

## Drilling Contractors

### Choosing a Drilling Contractor

All drilling contractors in Saskatchewan are required to register their drilling rigs before they operate a machine for the purpose of obtaining groundwater or scientific data on groundwater. The Saskatchewan Watershed Authority can be contacted for an updated list of registered contractors and drilling rigs (please refer to page 55 for contact information). It is beneficial to contact numerous drillers in order to get a comparison of quotes. It is also advisable to hire a contractor who is familiar with the drilling conditions in the area.

## Water Well Drilling Agreements

Water well drilling is a costly investment, and therefore a water well drilling agreement should be drawn up prior to the well being drilled. This will prevent any misunderstandings between the well owner and the drilling contractor and will clearly define the services, materials and costs involved in the drilling process. Agreements should cover:

- All costs of drilling/well construction.
- Starting date and completion date.
- Logging of test hole and submission of driller's report.
- Maximum depth of well construction.
- Type of well connection desired (ie. pitless adaptor).
- Desired well yield and acceptable water quality.
- Control of flowing well, if encountered.
- Details about well construction materials such as:
  - type and diameter of well casing.
  - type and diameter of well screen.
  - type of annulus or casing seal.
- Development of well.
- Yield test.
- Disinfection.
- Installation of pump.
- Equipping the well with a sanitary well cap.
- Guarantees.

The following pages provide an example of a water well drilling agreement form.

## Water Well Drilling Agreement Form

### Identification

1. Well owner	
Address	
2. Drilling contractor	
Address	
3. Proposed starting date	
Proposed completion date	

### Planning of Water System

#### Water Sources

4. Groundwater supply options based on existing records*

\* A drilling contractor and well owner should research groundwater information on local wells to determine possible groundwater supply options. Information is available from the Saskatchewan Watershed Authority.

#### Water Quality Requirements

5. Proposed well use:	Household	Livestock	Irrigation
6. Desired water quality* On-site tests:			
Total dissolved solids	mg/L	Iron	mg/L
Hardness	mg/L	pH	

\* Water quality is a very important consideration for all potential water uses. Drilling contractors can determine rough estimates for some parameters, such as total dissolved solids, iron, hardness and pH. However, only accredited water analysis laboratories can provide reliable results. These results will establish whether water treatment equipment may be needed.

## Water Quantity Requirements

7. Desired yield*	L/s (gpm)	Min. acceptable yield	L/s (gpm)
-------------------	-----------	-----------------------	-----------

\*The desired yield is the flow rate of water, either in litres per second (L/s) or gallons per minute (gpm), from a well. The desired yield can be determined by referring to the Sizing the Water Supply section in Chapter 2 of this publication. In some areas, aquifers are slow yielding, and the desired minimum yield might not be available. In this case, the desired yield should be stated as the normal yield for the area. It is important to establish a minimum yield of water desired so that the well is considered an economically feasible investment.

## Well Site

8. Location of well:	Qtr	Sec	Twp	Rge
	W of Meridian	Lot	Block	Plan

## Design and Construction of Water Well

### Well Design

9. Maximum desired depth*	m (ft.)
10. Type of drilling	
11. Diameter of hole**	
12. Flowing well control***	
13. Well connection	
14. Formation logging procedure****	
15. Annulus or casing seal	
16. Artificial filter pack*****	

\* A maximum desired depth should be established prior to drilling the well. This will depend on the known depths of productive aquifers and their respective water qualities. Personal finances are also a factor when determining the maximum desired well depth.

\*\*The type of well that is drilled will help determine the diameter of the hole. Drilled wells are usually 10 –20 cm (4 – 8 inches) in diameter, and bored wells are usually 46 – 122 cm (18 – 48 inches) in diameter

\*\*\* If a flowing well is anticipated, sufficient surface casing should be set and cemented, and a control device that will allow the flow to be controlled and shut off should be added.

\*\*\*\* Well drillers will perform various logging procedures to identify the aquifers with the best potential for water supply. These can include descriptive logging, electric logging, or gamma-ray logging.

\*\*\*\*\* In the case where the aquifer has a relatively uniform grain size, an artificial filter pack may be used.

### Material

17. Casing material		
Inside diameter	Weight per m (ft.)	Wall thickness
18. Well cover	Distance from top of casing to ground surface	
19. Liner material		
Insider diameter	Weight per m (ft.)	Wall thickness
20. Screen		
Manufacturer	Material	
Length	Nominal diameter	

### Well Completion

#### Well Development

21. Well development method:	Backwashing	Jetting	Surging
	Bailing	Heavy pumping	

### Yield Testing

22. Yield testing duration* (hours)
-------------------------------------

\* A drilling contractor will perform a yield test in order to determine the most suitable pumping equipment for the well. The test should also provide the following information that can be used to monitor future well performance:

- i. Non-pumping (static) water level.
- ii. Water removal rate in L/s (gpm).
- iii. Depth to the pumping water level at one or more constant pumping rates (drawdown).
- iv. The length of time the well is pumped at each rate.
- v. The recovery of the water level over a two-hour period or until 90% recovery of the non-pumping water level is reached.

