Regulations and other Acts

Gouvernement du Québec

O.C. 696-2014, 16 July 2014

Environment Quality Act
(chapter Q-2)

An Act to affirm the collective nature of water resources and provide for increased water resource protection
(chapter C-6.2)

Water Withdrawal and Protection

Water Withdrawal and Protection Regulation

WHEREAS, under subparagraph *e* of the first paragraph of section 31 of the Environment Quality Act (chapter Q-2), the Government may make regulations to define standards for the protection and quality of the environment or any of its parts throughout all or part of the territory of Québec;

WHEREAS, under subparagraph *m* of the first paragraph of section 31, the Government may make regulations to determine the terms and conditions according to which every application for a permit, certificate, authorization, approval or permission must be made and, in such cases as the Government determines, those according to which every application to amend or renew any such document must be made;

WHEREAS, under the second paragraph of section 31.81 of the Act, the Government may prescribe the cases in which the Minister may issue or renew a water withdrawal authorization for a shorter or longer term than the term provided for in that section;

WHEREAS, under paragraph *r* of section 46 of the Act, the Government may make regulations to establish norms respecting the sinking and sealing off of wells;

WHEREAS, under paragraph *s* of section 46, the Government may make regulations to regulate withdrawals of surface water or groundwater, in particular to

— determine, for the purposes of paragraph 1 of section 31.75 of the Environment Quality Act, the number of persons from which water withdrawal serving their supply is subject to the authorization of the Minister despite the fact that the maximum daily flow rate is less than 75,000 litres per day;

— in the cases and under the conditions specified, subject water withdrawals to the application of all or part of the provisions of subdivision 1 of Division V of Chapter I of the Act or the regulations made thereunder;

— determine, for the purposes of subdivisions 1 and 2 of Division V of Chapter I of the Act, the cases in and conditions under which 2 or more existing or planned water withdrawals are deemed to constitute a single withdrawal owing to the hydrologic interconnection of the waters concerned, the distance between the withdrawal sites or the intended use of the water;

— prescribe standards respecting the quantity and quality of the surface water or groundwater that may be withdrawn or that must be returned to the environment after use and the conditions of such return, the use of the water withdrawn and the preservation of aquatic ecosystems and wetlands;

— prescribe standards respecting the installation and maintenance of equipment or devices for determining the quantity and quality of the water withdrawn or returned to the environment;

— determine the measures or plans that the holder of a water withdrawal authorization must implement to ensure the conservation and efficient use of the water withdrawn, and prescribe how such a holder must report to the Minister on the results obtained;

— prescribe standards for water collection facilities;

— prescribe what documents and information a person making or planning to make a water withdrawal must send to the Minister, including studies or reports on the actual or potential individual or cumulative impacts of the withdrawal or planned withdrawal on the environment, other users and public health, and how they are to be sent, and determine what documents or information is public and must be made available to the public;

WHEREAS, under section 115.27 of the Act, the Government may, by regulation, specify that a failure to comply with the regulation may give rise to a monetary administrative penalty and set forth the amount of such penalty;

WHEREAS, under section 115.34 of the Act, the Government may, by regulation, determine the regulatory provisions whose contravention constitutes an offence and renders the offender liable to a fine, a term of imprisonment or to both the fine and imprisonment;

WHEREAS, under sections 33 and 34 of the Act to affirm the collective nature of water resources and provide for increased water resource protection (chapter C-6.2), the Government may, by regulation, provide for a longer term for water withdrawal authorizations referred to in those sections;

WHEREAS, under section 35 of the Act, a regulation of the Government sets the time limits, prior to the expiry of the period mentioned in section 33 or 34, within which persons who are making water withdrawals covered by either of those sections are required to apply to the Minister for an authorization or an authorization renewal for those withdrawals;

WHEREAS, in accordance with sections 10 and 11 of the Regulations Act (chapter R-18.1) and section 124 of the Environment Quality Act, a draft Water Withdrawal and Protection Regulation was published in Part 2 of the *Gazette officielle du Québec* of 28 December 2011 with a notice that it could be made by the Government on the expiry of 60 days following that publication;

WHEREAS, given substantial amendments made to the draft Regulation, in particular to introduce standards applicable to drilling sites used to explore for or produce petroleum, natural gas or brine or to explore for or operate an underground reservoir, a new draft Water Withdrawal and Protection Regulation was published in Part 2 of the *Gazette officielle du Québec* of 29 May 2013 with a notice that it could be made by the Government on the expiry of 30 days following that publication, in accordance with sections 10 and 12 of the Regulations Act;

WHEREAS it is expedient to make the Water Withdrawal and Protection Regulation with amendments;

IT IS ORDERED, therefore, on the recommendation of the Minister of Sustainable Development, the Environment and the Fight Against Climate Change:

THAT the Water Withdrawal and Protection Regulation, attached to this Order in Council, be made.

JUAN ROBERTO IGLESIAS,
Clerk of the Conseil exécutif

Water Withdrawal and Protection Regulation

Environment Quality Act
(chapter Q-2, s. 31, 1st par., subpars. *e* and *m*, s. 31.81, 2nd par., s. 46, pars. *r* and *s*, subpars. 1 to 2.1, 2.3 to 2.6, 3 and 4, s. 115.27 and s. 115.34)

An Act to affirm the collective nature of water resources and provide for increased water resource protection (chapter C-6.2, ss. 33, 34 and 35)

CHAPTER I
APPLICATION

1. The object of this Regulation is to set the terms and conditions for authorizations for the withdrawal of water, as provided for in section 31.75 of the Environment Quality Act (chapter Q-2), and to prescribe certain standards for water withdrawals, water withdrawal facilities and facilities or activities that may affect the quality of water withdrawn in the vicinity. It ensures, in particular, the protection of water withdrawn for human consumption or food processing purposes.

The Regulation applies to all water withdrawals referred to in section 31.74 of the Environment Quality Act, including water withdrawals in a reserved area and an agricultural zone established under the Act respecting the preservation of agricultural land and agricultural activities (chapter P-41.1).

2. For the purposes of this Regulation, unless otherwise indicated by the context,

"animal waste" means animal waste within the meaning of the Agricultural Operations Regulation (chapter Q-2, r. 26); (*déjections animales*)

"ditch" means a common ditch, a ditch along a public or private road, or a drainage ditch referred to in subparagraph 4 of the first paragraph of section 103 of the Municipal Powers Act (chapter C-47.1); (*fossé*)

"food processing" means an activity governed by the Food Products Act (chapter P-29); (*transformation alimentaire*)

"parcel" means a parcel within the meaning of the Agricultural Operations Regulation;

"person responsible" means the operator or owner; (*responsable*)

"professional" means a professional within the meaning of section 1 of the Professional Code (chapter C-26) who belongs to an order responsible for the carrying on of a professional activity referred to in this Regulation; any other person authorized by a professional order to carry on an activity referred to in this Regulation is also deemed to be a professional for that sole activity; (*professionnel*)

"raising facility" means a raising facility within the meaning of the Agricultural Operations Regulation; (*installation d'élevage*)

"temporary industrial camp" means a temporary industrial camp within the meaning of the Regulation respecting the application of section 32 of the Environment Quality Act (chapter Q-2, r. 2); (*campement industriel temporaire*)

"watercourse" means, with the exception of a ditch, a mass of water running along a bed in a regular or intermittent flow, including a bed established or modified by human intervention, the St. Lawrence River, the Gulf of St. Lawrence, and all seas surrounding Québec; (*cours d'eau*)

"withdrawal site" means the place where water enters a facility installed to make water withdrawals; (*site de prélèvement*)

"yard" means a yard within the meaning of the Agricultural Operations Regulation. (*cour d'exercice*)

The terms "high-water mark", "littoral zone", "floodplain" and "lakeshore or riverbank" have the same meaning than the meaning given in the Protection Policy for Lakeshores, Riverbanks, Littoral Zones and Floodplains (chapter Q-2, r. 35).

3. The average volume of water withdrawn per day is calculated over a period of 90 consecutive days that constitutes the period of maximum water withdrawal.

The number of users supplied by a water withdrawal is calculated in accordance with Schedule 0.1 of the Regulation respecting the quality of drinking water (chapter Q-2, r. 40) on the basis of the system, establishment or place to which it is principally or exclusively connected.

In making the calculations, all the water withdrawals made at withdrawal sites connected to the same establishment, facility or waterworks system are deemed to constitute a single water withdrawal. The same applies to establish the maximum daily flow rate of a withdrawal subject to authorization pursuant to section 31.75 of the Environment Quality Act (chapter Q-2).

4. All volumes of water calculated for the purposes of this Regulation must be expressed in litres.

CHAPTER II
AUTHORIZATION FOR WATER WITHDRAWALS

DIVISION I
WATER WITHDRAWALS REQUIRING AUTHORIZATION

5. Even if the maximum flow rate is less than 75,000 litres per day, the following water withdrawals require authorization under section 31.75 of the Environment Quality Act (chapter Q-2):

(1) a water withdrawal for human consumption purposes, used to supply a temporary industrial camp supplying over 80 persons, where the camp is subject to the authorization provided for in section 32 of the Environment Quality Act;

(2) a water withdrawal for human consumption purposes, used to supply any other establishment, facility or waterworks system supplying over 20 persons.

DIVISION II
WATER WITHDRAWALS NOT REQUIRING AUTHORIZATION

6. The following water withdrawals do not require authorization under section 31.75 of the Environment Quality Act (chapter Q-2):

(1) water withdrawals that use a ditch, drain or sewer to catch runoff or divert groundwater if, as the case may be,

(a) the ditch, drain or sewer is more than 30 metres from a pond other than an irrigation pond, a marsh, a swamp or a bog;

(b) the withdrawal is intended for the cultivation of organic soil, the extraction of peat, the drainage of a public road or the drainage of a building;

(2) water withdrawals carried out by a permanent facility installed for civil security purposes;

(3) water withdrawals from an irrigation pond fed by the infiltration of groundwater or runoff if

(a) the irrigation pond is of human origin;

(b) the irrigation pond is no more than 6.5 metres deep;

(c) the irrigation pond is more than 30 metres from a pond other than an irrigation pond, a marsh, a swamp, a bog, a lake or a watercourse;

(d) the irrigation pond is more than 100 metres from a site where groundwater is withdrawn on a neighbouring property for human consumption;

(e) the water is not withdrawn to flood land for harvesting purposes;

(f) the water is withdrawn outside the St. Lawrence River Basin described in section 31.89 of the Environment Quality Act or, if water is withdrawn within the Basin, it does not exceed the average volume of 379,000 litres per day;

(4) temporary and non-recurring water withdrawals that are made

(a) as part of exploration activities for mineral substances other than gas or petroleum, unless it is made for the purpose of dewatering or keeping dry mine shafts, access ramps to open pits or a site intended for the exploration of mineral substances;

(b) as part of civil engineering work, if they do not exceed 180 days;

(c) to analyze the performance of a water withdrawal facility, if they do not exceed 60 days;

(d) to establish the properties of an aquifer, if they do not exceed 60 days;

(e) to analyze the quality of water for human consumption, if they do not exceed 200 days.

