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REGULATION MADE UNDER THE ONTARIO WATER RESOURCES ACT

DRINKING WATER PROTECTION

CONTENTS

INTERPRETATION

1. In this Regulation,

"approval" means an approval under subsection 52 (1) of the Act;

"Ontario Drinking Water Standards" means the Ministry of the Environment publication entitled "Ontario Drinking Water Standards", originally dated August 2000, as amended from time to time;

"quarter" means the three-month period beginning on January 1, April 1, July 1 and October 1 in each year;

"water distribution system" means a part of a water treatment or distribution system that distributes water, if that part of the system includes one or more water works;

"water treatment or distribution system" means a system for collecting, producing, treating, storing, supplying or distributing water that includes one or more water works.

2. (1) For the purpose of this Regulation, a laboratory is an accredited laboratory for a parameter if,

(a) the laboratory is accredited for analysis of that parameter by the Standards Council of Canada; or

(b) the laboratory has obtained an accreditation for analysis of that parameter that, in the Director's opinion, is equivalent to accreditation by the Standards Council of Canada.

(2) For the purpose of this Regulation, analysis for a microbiological parameter shall be deemed to be carried out in an accredited laboratory for that parameter if it is carried

out in an Ontario Ministry of Health and Long-Term Care laboratory by a member of the College of Medical Laboratory Technologists of Ontario.

(3) Until October 31, 2000, every laboratory shall be deemed to be an accredited laboratory for every parameter except the microbiological parameters listed in Table A (Microbiological) of Schedule 2 (Sampling and Analysis Requirements).

(4) Until February 28, 2001, a laboratory that has applied to the Standards Council of Canada for accreditation in respect of a parameter listed in Schedule 1 (Transitional Accreditation) shall be deemed to be an accredited laboratory for that parameter.

(5) The Director may issue a Notice of Interim Approval for analysis for the microbiological parameters listed in Table A of Schedule 2 to a laboratory that,

(a) is a member in good standing of the Canadian Association for Environmental Analytical Laboratories;

(b) has passed the Canadian Association for Environmental Analytical Laboratories Proficiency Testing studies for the microbiological parameters listed in Table A of Schedule 2; and

(c) has completed the Canadian Association for Environmental Analytical Laboratories Initial or Abbreviated On-Site Assessment addressing the methods specific to those microbiological parameters.

(6) Until October 31, 2000, every laboratory for which a Notice of Interim Approval has been issued under subsection (5) and not revoked shall be deemed to be an accredited laboratory for the microbiological parameters listed in Table A of Schedule 2.

APPLICATION

3. (1) This Regulation applies to every water treatment or distribution system that includes a water works for which an approval would be required if the water works were established on or after August 8, 2000.

(2) Despite subsection (1), this Regulation does not apply to a water treatment or distribution system that obtains all of its water from another water treatment or distribution system to which this Regulation does apply, unless,

(a) the system that obtains the water is owned or operated by a municipality or by the Ontario Clean Water Agency;

(b) the system that obtains the water supplies water to a municipality or the Ontario Clean Water Agency; or

(c) the system that obtains the water rechlorinates or otherwise treats the water.

(3) Despite subsection (1), this Regulation does not apply to a water treatment or distribution system that supplies 50,000 litres of water or less on at least 88 days in every 90-day period, unless the system serves more than five private residences.

(4) Despite subsection (1), this Regulation does not apply to a water treatment or distribution system that is not capable of supplying water at a rate greater than 250,000 litres per day, unless the system serves more than five private residences.

APPROVALS

4. (1) A person who applies for an approval shall do so in accordance with the Ontario Drinking Water Standards.

(2) In considering an application for an approval, the Director shall have regard to the Ontario Drinking Water Standards.

MINIMUM LEVEL OF TREATMENT

5. (1) The owner of a water treatment or distribution system that obtains water from a ground water source shall ensure provision of a minimum level of treatment consisting of disinfection.

(2) The owner of a water treatment or distribution system that obtains water from a surface water source shall ensure provision of a minimum level of treatment consisting of chemically assisted filtration and disinfection or other treatment capable, in the Director's opinion, of producing water of equal or better quality.

(3) The owner of a water treatment or distribution system shall ensure that no water enters a water distribution system or plumbing unless it has been treated with chlorination or another treatment that, in the Director's opinion, is as effective as chlorination to achieve disinfection that persists into the distribution system or plumbing.

(4) Subsections (1), (2) and (3) apply despite any provision in an approval granted before August 1, 2000.