### Disinfection

23. Disinfection*
-------------------

\*The well and pumping equipment should be disinfected. The concentration of chlorine to be used is calculated based on the volume of water that is in the well. The concentration must be left in the well for at least 12 hours to ensure any bacteria present are destroyed.

## Well Completion

24. Well head finishing\*

\* Well head finishing includes the clean up and removal of any mud, aquifer debris, and material scraps.

## Costs

25. Test holes per metre (ft.)

26. Reaming per metre (ft.)

27. Drilling/boring per metre (ft.)

28. Casing per metre (ft.)

29. Liner per metre (ft.)

30. Screen

31. Filter pack

32. Development

33. Labour per hour

34. Water testing

35. Reclamation of unused well

36. Total costs

37. Payment schedule

38. Guarantee

## **Water Well Drilling Reports**

### **Driller's Report**

Within 30 days following the completion of the drilling of the well, the drilling contractor must submit a driller's report to the Saskatchewan Watershed Authority.

### **Electric and Other Logs**

If the drilling contractor runs an electric log or other log on a test hole or well, the driller must submit a copy to the Saskatchewan Watershed Authority within 30 days following the completion of the logging.

## Chlorine Disinfection Procedures

Disinfection is routinely used to control bacteria in wells and is applied as part of a start-up procedure for newly constructed wells and should be used as semi-annual maintenance for existing wells. Disinfection should also be performed in the event of contamination (e.g. flooding or unacceptable levels of bacterial growth).

Well disinfection can be performed by two methods: low or high level chlorine disinfection. High level chlorine disinfection is the preferred option. However, if the proper equipment (e.g. a 1,360 litre tank) is not available then low level disinfection may be adequate.

Until the disinfection procedure has eliminated the bacterial contamination, an alternate source of safe water should be used or the water should be boiled for one minute, at a rolling boil, before use. In addition, if possible identify and eliminate the source of contamination.

### High Level Chlorine Well Disinfection (Shock Disinfection)

#### *Materials Required*

- A clean water tank with a holding capacity of at least 1,360 litres (300 gallons).
- Garden hose.
- 20 litres of industrial strength chlorine (12% sodium hypochlorite) – available from any chemical dealer, water treatment supplier, or dairy supply retailer.

#### *Procedure*

1. Follow chlorine manufacturer's instructions for use. Chlorine concentrations at this level are dangerous. Avoid contact with skin or inhaling the fumes, and wear protective clothing/eye wear. If the well is located in a pit, make sure there is proper ventilation during the chlorination procedure. It is recommended that the services of a licensed well driller who has the proper equipment and experience to do the job safely be contracted.
2. Ventilate confined spaces (e.g. well pit, crawl space, and all other confined spaces) where potentially dangerous levels of vapours may accumulate.
3. Do not run chlorinated water through certain types of water treatment equipment (e.g. softeners, carbon filters, reverse osmosis systems). For specific information, contact the equipment dealer or the Saskatchewan Watershed Authority.
4. The disinfection treatment will require the well to be taken out of service. Therefore, store enough water to meet all necessary requirements for a minimum 12 hour period.
5. Fill the water tank to a minimum of 1,360 litres (300 gallons) with water from the well.
6. After drawing the water from the well, allow the well to recover to its static (non-pumping) level.
7. Add 10 litres of the chlorine solution (12% sodium hypochlorite) to the well through the garden hose extended as far down the well as possible. If a well is slow yielding or tends to pump any sediment, be careful when chlorinating. Slowly siphon the solution down the well and pump it out very slowly. Over-pumping the well may worsen the sediment problem.
8. Add the remaining 10 litres of the 12% sodium hypochlorite to the tank of water.
9. Slowly add the water with chlorine from the tank to the well. Do not exceed the well pumping rate.
10. Start the pump and bleed air from the pressure tank. Open each tap and allow the water to run through all taps until a smell of chlorine is detected, then turn off the taps.
11. Turn the entire system off for at least 12 hours. Chlorine can be very corrosive if left in the water distribution system for an extended period of time.
12. After at least 12 hours, flush the system by running water through an outside hose away from grass, shrubs, trees and other sensitive plants until the strong smell of chlorine disappears. Make certain that the water does not enter any watercourse. Finally, open the indoor taps until the system is completely flushed. Return the system to normal operation.
13. If high level disinfection is being used to eliminate a bacterial problem, verify that the procedure has removed the bacteria.