DIVISION III
APPLICATION FOR AUTHORIZATION

7. An application for a water withdrawal authorization under section 31.75 of the Environment Quality Act (chapter Q-2) must be sent in writing to the Minister, include the following information and be accompanied by the following documents:

(1) the name and contact information of the applicant and the applicant's representative, if any;

(2) if the applicant is a municipality, partnership or association, a certified copy of the deed authorizing the application;

(3) the Québec business number assigned to the applicant after registration under the Act Respecting the Legal Publicity of Enterprises (chapter P-44.1);

(4) a copy of the deed of ownership for the land required for the construction of the water withdrawal facility and, if groundwater is to be withdrawn, for the layout of its inner protection zone or a copy of the authorization from the owner of the land for the use of the land for that purpose;

(5) a description of the water withdrawal, including its intended use, the maximum volume of water drawn and used per day, the minimum volume discarded per day and, if applicable, the number of persons supplied by the withdrawal for human consumption purposes;

(6) a description of each withdrawal site covered by the application, including the following elements:

(a) its location, including its geographical coordinates and the cadastral designation of the lots concerned, a map and an aerial or satellite photograph of the site;

(b) in the case of a surface water withdrawal, the name of the lake or watercourse concerned;

(c) the plans and specifications for the water withdrawal facility and its expected layout or the report provided for in section 21 if the application concerns a groundwater withdrawal facility, not used to supply water for human consumption, installed in accordance with Chapter III;

(d) the construction and maintenance work planned, including a schedule for the completion of the work and the mitigating measures planned for the work, a description of the materials and equipment used, and the envisaged measures in place to supervise the work;

(e) the methods used to monitor operations and the measuring equipment used and its location, if applicable;

(7) a description of each site where the water withdrawn will be discharged, including its location and the reference for the authorization issued for the discharge under the Environment Quality Act, if applicable;

(8) a description of the surrounding environment, in particular concerning the land uses applicable and the existing uses in the vicinity;

(9) a study, signed by a professional or the holder of a university diploma in biology, focusing on the location of the natural environments, flora and wildlife affected by the water withdrawal or disposal site, their characteristics and the mitigating measures of the impact planned, where the withdrawal site or disposal site is installed in one of the following sites:

(a) a littoral zone, riverbank, lakeshore, floodplain, marsh, swamp, pond or bog;

(b) a wildlife habitat referred to in the Regulation respecting wildlife habitat (chapter C-61.1, r. 18) or a wildlife species habitat referred to in the Regulation respecting threatened or vulnerable wildlife species and their habitats (chapter E-12.01, r. 2) or the Ministerial Order concerning the establishment of a list of threatened or vulnerable vascular plant species which are likely to be so designated and a list of threatened or vulnerable wildlife species which are likely to be so designated (chapter E-12.01, r. 4) where it is not already in the Regulation respecting wildlife habitat;

(c) a plant species habitat referred to in the Regulation respecting threatened or vulnerable plant species and their habitats (chapter E-12.01, r. 3) or the Ministerial Order concerning the establishment of a list of threatened or vulnerable vascular plant species which are likely to be so designated and a list of threatened or vulnerable wildlife species which are likely to be so designated (chapter E-12.01, r. 4);

(d) a protected zone governed by the Natural Heritage Conservation Act (chapter C-61.01) or the Parks Act (chapter P-9);

(e) an exceptional forest ecosystem or a biological refuge classified or designated under the Sustainable Forest Development Act (chapter A-18.1);

(f) an outstanding geological site classified under the Mining Act (chapter M-13.1);

(g) a wildlife preserve established under the Act respecting the conservation and development of wildlife (chapter C-61.1);

(10) a document signed by a professional that

(a) describes the scenario for the planned withdrawal of water for the total withdrawal and for each withdrawal site, including the withdrawal period or periods associated with the need for water and the volumes withdrawn, consumed and discharged;

(b) shows that the maximum volume of water withdrawn and consumed per day is reasonable compared to the needs to be met;

(c) shows that the water withdrawal facility is suitable for the declared use;

(d) describes the changes expected in the quality of the water when used and discharged into the environment, in particular with respect to any substances added to the water;

(11) a certificate from the clerk or secretary-treasurer of the local municipality or regional county municipality concerned stating that the withdrawal complies with the applicable municipal by-laws;

(12) if the application concerns the withdrawal of water for human consumption or food processing,

(a) an initial characterization study of the quality of the water to be withdrawn signed by a professional;

(b) an economic impact assessment for the activities carried out within the protection zones of the planned withdrawal site given the constraints provided for in this Regulation and, where the agricultural activities are affected, the means the applicant has taken or intends to take to minimize the impact on the operators concerned, such as the signing of a financial assistance agreement.

Subparagraph 11 of the first paragraph does not apply to a person who, under the Mining Act (chapter M-13.1), is authorized to do exploration, development, mining or production work on mineral substances or underground reservoirs, except work to extract sand, gravel or building stone on private land for which, under section 5 of the Mining Act, rights in or over such mineral substances have been surrendered to the owner of the soil.

The information provided pursuant to this section, except the information listed in subparagraph 10 of the first paragraph where it does not concern an application for a water withdrawal referred to in section 31.97 of the Environment Quality Act, is public information.

8. The information recorded in any additional study or expert evaluation required by the Minister for an application for authorization under section 31.82 of the Environment Quality Act (chapter Q-2) is public information.

DIVISION IV
TERM OF AUTHORIZATIONS ISSUED FOR CERTAIN WITHDRAWALS

9. Despite the first paragraph of section 31.81 of the Environment Quality Act (chapter Q-2), the term of a water withdrawal authorization issued for the operation of a fish farm on land is 15 years when, for each ton of annual production, the fish farm expects an annual discharge of phosphorous in its effluents of 4.2 kilograms or less and withdraws a volume of water of 10,000 litres or less per hour.

Similarly, the term of the first authorization issued for water withdrawals carried out for the purpose of selling or distributing spring water or mineral water or for the purpose of making, preserving or processing products within the meaning of the Food Products Act (chapter P-29) is 11 years.

DIVISION V
RENEWAL AND AMENDMENT OF AUTHORIZATIONS

10. An application for the renewal of a water withdrawal authorization must be sent to the Minister in writing at least 6 months before the expiry of the term of the authorization, and must include the following information:

(1) an update of the information contained in the initial application;

(2) the measurements taken during water withdrawal operations, such as piezometric data, if any.

An application for the amendment of a water withdrawal authorization must also be submitted in writing and include the information listed in the first paragraph, a description of the amendment requested and an assessment of the impact of the amendment on water withdrawal operations.

Information provided pursuant to this section is public information, subject to the third paragraph of section 7.

CHAPTER III
WATER WITHDRAWAL FACILITIES

11. The standards set out in this Chapter apply to all water withdrawals. They do not apply to

(1) water withdrawals authorized by the Minister pursuant to section 31.75 of the Environment Quality Act (chapter Q-2) where the facility is installed in accordance with the plans and specifications sent under an application for authorization;

(2) water withdrawals that do not require such authorization pursuant to section 6.

12. For the purposes of this Chapter, the construction of a water withdrawal facility includes its initial construction, its substantial modification and its replacement.

A substantial modification includes work to deepen, fracture or seal a well.

DIVISION I
GENERAL

13. The construction of any water withdrawal facility must meet the following conditions:

(1) the facility must be constructed with new materials;

(2) work relating to the construction of the facility must be performed in a way that minimizes lakeshore and riverbank erosion and the clearing of vegetation, limits work in littoral zones and the flow of sediment to lakes and watercourses, and prevents any water contamination and deterioration of the environment.

14. Every water withdrawal facility must remain accessible for inspection, maintenance, disinfection or equipment repair purposes, and for plugging or dismantling if required.

DIVISION II
GROUNDWATER WITHDRAWAL FACILITIES

§1. *General*

15. Unless a groundwater withdrawal facility is intended to replace an existing facility used for the same purpose, the groundwater withdrawal facility may not be installed in a floodplain having a flood recurrence interval of 20 years, or in the identified floodplain of a lake or watercourse unless the 20-year and 100-year flood recurrence intervals have been distinguished.

16. A groundwater withdrawal facility constructed in a floodplain must meet the following conditions:

(1) the well must be sealed in accordance with section 19;

(2) the well must be constructed under the supervision of a professional.

17. The construction of a groundwater withdrawal facility must, in addition, meet the following conditions:

(1) the facility must be located at a distance of 15 metres or more from a watertight waste water treatment system;

(2) the facility must be located 30 metres or more from a non-watertight waste water treatment system or, if the well is sealed in accordance with section 19, 15 metres or more from such a system;

(3) the facility must be located 30 metres or more from a composting area, a yard, a raising facility, a construction used to store animal waste, land, pasture land or land used as a cemetery;

(4) the casing used for a drilled, excavated or driven well must rise at least 30 cm above the ground level existing before the work begins;

(5) the casing joints must be watertight.

The distances provided for in subparagraphs 1, 2 and 3 of the first paragraph do not apply to the construction of a groundwater withdrawal facility made necessary by the termination of a water supply from a neighbouring facility. The distances then applicable are determined by a professional who must ensure that any risks that may affect the quality of the groundwater withdrawn are minimized, in particular by preparing the plans and specifications for the facility and supervising the construction work on the facility.

18. Unless a groundwater withdrawal facility is plugged in accordance with section 20, the facility must, at all times, be operated in compliance with the following conditions:

(1) the facility must be equipped with a secure cover that is resistant to the weather, contaminants and vermin, and, if the facility is exposed to immersion risks, the infiltration of water;

(2) the soil around the facility must be graded so as to prevent water pooling and water runoff towards the facility for a distance of 1 metre around the facility;

(3) the facility must be visibly locatable;

(4) if a hydrofracturing activity is carried out at the facility, water that meets the quality standards for drinking water prescribed by the Regulation respecting the quality of drinking water (chapter Q-2, r. 40) must be used.

This section also applies to an observation well.

19. When the sealing of a groundwater withdrawal facility is required under this Regulation, it must be performed in accordance with the following conditions:

(1) the well must be drilled in such a way that, over a minimum depth of 5 metres, it has a diameter at least 10 centimetres greater than the nominal diameter of the pipe casing;

(2) the permanent pipe casing, excluding the perforated casing, must descend to a minimum depth of 5 metres;

(3) the annular space around the pipe casing must be filled, in accordance with good practice, to a minimum depth of 5 metres using a material that ensures a watertight, durable seal, such as a cement bentonite mix or pure bentonite;

(4) the excess pipe casing must be removed without damaging the seal;

(5) the sealing must be performed under the supervision of a professional.

All work carried out after the sealing must be performed in a way that minimizes the effect on the seal.

20. Where a groundwater withdrawal facility is plugged, the plugging must meet the following conditions:

(1) a material not likely to degrade the quality of the groundwater must be used;

(2) the well casing must be exposed to a depth of at least 1 metre below the surface of the ground;

(3) the well casing must be cut off at the bottom of the excavation;

(4) the portion of the casing open to the aquifer must be filled with clean sand;

(5) the remaining portion of the casing must be filled with pure bentonite or a cement bentonite mix;

(6) a concrete slab must be placed over the end of the casing;

(7) the excavation must be filled using the soil initially excavated.

This section also applies to an observation well.

21. The person who performed the construction work for a groundwater withdrawal facility or the professional who supervised the work must send to the Minister, within 30 days after the work is completed, a report containing the information listed in Schedule I certifying that the work complies with the standards set out in this Regulation.

A copy of the report must also be sent to the person responsible for the facility and the municipality concerned within the prescribed time limit.

The information recorded in the report is public information.

§2. Specific provisions for certain categories of facilities

22. A groundwater withdrawal facility used to supply water for human consumption must be designed with materials suitable for drinking water supply systems.

It must be cleaned and disinfected before being operated to eliminate any possibility of water contamination. The same applies to any accessory equipment installed more than 2 days after the cleaning and disinfection of the water withdrawal facility.

