, for the records identified in Section1303-53(d)(8)(i) through 1303-53(d)(8)(viii) above, no change is made to a DPNR decision during a twelve (12) year retention period, DPNR shall maintain the record until a new decision, determination or designation has been issued.

Section 1303-54. Special monitoring for organic contaminants

(a) The Commissioner may designate, by publication, public water systems which are required to take water samples, provide information, and in appropriate cases analyze water samples for the purpose of providing information on contamination of drinking water sources and of treated water by organic chemicals.

(b) The Commissioner shall provide to each public system designated pursuant to paragraph (a) of this section a written schedule for the sampling of source water or treated water by the system, with written instructions for the sampling methods and for handling of samples. The schedule may designate the locations or types of locations to be sampled.

(c) In cases where the public water system has a laboratory capable of analyzing samples for constituents specified by the Commissioner, he may require analyses to be made by the public

water system for submission to DPNR. If the Commissioner requires the analyses to be made by the public water system, he shall provide the system with written instructions as to the analytical procedures to be followed, or with references to technical documents describing the analytical procedures.

(d) Public water systems designated by the Commissioner pursuant to paragraph (a) of this section shall provide to DPNR upon request, information to be used in the evaluation of analytical results, including records of previous monitoring and analyses, information on possible sources of contamination and treatment techniques used by the system.

Section 1303-55. Special monitoring for sodium

(a) Suppliers of water for community public water systems shall collect and analyze one sample per plant at the entry point of the distribution system for the determination of sodium concentration levels; samples must be collected and analyzed annually for systems utilizing surface water sources in whole or in part, and at least every three (3) years for systems utilizing solely ground water sources. The minimum number of samples required to be taken by the systems shall be based on the number of treatment plants used by the system, except that multiple wells drawing raw water from a single aquifer may, with the Commissioner's approval be considered one treatment plant for determining the minimum number of samples. The supplier of water may be required by DPNR to collect and analyze water samples for sodium more frequently in locations where the sodium content is variable.

(b) The supplier of water shall report to DPNR the results of the analyses for sodium within the first ten (10) days of the month following the month in which the sample results were received or within the first ten (10) days following the end of the required monitoring periods as stipulated by DPNR whichever of these is first. If more than annual sampling is required the supplier shall report the average sodium concentration within ten (10) days of the month following the month in which the analytical results of the last sample used for the annual average was received. The supplier shall report the results to DPNR.

(c) The supplier of water shall notify the public health officials of the sodium levels by written notice by direct mail within three (3) months. A copy of each notice required to be

provided by this paragraph shall be sent to DCCA within ten (10) days of its issuance.

(d) Analyses for sodium shall be conducted as directed in Section 1303-43(k)(1).

Section 1303-56. Special monitoring for corrosivity characteristics

(a) Suppliers of water for community public water systems shall collect samples from a representative entry point to the water distribution system for the purpose of analysis to determine the corrosivity characteristics of the water.

(1) The Supplier shall collect two (2) samples per plant for analyses for each plant using surface water sources wholly or in part or more if required by DPNR; one (1) during mid-winter and one (1) during mid-summer. The supplier of the water shall collect one (1) sample per plant for analysis for each plant using ground water sources or more if required by DPNR. The minimum number of samples required to be taken by the system shall be based on the number of treatment plants used by the system, except that multiple wells drawing raw water from a single aquifer may, with DPNR approval, be considered one treatment plant for determining the minimum number of samples.

(2) Determination of the corrosivity characteristics of water shall include measurement of Ph, calcium hardness, alkalinity, temperature, total dissolved solids (total filterable residue), and calculation of the Langelier index in accordance with paragraph (c) of this section. The determination of corrosivity characteristics shall only include one round of sampling (two (2) samples per plant for surface water sources and one sample per plant for ground water sources). However, DPNR may require more frequent monitoring as appropriate. In addition, DPNR have the discretion to require monitoring for additional parameters which may indicate corrosivity characteristics, such as sulfates and chlorides. In certain cases, the Aggressive

Index, as described in paragraph (c), can be used instead of the Langelier Index; the supplier shall request in writing to DPNR and DPNR will make this determination.

(b) The supplier of water shall report to DPNR the results of the analyses for the corrosivity characteristics within the first ten (10) days of the month following the month in which the sample results were received. If more frequent sampling is required by DPNR, the supplier can accumulate the data and shall report each value within ten (10) days of the month following the month in which the analytical results of the last sample was received.

(c) Analyses conducted to determine the corrosivity of the water shall be made in accordance to the following methods:

(1) Langelier Index - "Standard Methods for the Examination of Water and Wastewater", 14th Edition, Method 203, pp. 61-63.

(2) Aggressive Index - "AWWA Standard for Asbestos-Cement Pipe, 4 in. through 24 in. for Water and Other Liquids", AWWA C400-77, Revision of C400-75, AWWA, Denver, Colorado.

(3) Total Filtrable Residue - "Standard Method for the Examination of Water and Wastewater", 14th Edition, Method 208B, pp. 92-93; or "Methods for Chemical Analysis of Water and Wastes", Method 160.1

(4) Temperature - "Standard Methods for the Examination of Water and Wastewater", 14th Edition Method 212, pp. 125-126.

(5) Calcium-EDTA titrimetric method - "Standard Methods for the Examination of Water and Wastewater", 14th Edition. Method 306C, pp. 189-191; or "Annual Book of ASTM Standards",Method D-1126-67B; "Methods for Chemical Analyses of Water and Wastes", Method 215.

(6) Alkalinity-Methyl Orange end point Ph 4.5. - "Standard Methods for the Examination of Water and Wastewater", 14th Edition. Method 403, pp. 278-281; or "Annual Book of ASTM Standards",Method D-1067-70B; or "Methods for Chemical Analysis of Water and Wastes", Method 310.1

(7) pH - "Standard Methods for the Examination of Water and Wastewater", 14th Edition. Method 424, pp. 460-465; or

"Methods for Chemical Analysis of Water and Wastes", Method 150.1; or"Annual Book of ASTM Standards", Method D-1293-78A or B.

(8) Chloride-Potentiometric Method - "Standard Methods for the Examination of Water and Wastewater", 14th Edition, pp. 306.

(9) Sulfate-Turbidimetric Method - "Methods for Chemical Analysis of Water and Wastes", pp. 277-278, EPA, Office of Technology Transfer, Washington, D.C. 20460, 1974, or "Standard Methods for the Examination of Water and Wastewater", 14th Edition, pp. 496-498.

(d) Community water supply systems shall identify whether the following construction materials are present in their distribution system and report to DPNR:

(1) Lead from piping, solder, caulking, interior lining of distribution main alloys and home plumbing.

(2) Copper from piping and alloys, service lines, and home plumbing.

(3) Galvanized piping, service lines, and home plumbing.

(4) Ferrous piping materials such as cast iron and steel.

(5) Asbestos cement pipe.

In addition, DPNR may require identification and reporting of other materials of construction present in distribution systems that may contribute contaminants to the drinking water, such as:

Vinyl lined asbestos cement pipe.

Coal tar lined pipes and tanks.

Section 1303-57. Special Monitoring for Unregulated Organic and Inorganic Contaminants

(a) All community and non-transient, non-community water systems shall monitor for the volatile organic contaminants listed in paragraph (e) of this section by the date specified in the following table:

NO OF PERSONS SERVED	MONITORING TO BEGIN NO LATER THAN
Over 10,000	January 1, 1988
3,300 to 10,000	January 1, 1989
Fewer than 3,300	January 1, 1991

(b) Surface water systems shall sample at points in the distribution system representative of each water source or at entry points to the distribution system after any application of treatment. The minimum number of samples is per quarter per water source, for one (1) year.

(c) Ground-water systems shall sample at points of entry to the distribution system representative of each well after any application of treatment. The minimum number of samples is one (1) sample per entry point to the distribution system.

(d) The Commissioner may require confirmation samples for positive or negative results.

(e) Community water systems and non-transient, non-community water systems shall monitor for the following contaminants except as provided in paragraph (f) of this section:

(1) Chloroform
(2) Bromodichloromethane
(3) Chlorodibromomethane
(4) Bromoform
(5) Dibromomethane
(6) m-Dichlorobenzene
(8) 1,1-Dichloropropene
(9) 1,1-Dichloroethane
(10) 1,1,2,2-Tetrachloroethane
(11) 1,3-Dichloropropane
(12) Chloromethane
(13) Bromomethane
(14) 1,2,3-Trichloropropane
(15) 1,1,1,2-Tetrachloroethane
(16) Chloroethane
(17) 2,2-Dichloropropane
(18) o-Chlorotoluene
(19) p-Chlorotoluene
(20) Bromobenzene
(21) 1,3-Dichloropropene

(f) [Reserved]

(g) Analysis for the unregulated organic contaminants in Paragraphs (e) and (j) of this section shall be conducted using EPA Methods 502.2 or 524.2, or their equivalent as determined by DPNR or EPA, except analysis for bromodichloromethane, bromoform, chlorodibromomethane and chloroform under paragraph (e) of this section which also may be conducted by EPA Method 551. Analysis for 1,2,3-trichloropropane also may be conducted by EPA Method 504.1. A source for the EPA Methods is referenced in Section1303-44A(e).

(h) Analysis under this section shall only be conducted by laboratories certified by EPA or DPNR under Section1303-44.

(i) Public water systems may use monitoring data collected anytime after January 1, 1983 to meet the requirements for the unregulated monitoring, provided that the monitoring program was consistent with the requirements of this section. For systems supplied by a single well, the results of EPA's Ground-Water Supply Survey may also be used to meet the requirements for unregulated monitoring.

(j) Monitoring for the following compounds is required at the discretion of the Commissioner:

(1) 1,2,4-trimethylbenzene
(2) 1,2,3-trichlorobenzene
(3) n-propylbenzene
(4) n-butylbenzene
(5) napthalene
(6) hexachlorobutadiene
(7) 1,3,5-trimethylbenzene
(8) p-isopropyltoluene
(9) isopropylbenzene
(10) tert-butylbenzene
(11) sec-butylbenzene
(12) fluorotrichloromethane
(13) dichlorodifluoromethane
(14) bromochloromethane

(k) All community and non-transient water systems shall repeat the monitoring required in this section no less frequently than every five (5) years from the date specified in section (a).

(l) Monitoring of the SOC and IOC contaminants listed in Section1303-57(l)(11) and (12) shall be conducted as follows:

(1) SOC Sampling Requirements: Each community and non-transient, non-community water system shall take four (4) consecutive quarterly samples at each sampling point for each contaminant listed in paragraph (l)(11) of this section and report the results to DPNR. Monitoring must be completed by December 31, 1995.

(2) IOC Sampling Requirements: Each community and non-transient non-community water system shall take one (1) sample at each sampling point for each contaminant listed in paragraph (l)(12) of this section and report the results to DPNR. Monitoring must be completed by December 31, 1995.

(3) Each community and non-transient non-community water system may apply to DPNR for a waiver from the requirements of paragraph (l)(1) and (2) of this section.

(4) DPNR may grant a waiver for the requirement of paragraph (l)(1) of this section based on the criteria specified in Section1303-57(f). DPNR may grant a waiver from the requirement of paragraph (l)(2) of this section if previous analytical results indicate contamination would not occur, provided this data was collected after January 1, 1990.

(5) Groundwater systems shall take a minimum of one (1) sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(6) Surface water systems shall take a minimum of one (1) sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment (hereafter called a sampling point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant. [Note: For purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources.]

(7) If the system draws water from more than one (1) source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water representative of all sources is being used).