## Low Level Chlorine Well Disinfection

### Materials Required

- Disinfection can be conducted using unscented household bleach. Check the product label to ensure that the chlorine is in the form of sodium hypochlorite or calcium hypochlorite. Some “all purpose bleaches” (such as Javex 2) contain no chlorine and should not be used for disinfecting wells.
- The table below outlines the quantity of bleach required to properly disinfect a well.

### Procedure

1. Follow chlorine manufacturer’s instructions for use. Chlorine concentrations at this level are dangerous. Avoid contact with skin, inhaling the fumes and wear protective clothing/eye wear. If the well is located in a pit, make sure there is proper ventilation during the chlorination procedure. It is recommended that the services of a licensed well driller who has the proper equipment and experience to do the job safely be contracted.
2. Ventilate confined spaces (e.g., well pit, crawl space, and all other confined spaces) where potentially dangerous levels of vapours may accumulate.
3. Do not run chlorinated water through certain types of water treatment equipment (e.g., softeners, carbon filters, reverse osmosis systems). For specific information, contact the equipment dealer or the Saskatchewan Watershed Authority.
4. If a well is slow yielding or tends to pump any sediment, be careful when chlorinating. Slowly siphon the solution down the well and pump it out very slowly. Over-pumping the well may worsen the sediment problem.
5. The disinfection treatment will require the well to be taken out of service. Therefore, store sufficient water to meet all necessary requirements for a minimum 12 to 24 hour period.
6. Add the amount of unscented bleach indicated in the table below directly into the well. Connect a garden hose to a nearby tap and wash down the inside wall of the well. This will ensure thorough mixing of the chlorine and the water throughout the well.
7. Start the pump and bleed air from the pressure tank. Open each tap and allow the water to run through all taps until a smell of chlorine is detected, then turn off the taps. If a strong smell is not detected, add more bleach to the well and repeat step 7.
8. Allow the water to sit in the system for 12 to 24 hours.
9. Start the pump and run water through an outside hose away from grass, shrubs, trees and other sensitive plants until the strong smell of chlorine disappears. Make certain that the water does not enter any watercourse. Finally, open the indoor taps until the system is completely flushed. Return the system to normal operation.
10. If low level disinfection is being used to eliminate a bacterial problem, verify that the procedure has removed the bacteria.

**Low Level Chlorine Disinfection**

Depth of Water in Well (m)	Volume of Bleach Added (5.25% chlorine)	
	Casing Diameter = 15 cm (Drilled Well)	Casing Diameter = 90 cm (Bored Well)
1	100 mL	3.2 L
3	300 mL	9.8 L
5	500 mL	16.5 L
10	1,000 mL	32.0 L
30	3,000 mL	96.0 L

### *Disinfection Verification*

- Until water testing indicates that the water is safe to use, find another source of water, or boil the water for one minute, at a rolling boil, before consuming. This precaution is particularly important for persons who are immunocompromised and also if the water is being used for infant feeding (preparing formula, etc.).
- For **private water supplies**, it is recommended that a sample be taken five days after treatment and another at least one week after constant use. Two consecutive 'safe' test results are required to ensure that the treatment was effective.
- For **Health regulated public water supplies**:
  - wells not receiving continuous treatment require a sample taken five days after treatment and another at least one week after constant use,
  - wells receiving continuous disinfection treatment require at least two consecutive sets of samples. The samples should be taken at least one day after the treatment and one day apart. Health Region officials will be advising the owner/operator of the supply on number of samples, sampling locations and when the water supply can be used again for human consumption.
- In general, all private systems should be analysed at least once a year or whenever there is reason to believe that the water supply may have become contaminated (e.g. flooding).
- Health regulated public water supplies must sample as required by the health region.

### *Alternatives*

#### **Private Water Supply**

If high level disinfection fails to correct the problem in a private water supply, contact the local offices of Agriculture and Agri-Food Canada – Prairie Farm Rehabilitation Administration, Saskatchewan Watershed Authority, Saskatchewan Ground Water Association, or a Professional Engineer or Geoscientist for further assistance.

#### **Health Regulated Public Water Supply**

If high level disinfection fails to correct the problem in a Health regulated public water supply, contact the local Health Region Public Health Inspector for further assistance.

## Drinking Water Quality Standards and Objectives

Saskatchewan Environment sets drinking water quality standards and objectives for municipal and other large drinking water systems based on limit values published by

Health Canada. The following table provides the objectives for the most common parameters that are tested for when conducting water analysis on private rural wells.