23. A facility that is drilled must

(1) include a pipe casing having a nominal thickness of 4.78 millimetres compliant with ASTM-53 Grade B or ASTM A-589 Grade B if it is made of steel or ASTM A-409 if it is made of stainless steel;

(2) be assessed by the person who constructed it to verify if the daily quantity of water supplied may meet the water needs during the periods of the day where the need will be more important.

In the event that the facility assessed cannot meet the water needs mentioned in subparagraph 2 of the first paragraph, the person that constructed the facility must immediately inform the owner. The facility must then be plugged in accordance with section 20 or, if it is used for observation purposes, be operated in accordance with section 18.

24. A groundwater withdrawal facility consisting of a well drilled into rock must be constructed in accordance with the following conditions:

(1) the casing used must be anchored in bedrock for at least 0.6 metres or until penetration ceases;

(2) a drive shoe or other device to prevent deformation of the lower end of the casing must be used;

(3) where the drilled rock formation is located within a depth of 5 metres, the facility must be sealed in accordance with section 19, without having to be supervised by a professional if, in the latter case, the facility is constructed in accordance with subparagraph 1, 2 and 3 of the first paragraph of section 17.

25. A groundwater withdrawal facility designed to capture a natural resurgence of groundwater using a horizontal drain must meet the following conditions:

(1) the drain must be buried at least 1 metre deep upstream from the natural point of groundwater resurgence so as to collect the water before it surfaces;

(2) the drain must be connected to a watertight reservoir;

(3) the reservoir must stand at least 30 centimetres above the surface of the ground and must be equipped with an overflow, directing water that is not withdrawn towards the natural outlet of the resurgence;

(4) the ground above and for at least 3 metres upstream from the drain must be graded so as to prevent runoff towards the drain or the infiltration of surface water;

(5) the location of the drain, and in particular of its extremities, must be indicated by visual markers.

26. A groundwater withdrawal facility using artesian pressure must include a flow control system

(1) to confine the flow within the casing;

(2) to control gushing in such a way that the water does not damage neighbouring properties.

DIVISION III
SURFACE WATER WITHDRAWAL FACILITIES

27. A surface water withdrawal facility in a floodplain must be constructed in such a way that the components of the facility are located beneath the ground surface for the part outside the littoral zone.

CHAPTER IV
GEOTHERMAL SYSTEMS

28. A geothermal system that withdraws water must be constructed in accordance with the following conditions:

(1) the system must be exclusively supplied by groundwater;

(2) the system must return the water to the aquifer without allowing it to come into contact with any substance liable to affect its quality;

(3) the water withdrawal facility and the discharge facility of such a system must comply with the standards applicable to a groundwater withdrawal facility set out in sections 12 to 26, adapted as required.

29. A ground-source geothermal system that does not withdraw water must be constructed in accordance with the following conditions:

(1) the system must not be located in a littoral zone or in a floodplain having a flood recurrence interval of 20 years, or in the identified floodplain of a lake or watercourse unless the 20-year and 100-year flood recurrence intervals have been distinguished;

(2) the components situated below the soil's surface must be made of materials that are new at the time the facility is installed;

(3) the system cannot use ethylene glycol, potassium acetate and methanol for its operation;

(4) the work to construct the system must be carried out in such a way that no water is contaminated and no environmental degradation occurs;

(5) when the system is installed at a depth of over 5 metres in the ground, the soil must be graded above the underground components and over a distance of 1 metre around the system in a way that prevents water pooling and water runoff towards the components;

(6) if the system is installed in a floodplain with a flood recurrence interval of 100 years must be designed to resist a 100-year flood and the work must be carried out below the soil's surface;

(7) the watertightness of the components must be assessed before the system is operated.

30. The person who installed the ground-source geothermal system that does not withdraw water or the professional who supervised the work must send to the Minister, within 30 days after the work is completed, a report containing the information listed in Schedule I certifying that the work complies with the standards set out in this Regulation. The report must also contain

(1) a plan showing the location of the system, including the location of all underground components;

(2) the dimensions of the geothermal loops and the composition of the fluids used in the system;

(3) the results of the pressure tests conducted on the system.

A copy of the report must also be sent to the person responsible for the system and to the municipality concerned within the prescribed time limit.

The information recorded in the report is public information.

CHAPTER V
DRILLING SITE USED TO EXPLORE FOR OR PRODUCE PETROLEUM, NATURAL GAS OR BRINE, OR TO EXPLORE FOR OR OPERATE AN UNDERGROUND RESERVOIR

DIVISION 1
GENERAL

31. For the purposes of this Chapter, unless otherwise indicated by the context,

(1) "fracturing" means an operation to create fractures in a geological formation using fluids injected into a well under pressure, except an operation using volumes of fluids below 50,000 litres;

(2) "well segment" means a part of well that allows to submit a geological zone to fracturing;

(3) "drilling site" means the zone grouping the drilling well or wells used to explore for or produce petroleum, natural gas or brine, or to explore for or operate an underground reservoir and the land laid out in the immediate vicinity of the well or wells to receive the equipment and infrastructures necessary for the interventions performed on the well or wells, such as storage areas, soil mound and waste water storage or treatment basins;

(4) "stratigraphic survey" means an operation to collect data on a geological formation, using samples and their analysis and technical surveys, conducted as part of preliminary investigations to eventually locate, design and construct a drilling site for the exploration or production of petroleum, natural gas or brine, or for the exploration for or operation of an underground reservoir and the well or wells which will be present on the site.

The information recorded in a notice, a study, a program or a report required under this Chapter is public information. The same applies to the analysis results sent to the Minister under this Chapter. In all cases, a copy of the notices, studies, programs, reports or analysis results must be sent to the Minister of Energy and Natural Resources within the time limit prescribed for their transmission to the Minister.

32. It is prohibited to construct a drilling site or conduct a stratigraphic survey in a floodplain having a flood recurrence interval of 20 years, in the identified floodplain of a lake or watercourse unless the 20-year and 100-year flood recurrence intervals have been distinguished or less than 500 metres from a site where water is withdrawn for human consumption or food processing.

The distance of 500 metres provided for in the first paragraph concerning the construction of a drilling site may be increased to the distance set in the hydrogeological study provided for in section 38 where the study shows that the distance of 500 metres does not minimize risks of contamination of the sites where water is withdrawn for human consumption or food processing that are located on the territory covered by the study.

DIVISION II
STRATIGRAPHIC SURVEY

33. The person responsible for a stratigraphic survey must send to the Minister, 30 days before starting the survey, a notice containing the following information:

(1) the location of the survey;

(2) the start date for the survey;

(3) the nature of the survey, in particular with respect to the planned investigation;

(4) the estimated duration of the survey, particularly the duration of the planned investigations.

34. Every stratigraphic survey must be planned and conducted, under the supervision of a professional, so as to prevent fluids from migrating to an aquifer used or likely to be used.

35. At the end of the survey, the stratigraphic survey hole must be plugged over its entire length, under the supervision of a professional, to prevent fluids migrating from one geological formation to another.

The professional must be informed of the problems that arose during the survey and the measures taken to correct the situation.

36. The person responsible for the stratigraphic survey must send to the Minister, within 30 days after the plugging of the stratigraphic survey hole is completed, a report signed by the professional who supervised the plugging work. The report must contain the following information:

(1) the characteristics of the survey hole;

(2) the stratigraphic profile, indicating in particular the geological formations plugged;

(3) the plugging technique used;

(4) the plugging materials used;

(5) if applicable, the problems that arose during the survey or the plugging work and the measures taken to correct the situation.

DIVISION III
INITIAL CHARACTERIZATION STUDY

37. The person responsible for a drilling site must carry out an initial characterization study of the site.

The characterization study must cover, according to the most stringent areas, a territory having a minimum radius of 2 kilometres outside the limits of the drilling site or a territory corresponding to the horizontal length of the well planned.

The characterization study includes, with respect to the territory involved,

(1) a hydrogeological study signed by a professional;

(2) an analysis of the water samples taken at the sites where water is withdrawn for human consumption or food processing purposes, such analysis is carried out using the parameters and substances in Schedule II;

(3) an analysis of the water samples taken at the observation wells referred to in section 39 and carried out using the parameters and substances in Schedule II.

The water samples referred to in subparagraph 2 of the second paragraph are taken with the consent of the person responsible for the water withdrawal site concerned. If such consent cannot be obtained, the person responsible for the drilling site must include in the hydrogeological study, the list of the persons responsible for the water withdrawals who refused the sampling of the site.

38. The hydrogeological study must, in particular, provide the following information with respect to the territory involved:

(1) its topography;

(2) its geological and structural context, including its stratigraphic profile;

(3) its hydrogeological, hydrological and geochemical context, by specifying in particular the aquifers present and the hydrographical network;

(4) the location and a description of the layout of the water withdrawals for human consumption or food processing purposes and the results of the analyses of the

water samples taken at the sites of the withdrawals in accordance with subparagraph 2 of the third paragraph of section 37, if any;

(5) the location and a description of the layout of the wells for the exploration of or production of petroleum, natural gas or brine, or for the exploration for or operation of an underground reservoir, if any;

(6) the conditions of confinement and recharging of the aquifers and their vulnerability to the planned surface activities on the drilling site;

(7) the dynamics of the water flow in particular with respect to the groundwater flow direction and their links with surface water;

(8) an assessment of the impact of water contamination on water withdrawals for human consumption or food processing purposes and on aquatic ecosystems associated to a watercourse, in the event that

(a) a failure of the well causes a migration of fluids to the aquifer or aquifers or to the surface;

(b) an accidental spill occurs on the drilling site;

(9) the demonstration that the location selected for the drilling site is the least likely to affect water withdrawn for human consumption or food processing purposes and, if applicable, the distance to comply with to minimize the risks of contamination of the water from such withdrawals if the distance is greater than the minimum distance prescribed under section 32;

(10) the location of the observation wells constructed or to be constructed and the reasons justifying the choice of their location and their construction.

The study is sent to the Minister at least 30 days before the construction work begins on the drilling site.

The analysis results provided for in subparagraph 4 of the first paragraph must be sent to each person responsible for the withdrawal sites concerned within 30 days of their receipt.

39. For the analysis provided for in subparagraph 3 of the third paragraph of section 37, the person responsible for the drilling site must construct an observation well or observation wells for groundwater for the withdrawal of water samples representative of the quality of the groundwater used or likely to be used for human consumption or food processing purposes, in particular the water in the lower and higher parts of the aquifers collected in the hydrogeological survey referred to in section 38.

The well or wells must be constructed as follows:

(1) if only one well is constructed, it must have multiple levels and must be located less than 30 metres from the planned drilling site, at the hydraulic downstream;

(2) if a number of wells are constructed, there must be a minimum of 3 and they must be located

(a) less than 300 metres from the limits of the planned drilling site;

(b) at the hydraulic upstream of the drilling site for one of them and at the hydraulic downstream for the others.

The water samples must be taken in each observation well before the drilling of the surface casing of the drilling site.

The analysis results of the samples taken must be sent to the Minister as soon as possible.

DIVISION IV
FRACTURING

40. The fracturing operation of a well intended for exploration for or the production of petroleum or natural gas is prohibited less than 400 metres below the base of an aquifer.

For the purposes of this section, the base of an aquifer is set at 200 metres under the surface of the ground, unless the hydrogeological study provided for in section 38 shows that the base of the deepest aquifer presenting a total dissolved solid content less than 4,000 mg/l is located at a different depth.