(8) DPNR may require a confirmation sample for positive or negative results.

(9) DPNR may reduce the total number of samples a system must analyze by allowing the use of compositing. Composite samples from a maximum of five (5) sampling points are allowed. Compositing of samples must be done in the laboratory and the composite sample must be analyzed within fourteen (14) days of collection. If the population served by the system is >3,300 persons, then compositing may only be permitted by DPNR at sampling points within a single system. In systems serving 3,300 persons, DPNR may permit compositing among different systems provided the five (5) sample limit is maintained.

(10) Instead of performing the monitoring required by this section, a community water system or non-transient non-community water system serving fewer than one hundred and fifty (150) service connections may send a letter to DPNR stating that the system is available for sampling. This letter must be sent to DPNR by January 1, 1994. The system shall not send such samples to DPNR, unless requested to do so by the Commissioner.

(11) Systems shall monitor for the unregulated organic contaminants listed below, using the method(s) identified below and using the analytical test procedures contained in Technical Notes on Drinking Water Methods, EPA-600/R-94-173, October 1994. Method 6610 shall be followed in accordance with the Standard Methods for the Examination of Water and Wastewater 18th Edition Supplement, 1994, American Public Health Association. A source for EPA methods 505, 507, 508, 508.1, 515.2, 525.2 and 531.1 is referenced in Section 1303-44A(e).

Unregulated Organic Contaminants	
Organic Contaminants	**EPA Analytical Method**
Aldicarb	531.1, 6610
Aldicarb Sulfone	531.1, 6610
Aldicarb Sulfoxide	531.1, 6610
Aldrin	505, 508, 525.2, 508.1
Butachlor	507, 525.2
Carbaryl	531.1, 6610
Dicamba	515.2, 555, 515.1
Dieldrin	505, 508, 525.2, 508.1
3-Hydroxycarbofuran	531.1, 6610
Methomyl	531.1, 6610
Metolachlor	507, 525.2, 508.1
Metribuzin	507, 508.1, 525.2
Propachlor	508, 525.2, 508.1

(12) List of Unregulated Inorganic Contaminant(s):

Unregulated Inorganic Contaminants			
Contaminant	**ASTM[1]**	**SM[2]**	**EPA Analytical Method**
Sulfate	D4327-91	4110	[1]300.0

[1]The procedures shall be done in accordance with the Annual Book of ASTM Standards, 1994, Vols. 11.01 and 11.02, American Society for Testing and Materials.
[2]The procedures shall be done in accordance with the 18th edition of Standard Methods for the Examination of Water and Wastewater, 1992, American Public Health Association.
[3]"Methods for the Determination of Inorganic Substances in Environmental Samples", EPA-600/R-93-100, August 1993.

Section1303-58 General requirements for the control of lead and copper

(a) Applicability and effective dates:(a) Applicability and effective dates

(1) The requirements of SectionSection 1303-58 thru 1303-67 (here in after referred to as the "Lead and Copper Rule") constitute the Virgin Islands primary drinking water regulations for lead and copper. Unless otherwise indicated, each of the provisions of the Lead and Copper Rule apply to community water systems and non-transient, non-community water systems (hereinafter referred to as "water systems" or "systems").

(2) The requirements set forth in SectionSection1303-64 thru 1303-67, 1303-51 and 1303-53 shall take effect July 7, 1991. The requirements in SectionSection1303-59 thru 1303-63 shall take effect December 7, 1992.

(b) Scope of lead and copper regulations:

These regulations establish a treatment technique that includes requirements for corrosion control treatment, source water treatment, lead service line replacement, and public education. These requirements are triggered, in some cases, by lead and copper action levels measured in samples collected at consumers' taps.

(c) Lead and Copper action levels(c) Lead and Copper action levels:

(1) The lead action level is exceeded if the concentration of lead in more than ten percent (10%) of tap water samples collected during any monitoring period conducted in

accordance with Section1303-64 is greater than 0.015 mg/L (i.e., if the "90th percentile" lead level is greater than 0.015 mg/L).

(2) The copper action level is exceeded if the concentration of copper in more than ten percent (10%) of tap water samples collected during any monitoring period conducted in accordance with Section1303-64 is greater than 1.3 mg/L (i.e., if the "90th percentile" copper level is greater than 1.3 mg/L).

(3) The 90th percentile lead and copper levels shall be computed as follows:

(i) The results of all lead or copper samples taken during a monitoring period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result shall be assigned a number, ascending by single integers beginning with the number one (1) for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.

(ii) The number of samples taken during the monitoring period shall be multiplied by 0.9.

(iii) The contaminant concentration in the numbered sample yielded by the calculation in paragraph (c)(3)(ii) is the 90th percentile contaminant level.

(iv) For water systems serving fewer than one hundred (100) people that collect five (5) samples per monitoring period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.

(d) <u>Corrosion control treatment requirements:</u>(d) <u>Corrosion control treatment requirements</u>

(1) All water systems shall install and operate optimal corrosion control treatment as defined in Section1303-59.

(2) Any water system that complies with the applicable corrosion control treatment requirements specified by DPNR under SectionSection1303-59 and 1303-60 shall be deemed in compliance with the treatment requirement contained in paragraph (d)(1) of this section.

(e) Source water treatment requirements:

Any system exceeding the lead or copper action level shall implement all applicable source water treatment requirements specified by DPNR under Section1303-61.

(f) Lead service line replacement requirements:(f) Lead service line replacement requirements

Any system exceeding the lead action level after implementation of applicable corrosion control and source water treatment requirements shall complete the lead service line replacement requirements contained in Section1303-62.

(g) Public education requirements:(g) Public education requirements

Any system exceeding the lead action level shall implement the public education requirements contained in Section1303-63.

(h) Monitoring and analytical requirements:(h) Monitoring and analytical requirements

Tap water monitoring for lead and copper, monitoring for water quality parameters, source water monitoring for lead and copper, and analyses of the monitoring results under the Lead and Copper Rule shall be completed in compliance with SectionSection1303-64, 1303-65, 1303-66, and 1303-67.

(i) Reporting requirements:(i) Reporting requirements

Systems shall report to DPNR any information required by the treatment provisions of the Lead and Copper Rule and Section1303-51.

(j) Recordkeeping requirements:(j) Recordkeeping requirements

Systems shall maintain records in accordance with Section1303-53.

(k) Violation of Virgin Islands primary drinking water regulations:(k) Violation of Virgin Islands primary drinking water regulations

Failure to comply with the applicable requirements of SectionSection1303-58 thru 1303-67, 1303-51 & 1303-53, including requirements established by DPNR pursuant to these provisions, shall constitute a violation of the Virgin Islands primary drinking water regulations for lead and/or copper.

Section1303-59 Applicability of corrosion control treatment steps to small, medium-size and large water systems for the control of lead and copper

(a) Corrosion control based on system size:

Systems shall complete the applicable corrosion control treatment requirements described in Section1303-60 by the deadlines established in this section.

(1) A large system (serving > 50,000 persons) shall complete the corrosion control treatment steps specified in paragraph (d) of this section, unless it is deemed to have optimized corrosion control under paragraph (b)(2) or (b)(3) of this section.

(2) A small system (serving ≤ 3,300 persons) and a medium-size system (serving > 3,300 and ≤ 50,000 persons) shall complete the corrosion control treatment steps specified in

paragraph (e) of this section, unless it is deemed to have optimized corrosion control under paragraph (b)(1), (b)(2), or (b)(3) of this section.

(b) Criteria for corrosion control:

A system is deemed to have optimized corrosion control and is not required to complete the applicable corrosion control treatment steps identified in this section if the system satisfies one of the following criteria:

(1) A small or medium-size water system is deemed to have optimized corrosion

control if the system meets the lead and copper action levels during each of two (2) consecutive six-month monitoring periods conducted in accordance with Section1303-64.

(2) Any water system may be deemed by DPNR to have optimized corrosion control treatment if the system demonstrates to the satisfaction of DPNR that it has conducted activities equivalent to the corrosion control steps applicable to such system under this section. If DPNR makes this determination, it shall provide the system with written notice explaining the basis for its decision and shall specify the water quality control parameters representing optimal corrosion control in accordance with Section1303-60(f). A system shall provide DPNR with the following information in order to support a determination under this paragraph:

(i) The results of all test samples collected for each of the water quality parameters in Section1303-60(c)(3).

(ii) A report explaining the test methods used by the water system to evaluate the corrosion control treatments listed in Section1303-60(c)(1), the results of all tests conducted, and the basis for the system's selection of optimal corrosion control treatment.

(iii) A report explaining how corrosion control has been installed and how it is being maintained to insure
minimal lead and copper concentrations at consumers' taps.

(iv) The results of tap water samples collected in accordance with Section1303-64 at least once every six (6) months for one (1) year after corrosion control has been installed.

(3) Any water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with Section1303-64 and source water monitoring conducted in accordance with Section1303-66 that demonstrates for two (2) consecutive six-month monitoring periods that the difference between the 90th percentile tap water lead level computed under Section1303-58(c)(3), and the highest source water lead concentration, is less than the Practical Quantitation Level (PQL) for lead specified in Section1303-67(a)(1)(ii).

(c) <u>Cessation of required treatment:</u>

Any small or medium-size water system that is required to complete the corrosion control steps due to its exceedance of the lead or copper action level may cease completing the treatment steps whenever the system meets both action levels during each of two (2) consecutive monitoring periods conducted pursuant to Section1303-64 and submits the results to DPNR. If any such water system thereafter exceeds the lead or copper action level during any monitoring period, the system (or DPNR, as the case may be) shall recommence completion of the applicable treatment steps, beginning with the first treatment step which was not previously completed in its entirety. DPNR may require a system to repeat treatment steps previously completed by the system where DPNR determines that this is necessary to implement properly the treatment requirements of this section. DPNR shall notify the system in writing of such a determination and explain the basis for its decision. The requirement for any small or medium-size system to implement corrosion control treatment steps in accordance with paragraph (e) of this section (including systems deemed to have optimized corrosion control under paragraph (b)(1) of this section) is triggered whenever any small or medium-size system exceeds the lead and copper action level.

(d) Treatment steps and deadlines for large systems:

Except as provided in paragraph (b)(2) and (3) of this section, large systems shall complete the following corrosion control treatment steps (described in the referenced portions of SectionSection1303-60, 1303-64, and 1303-65) by the indicated dates.

(1) Step 1: The system shall conduct initial monitoring (Section1303-64(d)(1) and Section1303-65(b)) during two (2) consecutive six-month monitoring periods by January 1, 1993.

(2) Step 2: The system shall complete corrosion control studies (Section1303-60(c)) by July 1, 1994.

(3) Step 3: DPNR shall designate optimal corrosion control treatment (Section1303-60(d)) by January 1, 1995.

(4) Step 4: The system shall install optimal corrosion control treatment (Section1303-60(e)) by January 1, 1997.

(5) Step 5: The system shall complete follow-up sampling (Section1303-64(d)(2) and Section1303-65(c)) by January 1, 1998.

(6) Step 6: DPNR shall review installation of treatment and designate optimal water quality control parameters (Section1303-60(f)) by July 1, 1998.

(7) Step 7: The system shall operate in compliance with DPNR-specified optimal water quality control parameters (Section1303-60(g)) and continue to conduct tap sampling (Section1303-64(d)(3) and Section1303-65(d)).

(e) Treatment steps and deadlines for small and medium-size systems:

Except as provided in paragraph (b) of this section, small and medium-size systems shall complete the following corrosion control treatment steps (described in the referenced portions of SectionSection1303-60, 1303-64 and 1303-65) by the indicated time periods.

