PRELIMINARY SURFICIAL GEOLOGY OF THE OXFORD QUADRANGLE, SUMNER AND COWLEY COUNTIES, KANSAS

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The following description consists of a compilation of several sources, including field notes and measured sections. Data were collected and evaluated using the Kansas Geological Survey's surficial geology field program. Surficial geology maps and geological cross sections were updated by the Kansas Geological Survey and are available online. The updated data are site-specific and show geologic units and thicknesses that are not consistent with older Kansas Geological Survey maps and cross sections.

**Geologic Units**

**Cretaceous System**

- **Middle-Cretaceous**
  - **Cimarron Formation**
    - quartzite, sandstone, siltstone, and shale
  - **Canyon Limestone**
    - sandstone and siltstone
  - **Ninnescah Sandstone**
  - **Navajo Formation**
    - sandstone, siltstone, and shale
  - **Aquifer Limestone**
    - lime mudstone

- **Lower-Cretaceous**
  - **Osage Formation**
    - sandstone, siltstone, and shale
  - **Coyote Shale**
  - **Dolomite**
  - **Dogtooth Valley Shale**

- **Sedimentary Rocks**
  - **Winnemucca Shale**
  - **Catoosa Formation**
  - **Mississippian**
    - **Black River Formation**
    - **Mississippian Limestone**
    - **Cleburne Formation**
  - **Pennsylvanian**
    - **Wellington Formation**
      - sandstone, siltstone, and shale
  - **Permian**
    - **Permian**
      - **Carnegie Limestone**
      - **Canyon Limestone**

**Economic Geology**

- **Mining**
  - **Salt**
  - **Potash**

**Environmental Geology**

- **Soil Erosion**
- **Gully Formation**
- **Dune Formation**
- **Fluvial Deposits**
- **Holocene Deposits**

**Geologic Map**

The geologic map was updated by the Kansas Geological Survey, and the updated data are available online. The updated data are site-specific and show geologic units and thicknesses that are not consistent with older Kansas Geological Survey maps and cross sections.

**Glossary**

- **Aquifer**
  - **Fractured Rock Aquifer**
  - **Displaced Aquifer**
  - **Interbedded Aquifer**
  - **Confined Aquifer**

**Revised References**


**Acknowledgments**

The Kansas Geological Survey is dedicated to providing accurate and reliable information to the public. The data and information provided in this report are intended for educational and research purposes and are not intended to be used for engineering or design purposes.

**Update Information**

The data and information provided in this report are subject to change and may not reflect the most recent updates. The Kansas Geological Survey encourages feedback and comments to improve the quality and accuracy of the information provided.