41. Every fracturing operation must be planned and conducted so as to prevent the propagation of fractures to a natural preferential path of fluid flow or an existing well, which may foster the migration of fluids to an aquifer used or likely to be used.

42. The fluid injected in a fracturing operation may not contain

(1) an ethoxylated alkylphenol based surfactant;

(2) a substance determined as persistent or bioaccumulative within the meaning of the Persistence and Bioaccumulation Regulations (SOR/2000-107).

43. The person responsible for a well must send to the Minister within 30 days before the fracturing operation begins, the fracturing program planned. The program must be signed by a professional and must include

(1) a plan of the well showing

(a) the location of the well, including its geographical coordinates, the cadastral designation of the lots concerned, a map and an aerial or satellite photograph of the well;

(b) the name and number given to the well in the licences issued under the Mining Act (chapter M-13.1);

(c) the type of well;

(d) the segment or segments of the well to be fractured and the projected vertical depth of the well;

(e) the date or dates planned for the fracturing;

(f) the name of the person responsible for the fracturing and the name of the professional who will supervise the work;

(2) the type and total volume of fluid that may be injected;

(3) the maximum pressure that may be generated by the fluid injected;

(4) the composition of the fluid injected including, for each compound, the following mentions:

(a) the name of the compound, its function and its concentration in the fracturing fluid;

(b) if applicable, the name of each substance contained in the compound, the number given to each substance by the American Chemical Society for identification purposes (CAS number) and their concentration in the compound;

(c) the name and the contact information of the supplier of the compound;

(5) the composition, structure and geo-mechanical behaviour of the encasing geological formations;

(6) a three-dimensional assessment of the propagation of the fractures, and the description of the method used to perform the assessment;

(7) the determination of the parameters above which an incident is likely to occur during a fracturing operation, such as the maximum pressure to be used to prevent damage to the well or a propagation of fractures to a preferential path of the fluid flow;

(8) a description of the monitoring that will be done for the implementation of the program and the verification of the parameters provided for in subparagraph 7, and the nature of the data that will be collected in such a monitoring, in particular the volume of fluids injected and pressure variations.

The description of the monitoring provided for in subparagraph 8 of the first paragraph must include a microseismic monitoring or, where such monitoring is already performed in the same geological formation during a fracturing operation in similar wells, an analysis of the data collected in the monitoring.

44. A fracturing operation and its monitoring must be conducted, at all times, under the supervision of a professional.

45. The person responsible for a well must implement the fracturing program referred to in section 43.

The person must immediately notify the Minister where any of the following events occur in a fracturing operation or its monitoring:

(1) damage to the well;

(2) an unexpected drop of the pressure generated by the fluids injected;

(3) an accidental splill at the drilling site;

(4) any other incident for which parametres have been determined under subparagraph 7 of the first paragraph of section 43.

The notice must contain the measures taken or planned by the person responsible to mitigate or eliminate the risks to health or the environment caused by the event, if any.

The person responsible for a well must also notify the Minister as soon as possible of any change made to the fracturing program and the reason justifying the change.

46. The person responsible for a well must send to the Minister, within 30 days of the end of the implementation of a fracturing program, a report signed by a professional on the monitoring made concerning the fracturing operations concerned by the program. Such a report contains, in particular, the data collected during the operation, their interpretation and any mapping of the microseismic events recorded.

DIVISION V
MONITORING OF GROUNDWATER

47. In order to verify the quality, the person responsible for a drilling site must, during the construction of the site or during exploration, fracturing operations or exploitation on the site take, at the frequencies provided for in Schedule III, water samples in the observation wells provided for in section 39 and analyze them in accordance with the Schedule.

The monitoring provided for in the first paragraph must also be conducted during the temporary closure period of the site and the 10-year period following permanent closure.

48. The person responsible for a drilling site must obtain from a professional, not later than 15 days after receipt of the results of the analysis of the water samples in accordance with section 47, the professional's opinion on the quality of the groundwater of the drilling site to determine in particular whether it is contaminated or not or to assess the degradation of its quality.

In the preparation of the opinion, the professional takes into account the analysis results obtained following the initial characterization study of the drilling site and the results of the analysis of the water samples obtained during the withdrawal and previous withdrawals.

If the conclusion of the opinion is that the groundwater is contaminated, the person responsible must immediately send the opinion to the Minister. The person responsible must also send to the Minister within 30 days after receipt of the professional's opinion a statement certifying the measures that have been or will be taken to determine the cause of the problem and correct the situation.

DIVISION VI
REGISTER

49. The person responsible for a drilling site must keep and update a register to record the following information:

(1) the hydrogeological study referred to in section 38;

(2) the fracturing program referred to in section 43;

(3) the results of the analysis of the samples collected in accordance with Schedules II and III;

(4) the fracturing operation monitoring report referred to in section 46;

(5) the opinion obtained from a professional under section 48;

(6) the opinions or declarations sent to the Minister under this Chapter.

The register must be retained for 10 years following the permanent closure of the site.

The information recorded in the register must be given to the Minister and to the Minister of Energy and Natural Resources on request.

CHAPTER VI
PROTECTION GIVEN TO THE WATER WITHDRAWN FOR HUMAN CONSUMPTION OR FOOD PROCESSING PURPOSES

DIVISION I
GENERAL

50. This Chapter applies only to water withdrawals made for human consumption or food processing purposes. It provides for the delimitation, where required, of inner, intermediate and outer protection zones for groundwater or surface water withdrawals in order, in particular, to assess the vulnerability of the water withdrawn and to supervise the performance of certain activities that may affect water quality.

51. For the purposes of this Chapter, the following categories of water withdrawals are established:

(1) category 1: water withdrawals carried out for a municipal waterworks system supplying over 500 persons and at least 1 residence;

(2) category 2: water withdrawals carried out to supply

(a) a municipal waterworks system supplying between 21 and 500 persons and at least 1 residence;

(b) any other waterworks system supplying 21 or more persons and at least 1 residence;

(c) a system, independent from a waterworks system, supplying at least 21 or more persons at 1 or more educational institutions, 1 or more detention facilities, or 1 or more health and social services institutions within the meaning of the Regulation respecting the quality of drinking water (chapter Q-2, r. 40);

(3) category 3: water withdrawals carried out to supply

(a) a system, independent from a waterworks system, supplying only 1 or more food processing establishments;

(b) a system, independent from a waterworks system supplying only 1 or more enterprises, 1 or more tourist establishments or 1 or more seasonal tourist establishments within the meaning of the Regulation respecting the quality of drinking water;

(c) any other system supplying 20 persons or fewer.

52. The location of a withdrawal site and any delimitation of a protection zone determined by a professional in accordance with this Chapter is public information. The person responsible for water withdrawals must disclose them on request.

DIVISION II
GROUNDWATER

§1. Vulnerability of groundwater

53. The intrinsic vulnerability of groundwater must be assessed by a professional for each category 1 water withdrawal protection zone delimited pursuant to this Division in accordance with the DRASTIC method of the National Water Well Association, as established in Aller, L., Bennet, T., Lehr, J.H. et al. (1987), DRASTIC: A Standardized System for Evaluating Ground Water Pollution Potential Using Hydrogeologic Settings, report no. EPA-600/2-87-035, the results of which must be used to rate vulnerability using the following vulnerability ratings:

(1) "Low": a rating equal to or less than 100 for the entire protection zone;

(2) "Medium": a rating less than 180 for the entire protection zone, except if a "low" rating has been assigned;

(3) "High": a rating equal to or greater than 180 in any part of the protection zone.

The intrinsic vulnerability of groundwater within a category 2 or 3 water withdrawal protection zone is deemed to be high, unless a professional assesses it otherwise in accordance with the method referred to in the first paragraph.

§2. Inner protection zone

54. An inner protection zone is delimited for all groundwater withdrawals. The limits of the zone are set at the following distances:

(1) 30 metres from a category 1 or 2 water withdrawal site, unless a professional determines them after certifying, in a hydrogeological study, that

(a) the presence of a superficial geological formation with low permeability provides natural protection for the groundwater;

(b) the configuration of the land or a nearby infrastructure ensures the protection of the quality of the groundwater with respect to incidents or activities that may occur in the zone concerned; or

(c) human activities within a radius of 30 metres from the withdrawal present no significant risk that may affect groundwater quality;

(2) 3 metres from a category 3 water withdrawal site.

55. The location of the inner protection zone for category 1 or 2 groundwater withdrawal facility must be indicated on the site in a way that is visible at all times from all access points, in particular by way of signs.

56. All activities presenting a risk of water contamination are prohibited in the inner protection zone of a groundwater withdrawal, except activities relating to the operation, maintenance, rebuilding or replacement of the water withdrawal facility and its accessory equipment.

§3. Intermediate protection zone

57. An intermediate protection zone is delimited for all groundwater withdrawals. The limits of the zone are set as follows:

(1) for category 1 water withdrawals, the limits must be determined by a professional who verifies, using data collected from a minimum of 3 wells that are constructed within the aquifer used for water withdrawals and that may be used to observe groundwater,

(a) the 200-day groundwater migration period, to ensure bacteriological protection;

(b) the 550-day groundwater migration period, to ensure virological protection;

(2) for category 2 water withdrawals, the limits are set at the following distances, except if they have been determined in accordance with subparagraph 1:

(a) 100 metres from the withdrawal site to ensure bacteriological protection;

(b) 200 metres from the withdrawal site, to ensure virological protection;

(3) for category 3 water withdrawals, the limits are set at the following distances, except if they have been determined in accordance with subparagraph 1:

(a) 30 metres from the withdrawal site, to ensure bacteriological protection;

(b) 100 metres from the withdrawal site, to ensure virological protection;

The person responsible for the category 1 or 2 water withdrawal must send a written notice to the domicile of each property included in the intermediate protection zone informing the owners or occupants of the presence of the withdrawal site in their neighbourhood.

58. The spreading and storage, directly on the ground, of sludge from municipal waste water treatment works or from any other works for the collection or treatment of sanitary waste water are prohibited within the intermediate virological protection zone of groundwater withdrawals with a water vulnerability rating of medium or high, except if the spreading is carried out for domestic landscaping purposes or if the spreading uses sludge certified to comply with CAN/BNQ 0413-200, CAN/BNQ 0413-400 or BNQ 419-090.

The first paragraph also applies to any substance containing more than 0.1%, dry weight basis, of sludge from sanitary waste water.

59. The construction of a yard and storage, directly on the ground, of animal waste, nitrogenous fertilizers, farm compost or any fertilizing waste substance not certified to comply with CAN/BNQ 0413-200, CAN/BNQ 0413-400 or BNQ 419-090 are prohibited

(1) in the intermediate bacteriological protection zone for groundwater withdrawals with a water vulnerability rating of medium or high;

(2) in the virological protection zone for groundwater withdrawals if the nitrate + nitrite (expressed as N) concentration of the water withdrawn, sampled in accordance with the Regulation respecting the quality of drinking water (chapter Q-2, r. 40), is above 5 mg/l on 2 or more occasions over a 2-year period;

(3) within the first 100 metres of the intermediate virological protection zone from category 3 groundwater withdrawals on a neighbouring property when the vulnerability rating is medium or high.

60. The construction of a composting area is prohibited

(1) less than 100 metres from the bacteriological protection zone for a category 1 or 2 groundwater withdrawal with a vulnerability rating of medium or high;

(2) in the bacteriological protection zone of a category 3 groundwater withdrawal with a vulnerability rating of medium or high;

(3) within the first 100 metres of the intermediate virological protection zone from category 3 groundwater withdrawals on a neighbouring property when the vulnerability rating is medium or high.

