

MILK RIVER AQUIFER - QUESTIONS & ANSWERS

What is the Milk River Aquifer?

The Milk River Aquifer is a regional sandstone aquifer that underlies a large area of southern Alberta. Many rural southern Albertans rely on the aquifer for their water supply.

Where is the Milk River Aquifer?

The aquifer underlies the County of Forty Mile No. 8, parts of the County of Warner No. 5, the Municipal District of Taber No. 14, Cypress County and part of the state of Montana.

How deep is the Aquifer?

The depth to the aquifer varies across the area: the aquifer out-crops to the surface along the Milk River near Writing-on-Stone Provincial Park. The depth to the aquifer increases to the north-east and lies more than 300 m below the surface in the extreme north-east.

Is the Milk River Aquifer depleting?

Yes. Local well owners have been noticing depletion of the aquifer over the past 50 years.

How significant is the depletion? How fast is it occurring?

The rate of depletion varies across the aquifer. In some areas, water levels are relatively unchanged. In others, there has been a significant decrease. For example, at Foremost, there has been a drop of over 30 m in the water level between 1960 and 1996, an average drop of 0.8 m per year. At current rates of extraction, the water level at the village of Foremost wells could be drawn down to the aquifer within 70 years.

Where are the most critical areas?

Depletion is most prominent over the central and northern parts of the aquifer, where water levels are considerably lower. The greatest water level decline is near the village of Foremost.

What is causing the depletion?

Declines in water level occur when the water is used or discharged faster than the aquifer can be replenished. Generally, water levels have dropped the most near licensed wells with high pumping rates, such as the village of Foremost. Water levels have also dropped significantly in areas that have many wells with uncontrolled flow to the surface. This includes some areas where the aquifer is used for stock watering, chiefly located in major valleys and coulees, where more water is flowing to the surface than the cattle can drink.

How has the Milk River Aquifer Reclamation and Conservation Program helped?

Through the Milk River Aquifer Reclamation and Conservation Program, a partnership between Alberta Environment, Agriculture and Agri-Food Canada's Prairie Farm Rehabilitation Administration (PFRA), and the County of Forty Mile from 1999 to 2004; over 1,000 water wells have been field-identified as unused or abandoned, 101 of those wells have been decommissioned, rural residents have a better understanding of the Milk River Aquifer and the data gathered will allow for better management of the aquifer in the future.

How can decommissioning of abandoned and/or unused wells help?

An unused well may not be flowing at the surface, but groundwater could still be leaving the aquifer - for example, through a corroded well casing - and flowing into gravel or sand deposits below the surface. Proper decommissioning of unused wells will prevent flow between aquifers at different depths and will also prevent potential contamination problems.

How many wells are abandoned and/or unused in the Milk River Aquifer?

Of the 1,027 Milk River Aquifer water wells identified in the landowner survey, 585 wells are listed as active and 442 as inactive. Approximately 23% of the inactive wells were decommissioned under the Milk River Aquifer Reclamation and Conservation Program.

How will program performance be measured?

Data gathered on aquifer water levels and water quality under the five year Milk River Aquifer Reclamation and Conservation Program and additional observation wells currently being monitored will allow for long term changes in aquifer water levels and water quality to be evaluated.

What else can be done to conserve the aquifer?

There are three main components to conserving the aquifer in addition to education/awareness:

1. Management: Continue to promote sound management of the resource. Unused wells should be decommissioned.
2. Conservation: For flowing wells used for livestock watering, install a float system or flow control valve (note: may not be possible for older wells > 20 years, the outside of the well casing must have been properly cemented and the casing must still be in good condition).
3. Monitoring: Record water levels in wells and conduct chemical analyses of water every one to three years.