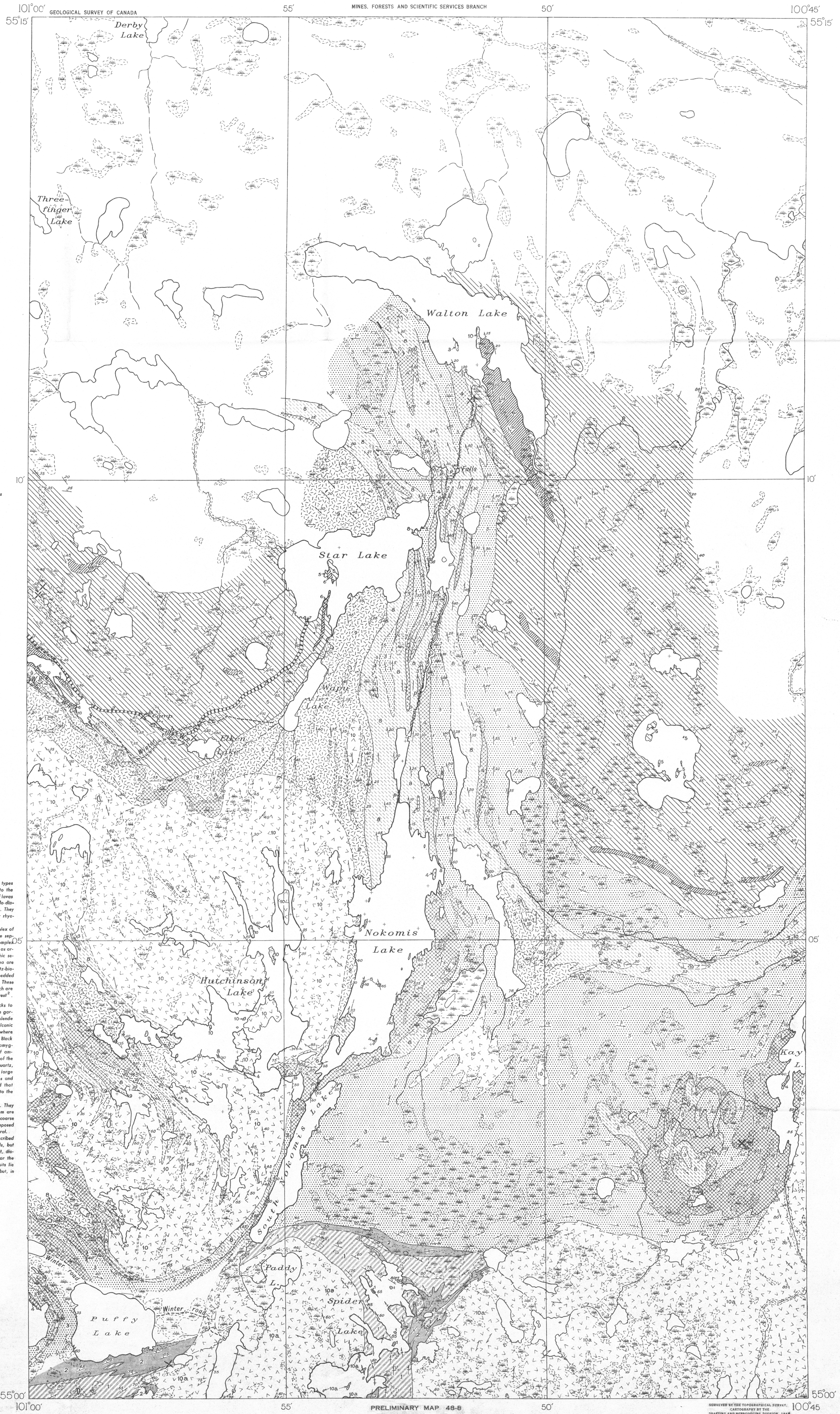
CANADA
DEPARTMENT OF MINES AND RESOURCES
GEOLOGICAL SURVEY OF CANADA
MINES, FORESTS AND SCIENTIFIC SERVICES BRANCH



LEGEND

ARCHAEAN OR PROTEROZOIC

- 10 — Biotite granite, pegmatite; 10a, porphyritic knobby-weathering hornblende granite

KISSEYNEW COMPLEX (3-9)

- 9 — Granitoid, oligoclase-quartz gneiss
- 8 — Granitized sedimentary and igneous gneisses (3, 4); minor injection gneiss
- 7 — Amphibolite, in part richly garnetiferous
- 6 — Hornblende-plagioclase gneiss, in part garnetiferous
- 5 — Mainly quartzites and granitized equivalents, commonly garnetiferous; minor limestone
- 4 — Hornblende-plagioclase gneiss, pseudo-diorite; 4a, hornblende-plagioclase gneiss injected by granite
- 3 — Quartz-biotite gneiss, in part highly feldspathic; minor hornblende-feldspar gneiss. Commonly garnetiferous