Drinking Water Quality Standards and Objectives			
Analyte	Units	Objective <sup>1</sup>	Objective Type
Bicarbonate	mg/L	ng	
Calcium	mg/L	ng	
Carbonate	mg/L	ng	
Chlorides	mg/L	250	Aesthetic Objective
Hydroxide	mg/L	ng	
Magnesium	mg/L	200	Aesthetic Objective
pH	pH units	6.5 to 9.0	Aesthetic Objective
Potassium	mg/L	ng	
Sodium	mg/L	200	Aesthetic Objective
Specific Conductivity	µS/cm	ng	
Sulphate	mg/L	500	Aesthetic Objective
Sum of Ions	mg/L	1,500	Aesthetic Objective
Total Alkalinity	mg/L	500	Aesthetic Objective
Total Hardness	mg/L	800	Aesthetic Objective
Nitrate	mg/L	45	Maximum Acceptable Concentration
Organic Carbon, Dissolved	mg/L	ng	
Arsenic	µg/L	10	Interim Maximum Acceptable Concentration <sup>2</sup>
Barium	mg/L	1.0	Maximum Acceptable Concentration
Boron	mg/L	5	Interim Maximum Acceptable Concentration <sup>2</sup>
Cadmium	mg/L	0.005	Maximum Acceptable Concentration
Chromium	mg/L	0.05	Maximum Acceptable Concentration
Copper	mg/L	1.0	Aesthetic Objective
Fluoride	mg/L	1.5	Maximum Acceptable Concentration
Iron	mg/L	0.3	Aesthetic Objective
Lead	mg/L	0.01	Maximum Acceptable Concentration
Manganese	mg/L	0.05	Aesthetic Objective
Selenium	mg/L	0.01	Maximum Acceptable Concentration
Zinc	mg/L	5.0	Aesthetic Objective
Fecal Coliform Bacteria	ct/100 mL	0	Maximum Acceptable Concentration
Total Coliform Bacteria	ct/100 mL	0	Maximum Acceptable Concentration
Uranium	µg/L	20	Maximum Acceptable Concentration

<sup>1</sup> Based on Saskatchewan's Drinking Water Quality Standards and Objectives

<sup>2</sup> Interim Maximum Acceptable Concentrations have been set by Health Canada

mg/L = milligrams per litre

µg/L = micrograms per litre

µS/cm = microsiemens per centimetre

ct/100 mL = count per 100 milliliters

ng = no guideline set

There are three objective types used when referencing drinking water quality guidelines and objectives:

1. **Maximum Acceptable Concentration (MAC)**

Maximum acceptable concentrations have been established for substances that are known or suspected to cause adverse effects on health. Objectives are set at levels that will not cause hazardous health effects when consumed at that concentration over a lifetime.

2. **Interim Maximum Acceptable Concentration (IMAC)**

In some cases, there is insufficient toxicological data to establish MACs with reasonable certainty. For these substances, interim values are recommended, taking into account the available health-related data, while at the same time employing a safety factor to compensate for the uncertainties involved.

3. **Aesthetic Objective (AO)**

Aesthetic objectives apply to substances or characteristics of drinking water that can affect its acceptability to consumers or interfere with practices for supplying good quality water. In some cases, both AO and health-related guidelines (MACs or IMACs) have been derived. Where only aesthetic objectives are specified, these values are below those considered to constitute a health hazard.

Questions relating to human health should be directed to the local Health Region. Please refer to page 54 for contact information.

## **Water Quality Legislation**

### ***The Environmental Management and Protection Act, 2002***

The Act gives the Minister of the Environment powers to issue orders to investigate any activities that may pollute the environment, to monitor for effects, to halt such activities, and to restore the affected environment.

### ***The Environmental Assessment Act***

*The Environmental Assessment Act* authorizes Saskatchewan Environment to review the potential environmental effects of a proposed development. Any project defined as a “development” must be approved by the Minister of Environment before it is allowed to proceed.

### ***The Public Health Act, 1994***

*The Public Health Act, 1994* gives authority to the Local Authorities (i.e. Health Regions) for the administration and enforcement of the Act. The Act also provides responsibilities to municipalities to ensure that sewer systems and supply of potable water systems are available to inhabitants of cities, towns, villages and hamlets. The Local Authority can order the abatement of any condition that is or may become a health hazard.

### ***The Pest Control Products (Saskatchewan) Act***

*The Pest Control Products (Saskatchewan) Act* puts forth rules for the handling, storage and use of pesticides.

### ***The Boiler and Pressure Vessel Act, 1999***

*The Boiler and Pressure Vessel Act, 1999* is an act respecting boilers and pressure vessels, as well as steam, refrigeration and compressed gas plants.