(5) If a water treatment or distribution system commenced operation before August 1, 2000 and, immediately before August 1, 2000, was not in compliance with subsection (1), (2) or (3), the owner,

(a) is not required to comply with that subsection until December 31, 2002; and

(b) shall, on or before October 31, 2000, deliver to the Director a written notice describing the action proposed in order to achieve compliance and setting out a timetable for the action.

6. (1) Subsections 5 (1) and (3) do not apply if an approval granted on or after August 1, 2000 provides that disinfection and chlorination are not required.

(2) An approval may provide that disinfection and chlorination are not required only if,

(a) the water is obtained exclusively from ground water sources; and

(b) the application for the approval includes,

(i) if the owner of the water treatment and distribution system is a municipality, a copy of a resolution of the municipal council approving the application,

(ii) the written consent of the medical officer of health for the health unit in which the water treatment and distribution system is located,

(iii) results of all water sampling and analysis required by subsection 7 (1) during the 24 months before the application is made,

(iv) a report prepared by a hydrogeologist, assessing the aquifer, the well, the well head protection and the impact of existing and anticipated land uses,

(v) confirmation that reasonable notice was given of a public meeting to inform users and prospective users of water from the water treatment and distribution system of the application and to obtain their comments on it,

(vi) a summary of the comments made at the public meeting mentioned in subclause (v) and the owner's responses to them, and

(vii) confirmation that, for every well in the water treatment and distribution system, standby disinfection equipment and a supply of appropriate chemicals will be readily available for immediate use in case disinfection is required.

SAMPLING AND ANALYSIS

7. (1) The owner of a water treatment or distribution system shall ensure that water sampling and analysis is carried out in accordance with,

(a) Schedule 2 (Sampling and Analysis Requirements); and

(b) any additional requirements of an approval or an order or direction under the Act.

(2) Subsection (1) prevails over an approval granted before August 1, 2000 that provides for less stringent sampling or analysis.

(3) If analysis of a water sample for a parameter is required by subsection (1), the owner of the system shall ensure that the analysis is carried out by an accredited laboratory for that parameter.

(4) Subsection (3) does not apply to,

(a) analysis that is carried out by continuous monitoring equipment that forms part of the water treatment or distribution system;

(b) analysis that is carried out in accordance with an approval, order or direction referred to in clause (1) (b), if the analysis is for a parameter that is not mentioned in Table A (Microbiological) of Schedule 2 (Sampling and Analysis Requirements), Schedule 4 (Chemical/Physical Standards) or Schedule 5 (Radiological Standards) and,

(i) the parameter is not identified in the approval, order or direction as a health-related parameter, or

(ii) the parameter is identified in the approval, order or direction as a health-related parameter and the analysis is carried out by a Ministry of the Environment laboratory or by a laboratory that, in the

Director's opinion, is proficient in carrying out analyses for that parameter; or

(c) analysis for a parameter listed in Schedule 3 (Operational Parameters), if the analysis is carried out in the water treatment or distribution system by,

(i) the holder of a Class I, Class II, Class III or Class IV water treatment licence or water distribution licence issued under Ontario Regulation 435/93, or

(ii) a person who,

(A) has at least one year of experience working in a laboratory in a water treatment or distribution system or in a laboratory that, in the Director's opinion, is similar to a laboratory in a water treatment or distribution system, and

(B) has passed, in the preceding 36 months, an examination approved by the Director that relates to water quality analysis in water treatment or distribution systems or, in the Director's opinion, has education, training or experience indicating that the person has the skills tested by the examination.

(5) If analysis of a water sample for a parameter is required by subsection (1) and the analysis will be carried out by a laboratory, the owner of the water treatment or distribution system shall ensure that written notice of the identity of the laboratory is delivered to the Director at least three working days before the sample is analyzed, unless the Director has previously been notified under this subsection that a water sample from the water treatment or distribution system will be analyzed for that parameter by that laboratory.

(6) If analysis of a water sample for a parameter is required by an approval, order or direction referred to in clause (1) (b), the parameter is not mentioned in Table A of Schedule 2, Schedule 4 or Schedule 5, and the parameter is identified in the approval, order or direction as a health-related parameter, the owner of the water treatment or distribution system shall ensure that the laboratory that carries out the analysis is informed, when the sample is sent to the laboratory, of the maximum concentration set out for the parameter in the approval, order or direction.

(7) If subsection (3) applies to the analysis of a water sample for a parameter, the owner of the water treatment or distribution system shall ensure that an accredited laboratory to which the sample is given for analysis does not subcontract the analysis unless,

(a) the owner consents; and

(b) the person who carries out the analysis is an accredited laboratory for the parameter.

