

## Acknowledgement:

This Fact Sheet is one of a series developed by an Interagency Committee with representatives from Saskatchewan Health, Regional Health Authorities, Saskatchewan Watershed Authority, Saskatchewan Agriculture, Agriculture and Agri-Food Canada – PFRA and Saskatchewan Environment.

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Government of  
Saskatchewan

# Uranium

(For Private Water and Health Regulated Public Water Supplies)

## What Is Uranium?

Uranium is a common naturally occurring element that occurs in rocks, soil, and water. It is naturally radioactive, and in the environment consists of three radionuclides; uranium-234, uranium-235, and uranium-238. Uranium-238 makes up the majority of the uranium found in nature. Uranium occurs in granites and various other minerals and when refined, is a silver coloured metal. Uranium breaks down (decays) very slowly into other elements including radium and radon gas.

Commercially uranium is primarily used as a fuel in nuclear power plants. The military also use enriched uranium to power nuclear propelled navy ships and submarines and in nuclear weapons. Other uses of uranium include as a colour additive in ceramic glazes, in some light fixtures and photographic equipment. Phosphate fertilizers can also contain natural uranium.

## How Does Uranium Get Into Water?

Uranium may enter drinking water supplies when groundwater dissolves minerals that contain uranium. The amount of uranium in well water will vary depending upon the concentration in the mineral deposits and soils. Uranium is also released into the environment through mill tailings, emissions from nuclear industry, dissolution of phosphate fertilizers and combustion of coal and other fuels.

## How Does Uranium Affect My Health?

Naturally occurring uranium has very low levels of radioactivity. Therefore, in drinking water the chemical properties of uranium are of greater concern than its radioactivity. Although most ingested uranium is eliminated from the body, a small amount is absorbed into the bloodstream and carried to the kidneys. Studies have shown that elevated levels of uranium in drinking water can increase a person's risk of kidney damage.

## How Can I Remove Uranium From My Drinking Water?

In-house water treatment devices that are capable of reducing uranium include point-of-entry reverse osmosis units, or anion exchange. Other options are to use point-of-use devices such as reverse osmosis or distillation that are capable of providing sufficient amounts of cooking and drinking water for residential use.

Other possible options for ground water users include drilling a new well into another aquifer; or use bottled water for cooking and drinking. If possible, connection to a public water distribution system should be considered.

The Health Canada's Guidelines for Canadian Drinking Water Quality and Saskatchewan Environment's Drinking Water Quality Standards and Objectives have established a maximum acceptable concentration (MAC) of 0.020 mg/L.

Most water quality testing laboratories can determine how much uranium is present in a water supply. For information on sampling instructions and containers, you should contact an accredited laboratory. If using the Saskatchewan Disease Control Laboratory, sample containers are available from the laboratory, local Health Regions, or rural municipalities.

## Need More Information?

### Health Regulated Public Water Supply

For more information on this fact sheet and/or other water quality issues relating to health regulated public water supplies contact your local health region public health inspector.

### Private Water Supply

For more information on how uranium impacts on human health contact your local health region office. For information on how uranium impacts agricultural operations contact Saskatchewan Ministry of Agriculture through your Agricultural Business Centre or the Agricultural Knowledge Centre at 1-866-457-2377 or on the internet (<http://www.agriculture.gov.sk.ca/AKC>).

<p><b>Government of Saskatchewan</b> Water Information website <a href="http://www.SaskH2O.ca">www.SaskH2O.ca</a></p>	<p><b>Water Inquiry Line</b> Questions about water? Call 1-866-SASK H2O (1-866-727-5420) to be referred to proper agency.</p>
<p><b>Saskatchewan Ministry of Health</b> <a href="http://www.health.gov.sk.ca/environmental-health">http://www.health.gov.sk.ca/environmental-health</a> <b>Regional Health Offices</b> Saskatoon: Saskatoon (306) 655-4605 Sunrise: Yorkton (306) 786-0600 Kelsey Trail: Melfort (306) 752-6310 Five Hills: Moose Jaw (306) 691-1500 Sun Country: Weyburn (306) 842-8618 Heartland: Rosetown (306) 882-6413 Prairie North: North Battleford (306) 446-6400 Prince Albert Parkland: Prince Albert (306) 765-6600 Cypress: Swift Current (306) 778-5280 Regina Qu'Appelle: Regina (306) 766-7755 Mamawetan Churchill River: La Ronge (306) 425-8512 Keewatin Yatthe: Buffalo Narrows (306) 235-5811</p>	<p><b>Saskatchewan Watershed Authority,</b> Head Office, Moose Jaw (306) 694-3900 Website: <a href="http://www.swa.ca">www.swa.ca</a> <i>Regional Offices:</i> <a href="http://www.swa.ca/AboutUs/Contact.asp?type=Offices">http://www.swa.ca/AboutUs/Contact.asp?type=Offices</a></p> <p><b>Sask Water Corporation</b> Head Office, Moose Jaw Customer Service 1-888-230-1111 Website: <a href="http://www.saskwater.com">http://www.saskwater.com</a></p> <p><b>Prairie Farm Rehabilitation Administration (PFRA)</b> - Agriculture and Agri-Food Canada Website <a href="http://www.agr.gc.ca/pfra/water/intro_e.htm">http://www.agr.gc.ca/pfra/water/intro_e.htm</a> <i>Regional Offices:</i> <a href="http://www.agr.gc.ca/pfra/sask_e.htm">http://www.agr.gc.ca/pfra/sask_e.htm</a></p>
<p><b>Saskatchewan Ministry of Health</b> <b>Saskatchewan Disease Control Laboratory, Regina</b> General Inquiry 1-866-450-0000 Phone: (306) 798-2125 // Fax (306) 798-0071 Website: <a href="http://www.health.gov.sk.ca/lab">http://www.health.gov.sk.ca/lab</a></p>	<p><b>Saskatchewan Ministry of Agriculture</b> General Inquiry 1-866-457-2377 Agricultural Operations Regina (306) 787-4680 Irrigation Development Outlook (306) 867-5500 Website: <a href="http://www.agriculture.gov.sk.ca">www.agriculture.gov.sk.ca</a></p>
<p><b>Health Canada</b> First Nation and Inuit Health Branch, Regina (306) 780-5434 Website: <a href="http://www.hc-sc.gc.ca">http://www.hc-sc.gc.ca</a></p>	<p><b>Saskatchewan Ministry of Environment</b> Toll-Free 1-800-567-4224 Spill Emergency Toll-Free 1-800-667-7525 Website: <a href="http://www.environment.gov.sk.ca">http://www.environment.gov.sk.ca</a></p>