

APRIL 17, 1989  
NARRATIVE FOR  
BON HOMME, YANKTON, CLAY, AND UNION COUNTIES, SOUTH DAKOTA  
OIL AND GAS DEVELOPMENT POTENTIAL MAP

INTRODUCTION:

These four counties are all located in the extreme southeast corner of the state. The topography is open grasslands and small rolling hills.

Regional geology shows the surface to have exposures of Cretaceous Pierre, Niobrara, and Carlile Formations, with small outcrops of Cretaceous Belle Fourche Shales in Clay and Union Counties. Each of these counties also have extensive deposits of Pleistocene gravel and glacial deposits.

Because of the topographic high created by a Pre-Cambrian uplift to the north, the Paleozoic rocks were never deposited, therefore, the Cretaceous age rocks are unconformable to the Pre-Cambrian granites and Sioux Quartzite (Houser, 1987).

None of the four counties have had oil or gas exploration in the past 15 years. Numerous water wells have been drilled, which indicate that the Cretaceous age rocks are less than 2,000 feet thick (Mallory, 1972). Presently, there is no established oil or gas production in any of these counties.

There are no Indian lands within any of these counties.

OCCURRENCE POTENTIAL:

All four counties are classified as low occurrence potential. This is based on a sedimentary package less than 2,000 feet thick, and lack of drilling data.

There is no type log for any of the four counties.

DEVELOPMENT POTENTIAL:

All four counties are classified as low development potential. This is based on: 1) the lack of a Paleozoic section, and a thin Cretaceous section, and 2) the lack of established production or significant shows in any of the old oil and gas wells.

## REFERENCES CITED

Houser, B. B., 1987, Southwestern bounding fault of the Sioux Quartzite, South Dakota: U. S. Geological Survey, Open File Report 87-626, 11p.

Mallory, W. W., (ed.) 1972, Geologic atlas of the Rocky Mountain Region: Rocky Mountain Association of Geologists, p.56.