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FRESH-WATER AND SALT-WATER BOUNDARY IN THE GROUNDWATER OF SOUTH-CENTRAL MANITOBA

(Report and figure)

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FRESH-WATER AND SALT-WATER BOUNDARY IN THE GROUNDWATER OF SOUTH-CENTRAL MANITOBA

Recent development in the technology of salt-water conversion suggests that it may soon be economically possible to obtain domestic supplies of fresh water from salty sources. The accompanying fence diagram (Fig. 1) indicates, in a general way, the widespread availability of salty water in the groundwater of south-central Manitoba. The area covered by this diagram is approximately 110 miles east-west by 60 miles north-south. All the wells, except No. 2 and No. 3 which were drilled to obtain water, were exploratory holes in the search for oil. Sources of well logs are shown on Figure 1.

Some groundwater information was obtained with the log of a few of the wells, but most of the information on Figure 1 was compiled by the author during a groundwater study of part of the area shown.

The diagram is self-explanatory. Except for well No. 1, the location of each well is shown in its correct relative position, as on a map. Well No. 1 is used here principally for correlation of the different rock formations and its location was drawn somewhat inexactly in order to keep the size of the diagram to a minimum. The circle at the top of each well section shows the geographic location of the well, and the section indicates the various formations vertically below that location. The lines connecting the wells represent the approximate geological profile between them. With some judgment, each well can be correlated with any other well in the diagram.

The boundary between fresh water and salt water is shown as a line, though in reality it may be gradual. Except for the eastern part of the region, fresh water occurs only very near the surface.

The quality of the water, so far as salt content and hardness are concerned, is shown in some places. Although these figures are not exact, they are representative of the region or the aquifer. Data on the quantity of water is also shown.