ARCHAEAN

AMISK GROUP

- 2 — Bedded arkose, greywacke; minor rhyolite
- 1 — Altered basic lavas and tuffs; pseudo-diorite

Bedding (vertical, dip unknown)
Bedding (direction of dip known, upper side of bed unknown)
Gneissosity (inclined, vertical, dip unknown)
Foliation (inclined, vertical, dip unknown)
Fault, shear zone
Glacial striae
Prospect

Geology by D. S. Robertson 1947

Portage
Marsh

DESCRIPTIVE NOTES

The oldest rocks (1, 2) are altered basic volcanic and sedimentary types that are thought to be correlative with the Wekusko group at Elbow Lake to the south[1], and are probably part of the Amisk group. The basic rocks consist of lavas and tuffs, and contain irregular bodies of a rock resembling diorite (pseudo-diorite) but which were probably derived by recrystallization from basic flows. They are overlain by, and contain interbeds of, arkose, greywacke, and minor rhyolite (2)

The rocks of the Amisk group are overlain by the Kisseynew complex of gneisses, but evidence is so far lacking to indicate whether or not they are separated unconformably from them. The various map-units of the Kisseynew complex (3-9) are in part intercalated with each other, and the geological column as arranged in the map-legend is not to be interpreted as a definite stratigraphic sequence. The oldest of the Kisseynew members (3) exposed in the map-area are foliated, brownish grey to brown weathering, commonly garnetiferous quartz-biotite gneisses. Dark green, hornblende-plagioclase gneisses (4) are interbedded with them, and in some places (4a) they contain much injected granite. These gneisses are overlain by an assemblage of highly quartzitic rocks (5), which are equivalent to the Sherridon formation of the Sherridon map-area to the west[2].

They vary from pure quartzite through richly biotitic and feldspathic rocks to others very similar to granitoid gneisses (9). All contain abundant reddish garnets, and a few interbeds of limestone were noted. Some interbeds of hornblende gneiss form mappable units (6), and commonly show characteristics of volcanic rocks. Pillow structures and breccia fragments are locally discernible even where recrystallization has produced a coarse-grained rock with abundant garnets. Black and white, checkerboard-like patterns are common, and forms resembling amygdules consist of small garnets rimmed by white feldspar. A narrow band of amphibolite (7) extends through the Sherridon formation in the western part of the map-area. It consists chiefly of brownish anthophyllite, but much garnet, quartz, and mica have formed at its margins. The granitized gneisses (8) contain a large proportion of granitic material, but also show remnants of original textures and structures. The granitoid gneisses (8), on the other hand, are so transformed that they are similar to granite, but the minerals occur in streaks, imparting to the rock a banded, or foliated, appearance.

Bodies of fine- to medium-grained granite (10) intrude all rocks. They are commonly gneissic, due to oriented flakes of biotite, and most of them are relatively rich in magnetite. The porphyritic granite (10a), however, is coarse grained, contains blocky phenocrysts of white feldspar in a matrix composed mainly of pink to red feldspar, and hornblende is the chief subordinate mineral.

Several mineral deposits are known, most of which have been described by J. F. Wright[3,4]. All these old showings were prospected for base metals, but in many of them pyrrhotite was the only mineral recognized. A gold deposit, discovered in 1947, lies on the east flank of an intricately folded section near the southeast corner of the map-area at Kay Lake. Other, smaller, gold deposits lie south and southwest of Kay Lake. All are characterized by arsenopyrite, but, in addition, two of them carry small amounts of galena.

[1] Stockwell, C. H.: Gold deposits of Elbow-Morton Area, Man.; Geol. Surv., Canada, Mem. 186, 1936.

[2] Bateman, J. D., and Harrison, J. M.: Geol. Surv. Canada, Map 862A, with descriptive notes (1946).

[3] Kississing Lake Area, Manitoba; Geol. Surv., Canada, Sum. Rept. 1928, pt. B, pp. 73-104 (1929).

[4] Geology and Mineral Deposits of a Part of Northwest Manitoba; Geol. Surv., Canada, Sum. Rept. 1930, pt. C, pp. 60-63 (1931)

PRELIMINARY MAP 48-8

NOKOMIS LAKE

MANITOBA

Scale: 2 inches to 1 mile

1 ½ 0 1 2

SURVEYED BY THE TOPOGRAPHICAL SURVEY.
CARTOGRAPHY BY THE
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