### ***The Agricultural Operations Act***

*The Agricultural Operations Act* is an act respecting agricultural operations, including intensive livestock operations.

## **Regulations**

### **The Ground Water Regulations**

The Ground Water Regulations put forth rules for the registration of drilling machines, drilling and evaluation, the abandonment of test holes and wells, and the use of groundwater.

### ***The Water Regulations, 2002***

*The Water Regulations, 2002* set forth permit requirements for municipal sewage works, certain pipeline systems, and privately-owned water systems and that have a design flow of effluent that is greater than 18 cubic metres per 24-hour period. The regulations outline the requirements for the construction and operation of these systems, and also state the provincial drinking water quality standards.

### ***The Hazardous Substances and Waste Dangerous Goods Regulations***

*The Hazardous Substances and Waste Dangerous Goods Regulations* discuss the requirements to store or transfer hazardous substances.

### ***The Environmental Spill Control Regulations***

*The Environmental Spill Control Regulations* discuss the content and the method for submitting a spill report, as well as regulations concerning the disposal of the spilled pollutant.

### ***The Health Hazard Regulations***

The Health Hazard Regulations require specific actions to be taken by owners and operators of regulated water systems. In addition, the regulations include requirements for bulk water haulers, sanitary facilities at public places and the disposal of dead animals.

### ***The Plumbing and Drainage Regulations***

The Plumbing and Drainage Regulations adopt with amendments the Canadian Plumbing Code and require plumbing permits to be applied for. It is also this regulation that requires a permit for a private sewage works to be applied for and lays out requirements for water and sewer services within Mobile Home Parks.

### ***The Shoreland Pollution Regulations***

The Shoreland Pollution Control Regulations restrict land uses within a shoreland development area (eg. within 1,500 ft of a water body). Included in these regulations are restrictions on solid waste and sewage disposal works.

## **Contacts and Other Sources of Information**

### **Agriculture and Agri-Food Canada – Prairie Farm Rehabilitation Administration**

#### **North Saskatchewan**

##### **North Battleford District Office**

Room 121 – 9800 Territorial Place  
North Battleford, SK S9A 3N6

Ph: (306) 446-4050

Fax: (306) 446-4060

Website: [www.agr.gc.ca/pfra](http://www.agr.gc.ca/pfra)

##### **Melfort District Office**

Box 1748  
Bay 3 – 102 McKendry Avenue West  
Melfort, SK S0E 1A0

Ph: (306) 752-4442

Fax: (306) 752-1991

Website: [www.agr.gc.ca/pfra](http://www.agr.gc.ca/pfra)

##### **Watrous District Office**

Box 1150  
107E 3rd Avenue East  
Watrous, SK S0K 4T0

Ph: (306) 946-8720

Fax: (306) 946-3318

Website: [www.agr.gc.ca/pfra](http://www.agr.gc.ca/pfra)

##### **Rosetown District Office**

Box 1420  
219 Main Street  
Rosetown, SK S0L 2V0

Ph: (306) 882-4272

Fax: (306) 882-4055

Website: [www.agr.gc.ca/pfra](http://www.agr.gc.ca/pfra)

#### **South Saskatchewan**

##### **Weyburn District Office**

615 Railway Avenue  
Weyburn, SK S4H 0A9

Ph: (306) 848-4488

Fax: (306) 848-4499

Website: [www.agr.gc.ca/pfra](http://www.agr.gc.ca/pfra)

##### **Gravelbourg District Office**

Box 155  
314 Main Street  
Gravelbourg, SK S0H 1X0

Ph: (306) 648-2214

Fax: (306) 648-3402

Website: [www.agr.gc.ca/pfra](http://www.agr.gc.ca/pfra)

##### **Swift Current District Office**

Box 1088  
L.B. Thomson Place  
Gate #2, SPARC, Airport Road  
Swift Current, SK S9H 3X3

Ph: (306) 778-5000

Fax: (306) 778-5020

Website: [www.agr.gc.ca/pfra](http://www.agr.gc.ca/pfra)

##### **Maple Creek District Office**

Box 430  
Highway 21 and 2nd Avenue  
Maple Creek, SK S0N 1N0

Ph: (306) 662-5520

Fax: (306) 662-3166

Website: [www.agr.gc.ca/pfra](http://www.agr.gc.ca/pfra)

##### **Moose Jaw District Office**

1410A Caribou Street West  
Moose Jaw, SK S6H 7S9

Ph: (306) 691-3370

Fax: (306) 693-3103

Website: [www.agr.gc.ca/pfra](http://www.agr.gc.ca/pfra)

##### **Melville District Office**

Box 130  
109 – 290 Prince William Drive  
Melville, SK S0A 2P0

Ph: (306) 728-5790

Fax: (306) 728-6558

Website: [www.agr.gc.ca/pfra](http://www.agr.gc.ca/pfra)