(8) If subsection (3) applies to the analysis of a water sample for a parameter, the owner of the water treatment or distribution system shall not use a laboratory located outside Ontario unless,

(a) the laboratory is an accredited laboratory for that parameter;

(b) the laboratory is provided with a copy of this Regulation and the Ontario Drinking Water Standards; and

(c) the laboratory agrees to comply with the notification requirements of,

(i) section 8, and

(ii) subsection (10) of this section.

(9) Despite subsection (5), the notice required by that subsection may be given at any time before the analysis is carried out or within 24 hours after the analysis is carried out, if the analysis is carried out before September 5, 2000.

(10) Every laboratory that carries out an analysis of a water sample under subsection (3) shall submit a report on the results of the analysis to the Director at the same time as the report is sent to the owner.

NOTICE TO MEDICAL OFFICER OF HEALTH AND TO MINISTRY

8. (1) The owner of a water treatment or distribution system shall ensure that notice is given in accordance with this section if,

(a) analysis of a water sample from a water distribution system or a sample of treated water,

(i) shows that a parameter exceeds the Maximum Acceptable Concentration (MAC) or Interim Maximum Acceptable Concentration (IMAC) set out for the parameter in Schedule 4 (Chemical/Physical Standards) or 5 (Radiological Standards),

(ii) shows that a parameter that is identified in an approval, order or direction referred to in clause 7 (1) (b) as a health-related parameter and that is not mentioned in Schedule 4 or 5 exceeds the maximum concentration set out for that parameter in the approval, order or direction, or

(iii) is an indicator of adverse water quality described in Schedule 6 (Indicators of Adverse Water Quality); or

(b) other observations disclose an indicator of adverse water quality described in Schedule 6.

(2) In addition to the obligation of the owner under subsection (1) to ensure that notice is given in accordance with this section, a laboratory shall give notice in accordance with this section and shall immediately advise the owner if an analysis carried out by the laboratory of a water sample from a water distribution system or a sample of treated water,

(a) shows that a parameter exceeds the Maximum Acceptable Concentration (MAC) or Interim Maximum Acceptable Concentration (IMAC) set out for the parameter in Schedule 4 or 5;

(b) shows that a parameter that is identified in an approval, order or direction referred to in clause 7 (1) (b) as a health-related parameter and that is not mentioned in Schedule 4 or 5 exceeds the maximum concentration set out for that parameter in the approval, order or direction; or

(c) is an indicator of adverse water quality described in Schedule 6.

(3) Notice under this section must be given to,

(a) the medical officer of health for the health unit in which the water treatment or distribution system is located; and

(b) the Ministry.

(4) The notice must be given immediately and must be confirmed in writing within 24 hours.

(5) The immediate notice required by subsection (4) must be given by speaking directly or by telephone with a person referred to in subsection (6).

(6) For the purpose of subsection (5), the immediate notice required by subsection (4) must be given,

(a) to a medical officer of health, by speaking with a person at the office of the medical officer of health or, if the office is closed, by speaking with a person at the on-call system of the health unit; and

(b) to the Ministry, by speaking with a person at the Ministry's Spills Action Centre.

(7) The written confirmation required by subsection (4) must be given,

(a) to a medical officer of health, by delivering the confirmation to the office of the medical officer of health; and

(b) to the Ministry, by delivering the confirmation to the Ministry's Spills Action Centre.

(8) A notice given under this section by the owner of a water treatment or distribution system must confirm that appropriate action is being taken.

(9) If notice was required under subclause (1) (a) (i) or clause (2) (a) because turbidity exceeded the Maximum Acceptable Concentration (MAC) set out for turbidity in Schedule 4, no further notice is required under that provision in respect of the turbidity of a sample taken from a ground water source less than 48 hours after the notice was initially required under that provision.

CORRECTIVE ACTION

9. If notice is required under subsection 8 (1), the owner of the water treatment or distribution system shall ensure that,

(a) in the case of notice required under subclause 8 (1) (a) (i) or (ii), another sample is taken and analyzed; and

(b) in the case of notice required under subclause 8 (1) (a) (iii) or clause 8 (1) (b), the corrective action specified in Schedule 6 (Indicators of Adverse Water Quality) for the relevant indicator of adverse water quality is taken.

POSTING WARNING NOTICE

10. (1) The owner of a water treatment or distribution system shall ensure that a warning notice is posted in accordance with this section if,

(a) the owner does not comply with the sampling or analysis requirements of subsection 7 (1) with respect to a microbiological parameter; or

(b) notice is required under subsection 8 (1) because of a microbiological parameter and the corrective action specified in Schedule 6 (Indicators of Adverse Water Quality) for the relevant indicator of adverse water quality has not been taken.

