First Occurrence of Aquifer Materials in McCook County, South Dakota

Explanation

This map is intended for use as a tool to aid in identifying areas saturated by aquifer materials. The aquifer materials shown on this map are categorized below. This map does not show individual aquifers. There may be more than one type of aquifer material present in an area. However, only the aquifer material that would be first to 100 feet below land surface is shown. Within the boundaries of any given zone, there may be localized areas where aquifer material is absent. The thickness and permeability of aquifer materials may vary significantly. Also, it is possible that two zones may be in juxtaposition to form a continuous aquifer material. Therefore, all of the areas defined on this map may not be aquiferous. Any specific information should always be examined when making land management or water development decisions.

- **Shallow and Gravel**: May be uniform in depth and occurrence, may be sandy or clayey. Generally continuous in lateral extent.
- **Sand and Gravel**: First occurrence is generally less than or equal to 50 feet below land surface.
- **Sand and Gravel**: First occurrence is generally greater than 50 feet and less than or equal to 100 feet below land surface.
- **Shallow and Gravel**: First occurrence is generally greater than 100 feet below land surface.
- **Shallow and Gravel**: Expansively discontinuous in lateral extent, may be sandy or clayey.
- **Aquifer materials by stratigraphic subdivision of Cenozoic age**: Those sedimentary rocks of clay, silt, and gravel types within and below the topographic surface that form aquifer materials. These may be lateral zones that have aquifer material more than 100 feet below land surface. These areas are not typically considered aquifers due to low hydraulic conductivity. These areas are not typically considered aquifers due to low hydraulic conductivity. These areas are not typically considered aquifers due to low hydraulic conductivity.

Test Hole and Well Data from Geological Survey Program Lithologic Log Database, Water Rights Well Completion Reports Database, and Water Rights Permit Files

1. **Well or test hole where no aquifer material greater than 10 feet thick is known to occur at the land surface**: Variations in the land surface may reflect a small change in depth of bedrock. However, this depth of bedrock may be reflected in the land surface. Note that the bedrock may be less than 10 feet below land surface. The data may be representative of a small change in depth of bedrock.

2. **Well or test hole where no aquifer material greater than 10 feet thick is known to occur at the land surface**: Variations in the land surface may reflect a small change in depth of bedrock. However, this depth of bedrock may be reflected in the land surface. Note that the bedrock may be less than 10 feet below land surface. The data may be representative of a small change in depth of bedrock.

3. **Well or test hole where aquifer material greater than 10 feet thick is known to occur at the land surface**: Variations in the land surface may reflect a small change in depth of bedrock. However, this depth of bedrock may be reflected in the land surface. Note that the bedrock may be less than 10 feet below land surface. The data may be representative of a small change in depth of bedrock.

4. **Well or test hole where aquifer material greater than 10 feet thick is known to occur at the land surface**: Variations in the land surface may reflect a small change in depth of bedrock. However, this depth of bedrock may be reflected in the land surface. Note that the bedrock may be less than 10 feet below land surface. The data may be representative of a small change in depth of bedrock.

The geological survey program, Department of Environment and Natural Resources, engages in an ongoing commitment to provide information about the geologic framework of South Dakota. This information is useful for many purposes, including land management, water management, and mineral and energy exploration. The information provided by the geological survey program is intended to be as accurate as possible, based on the current state of knowledge.