(1) Step 1: The system shall conduct initial tap sampling (Section1303-64(d)(1) and Section1303-65(b)) until the system either exceeds the lead or copper action level or becomes eligible for reduced monitoring under Section1303-64(d)(4). A system exceeding the lead or copper action level shall recommend optimal corrosion control treatment (Section1303-60(a)) within six (6) months after it exceeds one of the action levels.

(2) Step 2: Within twelve (12) months after a system exceeds the lead or copper action level, DPNR may require the system to perform corrosion control studies (Section1303-60(b)). If DPNR does not require the system to perform such studies, DPNR shall specify optimal corrosion control treatment (Section1303-60(d)) within the following timeframes:

(i) For medium-size systems, within eighteen (18) months after such system exceeds the lead or copper action level, and

(ii) for small systems, within twenty-four (24) months after such system exceeds the lead or copper action level.

(3) Step 3: If DPNR requires a system to perform corrosion control studies under step 2, the system shall complete the studies (Section1303-60(c)) within eighteen (18) months after DPNR requires that such studies be conducted.

(4) Step 4: If the system has performed corrosion control studies under step 2, DPNR shall designate optimal corrosion control treatment (Section1303-60(d)) within six (6) months after completion of step 3.

(5) Step 5: The system shall install optimal corrosion control treatment (Section1303-60(e)) within twenty-four (24) months after DPNR designates such treatment.

(6) Step 6: The system shall complete follow-up sampling (Section1303-64(d)(2) and Section1303-65(c)) within thirty-six (36) months after DPNR designates optimal corrosion control treatment.

(7) Step 7: DPNR shall review the system's installation of treatment and designate optimal water quality control parameters (Section1303-60(f)) within six (6) months after completion of step 6.

(8) Step 8: The system shall operate in compliance with DPNR-designated optimal water quality control parameters (Section1303-60(g)) and continue to conduct tap sampling (Section1303-64(d)(3) and Section1303-65(d)).

Section1303-60 Description of corrosion control treatment requirements for the control of lead and copper

Each system shall complete the corrosion control treatment requirements described below which are applicable to such system under Section1303-59.

(a) System recommendation regarding corrosion control treatment:

Based upon the results of lead and copper tap monitoring and water quality parameter monitoring, small and medium-size water systems exceeding the lead or copper action level shall recommend installation of one or more of the corrosion control treatments listed in paragraph (c)(1) of this section which the system believes constitutes optimal corrosion control for that system. DPNR may require the system to conduct additional water quality parameter monitoring in accordance with Section1303-65(b) to assist DPNR in reviewing the system's recommendation.

(b) DPNR decision to require studies of corrosion control treatment (applicable to small and medium-size systems):(b) DPNR decision to require studies of corrosion control treatment (applicable to small and medium-size systems)

DPNR may require any small or medium-size system that exceeds the lead or copper action level to perform corrosion control studies under paragraph (c) of this section to identify optimal corrosion control treatment for the system.

(c) Performance of corrosion control studies:

(1) Any public water system performing corrosion control studies shall evaluate the

effectiveness of each of the following treatments, and, if appropriate, combinations of the following treatments to identify the optimal corrosion control treatment for that system:

(i) Alkalinity and pH adjustment;

(ii) Calcium hardness adjustment; and/or

(iii) The addition of a phosphate or silicate based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.

(2) The water system shall evaluate each of the corrosion control treatments using either pipe rig/loop tests, metal coupon tests, partial-system tests, or analyses based on documented analogous treatments with other systems of similar size, water chemistry and distribution system configuration.

(3) The water system shall measure the following water quality parameters in any tests conducted under this paragraph before and after evaluating the corrosion control treatments listed above:

(i) Lead;
(ii) Copper;
(iii) pH;
(iv) Alkalinity;
(v) Calcium;
(vi) Conductivity;
(vii) Orthophosphate (when an inhibitor containing a phosphate compound is used);
(viii) Silicate (when an inhibitor containing a silicate compound is used); and
(ix) Water temperature.

(4) The water system shall identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment and document such constraints with at least one of the following:

(i) Data and documentation showing that a particular corrosion control treatment has adversely affected other water treatment processes when used by another water system with comparable water quality characteristics, and/or

(ii) data and documentation demonstrating that the water system has previously attempted to evaluate a particular corrosion control treatment and has found that

the treatment is ineffective or adversely affects other water quality treatment processes.

(5) The water system shall evaluate the effect of the chemicals used for corrosion control treatment on other water quality treatment processes.

(6) On the basis of an analysis of the data generated during each evaluation, the water system shall recommend to DPNR in writing the treatment option that the corrosion control studies indicate constitutes optimal corrosion control treatment for that system. The water system shall provide a rationale for its recommendation along with all supporting documentation specified in paragraphs (c)(1) through (5) of this section.

(d) DPNR designation of optimal corrosion control treatment:

(1) Based upon consideration of available information including, where applicable, studies performed under paragraph (c) of this section and a system's recommended treatment alternative, DPNR shall either approve the corrosion control treatment option recommended by the system, or designate alternative corrosion control treatment(s) from among those listed in paragraph (c)(1) of this section. When designating optimal treatment DPNR shall consider the effects that additional corrosion control treatment will have on water quality parameters and on other water quality treatment processes.

(2) DPNR shall notify the system of its decision on optimal corrosion control treatment in writing and explain the basis for this determination. If DPNR requests additional information to aid its review, the water system shall provide the information.

(e) Installation of optimal corrosion control:(e) Installation of optimal corrosion control

Each system shall properly install and operate throughout its distribution system the optimal corrosion control treatment designated by DPNR under paragraph (d) of this section.

(f) DPNR review of treatment and specification of optimal water quality control parameters:(f) DPNR review of treatment and specification of optimal water quality control parameters

DPNR shall evaluate the results of all lead and copper tap samples and water quality parameter samples submitted by the water system and determine whether the system has properly installed and operated the optimal corrosion control treatment designated by DPNR in paragraph (d) of this section. Upon reviewing the results of tap water and water quality parameter monitoring by the system, both before and after the system installs optimal corrosion control treatment, DPNR

shall designate:

(1) A minimum value or a range of values for pH measured at each entry point to the distribution system.

(2) A minimum pH value, measured in all tap samples. Such value shall be equal to or greater than 7.0, unless DPNR determines that meeting a pH level of 7.0 is not technologically feasible or is not necessary for the system to optimize corrosion control.

(3) If a corrosion inhibitor is used, a minimum concentration or a range of concentrations for the inhibitor, measured at each entry point to the distribution system and in all tap samples, that DPNR determines is necessary to form a passivating film on the interior walls of the pipes of the distribution system.

(4) If alkalinity is adjusted as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity, measured at each entry point to the distribution system and in all tap samples.

(5) If calcium carbonate stabilization is used as part of corrosion control, a minimum concentration or a range of concentrations for calcium, measured in all tap samples.

The values for the applicable water quality control parameters listed above shall be those that DPNR determines to reflect optimal corrosion control treatment for the system. DPNR may designate values for additional water quality control parameters determined by DPNR to reflect optimal corrosion control for the system. DPNR shall notify the system in writing of these determinations and explain the basis for its decisions.

(g) Continued Operation and Monitoring:(g) Continued Operation and Monitoring

All systems shall maintain water quality parameter values at or above minimum values or within ranges designated by DPNR under paragraph (f) of this section in each sample collected under Section1303-65(d). If the water quality parameter value of any sample is below the minimum value or outside the range designated by DPNR, then the system is out of compliance with this paragraph. As specified in Section1303-65(d), the system may take a confirmation sample for any water quality parameter value no later than three (3) days after the first sample. If a confirmation sample is taken, the result must be averaged with the first sampling result and the average must be used for any compliance determinations under this paragraph. DPNR has discretion to delete results of obvious sampling errors from this calculation.

(h) Modification of DPNR treatment decisions:

Upon its own initiative or in response to a request by a water system or other interested party, DPNR may modify its determination of the optimal corrosion control treatment under paragraph (d) of this section or optimal water quality control parameters under paragraph (f) of this section. A request for modification by a system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. DPNR may modify its determination where it concludes that such change is necessary to ensure that the system continues to optimize corrosion control treatment. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for DPNR's decision, and provide an implementation schedule for completing the treatment modifications.

(i) Treatment decisions by EPA in lieu of DPNR:(i) Treatment decisions by EPA in lieu of DPNR

Pursuant to the procedures in 40 CFR Section142.19, the EPA Regional Administrator may review treatment determinations made by DPNR under paragraphs (d), (f), or (h) of this section and issue federal treatment determinations consistent with the requirements of those paragraphs where the Regional Administrator finds that:

(1) DPNR has failed to issue a treatment determination by the applicable deadlines contained in Section 1303-59,

(2) DPNR has abused its discretion in a substantial number of cases or in cases affecting a substantial population, or

(3) the technical aspects of DPNR's determination would be indefensible in an expected Federal enforcement action taken against a system.

Section1303-61 Source water treatment requirements for the control of lead and copper

Systems shall complete the applicable source water monitoring and treatment requirements (described in the referenced portions of
paragraph (b) of this section, and in SectionSection1303-64, and 1303-66) by the following deadlines:

(a) Deadlines for Completing Source Water Treatment Steps:(a) Deadlines for Completing Source Water Treatment Steps

(1) Step 1: A system exceeding the lead or copper action level shall complete lead and copper source water monitoring (Section1303-66(b)) and make a treatment

recommendation to DPNR (Section1303-61(b)(1)) within six (6) months after exceeding the lead or copper action level.

(2) Step 2: DPNR shall make a determination regarding source water treatment (Section1303-61(b)(2)) within six (6) months after submission of monitoring results under step 1.

(3) Step 3: If DPNR requires installation of source water treatment, the system shall install the treatment (Section1303-61(b)(3)) within twenty-four (24) months after completion of step 2.

(4) Step 4: The system shall complete follow-up tap water monitoring (Section1303-64(d)(2) and source water monitoring (Section1303-66(c)) within thirty-six (36) months after completion of step 2.

(5) Step 5: DPNR shall review the system's installation and operation of source water treatment and specify maximum permissible source water levels (Section1303-61(b)(4)) within six (6) months after completion of step 4.

(6) Step 6: The system shall operate in compliance with DPNR-specified maximum permissible lead and copper source water levels (Section1303-61(b)(4)) and continue source water monitoring (Section1303-66(d)).

(b) Description of Source Water Treatment Requirements:(6) Step 6 The system shall operate in compliance with DPNR-specified maximum permissible lead and copper source water levels (Section1303-61(b)(4)) and continue source water monitoring (Section1303-66(d)).(b) Description of Source Water Treatment Requirements

(1) System treatment recommendation:

Any system which exceeds the lead or copper action level shall recommend in writing to DPNR the installation and operation of one of the source water treatments listed in paragraph (b)(2) of this section. A system may recommend that no treatment be installed based upon a demonstration that source water treatment is not necessary to minimize lead and copper levels at users' taps.

(2) DPNR determination regarding source water treatment:
DPNR shall complete an evaluation of the results of all source water samples submitted by the water system to determine whether source water treatment is necessary to minimize lead or copper levels in water delivered to users' taps. If DPNR determines that treatment is needed, DPNR shall either require installation and operation of the source water

treatment recommended by the system (if any) or require the installation and operation of another source water treatment from among the following: ion exchange, reverse osmosis, lime softening or coagulation/filtration. If DPNR requests additional information to aid in its review, the water system shall provide the information by the date specified by DPNR in its request. DPNR shall notify the system in writing of its determination and set forth the basis for its decision.