(2) The warning notice required by this section must be posted in a prominent location where it is likely to come to the attention of users of water from the water treatment or distribution system.

(3) If the owner does not comply with subsection (1), a provincial officer or a public health inspector under the *Health Protection and Promotion Act* may post the warning notice.

PUBLIC INFORMATION

11. (1) The owner of a water treatment or distribution system shall ensure that the following information is available at the location or locations specified in subsection (2) for inspection by any member of the public during normal business hours without charge:

1. A copy of every report given to the owner by an accredited laboratory on the analysis of water samples taken under section 7.

2. A copy of every report or record made of the analysis of water samples carried out under clause 7 (4) (c) for aluminum, chloramine, chlorine residual, fluoride or turbidity.

3. A copy of every approval and every order or direction under the Act that applies to the system and is still in effect.

4. A copy of every report prepared under section 12.

5. A copy of this Regulation and the Ontario Drinking Water Standards.

(2) The information must be available at,

(a) the office of the owner or, if the office of the owner is not reasonably convenient to users of water from the system, at a location that is reasonably convenient to those users; and

(b) if the owner is not a municipality but the system serves a municipality, at the office of the municipality.

(3) Paragraphs 1 and 2 of subsection (1) do not apply to a report or record until the day after the report or record comes into the owner's possession.

(4) Paragraphs 1, 2 and 4 of subsection (1) do not apply to a report or record that is more than two years old.

(5) Paragraphs 1, 2 and 3 of subsection (1) do not apply to reports, records, approvals, orders or directions given, made or granted before August 26, 2000.

QUARTERLY REPORTS

12. (1) The owner of a water treatment or distribution system shall ensure that a written report is prepared and submitted to the Director, not later than 30 days after the end of each quarter, that,

(a) for the quarter, describes the water system, the operation of the system and the sources of the water collected, produced, treated, stored, supplied or distributed by the system;

(b) describes the measures taken to comply with this Regulation and the Ontario Drinking Water Standards during the quarter;

(c) summarizes the analytical results obtained during the quarter for water samples taken under section 7 and the notices, if any, that were required to be given during the quarter under section 8; and

(d) provides information referred to in clauses (a), (b) and (c) relating to previous quarters, if the information only became known during the quarter for which the report is prepared.

(2) The owner of the system shall ensure that a copy of any report under this section is given, without charge, to every user of water from the system who requests a copy.

(3) The owner of the system shall ensure that, every time a report is prepared under this section, effective steps are taken to advise users of water from the system that copies of the report are available, without charge, and of how a copy may be obtained.

(4) If a water treatment or distribution system serves more than 10,000 people, the owner of the system shall ensure that a copy of every report prepared under this section is available to the public at no charge on a website on the Internet.

(5) Subsections (2) and (4) do not apply to a report that is more than two years old.

(6) Subsection (1) does not apply to a quarter that began before June 30, 2000.

ENGINEERS' REPORTS

13. (1) The owner of a water treatment or distribution system shall ensure that written reports are prepared for the Ministry by a person referred to in subsection (2) in accordance with the Ministry of the Environment publication entitled "Terms of Reference for Engineers' Reports for Water Works", originally dated August 2000, as amended from time to time, if,

(a) the system is owned or operated by a municipality or by the Ontario Clean Water Agency;

(b) a municipality or the Ontario Clean Water Agency has contracted with the owner of the system to obtain water from the system; or

(c) reports under this section are required by an approval or by an order or direction under the Act.

(2) Reports under this section must be prepared by a professional engineer as defined in the *Professional Engineers Act* who has experience in sanitary engineering related to drinking water supplies and who is not an employee of the owner.

(3) If a water treatment or distribution system is listed in the Ministry of the Environment publication entitled Drinking Water Submission Dates for First Engineer's Report, dated August 2000, the owner of the system shall ensure that,

(a) a copy of the first report prepared under subsection (1) is submitted to the Director not later than the date specified for the system in that publication;

(b) a copy of the second report prepared under subsection (1) is submitted to the Director not later than the third anniversary of the date the first report was required to be submitted or, if an approval is granted that indicates that it is granted in response to the first report, not later than the third anniversary of the date the approval is granted or such earlier date as may be specified in that approval or another approval; and

(c) subsequent reports prepared under subsection (1) are submitted to the Director not later than the third anniversary of the date the previous report was required to be submitted or such earlier date as may be specified in an approval.