## Canadian Ground Water Association

### Main Office

1600 Bedford Highway  
Suite 100 – 409  
Bedford, NS B4A 1E8

Ph: (902) 845-1885  
Fax: (902) 845-1886  
E-mail: [info@cgwa.org](mailto:info@cgwa.org)  
Website: [www.cgwa.org](http://www.cgwa.org)

### Saskatchewan Ground Water Association

P.O. Box 9434  
Saskatoon, SK S7K 7E9

Ph: (306) 244-7551  
Fax: (306) 343-0002

## SaskH<sub>2</sub>O

Toll Free: 1-866 SASK H2O (727-5420)  
Website: [www/saskh2o.ca](http://www/saskh2o.ca)

## Saskatchewan Agriculture and Food

### Agriculture Knowledge Centre

Ph: 1-866-45-SAFRR (1-866-457-2377)  
Email: [aginfo@agr.gov.sk.ca](mailto:aginfo@agr.gov.sk.ca)  
Website: [www/agr.gov.sk.ca](http://www/agr.gov.sk.ca)

## Regional Offices

### Prince Albert Regional Office

Box 3003  
800 Central Avenue  
Prince Albert, SK S6G 6G1

Ph: (306) 953-2363

### North Battleford Regional Office

1192 102nd Street  
North Battleford, SK S9A 1E9

Ph: (306) 446-7964

### Tisdale Regional Office

Box 1480  
1105 99th Street  
Tisdale, SK S0E 1T0

Ph: (306) 878-8842

## Saskatoon Regional Office

3830 Thatcher Avenue  
Saskatoon, SK S7K 2H6

Ph: (306) 933-7986

## Outlook Regional Office

Box 9  
420 Saskatchewan Avenue West  
Outlook, SK S0L 2N0

Ph: (306) 867-5575

## Yorkton Regional Office

38 5th Avenue North  
Yorkton, SK S3N 0Y8

Ph: (306) 786-1531

## Regina Regional Office

515 Henderson Drive  
Regina, SK S4P 3V7

Ph: (306) 787-9773

## Swift Current Regional Office

Box 5000  
350 Cheadle Street West  
Swift Current, SK S9H 4G3

Ph: (306) 778-8218

## Weyburn Regional Office

Box 2003  
110 Souris Avenue  
Weyburn, SK S4H 2Z9

Ph: (306) 848-2857

## Saskatchewan Environment

3211 Albert Street  
Regina, SK S4S 5W6

Ph: (306) 787-2314

Website: [www.se.gov.sk.ca/](http://www.se.gov.sk.ca/)

## Spill Control Centre

Ph: 1-800-667-7525

## **Saskatchewan Health**

### **Regional Health Authority Offices**

#### **Athabasca Health Authority**

Box 124

Black Lake, SK S0J 0H0

Ph: (306) 439-2200

Website: [www.athabascahealth.ca](http://www.athabascahealth.ca)

#### **Cypress Health Region**

429 – 4th Avenue NE

Swift Current, SK S9H 2J9

Swift Current, SK

Ph: (306) 778-5280

Website: [www.cypresshealth.ca](http://www.cypresshealth.ca)

#### **Five Hills Health Region**

455 Fairford Street East

Moose Jaw, SK S6H 1H3

Ph: (306) 691-1500

Website: [www.fhhr.ca](http://www.fhhr.ca)

#### **Heartland Health Region**

Box 2110

Rosetown, SK S0L 2V0

Ph: (306) 882-6413

Website: [www.hrha.sk.ca](http://www.hrha.sk.ca)

#### **Keewatin Yatthe Health Region**

Box 40

Buffalo Narrows, SK S0M 0J0

Ph: (306) 425-8512

Website: [www.kyrha.ca](http://www.kyrha.ca)

#### **Kelsey Trail Health Region**

Box 1780

Tisdale, SK S0E 1T0

Ph: (306) 873-3100

Website: [www.kelseytrailhealth.ca](http://www.kelseytrailhealth.ca)

#### **Mamawetan Churchill River Health Region**

Box 6000

La Ronge, SK S0J 1L0

Ph: (306) 425-8512

Website: [www.mcrrha.sk.ca](http://www.mcrrha.sk.ca)

#### **Prairie North Health Region**

1092 – 107th Street

North Battleford, SK S9A 1Z1

Ph: (306) 446-6400

Website: [www.pnrha.ca](http://www.pnrha.ca)

#### **Prince Albert Parkland Health Region**

2nd Floor

1521 - 6 Avenue West

Prince Albert, SK S6V 5K1

Ph: (306) 765-6600

Website: [www.paphr.sk.ca](http://www.paphr.sk.ca)

