What Is Dissolved Organic Carbon?
Dissolved organic carbon (DOC) is a general description of the organic material dissolved in water. Organic carbon occurs as the result of decomposition of plant or animal material. Organic carbon present in soil or water bodies may then dissolve when contacted by water. This dissolved organic carbon moves with both surface water and ground water.

How Does Dissolved Organic Carbon Get Into Water?
Organic material (including carbon) results from decomposition of plants or animals. Once this decomposed organic material contacts water it may partially dissolve.

How Does Dissolved Organic Carbon Affect My Health?
DOC does not pose health risk itself but may become potentially harmful when in combination with other aspects of your water. When water with high DOC is chlorinated, harmful byproducts called trihalomethanes may be produced (see SaskH2O factsheet on trihalomethanes). Trihalomethanes may have long-term effects on health and they should be considered when chlorinating drinking water high in DOC. According to Health Canada, the benefits of chlorinating drinking water are much greater than the health risks associated with chlorination by-products such as trihalomethanes.

DOC can interfere with the effectiveness of disinfection processes such as chlorination, ultraviolet and ozone sterilization. DOC can also promote the growth of microorganisms by providing a food source.

Other Considerations
Organic material in water can cause aesthetic problems such as an unpleasant taste, odour and colour. Organic content is usually higher in surface water than ground water.

How Can I Remove Dissolved Organic Carbon From My Drinking Water?
It is far more cost effective to prevent organic material from entering the raw water supply than to remove it afterwards. Treatment methods effective in removing DOC from water include: coagulation/flocculation processes, biological filtration, granulated activated charcoal and distillation. Professional advice should be sought in order to ensure appropriate water treatment.

What Is The Standard For Dissolved Organic Carbon In Drinking Water?
DOC concentrations greater than 5 mg/L will complicate water treatment and may result in disinfection by-products, such as trihalomethanes, to be formed in amounts exceeding the standards. DOC will also increase colour in the finished water. Although there is no concentration limit for DOC, water treatment costs will dramatically increase as DOC increases. Source water with less than 2 mg/L of DOC tend to be easily treated for disinfection by-products and do not increase finished water colour.

How Can I Find Out If There Is Dissolved Organic Carbon In My Water?
Most water quality testing laboratories can determine how much DOC is present in a water supply. For information on sampling instructions and containers, you should contact an accredited laboratory.
**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 Dissolved Organic Carbon impacts on human health contact your local health region office. For information on how Dissolved Organic Carbon 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).

### Government of Saskatchewan
- **Water Inquiry Line**
  - Questions about water? Call 1-866-SASK H2O (1-866-727-5420) to be referred to proper agency.

### Saskatchewan Ministry of Health
- **Regional Health Offices**
  - 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
- **Health Canada**
  - Website: [http://www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)
  - First Nation and Inuit Health – Saskatchewan
    - Phone: (306) 780-6561//FAX (306) 780-7733

### Saskatchewan Watershed Authority
- Head Office, Moose Jaw (306) 694-3900
- Website: [www.swa.ca](http://www.swa.ca)
- **Regional Offices**
  - [http://www.swa.ca/AboutUs/Contact.asp?type=Offices](http://www.swa.ca/AboutUs/Contact.asp?type=Offices)

### Sask Water Corporation
- Head Office, Moose Jaw
- Customer Service 1-888-230-1111
- Website: [http://www.saskwater.com](http://www.saskwater.com)
- **Saskatchewan Ministry of Environment**
  - Toll-Free 1-800-567-4224 or (306) 953-3750
  - Spill Emergency Toll-Free 1-800-667-7525
  - Website: [http://www.environment.gov.sk.ca](http://www.environment.gov.sk.ca)

### Saskatchewan Ministry of Agriculture
- General Inquiry 1-866-457-2377
- Agricultural Operations Regina (306) 787-4680
- Irrigation Development Outlook (306) 867-5500
- Website: [www.agriculture.gov.sk.ca](http://www.agriculture.gov.sk.ca)

### Prairie Farm Rehabilitation Administration (PFRA)
- Agriculture and Agri-Food Canada
- Website [http://www.agr.gc.ca/pfra/water/intro_e.htm](http://www.agr.gc.ca/pfra/water/intro_e.htm)
- **Regional Offices**
  - [http://www.agr.gc.ca/pfra/sask_e.htm](http://www.agr.gc.ca/pfra/sask_e.htm)

### First Nations Environmental Health Providers
- **BTC Indian Health Services Inc.**
  - Phone: (306) 937-6700
- **File Hills Qu’Appelle Tribal Council Health Services**
  - Phone: (306) 332-8241
- **Meadow Lake Tribal Council, Health and Social Development**
  - Phone: (306) 236-8261
- **Northern Inter-Tribal Health Authority**
  - Phone: (306) 765-2421
- **Prince Albert Grand Council, Health and Social Development**
  - Phone: (306) 953-7248
- **Saskatoon Tribal Council, Health, and Family Services Inc.**
  - Phone: (306) 956-6100

- **Saskatchewan Ministry of Health**
  - Saskatchewan Disease Control Laboratory, Regina
    - General Inquiry 1-866-457-2377
    - Phone: (306) 798-2125 // Fax (306) 798-0071
    - Website: [http://www.health.gov.sk.ca/lab](http://www.health.gov.sk.ca/lab)

- **Saskatchewan Ministry of Agriculture**
  - General Inquiry 1-866-457-2377
  - Phone: (306) 787-4680
  - Irrigation Development Outlook (306) 867-5500
  - Website: [www.agriculture.gov.sk.ca](http://www.agriculture.gov.sk.ca)