(4) If a water treatment or distribution system is not listed in the Ministry of the Environment publication entitled Drinking Water Submission Dates for First Engineer's Report, dated August 2000, and the system began operation before August 1, 2000, the owner of the system shall ensure that a copy of the first report prepared under subsection (1) is submitted to the Director not later than July 31, 2001.

(5) If a water treatment or distribution system begins operation on or after August 1, 2000, the owner of the system shall ensure that a copy of the first report prepared under subsection (1) is submitted to the Director not later than the third anniversary of the date the system began operation or such earlier date as may be specified in an approval.

(6) Despite subsections (3), (4) and (5), if reports under subsection (1) are required by an approval or by an order or direction under the Act, the owner of the system shall ensure that a copy of the first report prepared under subsection (1) is submitted to the Director not later than the date specified by the approval, order or direction.

(7) The owner of a water treatment or distribution system to which subsection (4), (5) or (6) applies shall ensure that subsequent reports prepared under subsection (1) are submitted to the Director not later than the third anniversary of the date the previous report was required to be submitted or such earlier date as may be specified in an approval.

(8) This section only applies to a water treatment or distribution system that collects surface water or ground water or that treats water, including a system that rechlorinates water.

DOCUMENTS AND OTHER RECORDS

14. (1) The owner of a water treatment or distribution system shall ensure that the following documents and other records are kept for at least five years:

1. Every report given to the owner by an accredited laboratory on the analysis of water samples taken under section 7.

2. Every report or record made of the analysis of water samples carried out under clause 7 (4) (c) for aluminum, chloramine, chlorine residual, fluoride or turbidity.

3. Every report prepared under section 12.

4. Every report prepared under section 13.

(2) The owner of a water treatment or distribution system shall ensure a document or other record referred to in subsection (1) is submitted to the Director within seven days after the Director makes a request for it.

FORMS

15. (1) Where this Regulation requires a written notice, warning notice or report, the notice or report must be in a form provided by or approved by the Director.

(2) The Director may require that a document or other record that is submitted under this Regulation be submitted in an electronic format specified by the Director.

Schedule 1

TRANSITIONAL ACCREDITATION

2,3,4,6-tetrachlorophenol
2,4-dichlorophenol
2,4-dichlorophenoxyacetic acid
2,4,5-trichlorophenoxyacetic acid
2,4,6-trichlorophenol
Alachlor
Aldicarb
Aldrin + Dieldrin
Arsenic
Atrazine
Azinphos-methyl
Bendiocarb
Benzo(a)pyrene
Bromoxynil
Carbaryl
Carbofuran
Chlordane
Chlorpyrifos
Cyanazine
DDT
Diazinon
Dicamba
Diclofop-methyl
Dimethoate
Dinoseb
Dioxin and furan
Diquat
Diuron
Glyphosate
Heptachlor + Heptachlor Epoxide
Lindane
Malathion
Mercury (Hg)
Methoxychlor
Metolachlor
Metribuzin
Nitrilotriacetic acid (NTA)

Nitrosodimethylamine (NDMA)
Paraquat
Parathion
PCB
Pentachlorophenol
Phorate
Picloram
Prometryne
Radionuclides
Selenium
Simazine
Temephos
Terbufos
Triallate
Trifluralin
Uranium

Schedule 2

SAMPLING AND ANALYSIS REQUIREMENTS

Samples shall be taken from the point at which treated water enters the distribution system unless directed otherwise in the following table.

"Distribution samples" or samples required to be taken "in the distribution system" shall be taken in the distribution system from a point significantly beyond the point at which treated water enters the distribution system.

All sampling shall be done by taking grab samples unless "continuous monitoring" is specified. Continuous monitoring implies that sampling and analysis is done by continuous monitoring equipment that forms part of the water treatment or distribution system.

Sampling and analysis is required for all parameters indicated in the first column, unless an entry in one of the other columns indicates otherwise.

For the purpose of this Schedule, ground water under the direct influence of surface water is considered to be surface water.

