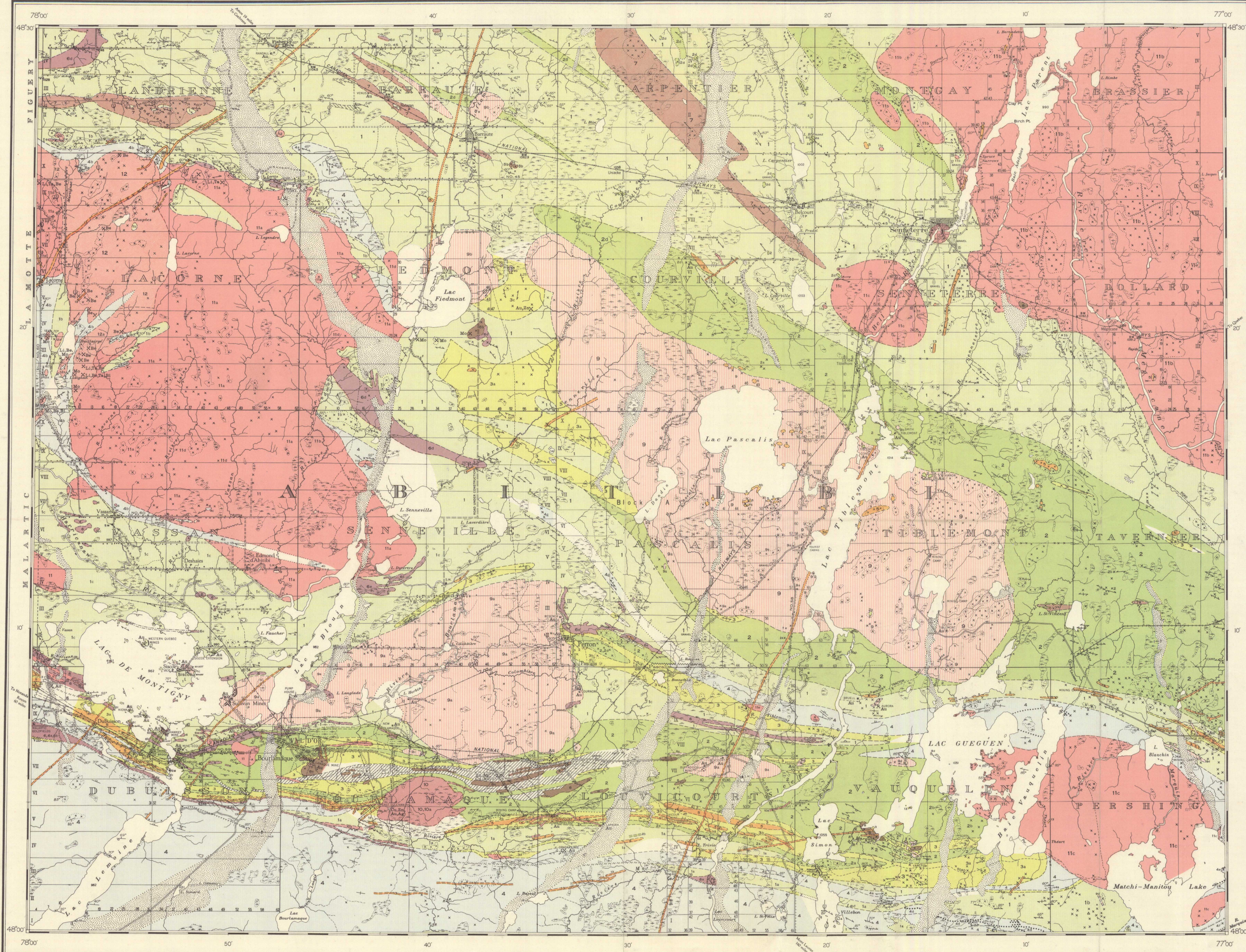


GEOLOGICAL SERIES

LEGEND

- PROTEROZOIC**
- 13 Diabase, gabbro
- POST-TIMISKAMING**
- 12 Muscovite granite, biotite-muscovite granite, biotite granite, pegmatitic granite; 12a, biotite granodiorite
- 11 Granodiorite, some diorite; 11a, hornblende monzonite, biotite-hornblende granodiorite; 11b, biotite granite and gneiss; 11c, hornblende granite, hornblende syenite; 11d, diorite, hornblende, and allied rocks; 11e, felspar porphyry
- 10 Coarse porphyritic syenite and allied rocks; 10a, felspar porphyry (coarse syenite porphyry)
- 9 Biotite granite; 9a, sodic granodiorite and allied rocks; 9b, albite granite; 9c, diorite; 9d, felspar or quartz-felspar porphyry
- 8 Mainly diorite porphyry; 8a, includes andesite porphyry and/or massive tuff and porphyritic andesite; 8b, quartz diorite
- 7 Quartz-felspar porphyry
- ARCHAIC**
- 6 Peridotite, some talcose schist; 6a, talcose amphibolite, talc-chlorite schist (includes diorite (5) and felspar porphyry and/or granodiorite (1) in places); 6b, andesite; some volcanic rocks; 6c, peridotite and altered gabbro; 6d, gabbro altered to amphibolite; 6e, peridotite and/or diorite inferred from magnetic anomalies
- 5 Diorite, quartz diorite; 5a, granophyre, micropegmatite; 5b, diorite and some andesite
- KEEWATIN AND TIMISKAMING**
- 4 Gneiss, some biotite schist; 4a, mainly conglomerate; 4b, biotite schist; 4c, amphibolitized gneiss and conglomerate; 4d, gneiss, tuff, and andesite, partly amphibolitized; 4e, biotite schist, gneiss, in part with staurolite and/or garnet; 4f, same as 4e, with pegmatite and muscovite-biotite granite; 4g, water-sorted tuffs, some gneiss
- KEEWATIN**
- 3 Agglomerate, some tuff; 3a, partly amphibolitized rhyolite, agglomerate, and tuff; 3b, includes andesite, trachyte, and spherulitic andesite; 3c, rhyolite and tuff; 3d, tuff, rhyolite tuff; some andesite may include some gneiss; 3e, graphitic tuff
- 2 Mainly andesite to trachyte and dacite; some agglomerate and tuff; 2a, includes spherulitic trachyte; 2b, similar to 2 but includes coarsely porphyritic andesite and andesite breccia; 2c, trachyte, porphyritic trachyte; 2d, rhyolite, tuff and agglomerate and/or flow breccia
- 1 Mainly andesite; 1a, andesite; some tuff and diorite; in part younger than 2 and 3; 1b, coarse amphibolite and partly amphibolitized andesite; 1c, andesite and some peridotite
- Chlorite-sericite schist, with sericite schist zones and some carbonatized zones; includes, in places, strongly sheared volcanic rocks and/or diorite and andesite porphyry
- Carbonate zone
- Iron formation as indicated by magnetic surveys
- Sand and gravel
- Rock outcrop, area of outcrop
- Bedding (inclined, vertical, overturned, dip unknown)
- Bedding (direction of dip known)
- Bedding (direction of dip unknown)