(3) Installation of source water treatment:

Each system shall properly install and operate the source water treatment designated by DPNR under paragraph (b)(2) of this section.

(4) DPNR review of source water treatment and specification of maximum permissible source water levels:

DPNR shall review the source water samples taken by the water system both before and after the system installs source water treatment, and determine whether the system has properly installed and operated the source water treatment designated by DPNR. Based upon its review, DPNR shall designate the maximum permissible lead and copper concentrations for finished water entering the distribution system. Such levels shall reflect the contaminant removal capability of the treatment properly operated and maintained. DPNR shall notify the system in writing and explain the basis for its decision.

(5) Continued operation and maintenance:

Each water system shall maintain lead and copper levels below the maximum permissible concentrations designated by DPNR at each sampling point monitored in accordance with Section1303-66. The system is out of compliance with this paragraph if the level of lead or copper at any sampling point is greater than the maximum permissible concentration designated by DPNR.

(6) Modification of DPNR treatment decisions:(6) Modification of DPNR treatment decisions

Upon its own initiative or in response to a request by a water system or other interested party, DPNR may modify its determination of the source water treatment under paragraph (2) of this section, or maximum permissible lead and copper concentrations for finished water entering the distribution system under paragraph (4) of this section. A request for modification by a system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. DPNR may modify its determination where it concludes that such change is necessary to ensure that the system

continues to minimize lead and copper concentrations in source water. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for DPNR's decision, and provide an implementation schedule for completing the treatment modifications.

(7) Treatment decisions by EPA in lieu of DPNR:(7) Treatment decisions by EPA in lieu of DPNR

Pursuant to the procedures in 40 CFR Section142.19, the EPA Regional Administrator may review treatment determinations made by DPNR under paragraphs (2), (4), or (6) of this section and issue federal treatment determinations consistent with the requirements of those paragraphs where the Administrator finds that:

(i) DPNR has failed to issue a treatment determination by the applicable deadlines contained in Section 1303-61(a);

(ii) DPNR has abused its discretion in a substantial number of cases or in cases affecting a substantial population; and/or

(iii) The technical aspects of DPNR's determination would be indefensible in an expected Federal enforcement action taken against a system.

Section1303-62 Lead service line replacement requirements for the control of lead and copper

(a) Systems that fail to meet the lead action level in tap samples taken pursuant to Section1303-64(d)(2), after installing corrosion control and/or source water treatment (whichever sampling occurs later), shall replace lead service lines in accordance with the requirements of this section. If a system is in violation of Section1303-59 or Section1303-61 for failure to install source water or corrosion control treatment, DPNR may require the system to commence lead service line replacement under this section after the date by which the system was required to conduct monitoring under Section1303-64(d)(2) has passed.

(b) A system shall replace annually at least seven percent (7%) of the initial number of lead service lines in its distribution system. The initial number of lead service lines is the number of lead lines in place at the time the replacement program begins. The system shall identify the initial number of lead service lines in its distribution system based upon a materials evaluation, including the evaluation required under Section1303-64(a). The first year of lead service line replacement shall begin on the date the action level was exceeded in tap sampling referenced in paragraph (a) of this section.

(c) A system is not required to replace an individual lead service line if the lead concentration in all service line samples from that line, taken pursuant to Section1303-64(b)(3), is less than or equal to 0.015 mg/L.

(d) A water system shall replace the entire service line (up to the building inlet) unless it demonstrates to the satisfaction of DPNR under paragraph (e) of this section that it controls less than the entire service line. In such cases, the system shall replace the portion of the line which DPNR determines is under the system's control. The system shall notify the user served by the line that the system will replace the portion of the service line under its control and shall offer to replace the building owner's portion of the line, but is not required to bear the cost of replacing the building owner's portion of the line. For buildings where only a portion of the lead service line is replaced, the water system shall inform the resident(s) that the system will collect a first flush tap water sample after partial replacement of the service line is completed if the resident(s) so desire. In cases where the resident(s) accept the offer, the system shall collect the sample and report the results to the resident(s) within fourteen (14) days following partial lead service line replacement.

(e) A water system is presumed to control the entire lead service line (up to the building inlet) unless the system demonstrates to the satisfaction of DPNR, in a letter submitted under Section1303-51(e)(4), that it does not have any of the following forms of control over the entire line (as defined by Virgin Islands statutes, public service contracts or other applicable legal authority): authority to set standards for construction, repair, or maintenance of the line, authority to replace, repair, or maintain the service line, or ownership of the service line. DPNR shall review the information supplied by the system and determine whether the system controls less than the entire service line and, in such cases, shall determine the extent of the system's control. DPNR's determination shall be in writing and explain the basis for its decision.

(f) DPNR shall require a system to replace lead service lines on a shorter schedule than that required by this section, taking into account the number of lead service lines in the system, where such a shorter replacement schedule is feasible. DPNR shall make this determination in writing and notify the system of its finding within six (6) months after the system is triggered into lead service line replacement based on monitoring referenced in paragraph (a) of this section.

(g) Any system may cease replacing lead service lines whenever lead service line samples collected pursuant to Section1303-64(d)(3) meet the lead action level during each of two consecutive monitoring periods and the system submits the results to DPNR. If the lead service line samples in any such water system thereafter exceeds the lead action level, the system shall recommence replacing lead service lines, pursuant to paragraph (b) in this section.

(h) To demonstrate compliance with paragraphs (a)-(d) of this section, a system shall report to

DPNR the information specified in Section1303-51(e).

Section1303-63 Public education and supplemental monitoring requirements for the control of lead and copper

A water system that exceeds the lead action level based on tap water samples collected in accordance with Section1303-64 shall deliver the public education materials contained in paragraphs (a) and

(b) of this section in accordance with the requirements in paragraph (c) of this section.

(a) Content of written materials:

A water system shall include the following text in all of the printed materials it distributes through its lead public education program. Any additional information presented by a system shall be consistent with the information below and be in plain English that can be understood by laypersons.

(1) INTRODUCTION

The United States Environmental Protection Agency (EPA) and [*insert name of water supplier*] are concerned about lead in your drinking water. Although most homes have very low levels of lead in their drinking water, some homes in the community have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under Federal law we are required to have a program in place to minimize lead in your drinking water by [*insert date when corrosion control will be completed for your system*]. This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace each lead service line that we control if the line contributes lead concentrations of 15 ppb or more after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at [*insert water system's phone number*]. This brochure explains the simple steps you can take to protect you and your family by reducing your exposure to lead in drinking water.

(2) HEALTH EFFECTS OF LEAD

Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys.

The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination -- like dirt and dust -- that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

(3) LEAD IN DRINKING WATER

(i) Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up twenty percent (20%) or more of a person's total exposure to lead.

(ii) Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and in some cases, pipes made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%.

(iii) When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or

later in the afternoon after returning from work or school, can contain fairly high levels of lead.

(4) STEPS YOU CAN TAKE IN THE HOME TO REDUCE EXPOSURE TO LEAD IN DRINKING WATER

(i) Despite our best efforts mentioned earlier to control water corrosivity and remove lead from the water supply, lead levels in some homes or buildings can be high. To find out whether you need to take action in your own home, have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in drinking water. Some local laboratories that can provide this service are listed at the end of this booklet. For more information on having your water tested, please

call [*insert phone number of water system*].

(ii) If a water test indicates that the drinking water drawn from a tap in your home contains lead above 15 ppb, then you should take the following precautions:

(A) Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six (6) hours. The longer water resides in your home's plumbing the more lead it may contain. Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually about fifteen (15)-thirty (30) seconds. If your house has a lead service line to the water main, you may have to flush the water for a longer time, perhaps one minute, before drinking. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than one or two gallons of water and costs less than [*insert a cost estimate based on flushing two times a day for thirty (30) days*] per month. To conserve water, fill a couple of bottles for drinking water after flushing the tap, and whenever possible use the first flush water to wash the dishes or water the plants. If you live in a high-rise building, letting the water flow before using it may not work to lessen your risk from lead. The plumbing systems have more, and sometimes larger pipes than smaller buildings. Ask your landlord for help in locating the source of the lead and for advice on reducing the lead level.

(B) Try not to cook with, or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and heat it on the stove.

(C) Remove loose lead solder and debris from the plumbing materials installed in newly constructed homes, or homes in which the plumbing has recently been replaced, by removing the faucet strainers from all taps and running the water from three (3) to five (5) minutes. Thereafter, periodically remove the strainers and flush out any debris that has accumulated over time.

(D) If your copper pipes are joined with lead solder that has been installed illegally since it was banned in 1986, notify the plumber who did the work and request that he or she replace the lead solder with lead-free solder. Lead solder looks dull gray, and when scratched with a key looks shiny. In addition, notify the Department of Planning & Natural Resources about the violation.

(E) Determine whether or not the service line that connects your home or apartment to the water main is made of lead. The best way to determine if your service line is made of lead is by either hiring a licensed plumber to inspect the line or by contacting the plumbing contractor who installed the line. You can identify the plumbing contractor by checking the city's record of building permits which should be maintained in the files of DPNR. A licensed plumber can at the same time check to see if your homes's plumbing contains lead solder, lead pipes, or pipe fittings that contain lead. The public water system that delivers water to your home should also maintain records of the materials located in the distribution system. If the service line that connects your dwelling to the water main contributes more than 15 ppb to drinking water, after our comprehensive treatment program is in place, we are required to replace the line. If the line is only partially controlled by the [*insert name of the city, county, or water system that controls the line*], we are required to provide you with information on how to replace your portion of the service line, and offer to replace that portion of the line at your expense and take a follow-up tap water sample within fourteen (14) days of the replacement. Acceptable replacement alternatives include copper, steel, iron, and plastic pipes.

(F) Have an electrician check your wiring. If grounding wires from the electrical system are attached to your pipes, corrosion may be greater. Check with a licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. DO NOT attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.

(iii) The steps described above will reduce the lead concentrations in your drinking water. However, if a water test indicates that the drinking water coming from your tap contains lead concentrations in excess of 15 ppb after flushing, or after we have completed our actions to minimize lead levels, then you may want to take the following additional measures:

(A) Purchase or lease a home treatment device. Home treatment devices are limited in that each unit treats only the water that flows from the faucet to which it is connected, and all of the devices require periodic maintenance and replacement. Devices such as reverse osmosis systems or distillers can effectively remove lead from your drinking water. Some activated carbon filters <u>may</u> reduce lead levels at the tap, however all lead reduction claims should be investigated. Be sure to check the actual

performance of a specific home treatment device before and after installing the unit.

(B) Purchase bottled water for drinking and cooking.

(iv) You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. Local government agencies that can be contacted include:

(A) DPNR, Division of Environmental Protection can provide you with information about your community's water supply, and a list of local laboratories that have been certified by EPA for testing water quality;

(B) DPNR, Division of Permits can provide you with information about building permit records that should contain the names of plumbing contractors that plumbed your home; and

(C) DPNR, Division of Environmental Protection or the Department of Health can provide you with information about the health effects of lead and how you can have your child's blood tested.

(v) DPNR can provide you with a list of certified laboratories in your area that you can call to have your water tested for lead.

(b) Content of broadcast materials:

A water system shall include the following information in all public service announcements submitted under its lead public education program to television and radio stations for broadcasting:

(1) Why should everyone want to know the facts about lead and drinking water? Because unhealthy amounts of lead can enter drinking water through the plumbing in your home. That's why I urge you to do what I did. I had my water tested for [*insert free or $ per sample*]. You can contact the [*insert the name of the city or water system*] for information on testing and on simple ways to reduce your exposure to lead in drinking water.