Parameter	Surface Water Source With Filtration	Surface Water Source Without Filtration	Ground Water Source
Microbiological Table A	Up to 100,000 population, a minimum of 8 samples plus an additional 1 sample per 1,000 population, shall be taken monthly in the distribution system, with at least one such sample taken every week. Over 100,000 population, a minimum of 100 samples plus an additional 1 sample per 10,000 population, shall be taken monthly in the distribution system, with at least three such samples taken every week. Only 25 per cent of each batch of the above samples needs to be analyzed for heterotrophic plate count or background colonies on a total coliform membrane filter analysis. A sample must be taken at least once per week from the point at which treated water enters the distribution system. A sample must be taken at least once per week from the raw water source (in a ground water source this means each well).		
Turbidity	grab sample every four hours or continuous monitoring on each filter effluent line for systems serving fewer than 500 persons, monitoring can be reduced to two grab samples per day	continuous monitoring	grab sample once a day
Chlorine Residual	continuous monitoring for	continuous monitoring for	one grab sample per day shall

Parameter	Surface Water Source With Filtration	Surface Water Source Without Filtration	Ground Water Source
(equivalent to free chlorine residual)	systems serving over 3,000 grab samples for systems serving 3,000 or fewer as follows: population frequency ≤ 500 1/day 500-1,000 2/day 1,001-2,500 3/day 2,501-3,000 4/day distribution samples shall be taken simultaneously with and at the same location as required for microbiological sampling	systems serving over 3,000 grab samples for systems serving 3,000 or fewer as follows: population frequency ≤ 500 1/day 500-1,000 2/day 1,001-2,500 3/day 2,501-3,000 4/day distribution samples shall be taken simultaneously with and at the same location as required for microbiological sampling	be taken distribution samples shall be taken simultaneously with and at the same location as required for microbiological sampling
Fluoride	continuous monitoring or daily monitoring using grab sampling where treatment process includes fluoridation all other supply systems shall monitor for fluoride annually	continuous monitoring or daily monitoring using grab sampling where treatment process include fluoridation all other supply systems shall monitor for fluoride annually	continuous monitoring or daily monitoring using grab sampling where treatment process include fluoridation all other supply systems shall monitor for fluoride annually
Volatile Organics Table B	trihalomethanes quarterly in the distribution system at a point reflecting the maximum residence time in the distribution system all others quarterly	trihalomethanes quarterly in the distribution system at a point reflecting the maximum residence time in the distribution system all others quarterly	trihalomethanes quarterly in the distribution system at a point reflecting the maximum residence time in the distribution system all others quarterly
Inorganics Table C And Sodium	annually in addition, lead shall be sampled annually in the distribution system at a point reflecting the maximum residence time in the distribution system sampling for sodium is not required	annually in addition, lead shall be sampled annually in the distribution system at a point reflecting the maximum residence time in the distribution system sampling for sodium is not required	every three years in addition, lead shall be sampled annually in the distribution system at a point reflecting the maximum residence time in the distribution system sodium shall be sampled every five years
Nitrates/Nitrites	quarterly	quarterly	quarterly
Pesticides & PCB Table D	quarterly	quarterly	quarterly

TABLE A

MICROBIOLOGICAL

Total Coliforms
Escherichia coli or fecal coliforms
Heterotrophic plate count or total coliform background count by membrane filter analysis

TABLE B

VOLATILE ORGANICS

Benzene	Ethylbenzene
Carbon Tetrachloride	Monochlorobenzene
1,2-Dichlorobenzene	Tetrachloroethylene
1,4-Dichlorobenzene	TolueneTrichloroethylene
1,2-Dichloroethane	Trihalomethanes
1,1-Dichloroethylene	Vinyl chloride
Dichloromethane	Xylene

TABLE C

INORGANICS

Arsenic	Lead
Barium	Manganese
Boron	Mercury
Cadmium	Nitrate
Chromium	Nitrite
Copper	Selenium
Iron	Uranium

TABLE D

PESTICIDES AND PCB

Alachlor	DDT	Parathion
Aldicarb	2,4-D	Pentachlorophenol
Aldrin+Dieldrin	Diclofop-methyl	Phorate
Atrazine	Dimethoate	Picloram
Azinphos-methyl	Dinoseb	PCB
Bendiocarb	Diquat	Prometryne
Bromoxynil	Diuron	Simazine
Carbaryl	Glyphosate	Temephos
Carbofuran	Heptachlor + heptachlor epoxide	Terbufos
Chlordane(Total)	Lindane(Total)	2,3,4,6-Tetrachlorophenol
Chlorpyrifos	Malathion	Triallate
Cyanazine	Methoxychlor	2,4,6-Trichlorophenol
Diazinon	Metolachlor	Trifluralin
Dicamba	Metribuzin	2,4,5-T
2,4-Dichlorophenol	Paraquat	

Schedule 3

OPERATIONAL PARAMETERS

Fluoride ✓ sampling.
Colour
Aluminum
pH — only in assessment
Turbidity ✓ sampling
Hardness
Temperature - assessment
Odour/taste
Alkalinity
Methane
Chloramine
Residual chlorine