61. The construction of a facility to store animal waste or a building for raising livestock is prohibited

(1) less than 100 metres from the bacteriological protection zone for a category 1 or 2 groundwater withdrawal with a vulnerability rating of medium or high;

(2) in the intermediate bacteriological protection zone of a category 3 groundwater withdrawal with a vulnerability rating of medium or high.

This section does not apply to fish farms.

62. In all cases in which the construction of a composting area, animal waste storage facility or building for raising livestock is not prohibited in the intermediate bacteriological protection zone for groundwater withdrawals, the facility must be designed to ensure watertightness and must be constructed under the supervision of a professional.

In addition, the watertightness of a composting area or animal waste storage facility constructed in such a zone must be assessed by a professional every 10 years.

A professional having carried out an assessment referred to in the second paragraph must send to the person responsible for groundwater withdrawals and to the Minister a watertightness certificate or a recommendation concerning the corrective measures required to make the facility watertight after a watertightness deficiency is noted.

The corrective measures required to make a facility watertight must be completed no later than 1 year following receipt of the professional's recommendation. They must be carried out under the supervision of a professional who must forward a watertightness certificate to the person responsible for withdrawals and to the Minister as soon as possible.

A copy of the watertightness certificate must be sent as soon as possible to the regional county municipalities whose territory intersects with the intermediate protection zones concerned.

63. Grazing and the spreading of animal waste, farm compost and fertilizing waste substances not certified compliant with CAN/BNQ 0413-200, CAN/BNQ 0413-400 or BNQ 419-090 are prohibited

(1) in the intermediate bacteriological protection zone for groundwater withdrawals with a water vulnerability rating of high;

(2) in the virological protection zone for groundwater withdrawals when the nitrate + nitrite (expressed as N) concentration of the water sampled in accordance with the Regulation respecting the quality of drinking water (chapter Q-2, r. 40) is above 10 mg/l on 2 or more occasions over a 2-year period;

(3) less than 100 metres from a category 1 groundwater withdrawal site with a water vulnerability rating of medium.

The spreading of nitrogenous fertilizers is also prohibited in the virological protection zone for groundwater withdrawals in the case provided for in subparagraph 2 of the first paragraph.

The spreading of animal waste, farm compost, nitrogenous fertilizers or fertilizing waste substance, if it is for domestic landscaping purposes, is not under the prohibition provided for in this section.

64. Grazing and the spreading of animal waste, farm compost or fertilizing waste substances must be carried out in accordance with the recommendations of a professional

(1) in the intermediate bacteriological protection zone for groundwater withdrawals with a vulnerability rating of medium;

(2) in the intermediate virological protection zone for groundwater withdrawals when the nitrate + nitrite (expressed as N) concentration of the water sampled in accordance with the Regulation respecting the quality of drinking water (chapter Q-2, r. 40) is above 5 mg/l on 2 or more occasions over a 2-year period.

The spreading of nitrogenous fertilizers must also be carried out in accordance with the recommendation of a professional in the intermediate virological protection zone for groundwater withdrawals in the case provided for in subparagraph 2 of the first paragraph.

The recommendation must set out the measures to be taken to minimize the impact on the water withdrawn, especially concerning the addition of nitrogen and pathogenic agents. It must be based on

(1) a historical review of the last 5 years of cultivation, spreading activities and grazing activities in the intermediate protection zone;

(2) the hydrogeological context and the texture, depth and state of compaction of the soil.

The recommendation must be submitted with the agro-environmental fertilization plan prepared in accordance with the Agricultural Operations Regulation (chapter Q-2, r. 26) when the place where the livestock raising or spreading occurs is subject to that Regulation. It must be retained for 5 years and provided to the Minister on request.

§4. Outer protection zone

65. An outer protection zone is delimited for category 1 or 2 groundwater withdrawals. The limits of the zone are set as follows:

(1) for category 1 water withdrawals, the limits must be determined by a professional who verifies, using data collected from a minimum of 3 wells that are constructed within the aquifer used for water withdrawals and that may be used to observe groundwater, the area of land where circulating groundwater may eventually be captured for water withdrawal;

(2) for category 2 groundwater withdrawals, using a radius of 2 kilometres upstream from the withdrawal site, except if the limits have been determined under paragraph 1.

66. In addition to the prohibition provided for in section 32, the construction of a drilling site to explore for or produce petroleum, natural gas or brine, or to explore for or operate an underground reservoir, and the performance of a stratigraphic survey, is prohibited in the outer protection zone for category 1 or 2 groundwater withdrawals.

§5. Notice and report sent to the Minister

67. Where the person responsible for a groundwater withdrawal is notified that at least 2 water samples contained more then 5 mg/l of nitrates + nitrites (expressed as N) over a 2-year period, in accordance with section 36.01 of the Regulation respecting the quality of drinking water (chapter Q-2, r. 40), the person must send to the Minister, within 30 days of receipt of such notice, the list of properties included in part or all of the intermediate protection zone of the water withdrawal or withdrawals at the source of the concentration measured.

68. The person responsible for a category 1 groundwater withdrawal must send to the Minister, every 5 years, a report signed by a professional containing the following information and updates, if any:

(1) the location of the withdrawal site and a description of its construction;

(2) the location plan of the inner, intermediate and outer protection zones, which must make it possible to identify their limits on site;

(3) the vulnerability levels of the protection zones assessed in accordance with section 53;

(4) with respect to the outer protection zone, human activities, land use of the territory and potential events likely to affect the quality and quantity of the water used for the withdrawal;

(5) an assessment of the threats the human activities and potential events recorded pursuant to subparagraph 4 represent;

(6) an identification of the causes that may explain what affects or has affected the quality and quantity of the groundwater used for the withdrawal, on the basis of the interpretation of available data, in particular, the data obtained in the monitoring of the quality of raw and supplied water required under the Regulation respecting the quality of drinking water (chapter Q-2, r. 40).

The information recorded in the report is public information, except the information provided for in subparagraphs 4, 5 and 6 of the first paragraph. The information is published on the website of the person responsible for the withdrawal if possible.

A copy of the report is sent, as soon as possible, to the regional county municipalities whose territories intersect with the protection zones of the withdrawal and the municipalities whose territory intersects with the outer protection zone of the withdrawal. The information referred to in subparagraphs 1 to 3 of the first paragraph must also be sent, as soon as possible, to the watershed organizations whose territories intersect with the protection zones of the withdrawal

DIVISION III
SURFACE WATER

§1. Vulnerability of surface water

69. The vulnerability of surface water used for category 1 water withdrawals must be rated as high, medium or low by the person responsible for withdrawals, for each of the following indicators, defined in Schedule IV:

(1) physical integrity of the withdrawal site;

(2) vulnerability to microorganisms;

(3) vulnerability to fertilizers;

(4) vulnerability to turbidity;

(5) vulnerability to inorganic substances;

(6) vulnerability to organic substances.

§2. Inner protection zone

70. An inner protection zone is delimited for category 1 or 2 surface water withdrawals. The limits of the zone are set at the following distances:

(1) 300 metres around a category 1 or 2 withdrawal site, if it is located in a lake;

(2) 1 kilometre upstream and 100 metres downstream from a category 1 or 2 withdrawal site if it is situated in the St. Lawrence River or, in the parts of the St. Lawrence River where the current may reverse due to the tide, 1 kilometre upstream and downstream from the withdrawal site;

(3) 500 metres upstream and 50 metres downstream from a category 1 or 2 withdrawal site if it is situated in any other watercourse.

The distances include any surface water, portions of tributaries and a 10-metre strip of land measured from the high-water mark.

The person responsible for the water withdrawal must send a written notice to the domicile of each property included in the inner protection zone informing their owners or occupants of the presence of the withdrawal site in their neighbourhood.

71. The following activities are prohibited in the inner protection zone for categories 1 and 2 surface water withdrawals:

(1) grazing;

(2) the spreading and storage, directly on the ground, of animal waste, farm compost, nitrogenous fertilizers or fertilizing waste substances;

(3) the spreading and storage, directly on the ground, of sludge from municipal waste water treatment works or from any other works for the collection of treatment of sanitary waste water and of any substance containing more than 0.1%, dry weight basis, of sludge from sanitary waste water;

(4) the construction of a new discharge in a watercourse, except a watercourse over 30 metres wide at low water if a professional certifies that the discharge will not affect the water withdrawal site.

All other activities within the inner protection zone for category 1 or 2 surface water withdrawals, except activities relating to the operation of a hydroelectric power station, must meet the following conditions:

(1) the activity must be organized to minimize the risk of soil erosion, in particular by re-establishing and maintaining natural plant cover and the natural state of the lakeshore or riverbank;

(2) if the activity involves a ditch or underground drain, they must not connect directly to the receiving lake or watercourse, unless they include infrastructures to limit the flow of sediments to the lake or watercourse concerned and, in the case of a ditch, the top of the bank must have plant cover over a minimum width of 1 metre.

§2. Intermediate protection zone

72. An intermediate protection zone is delimited for category 1 or 2 surface water withdrawals. The limits of the zone are set at the following distances:

(1) 3 kilometres around a category 1 or 2 withdrawal site, if it is located in a lake;

(2) 15 kilometres upstream and 100 metres downstream from a category 1 or 2 withdrawal site if it is situated in the St. Lawrence River or, if it is located in the parts of the St. Lawrence River where the current may reverse due to the tide, 15 kilometres upstream and downstream from the withdrawal site;

(3) 10 kilometres upstream and 50 metres downstream from a category 1 or 2 withdrawal site located in any other watercourse.

The distances include surface water, portions of tributaries and a 120-metre strip of land measured from the high-water mark.

73. In addition to the prohibition provided for in section 32, the construction of the drilling site to explore for or produce petroleum, natural gas or brine, or to explore for or operate an underground reservoir, and work to conduct a stratigraphic survey is prohibited in the intermediate protection zone for category 1 or 2 surface water withdrawals.

§3. Outer protection zone

74. An outer protection zone is delimited for category 1 water withdrawals. The limits of the zone correspond to the territory of the catchment area of the withdrawal site and include, if any, the limits of the intermediate protection zone for the withdrawal site located upstream.

§4. Report sent to the Minister

75. The person responsible for category 1 surface water withdrawals must send to the Minister, every 5 years, a report signed by a professional containing the following information and updates, if any:

(1) location of the withdrawal site and a description of its layout;

(2) a plan showing the location of the inner, intermediate and outer protection zones, which must make it possible to determine their limits on site;

(3) the water vulnerability ratings assessed in accordance with section 69 for each indicator provided for in Schedule IV;

(4) with respect to the inner and intermediate protection zones, human activities, land use and potential events likely to affect the quality and quantity of the water used for the withdrawal;

(5) with respect to the part of the outer protection zone that does not intersect with the inner and intermediate protection zones, human activities, land use and potential events likely to affect significantly the quality and quantity of the water used for the withdrawal;

(6) an assessment of the threats the human activities and potential events recorded pursuant to subparagraphs 4 and 5 represent;

(7) an identification of the causes that may explain, for each indicator provided for in Schedule V, the average or high levels of vulnerability of the surface water assessed.

To determine if a human activity, land use or potential event is likely to affect significantly the quality and quantity of the water used for a withdrawal, its nature and importance, its location and the discharge of contaminants that may result must be taken into consideration.