(2) To have your water tested for lead, or to get more information about this public health concern, please call [*insert the phone number of the city or water system*].

(c) Delivery of a public education program:

(1) In communities where a significant proportion of the population speaks a language other than English, public education materials shall be communicated in the appropriate language(s).

(2) A community water system that fails to meet the lead action level on the basis of tap water samples collected in accordance with Section1303-64 shall, within sixty (60) days:

(i) Insert notices in each customer's water utility bill containing the information in paragraph (a) of this section, along with the following alert on the water bill itself in large print: "SOME HOMES IN THIS COMMUNITY HAVE ELEVATED LEAD LEVELS IN THEIR DRINKING WATER. LEAD CAN POSE A SIGNIFICANT RISK TO YOUR HEALTH. PLEASE READ THE ENCLOSED NOTICE FOR FURTHER INFORMATION."

(ii) Submit the information in paragraph (a) to the editorial departments of the major daily and weekly newspapers circulated throughout the community.

(iii) Deliver pamphlets and/or brochures that contain the public education materials in paragraphs (a)(2) and (4) of this section to facilities and organizations, including the following:

(A) Public schools and/or local school boards;
(B) City or county health department;
(C) Women, Infants, and Children and/or Head Start Program(s) whenever available;
(D) Public and private hospitals and/or clinics;
(E) Pediatricians;
(F) Family planning clinics; and
(G) Local welfare agencies.

(iv) Submit the public service announcement in paragraph (b) of this section to at least five (5) of the radio and television stations with the largest audiences that broadcast to the community served by the water system.

(3) A community water system shall repeat the tasks contained in paragraphs (c)(2)(i),(ii) and (iii) of this section every twelve (12) months, and the tasks contained in

paragraphs (c)(2)(iv) of this section every six (6) months for as long as the system exceeds

the lead action level.

(4) Within sixty (60) days after it exceeds the lead action level, a non-transient non-community water system shall deliver the public education materials contained in paragraphs (a)(1), (2), and (4) of this section as follows:

(i) Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the system, and

(ii) Distribute informational pamphlets and/or brochures on lead in drinking water to each person served by the non-transient non-community water system.

(5) A non-transient noncommunity water system shall repeat the tasks contained in paragraph (c)(4) of this section at least once during each calendar year in which the system exceeds the lead action level.

(6) A water system may discontinue delivery of public education materials if the system has met the lead action level during the most recent six-month monitoring period conducted pursuant to Section1303-64. Such a system shall recommence public education in accordance with this section if it subsequently exceeds the lead action level during any monitoring period.

(d) Supplemental monitoring and notification of results:

A water system that fails to meet the lead action level on the basis of tap samples collected in accordance with Section1303-64 shall offer to sample the tap water of any customer who requests it. The system is not required to pay for collecting or analyzing the sample, nor is the system required to collect and analyze the sample itself.

1303-64 Monitoring requirements for lead and copper in tap water

(a) Sample site location:

(1) By the applicable date for commencement of monitoring under paragraph (d)(1) of this section, each water system shall complete a materials evaluation of its distribution system in order to identify a pool of targeted sampling sites that meets the requirements of this section, and which is sufficiently large to ensure that the water system can collect the number of lead and copper tap samples required in paragraph (c) of this section. All sites from which first draw samples are collected shall be selected from this pool of targeted

sampling sites. Sampling sites may not include faucets that have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants.

(2) A water system shall use the information on lead, copper, and galvanized steel that it is required to collect under Section1303-56 of this part [special monitoring for corrosivity characteristics] when conducting a materials evaluation. When an evaluation of the information collected pursuant to Section1303-56 is insufficient to locate the requisite number of lead and copper sampling sites that meet the targeting criteria in paragraph (a) of this section, the water system shall review the sources of information listed below in order to identify a sufficient number of sampling sites. In addition, the system shall seek to collect such information where possible in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities):

(i) All plumbing codes, permits, and records in the files of the building department(s) which indicate the plumbing materials that are installed within publicly and privately owned structures connected to the distribution system.

(ii) All inspections and records of the distribution system that indicate the material composition of the service connections that connect a structure to the distribution system.

(iii) All existing water quality information, which includes the results of all prior analyses of the system or individual structures connected to the system, indicating locations that may be particularly susceptible to high lead or copper concentrations.

(3) The sampling sites selected for a community water system's sampling pool ("tier 1 sampling sites") shall consist of single family structures that:

(i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes, and/or

(ii) are served by a lead service line.

When multiple-family residences comprise at least twenty percent (20%) of the structures served by a water system, the system may include these types of structures in its sampling pool.

(4) Any community water system with insufficient tier 1 sampling sites shall complete its sampling pool with "tier 2 sampling sites", consisting of buildings, including

multiple-family residences that:

(i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes, and/or

(ii) are served by a lead service line.

(5) Any community water system with insufficient tier 1 and tier 2 sampling sites shall complete its sampling pool with "tier 3 sampling sites", consisting of single family structures that contain copper pipes with lead solder installed before 1983.

(6) The sampling sites selected for a non-transient non-community water system ("tier 1 sampling sites") shall consist of buildings that:

(i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes, and/or

(ii) are served by a lead service line.

(7) A non-transient non-community water system with insufficient tier 1 sites that meet the targeting criteria in paragraph (a)(6) of this section shall complete its sampling pool with sampling sites that contain copper pipes with lead solder installed before 1983.

(8) Any water system whose sampling pool does not consist exclusively of tier 1 sites shall demonstrate in a letter submitted to DPNR under Section1303-51(g)(4) why a review of the information listed in paragraph (a)(2) of this section was inadequate to locate a sufficient number of tier 1 sites. Any community water system which includes tier 3 sampling sites in its sampling pool shall demonstrate in such a letter why it was unable to locate a sufficient number of tier 1 and tier 2 sampling sites.

(9) Any water system whose distribution system contains lead service lines shall draw fifty percent (50%) of the samples it collects during each monitoring period from sites that contain lead pipes, or copper pipes with lead solder, and fifty percent (50%) of those samples from sites served by a lead service line. A water system that cannot identify a sufficient number of sampling sites served by a lead service line shall demonstrate in a letter submitted to DPNR under Section1303-51(g)(4) why the system was unable to locate a sufficient number of such sites. Such a water system shall collect lead service line samples from all of the sites identified as being served by such lines.

(b) <u>Sample collection methods:</u>(b) <u>Sample collection methods</u>

(1) All tap samples for lead and copper collected in accordance with the Lead and Copper Rule, with the exception of lead service line samples collected under Section1303-62(c), shall be first draw samples.

(2) Each first-draw tap sample for lead and copper shall be one (1) liter in volume and have stood motionless in the plumbing system of each sampling site for at least six (6) hours. First draw samples from residential housing shall be collected from the cold-water kitchen tap or bathroom sink tap. First-draw samples from a non-residential building shall be collected at an interior tap from which water is typically drawn for consumption. First draw samples may be collected by the system or the system may allow residents to collect first draw samples after instructing the residents of the sampling procedures specified in this paragraph. If a system allows residents to perform sampling, the system may not challenge, based on alleged errors in sample collection, the accuracy of sampling results.

(3) Each service line sample shall be one (1) liter in volume and have stood motionless in the lead service line for at least six (6) hours. Lead service line samples shall be collected in one of the following three ways:

(i) At the tap after flushing the volume of water between the tap and the lead service line. The volume of water shall be calculated based on the interior diameter and length of the pipe between the tap and the lead service line.

(ii) Tapping directly into the lead service line.

(iii) If the sampling site is a building constructed as a single-family residence, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the lead service line.

(4) A water system shall collect each first draw tap sample from the same sampling site from which it collected a previous sample. If, for any reason, the water system cannot gain entry to a sampling site in order to collect a follow-up tap sample, the system may collect the follow-up tap sample from another sampling site in its sampling pool as long as the new site meets the same targeting criteria, and is within reasonable proximity of the original site.

(c) <u>Number of samples:</u>

Water systems shall collect at least one sample during each monitoring period specified in paragraph (d) of this section from the number of sites listed in the first column below ("standard monitoring"). A system conducting reduced monitoring under paragraph (d)(4) may collect one sample from the number of sites specified in the second column below during each monitoring

period specified in paragraph (d)(4).

System Size (# People Served)	# of sites Standard Monitoring	# of sites Reduced Monitoring
>100,000	100	50
10,000-100,000	60	30
3,301-10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
≤100	5	5

(d) Timing of monitoring:

(1) Initial tap sampling:(c) Number of samplesWater systems shall collect at least one sample during each monitoring period specified in paragraph (d) of this section from the number of sites listed in the first column below (standardmonitoring). A system conducting reduced monitoring under paragraph (d)(4) may collect one sample from the number of sites specified in the second column below during each monitoring period specified in paragraph (d)(4).**System Size(# People Served)# of sitesStandard Monitoring# of sitesReduced Monitoring**>100,000 100 5010,000-100,000 60 303,301-10,000 40 20501 to 3,300 20 10101 to 500 10 5≤100 5

5(d) Timing of monitoring (1) Initial tap sampling

The first six-month monitoring period for small, medium-size and large systems shall begin on the following dates:

System Size (# People Served)	First six-month Monitoring Period Begins On
>50,000	January 1, 1992
3,301 to 50,000	July 1, 1992
≤3,300	July 1, 1993

(i) All large systems shall monitor during two consecutive six-month periods.

(ii) All small and medium-size systems shall monitor during each six-month monitoring period until:

(A) The system exceeds the lead or copper action level and is therefore required to implement the corrosion control treatment requirements under Section1303-59, in which case the system shall continue monitoring in accordance with paragraph (d)(2) of this section or

(B) the system meets the lead or copper action levels during two (2) consecutive six-month monitoring periods, in which case the system may reduce monitoring in accordance with paragraph (d)(4) of this section.

(2) Monitoring after installation of corrosion control and source water treatment:
(2) Monitoring after installation of corrosion control and source water treatment

(i) Any large system which installs optimal corrosion control treatment pursuant to Section1303-59(d)(4) shall monitor during two (2) consecutive six-month monitoring periods by the date specified in Section1303-59(d)(5).

(ii) Any small or medium-size system which installs optimal corrosion control treatment pursuant to Section1303-59(e)(5) shall monitor during two (2) consecutive six-

month monitoring periods by the date specified in Section1303-59(e)(6).

(iii) Any system which installs source water treatment pursuant to Section1303-61(a)(3) shall monitor during two (2) consecutive six-month monitoring periods by the date specified in Section1303-61(a)(4).

(3) Monitoring after DPNR specifies water quality parameter values(3)Monitoring after DPNR specifies water quality parameter values for optimal corrosion control:

After DPNR specifies the values for water quality control parameters under Section1303-60(f), the system shall monitor during each subsequent six-month monitoring period, with the first monitoring period to begin on the date DPNR specifies the optimal values under Section1303-60(f).

(4) Reduced monitoring:

(i) A small or medium-size water system that meets the lead and copper action levels during each of two (2) consecutive six-month monitoring periods may reduce the number of samples in accordance with paragraph (c) of this section, and reduce the frequency of sampling to once per year.

