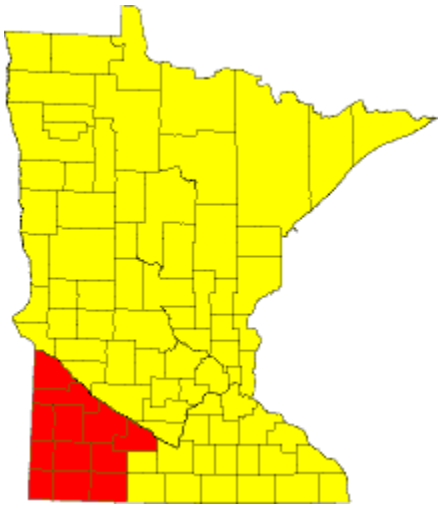
Minnesota Pollution Control Agency

Ground Water Profile:

Southwest Region



This is a ground-water profile for Minnesota's Southwest Region, which is comprised of Brown, Cottonwood, Jackson, Lac Qui Parle, Lincoln, Lyon, Murray, Nobles, Pipestone, Redwood, Rock and Yellow Medicine Counties.

HYDROGEOLOGY:

- Scattered, shallow alluvial sands and limited, buried sand aquifers are present.
- Low-yield crystalline bedrock is vulnerable to contamination at or near the surface.
- The highest yielding aquifers in this region are mostly narrow, channel outwash deposits.

QUANTITY ISSUES:

- Aquifers located here tend to be low yielding and not as well defined as elsewhere in the state.
- The Sioux Quartzite aquifer is near the surface in much of the region and is known for its low yield and high vulnerability to contamination.
- Many residents of this region are now served by rural water supply systems.

QUALITY ISSUES:

- Wells completed in the buried sand and gravel and Cretaceous aquifers often yield water of poor natural quality (high sulfate and total dissolved solids).
- Channel aquifers are highly susceptible to contaminants, including nitrate from feedlots, agriculture, and human wastewater.
- Water quality problems are often associated with augered and tiled wells which are common in this area.
- Residents rely on rural water supply systems because domestic wells in the region may be contaminated with nitrate nitrogen.

INFORMATION NEEDED:

- Yield assessments of aquifers in this area are needed.
- Better definition of impacts of agriculture on ground-water quality is needed.
- Future role of rural water supply systems should be better defined.
- Well owners need to be better educated to protect their wells from agricultural practices.

DESIRED ACTIONS:

- Monitoring points (good wells) should be retained for water level and water-quality measurements.
- Define locations, extent, and chemical quality of deeper aquifers.
- Educate land owners on land-use practices to protect wells and shallow ground water, including agricultural chemical handling and runoff.
- Many old wells need to be replaced with the construction of new wells.
- Continue the ground-water exploratory drilling program beyond the 1996-97 biennium.