The information recorded in the report is public information, except the information referred to in the subparagraphs 4, 5, 6 and 7 of the first paragraph. It must be published on the website of the person responsible for the withdrawal, if possible.

A copy of the report must be sent, as soon as possible, to the regional county municipalities whose territories intersect with the withdrawal protection zone and to municipalities whose territories intersect with an intermediate withdrawal protection zone. The information referred to in subparagraphs 1 to 3 of the first paragraph are also sent, as soon as possible, to the watershed organizations whose territories intersect with the withdrawal protection zones

CHAPTER VII
SPECIAL PROVISIONS APPLICABLE TO VILLE DE MERCIER AND OTHER CLOSE TERRITORIES

76. This Chapter applies to the territories of the following municipalities

(1) Ville de Mercier;

(2) Paroisse de Saint-Isidore;

(3) Sainte-Martine;

(4) Saint-Urbain-Premier.

77. The drilling, excavating or operating of a groundwater withdrawal facility, except if such activities are authorized for environmental rehabilitation purposes in accordance with the Environment Quality Act (chapter Q-2), is prohibited within the perimeter described in Schedule VI.

78. In the territory of a municipality to which this Chapter applies, a tube well located outside the perimeter described in Schedule VI that withdraws groundwater from the bedrock must be drilled so as to cut through at least 10 metres of bedrock.

79. In order to monitor the presence of vinyl chloride, the person responsible for a category 1 groundwater withdrawal facility used to supply water for human consumption or for food production or processing must, if the outer protection zone delimited pursuant to section 65 partly intersects with the area defined in Schedule V, withdraw, twice per year, groundwater samples.

The groundwater samples must be analyzed by a laboratory accredited pursuant to section 118.6 of the Environment Quality Act (chapter Q-2).

If the analysis reveals the presence of vinyl chloride, the person responsible for the facility must immediately inform the Minister. The person responsible must also send to the Minister, within 30 days after receipt of the analysis certificate provided by the accredited laboratory, a statement certifying that the measures the person has taken or intends to take to determine the cause of the problem and correct the situation.

The person responsible for the facility must record the following information in a register:

(1) the place where the samples were taken;

(2) the sampling method;

(3) all analysis results.

The register must be retained for 5 years. The information recorded in the register is provided to the Minister on request.

80. The provisions of section 79 apply to every category 2 groundwater withdrawal facility used to supply water for human consumption or for food production or processing if the intermediate bacteriological protection zone delimited pursuant to section 57 partly intersects with the area defined in Schedule V.

CHAPTER VIII
ADMINISTRATIVE PROVISIONS AND SANCTIONS

DIVSION I
MONETARY ADMINISTRATIVE PENALTIES

81. A monetary administrative penalty of $250 for a natural person and $1,000 in other cases may be imposed on any person who, in violation of this Regulation,

(1) refuses or neglects to send a notice or report or fails to comply with the conditions or applicable deadline, if no other monetary administrative penalty is prescribed;

(2) fails to retain, for the required time limit, any documents that the person is required to prepare or obtain;

(3) fails to keep the register provided for in section 49 or fails to retain it for the prescribed time limit;

(4) fails to disclose the location of a water withdrawal site and the delimitation of a protection zone in accordance with section 52;

(5) fails to indicate at the site the location of an inner protection zone in accordance with section 55 or removes or damages a sign installed at the site, or allows such a sign to deteriorate;

(6) fails to submit the recommendation of a professional with an agro-environmental fertilization plan in accordance with the fourth paragraph of section 64.

82. A monetary administrative penalty of $350 for a natural person and $1,500 in other cases may be imposed on any person who refuses or neglects to send the reports referred to in section 68 or 75 or to provide all the information that must be included in the reports, or fails to comply with the conditions or applicable deadlines.

83. A monetary administrative penalty of $550 for a natural person and $2,500 in other cases may be imposed on any person who

(1) fails to take a sample or measurement in accordance with this Regulation;

(2) fails to conduct an analysis, test, monitoring or check in accordance with this Regulation;

(3) fails to make a water withdrawal facility accessible in accordance with section 14.

84. A monetary administrative penalty of $750 for a natural person and $3,500 in other cases may be imposed on any person who

(1) fails to construct a facility in accordance with a standard provided for in paragraph 1 of section 13, section 16 or 17, the first paragraph of section 22, sections 23 to 28 or subparagraph 2 or 3 or subparagraphs 5 to 7 of the first paragraph of section 29;

(2) fails to seal a water withdrawal facility in accordance with section 19 or fails to minimize damage to the seal during subsequent work;

(3) fails to plug the groundwater withdrawal facility or the survey hole in accordance with section 20 or 35;

(4) fails to construct groundwater observation wells in accordance with section 39;

(5) fails to implement the fracturing program in accordance with the first paragraph of section 45.

85. A monetary administrative penalty of $1,000 for a natural person and $5,000 in other cases may be imposed on any person who

(1) fails to comply with the conditions for performing an activity in accordance with section 18, the second paragraph of section 22, section 34, 41 or 62, the first, second or third paragraph of section 64 or the second paragraph of section 71;

(2) fails to carry out an initial characterization study in accordance with section 37;

(3) fails to notify the Minister in accordance with the second or third paragraph of section 45 or the third paragraph of section 48;

(4) fails to assess water vulnerability ratings in accordance with section 53 or 69;

(5) fails to delimit the protection zones in accordance with section 54, 57 or 65 where the delimitation is determined by a professional.

86. A monetary administrative penalty of $1,500 for a natural person and $7,500 in other cases may be imposed on any person who

(1) performs an activity prohibited by sections 15, 32, 56, 58 to 61, 63 or 66, the first paragraph of section 71 or section 73;

(2) constructs a water withdrawal facility or a ground-source geothermal system in contravention of paragraph 2 of section 13 or subparagraph 1 or 4 of the first paragraph of section 29;

(3) fractures a well used to explore for or produce petroleum or natural gas, in contravention of section 40;

(4) uses a prohibited substance in the fluid injected in a fracturing operation in contravention of section 42.

87. A monetary administrative penalty of $2,000 for a natural person and $10,000 in other cases may be imposed on any person who

(1) drills, digs or operates a water withdrawal facility in violation of section 77 or 78;

(2) fails to carry out preventive monitoring, to have monitoring samples analyzed by a laboratory accredited pursuant to section 118.6 of the Environment Quality Act (chapter Q-2) or to notify the Minister of the analysis results for the samples and the measures planned to correct the situation in accordance with section 79.

DIVISION II
PENAL SANCTIONS

88. Every person who

(1) refuses or neglects to send a notice or report or to provide any information or document required under this Regulation, or fails to comply with the conditions and applicable time limit,

(2) fails to retain, for the prescribed time limit, the documents the person is required to prepare or obtain,

(3) fails to keep the register provided for in section 49 or fails to retain the register for the prescribed time limit,

(4) fails to disclose the presence and delimitation of a protection zone in accordance with section 52,

(5) fails to indicate at the site the location of an inner protection zone in accordance with section 55 or removes or damages a sign installed at the site, or allows such a sign to deteriorate,

(6) fails to submit the recommendation of a professional with an agro-environmental fertilization plan in accordance with the fourth paragraph of section 64,

(7) fails to comply with an obligation imposed by this Regulation that is not otherwise sanctioned under this Division or under Division XIII.1 of Chapter I of the Environment Quality Act (chapter Q-2),

commits an offence and is liable to a fine of $1,000 to $100,000 in the case of a natural person or $3,000 to $600,000 in other cases.

89. Every person who refuses or neglects to send the reports referred to in section 68 or 75 or to provide all the information that must be included in the reports, or fails to comply with the conditions or applicable deadlines, commits an offence and is liable to a fine of $2,000 to $10,000 in the case of a natural person or $6,000 to $600,000 in other cases.

90. Every person who

(1) fails to take a sample or measurement in accordance with this Regulation,

(2) fails to conduct an analysis, test, monitoring or check in accordance with this Regulation,

(3) fails to make a water withdrawal facility accessible in accordance with section 14,

commits an offence and is liable to a fine of $2,500 to $250,000 in the case of a natural person or $7,500 to $1,500,00 in other cases.

91. Every person who

(1) fails to construct a facility in accordance with a standard provided for in paragraph 1 of section 13, section 16 or 17, the first paragraph of section 22, sections 23 to 28 or subparagraph 2 or 3 or subparagraphs 5 to 7 of the first paragraph of section 29,

(2) fails to seal a water withdrawal facility in accordance with section 19 or fails to minimize damage to the seal during subsequent work,

(2) fails to plug the groundwater withdrawal facility or the survey hole in accordance with section 20 or 35,

(3) fails to construct groundwater observation wells in accordance with section 39,

(4) fails to implement the fracturing program in accordance with the first paragraph of section 45,

commits an offence and is liable to a fine of $4,000 to $250,000 in the case of a natural person or $12,000 to $1,500,000 in other cases.

92. Every person who

(1) provides false or misleading information,

(2) fails to comply with the conditions for the performance of an activity in accordance with section 18, the second paragraph of section 22, section 34, 41 or 62, the first, second or third paragraph of section 64 or the second paragraph of section 71,

(3) fails to carry out an initial characterization study in accordance with section 37,

(4) fails to notify the Minister in accordance with the second or third paragraph of section 45 or section 48,

(5) fails to assess water vulnerability ratings in accordance with section 53 or 69,

(6) fails to delimit the protection zones in accordance with section 54, 57 or 65 where the delimitation is determined by a professional,

commits an offence and is liable, in the case of a natural person, to a fine of $5,000 to $500,000 or, despite article 231 of the Code of Penal Procedure (chapter C-25.1), to a maximum term of imprisonment of 18 months or to both the fine and imprisonment, or, in other cases, to a fine of $15,000 to $3,000,000.

93. Every person who

(1) performs an activity prohibited by sections 15, 32, 56, 58 to 61, 63 or 66, the first paragraph of section 71 or section 73,

(2) constructs a water withdrawal facility or a ground-source geothermal system in contravention of paragraph 2 of section 13 or subparagraph 1 or 4 of the first paragraph of section 29,

(3) fractures a well used to explore for or produce petroleum or natural gas in contravention of section 40,

(4) uses a prohibited substance in the fluid injected in a fracturing operation in contravention of section 42,

commits an offence and is liable, in the case of a natural person, to a fine of $8,000 to $500,000 or, despite article 231 of the Code of Penal Procedure (chapter C-25.1), to a maximum term of imprisonment of 18 months or to both the fine and imprisonment, or, in other cases, to a fine of $24,000 to $3,000,000.

94. Every person who

(1) drills, digs or operates a water withdrawal facility in contravention of section 77 or 78,

(2) fails to carry out preventive monitoring, to have monitoring samples analyzed by a laboratory accredited pursuant to section 118.6 of the Environment Quality Act (chapter Q-2) or to notify the Minister of the analysis results for the samples and the measures planned to correct the situation in accordance with section 79,

commits an offence and is liable, in the case of a natural person, to a fine of $10,000 to $1,000,000 or, despite article 231 of the Code of Penal Procedure (chapter C-25.1), to a maximum term of imprisonment of 18 months or to both the fine and imprisonment, or, in other cases, to a fine of $30,000 to $6,000,000.