(ii) Any water system that maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by DPNR under Section1303-60(f) during each of two (2) consecutive six-month monitoring periods may request that DPNR allow the system to reduce the frequency of monitoring to once per year and to reduce the number of lead and copper samples in accordance with paragraph (c) of this section. DPNR shall review the information submitted by the water system and shall make its decision in writing, setting forth the basis for its determination. DPNR shall review, and where appropriate, revise its determination when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

(iii) A small or medium-size water system that meets the lead and copper action levels during three (3) consecutive years of monitoring may reduce the frequency of monitoring for lead and copper from annually to once every three (3) years. Any water system that maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by DPNR under Section1303-60(f) during three (3) consecutive years of monitoring may request that DPNR allow the system to reduce the frequency of monitoring from annually to once every three (3) years. DPNR shall review the information submitted by the water system and shall make its decision in writing, setting forth the basis for its determination. DPNR shall review, and where appropriate, revise its determination when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

(iv) A water system that reduces the number and frequency of sampling shall collect these samples from sites included in the pool of targeted sampling sites identified in paragraph (a) of this section. Systems sampling annually or less frequently shall conduct the lead and copper tap sampling during the months of June, July, August or September.

(v) A small or medium-size water system subject to reduced monitoring that exceeds the lead or copper action level shall resume sampling in accordance

paragraph (d)(3) of this section and collect the number of samples specified for standard monitoring under paragraph (c) of this section. Any water system subject to reduced monitoring frequency that fails to operate within the range of values for the water quality control parameters specified by DPNR under Section1303-60(f) shall resume tap water sampling in accordance with paragraph (d)(3) of this section and collect the number of samples specified for standard monitoring under paragraph (c) of this section.

(e) Additional monitoring by systems:

The results of any monitoring conducted in addition to the minimum requirements of this section shall be considered by the system and DPNR in making any determinations (i.e., calculating the 90th percentile lead or copper level) under the Lead and Copper Rule.

Section1303-65 Monitoring requirements for water quality parameters for the control of lead and copper

All large water systems, and all small and medium-size systems that exceed the lead or copper action level shall monitor water quality parameters in addition to lead and copper in accordance with this section. The requirements of this section are summarized in the table at the end of this section.

(a) General Requirements:

(1) Sample collection methods:

(i) Tap samples shall be representative of water quality throughout the distribution system taking into account the number of persons served, the different sources of water, the different treatment methods employed by the system, and seasonal variability. Tap sampling under this section is not required to be conducted at taps targeted for lead and copper sampling under Section1303-64(a). [Note: Systems may find it convenient to conduct tap sampling for water quality parameters at sites used for coliform sampling under Section1303-41.

(ii) Samples collected at the entry point(s) to the distribution system shall be from locations representative of each source after treatment. If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).

(2) Number of samples:

(i) Systems shall collect two (2) tap samples for applicable water quality parameters during each monitoring period specified under paragraphs (b) - (e) of this section from the following number of sites.

System Size (# People Served)	# of Sites For Water Quality Parameters
>100,000	25
10,001-100,000	10
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

(ii) Systems shall collect two (2) samples for each applicable water quality parameter at each entry point to the distribution system during each monitoring period specified in paragraph (b) of this section. During each monitoring period specified in paragraphs (c) - (e) of this section, systems shall collect one (1) sample for each applicable water quality parameter at each entry point to the distribution system.

(b) Initial Sampling:

All large water systems shall measure the applicable water quality parameters as specified below at taps and at each entry point to the distribution system during each six-month monitoring period specified in Section1303-64(d)(1). All small and medium-size systems shall measure the applicable water quality parameters at the locations specified below during each six-month monitoring period specified in Section1303-64(d)(1) during which the system exceeds the lead or copper action level.

(1) At taps:

(i) pH;

(ii) Alkalinity;

(iii) Orthophosphate, when an inhibitor containing a phosphate compound is used;

(iv) Silica, when an inhibitor containing a silicate compound is used;

(v) Calcium;

(vi) Conductivity; and

(vii) Water temperature.

(2) At each entry point to the distribution system: all of the applicable parameters listed in paragraph (b)(1) above.

(c) Monitoring after installation of corrosion control:

Any large system which installs optimal corrosion control treatment pursuant to Section1303-59(d)(4) shall measure the water quality parameters at the locations and frequencies specified below during each six-month monitoring period specified in Section1303-64(d)(2)(i). Any small or medium-size system which installs

optimal corrosion control treatment shall conduct such monitoring during each six-month monitoring period specified in Section1303-64(d)(2)(ii) in which the system exceeds the lead or copper action level.

(1) At taps, two samples for:

(i) pH;

(ii) Alkalinity;

(iii) Orthophosphate, when an inhibitor containing a phosphate compound is used;

(iv) Silica, when an inhibitor containing a silicate compound is used; and

(v) Calcium, when calcium carbonate stabilization is used as part of corrosion

control.

(2) At each entry point to the distribution system, one (1) sample every two (2) weeks (bi-weekly) for:

(i) pH;

(ii) When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and

(iii) When a corrosion inhibitor is used as part of optimal corrosion control, a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable).

(d) Monitoring after DPNR specifies water quality parameter valuesmeasure the water quality parameters at the locations and frequencies specified below during each six-month monitoring period specified in Section1303-64(d)(2)(i). Any small or medium-size system which installs optimal corrosion control treatment shall conduct such monitoring during each six-month monitoring period specified in Section1303-64(d)(2)(ii) in which the system exceeds the lead or copper action level.(1) At taps, two samples for(i) pH;(ii) Alkalinity;(iii) Orthophosphate, when an inhibitor containing a phosphate compound is used;(iv) Silica, when an inhibitor containing a silicate compound is used; and(v) Calcium, when calcium carbonate stabilization is used as part of corrosion control.(2) At each entry point to the distribution system, one (1) sample every two (2) weeks (bi-weekly) for(i) pH;(ii) When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and(iii) When a corrosion inhibitor is used as part of optimal corrosion control, a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable).(d) Monitoring after DPNR specifies water quality parameter values for optimal corrosion control:

After DPNR specifies the values for applicable water quality control parameters reflecting optimal corrosion control treatment under Section1303-60(f), all large systems shall measure the applicable water quality parameters in accordance with paragraph (c) of this section during each monitoring period specified in Section1303-64(d)(3). Any small or medium-size system shall conduct such monitoring during each monitoring period specified in Section1303-64(d)(3) in which the system exceeds the lead or copper action level. The system may take a confirmation sample for any water quality parameter value no later than three (3) days after the first sample. If a confirmation sample is taken, the result must be averaged with the first sampling result and the average must be used for any compliance determinations under Section1303-60(g). DPNR has

discretion to delete results of obvious sampling errors from this calculation.

(e) Reduced monitoring:

(1) Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of two consecutive six-month monitoring periods under paragraph (d) of this section shall continue monitoring at the entry point(s) to the distribution system as specified in paragraph (c)(2) of this section. Such system may collect two tap samples for applicable water quality parameters from the following reduced number of sites during each six-month monitoring period.

System Size (# People Served)	**Reduced # of Sites for Water Quality Parameters**
>100,000	10
10,001 to 100,000	7
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

(2) Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by DPNR under Section1303-60(f) during three (3) consecutive years of monitoring may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in this paragraph (e)(1) from every six (6) months to annually.

(3) A water system that conducts sampling annually shall collect these samples evenly throughout the year so as to reflect seasonal variability.

(4) Any water system subject to reduced monitoring frequency that fails to operate within the range of values for the water quality parameters specified by DPNR under Section1303-60(f) shall resume tap water sampling in accordance with the number and frequency requirements in paragraph (c) of this section.

(f) Additional monitoring by systems:

The results of any monitoring conducted in addition to the minimum requirements of this section shall be considered by the system and DPNR in making any determinations (i.e., determining concentrations of water quality parameters) under this section or Section1303-60.

SUMMARY OF MONITORING REQUIREMENTS FOR WATER QUALITY PARAMETERS[1]

Monitoring Period	Parameters[2]	Location	Frequency
Initial Monitoring	pH, alkalinity, calcium, conductivity, temperature	Taps to distribution system	Every
After Installation of Corrosion Control	pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every 6 months
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5]	Entry point(s) to distribution system	Biweekly
After DPNR Specifies Parameter Values For Optimal Corrosion Control	pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every 6 months
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5]	Entry point(s) to distribution system	Biweekly
Reduced Monitoring at	pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every 6 months reduced number
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5]	Entry point(s) to distribution system	Biweekly

[1] Table is for illustrative purposes; consult the text of this section for precise regulatory requirements.
[2] Small and medium-size systems have to monitor for water quality parameters only during monitoring periods in which the system exceeds the lead or copper action level.
[3] Orthophosphate must be measured only when an inhibitor containing a phosphate compound is used. Silica must be measured only when an inhibitor containing silicate compound is used.
[4] Calcium must be measured only when calcium carbonate stabilization is used as part of corrosion control.
[5] Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) must be measured only when an inhibitor is used.

Section1303-66 Monitoring requirements for lead and copper in source water

(a) Sample location, collection methods, and number of samples:

(1) A water system that fails to meet the lead or copper action level on the basis of tap samples collected in accordance with Section1303-64 shall collect lead and copper source water samples in accordance with the requirements regarding sample location, number of samples, and collection methods specified in Section1303-43(5)[inorganic chemical sampling].
[Note: The timing of sampling for lead and copper shall be in accordance with paragraphs (b) and (c) of this section, and not dates specified in 40 CFR Section141.23(a)(1) and (2)].
(2) Where the results of sampling indicate an exceedance of maximum permissible source water levels established under Section1303-61(b)(4), DPNR may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point. If DPNR-required confirmation sample is taken for lead or copper, then the results of the initial and confirmation sample shall be averaged in determining compliance with DPNR-specified maximum permissible levels. Any sample value below the detection limit shall be considered to be zero. Any value above the detection limit but below the PQL shall either be considered as the measured value or be considered one-half the PQL.

(b) Monitoring frequency after system exceeds tap water action level:

Any system which exceeds the lead or copper action level at the tap shall collect one source water sample from each entry point to the distribution system within six (6) months after the exceedance.

(c) Monitoring frequency after installation of source water treatment:

Any system which installs source water treatment pursuant to Section1303-61(a)(2) shall collect an additional source water sample from each entry point to the distribution system during two (2) consecutive six-month monitoring periods by the deadline specified in Section1303-61(a)(4).

(d) Monitoring frequency after DPNR specifies maximum permissible source water levels or determines that source water treatment is not needed:

(1) A system shall monitor at the frequency specified below in cases where DPNR specifies maximum permissible source water levels under Section1303-61(b)(4) or determines that the system is not required to install source water treatment under Section1303-61(b)(2).

(i) A water system using only groundwater shall collect samples once during

the three-year compliance period (as that term is defined in Section1303-12) in effect when the applicable DPNR determination under paragraph (d)(1) of this section is made. Such systems shall collect samples once during each subsequent compliance period, and/or

(ii) A water system using surface water (or a combination of surface and groundwater) shall collect samples once during each year, the first annual monitoring period to begin on the date on which the applicable DPNR determination is made under paragraph (d)(1) of this section.

(2) A system is not required to conduct source water sampling for lead and/or copper if the system meets the action level for the specific contaminant in tap water samples during the entire source water sampling period applicable to the system under paragraph (d)(1)(i) or (ii) of this section.

(e) Reduced monitoring frequency:

(1) A water system using only groundwater which demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and/or copper concentrations specified by DPNR in Section1303-61(b)(4) during at least three (3) consecutive compliance periods under paragraph (d)(1) of this section may reduce the monitoring frequency for lead and/or copper to once during each nine-year compliance cycle (as that term is defined in Section1303-12).

(2) A water system using surface water (or a combination of surface and ground waters) which demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by DPNR in Section1303-61(b)(4) for at least three (3) consecutive years may reduce the monitoring frequency in paragraph (d)(1) of this section to once during each nine-year compliance cycle (as that term is defined in 40 CFR Section141.23).

