This series of maps of the Kenmare 100K Sheet was based on public data flow, oil wells geology by the North Dakota Industrial Commission - Department of Mineral Resources, Oil & Gas Division. The Belle Plaine Member was identified on the initial maps by Kruger (2014). The K₂O grades of the Belle Plaine Member were modified from Kruger (2014).

K₂O Grades of the Belle Plaine Member of the Prairie Formation
Kenmare 100K Sheet, North Dakota

Legend

Symbols

- Well Control
- K₂O % / Thickness (feet)

Other Features

- City
- State Highway
- Reserve

Scale 1:100,000

References


K₂O Grades of the Belle Plaine Member of the Prairie Formation
Kenmare 100K Sheet, North Dakota

Ned W. Kruger
2019

The volume of potash from the Belle Plaine Member represented by this sheet is approximately 659,800 acre feet. The volume of potash from the Belle Plaine Member represented by this sheet is approximately 659,800 acre feet.

All calculations were based on gamma-ray log measurements recorded in API units taken at six-inch increments throughout the potash-containing portion of the log. Correction for borehole size and drilling-fluid weight as well as removal of the baseline gamma-ray response were performed. The corrected gamma-ray measurements were converted into apparent potassium oxide (K₂O) concentrations. Average (K₂O) concentrations and potash equivalent thicknesses were obtained using the grade-thickness method described in Nelson (2007, 2014) and Crain (2014). The apex of the gamma-ray log peak at which the gamma-ray response declines to one-half its maximum value was determined.

When a potash member displayed multiple gamma-ray log peaks separated by troughs representing a bed of insolubles such as clay or halite, the potash intervals at the upper or lower boundaries of the insulating event were included in thickness or isopach calculations if the corrected gamma-ray measurements were more than 100 API or separated by more than four feet from main body of the potash member. This occurred most frequently in portions of the Belle Plaine Member which may appear as one continuous body of potash separated by a thin potash-containing, non-potash-rich bed. Corrections for borehole size and drilling mud weight as well as removal of the baseline gamma-ray signal were made (Crain, 2014) (Crain & Anderson, 1966). Corrections for borehole size and drilling mud weight as well as removal of the baseline gamma-ray signal were made.

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