CHAPTER IX
TRANSITIONAL AND FINAL

95. The distances provided for in subparagraphs 1, 2 and 3 of the first paragraph of section 17 do not apply to the replacement or substantial modification of a groundwater withdrawal facility existing on the date of coming into force of this section if a professional certifies, in a hydrological study, any of the following situations:

(1) the presence of a superficial geological formation with low permeability provides natural protection for the groundwater;

(2) the configuration of the land or a nearby infrastructure ensures the protection of the quality of the groundwater with respect to incidents or activities that may occur within the zone concerned;

(3) the design of the groundwater withdrawal facility affords an equivalent protection;

(4) the dimensions of the land do not allow compliance with the distances given the presence of a main construction authorized by a municipality.

The applicable distances are determined by a professional who makes sure to minimize the risks that may affect the quality of the groundwater withdrawn by preparing, in particular, the plans and specifications of the facility and by supervising the construction work of the facility.

96. Despite section 54 of this Regulation, the limits of the inner protection zone of a category 1 or 2 groundwater withdrawal site used since the coming into force of the Groundwater Catchment Regulation (chapter Q-2, r. 6), namely 15 June 2002, may be set less than 30 metres from the withdrawal site given obstacles present, such as the size of the land, a road or a dwelling.

97. The person responsible for an animal waste storage facility or a composting area located in the bacteriological protection zone for groundwater withdrawals made for human consumption or food processing purposes on the date of coming into force of this section, must have the facility, yard or area assessed by a professional not later than 4 years after the date of coming into force of this section.

The professional who has carried out an assessment referred to in the first paragraph must send to the person responsible for the groundwater withdrawal facility and to the Minister a watertightness certificate or a recommendation concerning the corrective measures required to make the facility watertight after a watertightness deficiency is noted or, if no corrective measure is possible, the choice of a new location outside the protection zone where operations can continue. In the latter case, the plans and specifications for the new facility, yard or area must be submitted with the recommendation.

The professional's recommendation must be implemented not later than 2 years following its receipt. The work linked to the recommendation must be carried out under the supervision of a professional who must send, to the person responsible for the withdrawals and to the Minister when the work is completed, a watertightness certificate for the facility, yard or area concerned as soon as possible.

98. Every person who fails to have the watertightness of a facility assessed in accordance with the first paragraph of section 97 or who fails to comply with the requirements of that section, if a watertightness deficiency is noted,

(1) may have a monetary administrative penalty imposed in the amount of $750 for a natural person and $3,500 in other cases;

(2) is guilty of an offence and is liable to a fine of $4,000 to $250,000 in the case of a natural person and $12,000 to $1,500,000 in other cases.

99. The reports required under in sections 68 and 75 of this Regulation must be sent to the Minister not later than

(1) 6 years after the date of coming into force of sections 68 and 75 of this Regulation, in the case where the water withdrawals concerned are already in operation on that date;

(2) 6 years after the beginning of the withdrawal operations, in the case where the water withdrawals concerned are authorized on the date of coming into force of sections 68 and 75 of this Regulation, but are not yet in operation at that date; to that end, the person responsible for the water withdrawals concerned must inform the Minister of the beginning date of the withdrawal operations not later than 30 days after that date.

Until then, the person responsible for the groundwater withdrawals referred to in section 68 of this Regulation, where the withdrawal is in operation on 14 August 2014, must make public the information required under subparagraphs 1 to 3 of the first paragraph of section 25 of the Groundwater Catchment Regulation (chapter Q-2, r. 6), including by a publication on the website of the person responsible where such a publication is possible.

100. Every person who refuses or neglects to send the reports or information provided for in section 99 or does not comply with the prescribed time limit for filing them

(1) may be imposed an administrative monetary penalty of $350 in the case of a natural person or $1,500 in other cases;

(2) commits an offence and is liable to a fine of $2,000 to $100,000 in the case of a natural person or $6,000 to $600,000 in other cases.

101. Applications for a water withdrawal authorization already being examined on the date of coming into force of this section, pursuant to section 22, 31.5 or 32 of the Environment Quality Act (chapter Q-2) or pursuant to the provisions of Chapter IV of the Groundwater Catchment Regulation (chapter Q-2, r. 6), are governed by the provisions of this Regulation.

102. Despite sections 33 and 34 of the Act to affirm the collective nature of water resources and provide for increased water resource protection (chapter C-6.2), water withdrawals referred to in those sections remain valid until the following dates:

(1) if the withdrawer also holds a depollution attestation, until the date of renewal of the attestation that occurs after 14 August 2024;

(2) if the withdrawer carries out water withdrawals with an average daily volume equal to or exceeding 5,000,000 litres, until 14 August 2025;

(3) if the withdrawer carries out water withdrawals with an average daily volume equal to or exceeding 1,500,000 litres but below 5,000,000 litres, until 14 August 2026;

(4) if the withdrawer carries out water withdrawals with an average daily volume equal to or exceeding 600,000 litres but below 1,500,000 litres, until 14 August 2027;

(5) if the withdrawer carries out water withdrawals with an average daily volume equal to or exceeding 200,000 litres but below 600,000 litres, until 14 August 2028;

(6) until 14 August 2029 if

(a) the withdrawer carries out water withdrawals with an average daily volume below 200,000 litres;

(b) the withdrawer operates a terrestrial fish farming site which, for each ton of annual production, withdraws a volume of water equal to or less than 20,000 litres per hour and is authorized, by certificate, to produce an annual discharge of phosphorous in its effluents equal to or less than 4.2 kilograms per ton of production.

Water withdrawals may continue after the term for such time limits as a renewal or new authorization has not been issued.

103. An application for a renewal or an authorization referred to in section 33 or 34 of the Act to affirm the collective nature of water resources and provide for increased water resource protection (chapter C-6.2) must be submitted in writing to the Minister 6 months before the expiry date of the term and include

(1) an update of the information and documents submitted for the initial application for authorization, in the case of an application for a renewal;

(2) the information and documents referred to in subparagraphs 1 to 5, 7 and 10 of the first paragraph of section 7 of this Regulation;

(3) the location of each water withdrawal site covered by the application and a description of their construction, if the information has not been submitted before;

(4) the measures taken in respect of the water withdrawal operations, such as piezometric data, if any.

The information provided in respect of the application is public information, to the extent provided by the third paragraph of section 7 of this Regulation.

104. The terms "groundwater catchment facility", "groundwater catchment works" and "water supply intake", as used in an Act, regulation or other document, must be read as referring to a groundwater withdrawal facility.

105. Municipalities are responsible for the application of the provisions of Chapters III and IV, and of sections 78 and 79 of this Regulation to the extent that those sections concern water withdrawals or geothermal systems situated in a territory under the authority of the municipality concerned.

To accomplish their responsibilities under the first paragraph, Division I of Chapter VIII of this Regulation does not apply.

106. The standards of this Regulation concerning the protection of water withdrawals for human consumption or food processing purposes are evaluated 3 years after the coming into force of this Regulation and every 5 years after that on the basis of the evolution of the applicable scientific and technical knowledge in that respect.

107. This Regulation replaces the Groundwater Catchment Regulation (chapter Q-2, r. 6). However, the provisions of Chapter II and Schedule I to that Regulation remain applicable until 2 March 2015.

108. This Regulation comes into force on 14 August 2014, except:

(1) sections 11 to 30, which come into force on 2 March 2015;

(2) sections 68 and 75, which come into force on 1 April 2015.

SCHEDULE I
CONTENT OF REPORT
(ss. 21, 28 and 30)

1. For the purposes of this Schedule, "facility" means a water withdrawal facility, the discharge facility of a geothermal system that withdraws water, and a ground-source geothermal system.

2. The information required to draw up the drilling report consists of

(1) the name of the owner of the place where the facility is installed;

(2) the location of the place where the facility is installed (number, street, municipality, postal code, cadastral designation, latitude and longitude expressed in decimal degrees using the NAD 83 coordinate system and measured using a GPS device or other instrument of equivalent precision);

(3) the units of measurement used in the report (all information in the report must be expressed using the same units of measurement);

(4) the intended use of the facility installed;

(5) the number of the permit issued by the municipality concerned;

(6) the number of the licence issued by the Régie du bâtiment du Québec;

(7) the construction method used (drilling, excavation, driving);

(8) whether the work concerned was intended to deepen an existing well;

(9) the date of construction;

(10) the diameter or diameters drilled, and the depth of each diameter drilled;

(11) the presence of gas or saltwater during construction;

(12) in the case of a sealed well, the height of the seal and the materials used for the seal;

(13) the length, diameter and type of casing installed, and the length of the casing above ground level;

(14) the length, diameter, opening and type of perforated casing installed, if any;

(15) the length, diameter and type of additional or support tubing installed, if any;

(16) the type and thickness of the layers drilled;

(17) the following information on the flow tests conducted, if any:

(a) the date of the flow test;

(b) the water level at the end of the work;

(c) the duration of the flow test;

(d) the flow rate of the facility;

(e) the pumping method.

SCHEDULE II
INITIAL CHARACTERIZATION STUDY
(s. 37)

1. The following physico-chemical parameters must be measured on-site during sampling:

(1) specific electric conductivity;

(2) pH;

(3) oxydo-reduction potential;

(4) temperature;

(5) turbidity, where a water sample is taken from a surface water withdrawal site.

2. The samples collected must be analyzed for the following substances and parameters:

(1) organic compounds:

(a) total BTEX (benzene, toluene, ethylbenzene, xylene);

(b) total organic carbon (C);

(c) ethane (C_2H_6);

(d) polycyclic aromatic hydrocarbons (PAHs);

(e) petroleum hydrocarbons (C_{10}-C_{50});

(f) dissolved and, if applicable, stable isotopic signature ($\delta^{13}C$) of methane, if any;

(g) propane (C_3H_8).

(2) dissolved inorganic compounds:

(a) aluminum (Al);

(b) antimony (Sb);

(c) silver (Ar);

(d) arsenic (As);

(e) barium (Ba);

(f) beryllium (Be);

(g) bismuth (Bi);

(h) boron (B);

(i) bromium (Br);

(j) cadmium (Cd);

(k) calcium (Ca);

(l) chlorides;

(m) chrome (Cr);

(n) cobalt (Co);

(o) copper (Cu);

(p) tin (Sn);

(q) iron (Fe);

(r) fluorides (F);

(s) lithium (Li);

(t) magnesium (Mg);

(u) manganese (Mn);

(v) molybdenum (Mo);

(w) nickel (Ni);

(x) nitrites + nitrates;

(y) lead (Pb);

(z) potassium (K);

(aa) total radium (Ra);

(bb) selenium (Se);

(cc) silicon (Si);

(dd) sodium (Na);

(ee) strontium (Sr);

(ff) sulphates;

(gg) sulphides;

(hh) thallium (TI)

(ii) total thorium (Th);

(jj) titanium (Ti);

(kk) uranium (U);

(ll) vanadium (V);

(mm) zinc (Zn);

(3) the following parameters:

(a) alkalinity;

(b) total dissolved and suspended solids.

3. All samples must be analyzed by laboratories accredited pursuant to section 118.6 of the Environment Quality Act (chapter Q-2) or, if no laboratory is accredited for the analysis of a given substance, by a laboratory that meets ISO/CEI 17025, General requirements for the competence of testing and calibration laboratories, published jointly by the International Organization for Standardization and the International Electrotechnical Commission.

4. The laboratory sends the results to the person responsible for the drilling site.

SCHEDULE III
GROUNDWATER MONITORING
(s. 47)

1. For groundwater monitoring purposes, observation wells must be sampled once per year and 90 days after every repair to the well.

The frequency provided for in the first paragraph is increased to three times a year once the fracturing operations begin, each sampling campaign being executed at least 3 months from each other. The frequency is maintained until the fifth year following the last fracturing of the well is over.