#### **Regina Qu'Appelle Health Region**

2180 – 23rd Avenue

Regina, SK S4S 0A5

Ph: (306) 766-7755

Website: [www.rqhealth.ca](http://www.rqhealth.ca)

#### **Saskatoon Health Region**

3rd Floor, Saskatoon Square

410 - 22nd Street East

Saskatoon, SK S7K 5T6

Ph: (306) 655-4605

Website: [www.saskatoonhealthregion.ca](http://www.saskatoonhealthregion.ca)

#### **Sun Country Health Region**

Box 2003

Weyburn, SK S4H 2Z9

Ph: (306) 842-8618

Website: [www.suncountry.sk.ca](http://www.suncountry.sk.ca)

#### **Sunrise Health Region**

270 Bradbrooke Drive

Yorkton, SK S3N 2K6

Ph: (306) 786-0600

Website: [www.sunrisehealthregion.sk.ca](http://www.sunrisehealthregion.sk.ca)

## Saskatchewan Watershed Authority Offices

### Head Office

Victoria Place  
111 Fairford Street East  
Moose Jaw, SK S6H 7X9  
Ph: (306) 694-3980  
Fax: (306) 694-3944  
E-mail: [comm@swa.ca](mailto:comm@swa.ca)  
Website: [www.swa.ca](http://www.swa.ca)

### Regional Offices

#### Southeast - Weyburn Regional Office

Box 2003  
3rd Floor, City Centre Mall  
110 Souris Avenue  
Weyburn, SK S4H 2Z9  
Ph: (306) 848-2345  
Fax: (306) 848-2356  
E-mail: [comm@swa.ca](mailto:comm@swa.ca)  
Website: [www.swa.ca](http://www.swa.ca)

#### Southwest - Swift Current Regional Office

Box 5000  
3rd Floor, E.I. Wood Building  
350 Cheadle Street West  
Swift Current, SK S9H 4G3  
Ph: (306) 778-8257  
Fax: (306) 778-8271  
E-mail: [comm@swa.ca](mailto:comm@swa.ca)  
Website: [www.swa.ca](http://www.swa.ca)

#### Northeast - Nipawin Regional Office

Box 2133  
201 – 1st Avenue East  
Nipawin, SK S0E 1E0  
Ph: (306) 862-1750  
Fax: (306) 862-1771  
E-mail: [comm@swa.ca](mailto:comm@swa.ca)  
Website: [www.swa.ca](http://www.swa.ca)

#### East Central - Yorkton Regional Office

2nd Floor, 120 Smith Street East  
Yorkton, SK S3N 3V3  
Ph: (306) 786-1490  
Fax: (306) 786-1495  
E-mail: [comm@swa.ca](mailto:comm@swa.ca)  
Website: [www.swa.ca](http://www.swa.ca)

#### Northwest – North Battleford Regional Office

402 Royal Bank Tower  
1101 – 101st Street  
North Battleford, SK S9A 0Z5  
Ph: (306) 446-7450  
Fax: (306) 446-7461  
E-mail: [comm@swa.ca](mailto:comm@swa.ca)  
Website: [www.swa.ca](http://www.swa.ca)

### Other Offices

#### Regina Office

Park Plaza  
Suite 420 – 2365 Albert Street  
Regina, SK S4P 4K1  
Ph: (306) 787-0726  
Fax: (306) 787-0780  
E-mail: [comm@swa.ca](mailto:comm@swa.ca)  
Website: [www.swa.ca](http://www.swa.ca)

#### Saskatoon Office

330 – 350 Third Avenue North  
Saskatoon, SK S7K 2H6  
Ph: (306) 933-7442  
Fax: (306) 933-7330  
E-mail: [comm@swa.ca](mailto:comm@swa.ca)  
Website: [www.swa.ca](http://www.swa.ca)

#### Prince Albert Office

5th Floor  
McIntosh Mall  
Box 3003  
800 Central Avenue  
Prince Albert, SK S6V 6G1  
Ph: (306) 953-3537  
Fax: (306) 953-2300  
E-mail: [comm@swa.ca](mailto:comm@swa.ca)  
Website: [www.swa.ca](http://www.swa.ca)

## **SaskWater**

### **Head Office**

111 Fairford Street East  
Moose Jaw, SK S6H 7X9  
Ph: (306) 694-3098  
Toll Free: 1-888-230-1111  
Fax: (306) 694-3207

### **Other Offices**

#### **Watrous Office**

Box 310  
403 Main Street  
Watrous, SK S0K 4T0  
Ph: (306) 946-3200  
Fax: (306) 946-3533