(3) A water system that uses a new source of water is not eligible for reduced monitoring for lead and/or copper until concentrations in samples collected from the new source during three (3) consecutive monitoring periods are below the maximum permissible lead and copper concentrations specified by DPNR in Section1303-61(a)(5).

Section1303-67 Analytical methods for the control of lead and copper

(a) Analyses for lead, copper, pH, conductivity, calcium, alkalinity, orthophosphate, silica, and temperature shall be conducted using the methods in Section 1303-43(k)(1).

(1) Analyses under this section shall only be conducted by laboratories that have been certified by EPA or DPNR. To obtain certification to conduct analyses for lead and copper, laboratories must:

(i) Analyze performance evaluation samples which include lead and copper provided by EPA Environmental Monitoring and Support Laboratory or equivalent samples provided by DPNR.

(ii) Achieve quantitative acceptance limits as follows:

(A) For lead: ± thirty percent (30%) of the actual amount in the Performance Evaluation sample when the actual amount is greater than or equal to 0.005 mg/L. The Practical Quantitation Level, or PQL for lead is 0.005 mg/L.

(B) For Copper: ± ten percent (10%) of the actual amount in the Performance Evaluation sample when the actual amount is greater than or equal to 0.050 mg/L. The Practical Quantitation Level, or PQL for copper is 0.050 mg/L.

(iii) Achieve method detection limits (MDLs) according to the procedures as follows:

(A) Lead: 0.001 mg/L (only if source water compositing is done under 40 CFR Section141.23(a)(4)); and

(B) Copper: 0.001 mg/L or 0.020 mg/L when atomic absorption direct aspiration is used (only if source water compositing is done under 40 CFR Section141.23(a)(4)).

(iv) Or be currently certified by EPA or DPNR to perform analyses to the specifications described in paragraph (a) (2) of this section.

(2) DPNR has the authority to allow the use of previously collected monitoring data for purposes of monitoring, if the data were collected an analyzed in accordance with the requirements of the Lead and Copper Rule.

(3) All lead and copper levels measured between the PQL and MDL must be either reported as measured or they can be reported as

one-half the PQL specified for lead and copper in paragraph (a)(1)(ii) of this section. All levels below the lead and copper MDLs must be reported as zero.

(4) All copper levels measured between the PQL and the MDL must be either reported as measured or they can be reported as one-half the PQL (0.025 mg/L). All levels below the copper

MDL must be reported as zero.

Section1303-68 Special primacy requirements

(a) Requirements for the Virgin Islands to adopt 40 CFR Part 141, Subpart I Lead and Copper. An application for approval of a Virgin Islands program revision which adopts the requirements specified in 40 CFR Part 141, subpart I, must contain (in addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that DPNR regulations be at least as stringent as the federal requirements) a description of how DPNR will accomplish the following program requirements:

(1) Section1303-60(d), 1303-60(f) and 1303-60(h) -- Designating optimal corrosion control treatment methods, optimal water quality parameters and modifications thereto.

(2) Section1303-61(b)(2) and 1303-61(b)(4) -- Designating source water treatment methods, maximum permissible source water levels for lead and copper and modifications thereto.

(3) Section1303-51 -- Verifying compliance with lead service line replacement schedules and of Public Water System's demonstrations of limited control over lead service lines.

Section1303-69 EPA review of DPNR implementation of national primary drinking water regulations for lead and copper

(a) Pursuant to the procedures in this section, the Regional Administrator may review DPNR determinations establishing corrosion control or source water treatment requirements for lead or copper and may issue an order establishing federal treatment requirements for a public water system pursuant to Section1303-60(d) and (f) and Section1303-61(b)(2) and (4) where the Regional Administrator finds that:

(1) DPNR has failed to issue a treatment determination by the applicable deadline;

(2) DPNR has abused its discretion in making corrosion control or source water treatment determinations in a substantial number of cases or in cases affecting a substantial population; or

(3) the technical aspects of DPNR's determination would be indefensible in an expected federal enforcement action taken against a system.

(b) If the Regional Administrator determines that review of DPNR determination(s) under this section may be appropriate, he shall request DPNR to forward the determination and all information that was considered by DPNR in making its determination, including public comments, if any, within sixty

(60) days of the Regional Administrator's request.

(c) Proposed review of DPNR determinations:

(1) Where the Regional Administrator finds that review of DPNR determination under paragraph (a) of this section is appropriate, he shall issue a proposed review order which shall:

(i) Identify the public water system(s) affected, DPNR determination being reviewed and the provisions of Virgin Islands and/or federal law at issue;

(ii) Identify the determination that DPNR failed to carry out by the applicable deadline, or identify the particular provisions of DPNR determination which, in the Regional Administrator's judgment, fail to carry out properly applicable treatment requirements, and explain the basis for the Regional Administrator's conclusion;

(iii) Identify the treatment requirements which the Regional Administrator proposes to apply to the affected system(s), and explain the basis for the proposed requirements; and

(iv) request public comment on the proposed order and the supporting record.

(2) The Regional Administrator shall provide notice of the proposed review order by:

(i) Mailing the proposed order to the affected public water system(s), DPNR agency whose order is being reviewed, and any other parties of interest known to the Regional Administrator, and

(ii) publishing a copy of the proposed order in a newspaper of general circulation in the affected communities.

(3) The Regional Administrator shall make available for public inspection during the comment period the record supporting the proposed order, which shall include all of the information submitted by DPNR to EPA under paragraph (b) of this section, all other studies, monitoring data and other information considered by the Agency in developing the proposed order.

(d) Final review order:

(1) Based upon review of all information obtained regarding the proposed review order, including public comments, the Regional Administrator shall issue a final review order within one hundred and twenty (120) days after issuance of the proposed order which affirms, modifies, or withdraws the proposed order. The Regional Administrator may extend the time period for

issuing the final order for good cause. If the final order modifies or withdraws the proposed order, the final order shall explain the reasons supporting the change.

(2) The record of the final order shall consist of the record supporting the proposed order, all public comments, all other information considered by the Regional Administrator in issuing the final order and a document responding to all significant public comments submitted on the proposed order. If new points are raised or new material supplied during the public comment period, the Regional Administrator may support the responses on those matters by adding new materials to the record. The record shall be complete when the final order is issued.

(3) Notice of the final order shall be provided by mailing the final order to the affected system(s), DPNR, and all parties who commented on the proposed order.

(4) Upon issuance of the final order, its terms constitute requirements of the national primary drinking water regulation for lead and/or copper until such time as the Regional Administrator issues a new order (which may include recision of the previous order) pursuant to the procedures in this section. Such requirements shall supersede any inconsistent treatment requirements established by DPNR pursuant to the national primary drinking water regulations for lead and copper.

(5) The Regional Administrator may not issue a final order to impose conditions less stringent than those imposed by DPNR.

(e) The Regional Administrator may not delegate authority to sign the final order under this section.

(f) Final action of the Regional Administrator under paragraph (d) of this section shall constitute action of the Administrator for purposes of 42 U.S.C. Section300j-7(a)(2).

Section1303-70 Variances and exemptions from the maximum contaminant levels for organic and inorganic chemicals and exemptions from the treatment technique for lead and copper

(a) DPNR may require a public water system to use bottled water, point-of-use devices, point-of-entry devices or other means as a condition of granting a variance or an exemption from the requirements of 40 CFR Section141.61(a) and (c) and 40 CFR Section141.62, to avoid an unreasonable risk to health. DPNR may require a public water system

to use bottled water and point-of-use devices or other means, <u>but not point-of-entry devices</u>, as a condition for granting an exemption from corrosion control treatment requirements for lead and copper in Section1303-59 and Section1303-60 to avoid an unreasonable risk to health. DPNR may

require a public water system to use point-of-entry devices as a condition for granting an exemption from the source water and lead service line replacement requirements for lead and copper under Section1303-61 or Section1303-62 to avoid an unreasonable risk to health.

(b) Public water systems that use bottled water as a condition for receiving a variance or an exemption from the requirements of 40 CFR Section141.61(a) and (c) and 40 CFR Section141.62, or an exemption from the requirements of SectionSection1303-59 - 1303-62 must meet the requirements specified in either paragraph (g)(1) or (g)(2) and paragraph (g)(3) of this section:

(1) The Administrator or DPNR must require and approve a monitoring program for bottled water. The public water system must develop and put in place a monitoring program that provides reasonable assurances that the bottled water meets all MCLs. The public water system must monitor a representative sample of the bottled water for all contaminants regulated under 40 CFR Section141.61 (a) and (c) and 40 CFR Section141.62 during the first three-month period that it supplies the bottled water to the public, and annually thereafter. Results of the monitoring program must be provided to DPNR within five (5) working days.

(2) The public water system must receive a certification from the bottled water company that the bottled water supplied has been taken from an "approved source" as defined in 21 CFR 129.3(a); the bottled water company has conducted monitoring in accordance with 21 CFR 129.80(g)(1) through (3); and the bottled water does not exceed any MCLs or quality limits as set out in 21 CFR 103.35, 110, and 129. The public water system shall provide the certification to DPNR the first quarter after it supplies bottled water and annually thereafter.

(3) The public water system is fully responsible for the provision of sufficient quantities of bottled water to every person supplied by the public water system via door-to-door bottled water delivery.

(c) (1) In requiring the use of a point-of-entry device as a condition for granting an exemption from the treatment requirements for lead and copper under Section1303-61, DPNR must be assured that use of the device will not cause increased corrosion of lead and copper bearing materials located between the device and the tap that could increase contaminant levels at the tap.

* * *

Section 1309-1. Administrative assessment of civil fines and penalties

(a) Purpose and Scope. This section implements Title 19, Virgin Islands Code (VIC), Chapter 51, Section 1309(c) by establishing procedures for the administrative assessment of civil penalties for violations of the Safe Drinking Water Act.

(b) Authority. These regulations are promulgated pursuant to authority contained in Title 19, VIC, Chapter 51, Section 1309(c).

(c) Definitions:

(1) "Act" means the Safe Drinking Water Act, as amended, or rules and regulations which implement the Act.

(2) "Adjudication" means the Department's process for formulating a final administrative decision.

(3) "Commissioner" means the Commissioner of the Department of Planning and Natural Resources.

(4) "Decision" means an initial or final decision of the Hearing Officer.

(5) "Department" means the Department of Planning and Natural Resources.

(6) "Final administrative decision" means an Order or decision of the Department which is not subject to further Departmental review under this subchapter and which is subject to collection proceedings and judicial review in an appropriate court, as authorized by law.

(7) "Hearing Officer" means any person designated by the Commissioner to preside over hearings under this subchapter.

(8) "Initial decision" means a decision of the Hearing Officer which, under applicable statute and regulation, is subject to review by the Commissioner, but which becomes the final administrative decision in the absence of such review.

(9) "Notice of Violation and Assessment (NOVA)" means a written notice issued by the Commissioner or his designee, which accuses a Respondent of violating the Act and assesses a civil penalty for the violation.

(10) "Party" means a Respondent or the Department. Also, it includes joint and several respondents and any other person allowed to participate in any hearing.

(11) "Person" means any individual, corporation, or governmental body, other than a party, competent to make an oath or affirmation, offer testimony and otherwise assist in the adjudication process.

(12) "Respondent" means the person of entity accused of violation of the Act.

(13) "Sanction" means imposition of a penalty or fine, or taking other compulsory or restrictive action.

(d) Procedures:

(1) In general, the requirements of due process are met when the responding party is afforded:

(A) Timely and adequate notice;

(B) A hearing or other opportunity to confront adverse witnesses and present oral evidence on his own behalf;

(C) The right to be accompanied, represented and advised by counsel or other representative;

(D) A determination or decision based solely on the record and that identifies the evidence relied upon and specifies the reasons for the decision.