2. The samples collected during groundwater monitoring must be analyzed for the following substances:

(1) total BTEX (benzene, toluene, ethylbenzene, Xylene);

(2) chlorides;

(3) petroleum hydrocarbons (C_{10}-C_{50});

(4) dissolved methane;

(5) dissolved solids.

3. The following physico-chemical parameters must be measured on-site during the sampling:

(1) specific electric conductivity;

(2) pH;

(3) oxydo-reduction potential;

(4) temperature.

4. All samples must be analyzed by laboratories accredited pursuant to section 118.6 of the Environment Quality Act (chapter Q-2) or, if no laboratory is accredited for the analysis of a given substance, by a laboratory that meets ISO/CEI 17025, General requirements for the competence of testing and calibration laboratories, published jointly by the International Organization for Standardization and the International Electrotechnical Commission.

5. The laboratory sends the results to the person responsible for the drilling site.

SCHEDULE IV
VULNERABILITY OF SURFACE WATER
(ss. 69 and 75)

Physical vulnerability of withdrawal site

1. The physical vulnerability of the withdrawal site must be assessed using the most restrictive of the following methods:

(1) a historical review of all the natural or anthropic events recorded pursuant to section 22.0.4 of the Regulation respecting the quality of drinking water (chapter Q-2, r. 40), over a consecutive 5-year period, that may have affected the condition of the withdrawal site, allowing water vulnerability to be rated as follows:

(a) high if more than 1 distinct event is recorded;

(b) medium if a single distinct event is recorded;

(c) low if no events are recorded;

(2) a high rating assessment by a professional who certifies in writing that the location of the withdrawal site is a cause for concern because of the hydro-dynamic characteristics of the body of water, of water extraction, development or harnessing projects upstream, of a forecast increase in water demand, or of the anticipated effects of climate change.

Water vulnerability to microorganisms

2. Water vulnerability to microorganisms is assessed using one of the following methods:

(1) a compilation, over a consecutive 5-year period, of the results of an analysis of raw water samples withdrawn in accordance with the Regulation respecting the quality of drinking water (chapter Q-2, r. 40) for *Escherichia coli* bacteria, including the samples taken pursuant to section 22.0.1. The compilation is used to rate water vulnerability as follows:

(a) high if the analysis results show a median value above 150 UFC/100 ml or if the value of the 95th percentile is above 1 500 UFC/100 ml;

(b) medium if vulnerability is neither low nor high;

(c) low if the analysis results show a median value below 15 UFC/100 ml and if the value of the 95th percentile is below 150 UFC/100 ml;

(2) when the method in paragraph 1 cannot be used, water vulnerability is rated as follows:

(a) high, if the inner protection zone for the withdrawals is wholly situated in an urban area, or if at least one overflow from a combined or semi-separated sewer system likely to discharge raw or partially untreated sewage following a storm, continuous rain or a snow melt is located in the inner or intermediate protection zone;

(b) medium if vulnerability is neither low nor high;

(c) low, if the withdrawal site is situated downstream from an agglomeration served by a combined or semi-separated sewer system, a livestock raising operation, a food processing industry or another establishment likely to discharge pathogenic microorganisms or microorganisms indicating a contamination of fecal origin into the watercourse.

Water vulnerability to fertilizers

3. Water vulnerability to fertilizers is assessed using the most restrictive of the following methods:

(1) a compilation, over a consecutive 5-year period, of the results of an analysis of raw water samples withdrawn in accordance with section 22.0.1 of the Regulation respecting the quality of drinking water (chapter Q-2, r. 40) for total phosphorous. The compilation is used to rate water vulnerability as follows:

(a) in a lake:

(i) high if the average result is equal to or greater than 20 µg/l P;

(ii) medium if the average result is between 10 µg/l P and 20 µg/l P;

(iii) low if the average result is equal to or les than 10 µg/l P;

(b) in any other watercourse:

(i) high if the average result is equal to or greater than 50 µg/l P;

(ii) medium if the average result is between 30 µg/l P and 50 µg/l P;

(iii) low if the average result is equal to or less than 30 µg/l P;

(2) a historical review of all events recorded pursuant to section 22.0.4 of the Regulation respecting the quality of drinking water (chapter Q-2, r. 40) in a watercourse over a consecutive 5-year period involving cyanobacteria, algae or aquatic plant proliferations or increases in ammoniacal nitrogen, allowing water vulnerability to be rated as follows:

(a) high if 5 or more events are recorded;

(b) medium if 2 to 4 events are recorded;

(c) low if 1 or no events are recorded;

(3) when the methods in paragraphs 1 and 2 cannot be used, water vulnerability must be assessed by a professional based on the potential impact of anthropic activities recorded in the outer protection zone for the water withdrawals in terms of the introduction of fertilizers that may affect the water withdrawn.

Water vulnerability to turbidity

4. Vulnerability to turbidity must be assessed using one of the following methods:

(1) a compilation, over a consecutive 5-year period, of the results of an analysis of raw water samples withdrawn in accordance with section 22.0.2 of the Regulation respecting the quality of drinking water (chapter Q-2, r. 40) for turbidity. The compilation is used to rate water vulnerability as follows:

(a) high if the value of the 99th percentile is equal to or greater than 100 NTU (nephelometric turbidity unit);

(b) low in other cases;

(2) when the method in paragraph 1 cannot be used, water vulnerability must be assessed by a professional based on the potential impact of the natural characteristics of the outer protection zone for the water withdrawals and human acitivites carried out on water turbidity.

Water vulnerability to inorganic substances

5. Vulnerability to inorganic substances must be assessed using one of the following methods:

(1) a compilation, over a consecutive 5-year period, of the results of an analysis of raw water samples withdrawn in accordance with section 14 of the Regulation respecting the quality of drinking water (chapter Q-2, r. 40) for inorganic substances associated with the source. The compilation is used to rate water vulnerability as follows:

(a) high if, for at least one substance, 2 of the values analyzed are equal to or greater than 50% of the applicable standard;

(b) medium if

(i) for at least one substance, 2 of the values analyzed are between 20% and 50% of the applicable standard;

(ii) for at least one substance, 1 of the values analyzed is between 20% and 50% of the applicable standard and 1 other value is equal to or greater than 50% of the applicable standard;

(c) low in other cases;

(2) when the method in paragraph 1 cannot be used, the total of all the areas used for industrial, commercial or agricultural activities in the strips of land 120 metres wide in the intermediate protection zone delimited for water withdrawals is used to rate water vulnerability as follows:

(a) high, if the total is equal to or greater than 50% of the total area of the strips of land 120 metres wide in the intermediate protection zone;

(b) medium, if the total area is between 20% and 50% of the total area of the strips of land 120 metres wide in the intermediate protection zone;

(c) low, if the total area is equal to or less than 20% of the total area of the strips of land 120 metres wide in the intermediate protection zone.

Water vulnerability to organic substances

6. Vulnerability to organic substances must be assessed using one of the following methods:

(1) a compilation, over a consecutive 5-year period, of the results of an analysis of raw water samples withdrawn in accordance with section 19 of the Regulation respecting the quality of drinking water (chapter Q-2, r. 40) for inorganic substances associated with the source. The compilation is used to rate water vulnerability as follows:

(a) high if, for at least one substance, 2 of the values analyzed are equal to or greater than 50% of the applicable standard;

(b) medium if

(i) for at least one substance, 2 of the values analyzed are between 20% and 50% of the applicable standard;

(ii) for at least one substance, 1 of the values analyzed is between 20% and 50% of the applicable standard and 1 other value is equal to or greater than 50% of the applicable standard;

(c) low in other cases;

(2) when the method in paragraph 1 cannot be used, the total of all the areas used for industrial, commercial or agricultural activities in the strips of land 120 metres wide in the intermediate protection zone delimited for water withdrawals is used to rate water vulnerability as follows:

(a) high, if the total is equal to or greater than 50% of the total area of the strips of land 120 metres wide in the intermediate protection zone;

(b) medium, if the total area is between 20% and 50% of the total area of the strips of land 120 metres wide in the intermediate protection zone;

(c) low, if the total area is equal to or less than 20% of the total area of the strips of land 120 metres wide in the intermediate protection zone.

SCHEDULE V
DELIMITATION OF A PERIMETER IN VILLE DE MERCIER AND IN OTHER CLOSE TERRITORIES
(ss. 77, 78, 79 and 80)

CONTAMINATED PERIMETER

CANADA

PROVINCE OF QUEBEC

DISTRICT OF BEAUHARNOIS

Technical description

Namely, the whole territory forming part of Municipalité de Sainte-Martine, MRC de Beauharnois-Salaberry and Ville de Mercier, MRC de Rousillon and bounded by the limits of the following perimeter:

Starting from point "A" located at the meeting point of the southeast right-of-way of Boulevard Sainte-Marguerite and of the northeastern limit of lot 249 of the cadastre of Paroisse de Sainte-Philomène, thence, in a southeasterly direction following the northeastern limit of lot 249 to point "B" located at the limit of the cadastre of the parishes of Sainte-Philomène and Saint-Isidore, southeastern limit of Ville de Mercier; thence, in a southwesterly direction following the limit of the cadastre of the parishes of Sainte-Philomène and Saint-Isidore to point "C" located at the meeting point of that last limit and of the northeastern limit of the first concession of the cadastre of Paroisse de Saint-Urbain-Premier; thence, in a northerly direction following the northeastern limit of that first concession to point "D" located at the northern apex of lot 1 of the cadastre of Paroisse de Saint-Urbain-Premier; thence, in a southwesterly direction following the limit of the cadastre of the parishes of Sainte-Martine and Saint-Urbain-Premier to point "E" located at the meeting point of that last limit and of the southwestern limit of lot 289 of the cadastre of Paroisse de Sainte-Martine; thence, in a northwesterly direction following and along the extension of the southwestern limit of lot 289 to point "F" located along the northwest right-of-way of rang Saint-Joseph; thence, in a northeasterly direction following the northwest right-of-way of rang Saint-Joseph to point "G" located at the meeting point of that last right-of-way and of the southwestern limit of lot 183 of the cadastre of Paroisse de Sainte-Martine; thence, in a westerly direction following the southwestern limit of lot 183 to point "H" located along the southeast right-of way of Boulevard Saint-Jean-Baptiste; thence, in a northeasterly direction following the southeast right-of-way of Boulevard Saint-Jean-Baptiste to point "I" located at the meeting point of that last right-of-way and of the northeastern limit of lot 129 of the cadastre of Paroisse de Sainte-Philomène; thence, in a southeasterly direction following and along the extension of the northeastern limit of lot 129 to point "J" located at the meeting point of that last limit and of the stream called "Branche 10 de la Rivière de l'Esturgeon", located for the one part at the southeastern limit of lot 129; thence, in a northeasterly direction following the meanders of the southeast bank of that stream to point "K" located at the meeting point of that last bank or its extension and of the northeastern limit of lot 144 of the cadastre of Paroisse de Sainte-Philomène; thence, in a southeasterly direction following and along the extension of the northeastern limit of lot 144 to point "L" located along the southeast right-of-way of Boulevard Sainte-Marguerite; thence, in a southwesterly direction following that right-of-way to the starting point "A".

The whole as shown on the attached map that is an integral part of the technical description.

Québec, 11 June 2002

ANDRÉ GAGNÉ,
Land Surveyor

Minute: 2214
Map: 10342-001
File: 4116-03-04-93-034

SCHEDULE V
WATER WITHDRAWAL AND PROTECTION REGULATION