Schedule 4

CHEMICAL/PHYSICAL STANDARDS

PARAMETER	MAC (mg/L)	IMAC (mg/L)
Alachlor		0.005
Aldicarb	0.009	
Aldrin + Dieldrin	0.0007	
Arsenic		0.025
Atrazine + N-dealkylated metabolites		0.005
Azinphos-methyl	0.02	
Barium	1.0	
Bendiocarb	0.04	
Benzene	0.005	
Benzo(a)pyrene	0.00001	
Boron		5.0
Bromoxynil		0.005
Cadmium	0.005	
Carbaryl	0.09	
Carbofuran	0.09	
Carbon Tetrachloride	0.005	
Chloramines	3.0	
Chlordane (Total)	0.007	
Chlorpyrifos	0.09	
Chromium	0.05	
Cyanazine		0.01
Cyanide	0.2	
Diazinon	0.02	
Dicamba	0.12	
1,2-Dichlorobenzene	0.2	
1,4-Dichlorobenzene	0.005	
Dichlorodiphenyltrichloroethane (DDT)+Metabolites	0.03	
1,2-Dichloroethane		0.005
1,1-Dichloroethylene(vinylidene chloride)	0.014	
Dichloromethane	0.05	
2-4-Dichlorophenol	0.9	
2,4-Dichlorophenoxyacetic acid(2,4-D)		0.1
Diclofop-methyl	0.009	
Dimethoate		0.02
Dinoseb	0.01	
Dioxin and Furan		0.000000015 [a]
Diquat	0.07	
Diuron	0.15	
Fluoride	1.5 [b]	
Glyphosate		0.28
Heptachlor + Heptachlor Epoxide	0.003	
Lead	0.01 [c]	
Lindane (Total)	0.004	
Malathion	0.19	
Mercury	0.001	
Methoxychlor	0.9	
Metolachlor		0.05
Metribuzin	0.08	
Monochlorobenzene	0.08	
Nitrate(as nitrogen)	10.0	
Nitrite (as nitrogen)	1.0	

PARAMETER	MAC (mg/L)	IMAC (mg/L)
Nitrate + Nitrite (as nitrogen)	10.0	
Nitrilotriacetic Acid (NTA)	0.4	
Nitrosodimethylamine (NDMA)		0.000009
Paraquat		0.01
Parathion	0.05	
Pentachlorophenol	0.06	
Phorate		0.002
Picloram		0.19
Polychlorinated Biphenyls (PCBs)		0.003
Prometryne		0.001
Selenium	0.01	
Simazine		0.01
Temephos		0.28
Terbufos		0.001
Tetrachloroethylene (perchloroethylene)	0.030	
2,3,4,6-Tetrachlorophenol	0.10	
Triallate	0.23	
Trichloroethylene	0.05	
2,4,6-Trichlorophenol	0.005	
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)	0.28	
Trifluralin		0.045
Trihalomethanes	0.100 [d]	
Turbidity	1.0 NTU	
Uranium	0.10	
Vinyl Chloride	0.002	

Notes:

Short forms:
MAC - Maximum Acceptable Concentration
NTU - Nephelometric Turbidity Unit
IMAC - Interim Maximum Acceptable Concentration
mg/L - milligrams per litre

Footnotes:

[a] Total toxic equivalents when compared with 2,3,7,8-TCDD (tetrachlorodibenzo-p-dioxin).

[b] Where fluoride is added to drinking water, it is recommended that the concentration be adjusted to 1.0(+/- 0.2) mg/L, the optimum level for control of tooth decay.

[c] This standard applies to water at the point of consumption.

[d] This standard is expressed as a running annual average.