(E) An impartial decision maker.

(e) Notice of Violation and Assessment:

(1) A Notice of Violation and Assessment (NOVA) is issued by the Commissioner or his designate and served personally or by mail, return receipt requested, upon each respondent.

The NOVA is required to contain:

(A) A concise statement of the facts believed to show a violation;

(B) Specific reference to the provisions of the Act, regulation, permit, or order allegedly violated;

(C) The findings and conclusions upon which the Department bases the assessments;

(D) The amount of civil penalty assessed; and,

(E) A copy of the regulations in this section governing the proceedings.

The NOVA also must advise the respondent of his rights upon receipt of the NOVA.

(2) In assessing a civil penalty, the Department takes into account information available to the Department concerning any factor to be considered under the applicable statute, and any other information that justice or the purposes of the statute require.

(f) Procedure Upon Receipt of a NOVA.

(1) The respondent has thirty (30) days from receipt of the NOVA in which to respond. During this time, the respondent may:

(A) Accept the penalty by taking the actions specified in the NOVA;

(B) Seek to have the NOVA amended, modified, or rescinded under paragraph (f)(2) herein;

(C) Request a hearing or an informal settlement conference under paragraph (f)(5)(A) herein.

(D) Request an extension of time under paragraph (f)(3) herein; or,

(E) Take no action, in which case the NOVA becomes final in accordance with Section 1309-1(g).

(2) The respondent may seek amendment or modification of the NOVA to conform with the facts or law as that person sees them by notifying the Department's official specified in the NOVA. Where amendment or modification is sought, the Department's official will either amend the NOVA or decline to amend it, and so notify the respondent, as appropriate in writing.

(3) The respondent, within the thirty (30) day period specified in paragraph (f)(1) of this section, may request an extension of time to respond. The Department's official may grant an extension of up to thirty (30) days, unless the official determines that the respondent could, exercising reasonable diligence, respond within the thirty (30) day period.

Where the Department's official does not respond to the request within seventy-two (72) hours of its receipt, the request is granted automatically for the extension requested, up to maximum of thirty (30) days. A response to the request by telephone within seventy-two (72) hours of receipt, followed by a written confirmation, is an effective response.

(4) The Department's official may, for good cause, grant an additional extension beyond the thirty (30) day period specified in paragraph (f)(3) of this section.

(5) (A) Where the respondent desires a hearing, he shall mail to the address specified in the NOVA or serve in person a written and dated request. The request shall include a copy of the NOVA or refer to the relevant case by name and/or number. The Department's official shall promptly forward the request for hearing to the Commissioner for scheduling.

(B) Where the respondent desires to refrain from litigation of the matter and to reach an early dissolution of the environmental problem without being required to make any admissions of law or fact, he may request an informal settlement conference by following the same procedures established in paragraph (f)(5)(A) of this section.

(g) Final Departmental Decision.

(1) If no request for hearing is timely filed, as provided in Section 1309-1(f)(1)(C), the NOVA becomes effective as the final administrative decision and order of the Department on the thirtieth (30th) day after service of the NOVA or on the last day of any period of delay granted by the Department.

(2) Where a request for hearing is timely filed in accordance with Section 1309-1(f)(5)(A), the date of the Final Departmental Decision is thirty (30) days after service of the written decision upon the respondent.

(h) Payment of Final Assessment.

(1) Respondent shall make full payment of the civil penalty assessed within thirty (30) days of the date upon which the assessment becomes effective as the Final Departmental Decision and Order of the Department of Planning and Natural Resources. The respondent is required to mail or deliver to the Department a certified check, cashiers check or money order made payable in United States currency in the amount of the assessment to the Department of Planning and Natural Resources.

(2) Upon any failure to pay the civil penalty assessed, the Department may request the Department of Justice to recover the amount assessed in the appropriate court of the Virgin Islands, or the Department may take action under Section 1309-1(i).

(i) Compromise of Civil Penalty.

The Department, in its sole discretion, may compromise, modify, remit, or mitigate with or without conditions, any civil penalty imposed, or which is subject to imposition.

(j) Factors Considered in Assessing Penalties

(1) Factors to be taken into account in assessing a penalty may include the nature, circumstances, extent and gravity of the alleged violation; the respondent's degree of culpability and history of prior offenses; and such other matters as justice may require.

(k) Administrative Hearing.

(1) Scope of Applicability. This section sets forth the procedures governing the conduct of hearings and the issuance of initial and final decisions of the Department in administrative proceedings involving alleged violations of the Act and its implementing regulations.

(2) Case Docketing. Each request for hearing, promptly upon its receipt for filing in the Office of the Commissioner, the case will be assigned a docket number and, thereafter, the proceeding will be referred to by this number. Written assignment to a hearing Officer and notice of date, time and place of the hearing are promptly given to the parties.

(3) Duties and Powers of the Hearing Officer. The hearing officer is designated by the Commissioner and has all powers and responsibilities necessary to preside over the parties and the proceedings, to hold pre-hearing conferences, to conduct the hearing, and to make the decision in accordance with these regulations, including, but not limited to the authority and duty to do the following:

(A) Rule on a request to participate as a party in the proceeding by allowing, denying or limiting the participation (the ruling considers the views of the parties and is based on whether the requester can be expected to contribute materially to the disposition of the proceedings);

(B) In the hearing officer's discretion, having due regard for the convenience and necessity of the parties and witnesses to schedule the time, place and manner of conducting the hearing, to continue or adjourn the hearing to a later date or different place, and reopen the hearing at any time before issuance of the decision.

(C) Schedule and regulate the course of the hearing and the conduct of the participants;

(D) Administer oaths and affirmations to witnesses;

(E) Rule on motions, procedural requests, and similar matters;

(F) Examine and cross-examine witnesses and introduce into the record on the hearing official's own initiative, documentary or other evidence;

(G) Rule on requests for appearance of witnesses or production of documents or requests for Admissions and take appropriate action upon failure of a party to effect the appearance or production of a witness or document ruled relevant and necessary to the proceedings; and, as authorized by law, issue subpoenas for the appearance of witnesses or production of documents;

(H) Take official notice of any matter not appearing in evidence that is among traditional matters of judicial notice; or technical or scientific facts within the general specialized knowledge of the Department of Planning & Natural Resources as an expert body; or any reasonably available public document on condition that the parties are advised of the matter noticed.

(I) Prepare and submit a decision or other appropriate disposition document and certify the record;

(J) Grant preliminary or interim relief.

(4) Disqualification of Hearing Official.

(A) The hearing official may withdraw from a particular case when the hearing official considers himself disqualified.

(B) A party may in good faith request the hearing officer to withdraw on the ground of personal bias or other disqualification. The party seeking the disqualification is required to file with the hearing officer a timely affidavit or statement setting forth in detail the facts alleged to constitute the grounds for disqualification, and the hearing officer is required to rule on the matter. If the hearing officer rules against disqualification, the hearing officer is required to place all matters relating to such claims of disqualification in the record.

(5) Appearances.

(A) A party may appear in person or by or with counsel or other representative.

(B) Where a party fails to appear after proper notice, the hearing officer may consider the failure of the party to appear a waiver of any right to a hearing and consent to the making of a decision on the record.

(6) Conduct of the Hearing. The hearing officer shall provide the respondent with an opportunity for a fair, open and impartial hearing. The respondent has the right and the hearing officer is required to afford the opportunity to defend and meet the claims or allegations of violations by argument, proof, and cross-examination of witnesses. The hearing officer shall make findings of fact and conclusions of law and enter an order in accordance with the facts provided at the hearing. The Department, in accordance with well-settled law, is not held to strict conformity with judicial procedure required in a court of law and a hearing may be fair even though informal or summary. However, the hearing officer shall provide a hearing in which ample opportunity is given to all parties to make, by evidence and argument, a showing fairly adequate to establish, from a standpoint of justice, the steps asked to be taken. The hearing officer, before entering his order on the basis of the record and recommendations, shall provide opportunity to the parties to submit for his consideration exceptions to the recommended findings or conclusions and supporting reasons for the exceptions, such submission to be made within ten (10) days of issuance. The hearing officer shall issue written notice of this order to the respondent. The order of the hearing officer is final and binding on all parties unless appealed or otherwise presented for judicial review to the courts within thirty (30) days after notice has been sent to the respondent.

(7) Initial and Final Decisions.

(A) The hearing officer shall issue a written decision upon the record in the case, setting forth:

(i) Findings and conclusions, and the reasons or basis for them on all matters of fact, law or discretion presented in the record, and the rulings on any proposed findings or conclusions presented by the parties.

(ii) A statement of facts noticed or relied upon in the decision; and,

(iii) Such other matters as the hearing officer considers appropriate.

(B) The hearing officer may at the termination of the hearing announce the decision, subject to later issuance of a written decision.

(C) The hearing officer shall serve the written decision on each of the parties

personally or by mail, return receipt requested, and shall promptly certify to the Commissioner the record, including the original copy of the decision, as complete and accurate.

(D) Unless the hearing officer orders a stay or unless a petition for discretionary review is filed or the Commissioner issues an order to review upon his own initiative, an initial decision becomes effective as the final administrative decision of the Department of Planning & Natural Resources thirty (30) days after service.

(8) Administrative Review of Decision.

(A) Subject to the requirements of this section, any party may petition for review of an initial decision of the hearing officer within fifteen (15) days after the date the decision is served. The petitioner shall address the petition to the Commissioner and file at the main office of the Department of Planning & Natural Resources.

(B) Review by the Commissioner of an initial decision is discretionary and is not a matter of right. A petition for review is to be served upon all parties. Where a party files a timely petition for discretionary review, or action to review is taken by the Commissioner upon his own initiative, the effectiveness of the initial decision is stayed until further order of the Commissioner.

(C) Petitions for discretionary review may be filed only upon one or more of the following grounds:

(i) a finding of a material fact is clearly erroneous based upon the evidence in the record;

(ii) a necessary legal conclusion is contrary to law or precedent;

(iii) a substantial and important question of law, policy or discretion in involved, including the amount of the civil penalty; or

(iv) a prejudicial procedural error has occurred.

(D) Each issue is required to be separately numbered concisely stated, and supported by detailed citations to the record, statutes, and regulations. Issues or law or fact not argued before the hearing officer may not be raised on review unless they were raised for the first time in the initial decision or could not reasonably have been foreseen and raised

by the parties during the hearing. The Commissioner shall not consider new or additional evidence that is not a part of the record before the hearing officer.

(E) No oral argument on petitions for discretionary review is allowed.

(F) Where the Commissioner declines to exercise discretionary review, the order is served on all parties personally or by mail, return receipt requested, and specifies the date upon which the hearing officer's decision becomes effective as the Final Decision of the Department of Planning & Natural Resources. The Commissioner need not give reasons for declining review.

(G) Where the Commissioner grants a petition for discretionary review, he issues an order specifying the issues to be argued in written form and the date by which written arguments are to be filed. No oral argument is permitted.

(H) After the expiration date for filing briefs under paragraph (G) above, the Commissioner shall transmit the decision to each of the parties either personally or by mail, return receipt requested. The Commissioner's decision becomes the final administrative decision on the date it is served, unless otherwise provided in the decision.

(l) The address of the Department for delivering or mailing all requests, documents, and other correspondence mentioned within this Section is: U.S. Virgin Islands Department of Planning & Natural Resources, 8000 Nisky Shopping Center, Suite 45, St. Thomas, VI 00802.

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