- Schistosity (inclined, vertical, dip unknown)
- Foliation (inclined, vertical, dip unknown)
- Flow contact
- Fault
- Structural discontinuity (may indicate one or more faults and/or sheared drag-folds)
- Glacial striae
- Mineral prospect or occurrence
- Mine shaft
- MINERAL SYMBOLS**
- Beryl Be
- Bismuthinite Bi
- Columbite-tantalite Ta
- Copper Cu
- Gold Au
- Molybdenite Mo
- Pyrite Py
- Silver Ag
- Sphalerite Zn
- Spodumene Li



DESCRIPTIVE NOTES

Much of Senneterre map-area is of low, rolling relief, and is covered in one part or another by glacial-lake clays, sand, eskers, or terminal moraines. Scattered rock outcrops occupy only 5 to 10 per cent of the surface area. The general relief is broken by prominent diabase dykes; by amphibolitized andesites, in southwestern Pershing township; by a biotite-hornblende granite batholith, in Brassier and Dollard townships; by an area of granite, adjacent to Lac Fiedmont; and by the more prominent eskers, some of which, except for narrow stream gaps, traverse the area from north to south.

All consolidated rocks of the area are of Precambrian age. The oldest (1, 2, 3) are mainly of volcanic origin, fresh to altered in appearance, and vary in composition from andesite to trachyte and rhyolite. Some basic and acidic tuffs and agglomerates are found interbedded with the flows, and flow breccias occur here and there throughout the area.

Thick flows of dark to light green andesite (1) showing well-developed pillow structures form the base of the Keweenaw succession. Some of the lavas carry well-defined felspar phenocrysts; others, as in southwestern Pershing township, have been metamorphosed to coarse amphibolites, with remnants of pillow selvages still visible. Some quartz diorite facies, exhibiting blue quartz phenocrysts, are included in the andesites. Younger flows of intermediate composition (2) are mainly dacites with visible quartz. They are exceptionally well pillowed, weather pale green, with grey to brownish white selvages, and are interbedded with spherulitic members, andesite, rhyolite flows, and some acidic tuffs. The boundary between andesite (1) and the trachytes and dacites (2) is inferred in northern Pershing, Tiblemont, and Courville townships. In Fiedmont township dacites were not found northwest of lots 55 and 57, ranges VIII and IX.

Tuff and agglomerate (3) overlie the intermediate lava flows, and in Pershing, Vaouquelin, and northern Louvicoourt townships are interbedded with normal andesite. Agglomerate shows rounded, scoriaceous fragments from 5 to 6 inches long in a grey to green groundmass which can be seen on the Sigma property just east of the mill. The tuffs are grey to brown, with pebbly fragmental appearance; some are well bedded, and show crossbedding and variation in grain size.