Schedule 5

RADIOLOGICAL STANDARDS

Parameter	MAC (Bq/L)	Parameter	MAC (Bq/L)
Natural Radionuclides			
Beryllium-7	4000	Thorium-228	2
Bismuth -210	70	Thorium-230	0.4
Lead-210	0.1	Thorium-232	0.1
Polonium-210	0.2	Thorium-234	20
Radium-224	2	Uranium-234	4
Radium-226	0.6	Uranium-235	4
Radium-228	0.5	Uranium-238	4
Artificial Radionuclides			
Americium-241	0.2	Nibium-95	200
Antimony-122	50	Phosphorus-32	50
Antimony-124	40	Plutonium-238	0.3
Antimony-125	100	Plutonium-239	0.2
Barium-140	40	Plutonium-240	0.2
Bromine-82	300	Plutonium-241	10
Calcium-45	200	Rhodium-105	300
Calcium-47	60	Rubidium-81	3000
Carbon-14	200	Rubidium-86	50
Cerium-141	100	Ruthenium-103	100
Cerium-144	20	Ruthenium-106	10
Cesium-131	2000	Selenium-75	70
Cesium-134	7	Silver-108m	70
Cesium-136	50	Silver-110m	50
Cesium-137	10	Silver-111	70
Chromium-51	3000	Sodium-22	50
Cobalt-57	40	Strontium-85	300
Cobalt-58	20	Strontium-89	40
Cobalt-60	2	Strontium-90	5
Gallium-67	500	Sulphur-35	500
Gold-198	90	Technetium-99	200
Indium-111	400	Technetium-99m	7000
Iodine-125	10	Tellurium-129m	40
Iodine-129	1	Tellurium-131m	40
Iodine-131	6	Tellurium-132	40
Iron-55	300	Thallium-201	2000
Iron-59	40	Tritium	7000
Manganese-54	200	Ytterbium-169	100
Mercury-197	400	Yttrium-90	30
Mercury-203	80	Yttrium-91	30
Molybdenum-99	70	Zinc-65	40
Neptunium-239	100	Zirconium-95	100

Notes:

Radionuclide concentrations that exceed the MAC may be tolerated for a short duration, if the annual average concentrations remain below the MAC and the restriction (see immediately below) for multiple radionuclides is met.

Restrictions for multiple radionuclides - If two or more radionuclides are present, the following relationship based on International Commission on Radiological Protection (ICRP) Publication 26, must be satisfied and, if it is not satisfied, a MAC shall be considered to be exceeded:

$$\frac{c_1}{C_1} + \frac{c_2}{C_2} + \cdots\cdots\cdots\cdots + \frac{c_i}{C_i} \leq 1$$

where c_1, c_2, and c_i are the observed concentrations, and C_1, C_2 and C_i are maximum acceptable concentrations (MAC) for each contributing radionuclide.

Schedule 6

INDICATORS OF ADVERSE WATER QUALITY

Each of the following is an indicator of adverse water quality:

1. *Escherichia coli* (*E. coli*) or fecal coliform is detected in any required sample other than a raw water sample. (Corrective action: Increase the chlorine dose and flush the mains to ensure that a total chlorine residual of at least 1.0 mg/L or a free chlorine residual of 0.2 mg/L is achieved at all points in the affected part(s) of the distribution system. Resample and analyze. Corrective action should begin immediately and continue until *E. coli* and fecal coliforms are no longer detected in two consecutive sets of samples or as instructed by the local Medical Officer of Health.)

2. Total coliforms detected (but not *Escherichia coli* or other fecal coliforms) in any required sample other than a raw water sample. (Corrective action: Resample at the same site and analyze. If confirmed to be positive, increase the chlorine dose and flush the mains to ensure a total chlorine residual of at least 1.0 mg/L or a free chlorine residual of 0.2 mg/L to all points in the affected part(s) of the distribution system. Corrective action outlined should begin immediately and continue until total coliforms are no longer detected in two consecutive sets of samples or as instructed by the local Medical Officer of Health.)

3. Unchlorinated water is directed to the distribution system, where chlorination is used or required. This includes water in the distribution system which has less than 0.05 mg/L of free chlorine residual when tested. (Corrective action: Restore chlorination immediately and follow instructions as directed by the local Medical Officer of Health.)

4. Samples, other than raw water samples, containing more than 500 colonies per mL on a heterotrophic plate count analysis. (Corrective action: Resample and analyze. On confirmation, call the local Medical Officer of Health again and consult.)

5. Samples, other than raw water samples, containing more than 200 background colonies on a total coliform membrane filter analysis. (Corrective action: Resample and analyze. On confirmation, call the local Medical Officer of Health again and consult.)

6. Aeromonas spp., *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Clostridium* spp. or fecal streptococci (Group D streptococci) are detected in

samples, other than raw water samples. (Corrective action: Resample and analyze. On confirmation, call the local Medical Officer of Health again and consult.)

7. Sodium concentration exceeds 20 mg/L. Notification need not occur more frequently than once in five years. (Corrective action: Resample and analyze. On confirmation, call the local Medical Officer of Health again. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health must be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.)

8. A pesticide not listed in Table D of Schedule 2 is detected. (Corrective action: Resample, take a corresponding raw water sample and analyze. On confirmation, call the local Medical Officer of Health again and consult. Drinking water should be free of pesticides and every effort should be made to prevent pesticides from entering raw water sources. Pesticides may be reported by their most common trade name, a listing of which, called the Compendium of Scheduled Pesticides is accessible on the Internet through the web site of the Ministry of the Environment at www.ene.gov.on.ca.)