CANADIAN PRAIRIE DRINKING WATER

Where does Saskatchewan and Alberta drinking water come from?

A drainage basin in the Rocky Mountains.

For the City of Saskatoon, and to a large degree the City of Regina, the water comes from the South Saskatchewan River, which originates in the Rocky Mountains. Calgary and Edmonton waters also come from the Rocky Mountains.

Water drains off rocks making the water low in inorganic and organic compounds. When this water enters a lake or a river there is not enough "food" for plants and algae to grow rapidly. For many farmers in Alberta, Saskatchewan and Manitoba, the water is collected from agricultural fields which drain into dugouts.

Treating Rocky Mountain and Rural Water Research and Development efforts:

Water is transported from the Rocky Mountains to Saskatchewan in rivers lined with gravel; this is ideal for drinking water production.

There is a huge difference in treating water that has drained from agricultural fields into a dugout compared with treating water from the Rocky mountains. Indeed to get treated dugout water to a quality similar to the raw water used by many cities is difficult. Surely then various levels of government have allocated research resources to deal with theses challenging water supplies. The answer to that is a simple no.

In contrast, City of Calgary (10 times better raw water quality than the average prairie dugout), employs scientists, engineers and technicians (18 in total) to carry out research and development as well as monitoring of its water supply and treatment processes. If the City of Calgary's effort to ensure that it is supplying safe drinking water to its customers is appropriate then research and development laboratories with around 200 people would be an appropriate effort to resolve the much tougher and diverse rural water quality problems on the Canadian Prairie. Right now there are no people and no labs dedicated to research on rural water quality. There are some efforts by governments to extend solutions, but for rural water required solutions often do not exist prompting the need for research.

Why do cities like Saskatoon, Regina, Calgary, and Edmonton go to great lengths to ensure that he distributed water is safe? Can people really get sick from drinking water? A few years ago in Milwaukee (United States), a city of 800,000, water was distributed with the protozoan parasite Cryptosporidium in it. Fifty percent of Milwaukee's population got sick and more than 100 people died. Despite the fact that the water in Milwaukee was treated to standards that are much higher than what is required in Canada, this parasite got through. Being within the standards required in the US offered little protection to Milwaukee's treatment plant as law suits against the City are still being addressed 5 years after the incident. The potential for law suits in case people get sick is the driving force behind major increases in research and development as well as monitoring in most major Canadian and US cities. Few, if any, rural areas on the Canadian prairie offer adequate protection for this commonly occurring parasite. A closer examination of some of these rural water problems is offered in Algae.

Agricultural fields provide the drainage basins for on-farm uses of water. This water is typically in contact with organic nutrient rich soils providing ample "food" for plants and algae when it goes into a water body.

Water is trapped in man-made reservoirs (dugouts) for on-farm uses of water. These dugouts provide ideal conditions for plant and algae growth because they are shallow in addition to becoming loaded with nutrients.