#### **Prince Albert Office**

McIntosh Mall  
800 Central Avenue  
Prince Albert, SK S6V 6G1  
Ph: (306) 953-2250  
Fax: (306) 953-225

### **24 Hour Emergency Number**

1-800-667-5799

## **Water Quality**

### **Saskatchewan Watershed Authority**

Rural Water Quality Office  
Ph: 1-866-TEST-H20 (1-866-837-8420)

### **Accredited Water Analysis Laboratories in Saskatchewan**

#### **BDS Laboratories**

13 Qu'Appelle Street  
Box 363  
Qu'Appelle, SK S0G 4A0

Ph: (306) 699-2679  
Toll Free: 1-888-BDS-Labs (1-888-237-5227)

Fax: (306) 699-7190

Website: [www.bdslabs.com](http://www.bdslabs.com)

### **Buffalo Pound Water Treatment Plant**

Box 1790  
Regina, SK S4P 3C8  
Ph: (306) 694-1377  
Fax: (306) 694-6050

### **ALS Laboratory Group**

124 Veterinary Road  
Saskatoon, SK S7N 5E3

Ph: (306) 668-8370

Toll Free: 1-800-668-9878

Fax: (306) 668-8383

### **Saskatchewan Health**

#### **Saskatchewan Disease Control Laboratory**

3211 Albert Street  
Regina, SK S4S 5W6

Ph: (306) 787-3131

Toll Free: 1-866-450-0000

Fax: (306) 798-0046

### **Saskatchewan Research Council**

SRC Analytical Laboratories  
422 Downey Road  
Saskatoon, SK S7N 4N1

Ph: (306) 933-6932

Toll Free: 1-800-240-8808

Fax: (306) 933-7922

### **Saskatchewan Watershed Authority**

Rural Water Quality Office  
330 – 350 Third Avenue North  
Saskatoon, SK S7K 2H6

Ph: (306) 933-7442

Fax: (306) 933-7330

E-mail: [comm@swa.ca](mailto:comm@swa.ca)

Website: [www.swa.ca](http://www.swa.ca)

## References

The following is a list of useful publications related to groundwater.

### Groundwater

A Primer on Fresh Water – Questions and Answers. 2000.  
Environment Canada.

Groundwater – Nature’s Hidden Treasure. 1999.  
Environment Canada.

The Health of Our Water – Toward Sustainable Agriculture in Canada. 2000.  
Agriculture and Agri-Food Canada.

### Groundwater Protection

Canadian Code of Practice for Environmentally Sound Hog Production. 1996.  
Canada Pork Council.

Canadian Fertilizer Industry Storage and Handling Guidelines. 2001.  
Canadian Fertilizer Institute.

Clean Water – Life Depends on It! 1992.  
Environment Canada.

Developing a Manure and Dead Animal Management Plan. 2000.  
Saskatchewan Agriculture and Food.

Environmental Review Guidelines for Intensive Livestock Operations. 2002.  
Saskatchewan Agriculture and Food.

Establishing and Managing Livestock Operations. 2005.  
Saskatchewan Agriculture and Food.

Guide for Land Disposal of Sewage. 1999.  
Saskatchewan Environment.

Guide to Crop Protection. 2006.  
Saskatchewan Agriculture and Food.

Holding Pond Site Selection and Design. 1999.  
Saskatchewan Agriculture and Food.

Managing Manure as a Fertilizer. 2006.  
Saskatchewan Agriculture and Food.

Manure Handling from Barn to Storage for Cattle.  
Canada Plan Service Leaflet.

Manure Handling from Barn to Storage for Poultry.  
Canada Plan Service Leaflet.

National Farm Building Code of Canada. 1995.  
National Research Council of Canada.

Pesticide Safety Handbook. 1995.  
Saskatchewan Agriculture and Food.

Protecting Your Ground Water. 2006.  
Saskatchewan Watershed Authority.

Silage Storage Techniques.  
Saskatchewan Agriculture and Food.

The Saskatchewan Onsite Wastewater Disposal Guide. 2007.  
Saskatchewan Health.

## **Groundwater Quality**

Guidelines for Drinking Water Quality.  
Health Canada.

## **Groundwater Use**

Ground Water Approval Process. 2006.  
Saskatchewan Watershed Authority.

Domestic Water Use. 2006.  
Saskatchewan Watershed Authority.

## **Water Quality Testing**

Rural Water Quality Collection and Testing. 2006.  
Saskatchewan Watershed Authority.

## **Water Treatment**

Shock Chlorination for Ground Water Wells. 2006.  
Saskatchewan Watershed Authority.

## **Well Abandonment**

Abandonment – Test Holes and Wells. 2006.  
Saskatchewan Watershed Authority.