A thick band of gneiss, slate, and argillite (4), mapped in southern Rouyn township has been traced across the southern part of the map-area to where it joins a northern band in Haig township to the east. The northern band has been traced from Haig township to north-central Bourlamaque. Here the continuity appears broken, but a northwestern extension, probably displaced eastward, of water-sorted, well-bedded tuffs and some gneiss continues into Senneville township. This northern band may join one of the biotite schist members (4b) in Vasson or Fiedmont townships, but intervening outcrops were not found.

Swarms of peridotite sills (6) intrude basic and intermediate lavas north of the Cadillac fault zone; they follow the southern edge of Lac de Montguy and continue eastward to the Bourlamaque granodiorite. East of this intrusion one such sill was found, in lot 18, rge. II, Pascalis tp., and another in northern Louvicoourt extending eastward into Vaouquelin township. Talc-chlorite schist occurs along most of the Cadillac fault zone from western Duboué to the eastern edge of Bourlamaque township. The peridotites vary in colour from silvery grey to dark brown; massive varieties display a distinctive radiating fracture pattern, and types are soft and show a violet sheen on freshly broken surfaces. Veins of radiating amphibole plate-clusters cut across many of the peridotite outcrops. Peridotite sills in the andesites (1) of Vasson township follow the edge of biotite schists (4b) eastward. Areas (6a) in Senneville and Pascalis townships that show magnetic anomalies greater than 1,000 gammas are interpreted as being partly underlain by peridotite and diorite sills.

Quartz-felspar porphyries (7), mainly conformable with andesite flows in Fiedmont and Courville townships, contain clear to milky quartz phenocrysts 1 to 4 mm. in diameter, and felspar phenocrysts of dense, fine-grained groundmass. These intrusions are quite massive in places and much sheared in others. They show, here and there, crosscutting relationships with the Keweenaw lavas, and some may be of pre-Timiskaming age.

Later intrusive dykes, sills, plugs, and batholiths vary from gabbro to biotite granite in composition. Diorite porphyries (8) and fine-grained andesite porphyries (8a) form a swarm of sills in the sericite schist zone of Bourlamaque township. Dykes and plugs of this type are also found in the Rouyn-Kid group.

Albitic intrusions (9) occupy a central belt between the biotite granites (11) to the northeast in Brassier township, the Lacorne mass (11) to the west, and the biotite orthoclase batholith just south of the map-area. These intrusions include the Bourlamaque sodic granodiorite and related albitic dykes; the Siscoe plug; the Louvicoourt granodiorite; several small plugs of granodiorite and quartz-felspar porphyry in Vaouquelin township; the Pascalis-Tiblemont biotite granite, stretching 10 miles from northern Vaouquelin township to eastern Fiedmont; the albitic granite plug surrounding part of Lac Fiedmont; and two sill-like albitic porphyries in rge. III, Barrauld tp. Except for the quartz-felspar porphyries, these intrusive rocks contain cloudy to blue opalescent quartz eyes, albite, and varying amounts of ferromagnesian minerals. Some phases of the Pascalis-Tiblemont batholith have very little biotite.

Coarse syenite (10) and syenite porphyry (10a) lie south of the Bourlamaque batholith in the centre of Bourlamaque township. Related felspar-porphyry dykes are to be found roughly paralleling the Cadillac fault zone from Lac Lemoine eastward to central Louvicoourt township.

Hornblende granites (including the large mass in Pershing township), granodiorites, the older monzonite of the Lacorne batholith, and the Brassier-Dollard biotite granite (in part gneissic) have been grouped in one map-unit (11). The felspar of these intrusive rocks is mainly orthoclase, but includes some microcline and minor plagioclase. Varying amounts of biotite and hornblende are the essential mafic constituents. These rocks may not all be of the same age. A few, fine-grained, biotite lamprophyre dykes too small to show on the map occur in Duboué, northwestern Vaouquelin, and Senneterre townships. Diabase and gabbro (13) constitute three sets of dykes: one set strikes east, as those in southern Bourlamaque; another set strikes northeast, as those observed in Duboué township; and a third set trends north 25 degrees east, as in Senneterre and Tiblemont townships. They include both quartz- and olivine-diabase types, and rise as high as 300 feet above the surrounding country. The olivine diabases weather chocolate-brown, and some show spherulitic weathering.

All lava flows and sedimentary formations in this area dip at angles of from 60 to 80 degrees. Strikes are generally southeast to east, except where formations have been displaced by local intrusions or cross-folds. A main fault zone in the area is the eastward extension of the Cadillac fault, which crosses the area from the northwestern corner of Duboué township to the centre of southeastern Louvicoourt. Minor faults, striking northeast and southeast are found throughout the area. Eastward extensions of the Mannville fault were not located in Landrienne and Barrauld townships, but it is possible that subsidiary faults are represented by the carbonatized zones in Landrienne, Barrauld, and Courville townships. The Siscoe fault probably extends northwards to join a fault at the southern end of Lac La Motte, to the west of the map-area.

Most of the gold mines in the area are adjacent to the Bourlamaque sodic granodiorites and related intrusions of diorite porphyries. The gold-bearing deposits are mainly of one or other of the following types: (a) quartz-tourmaline veins carrying pyrite and, in some deposits, chalcopyrite, in diorite and granodiorite; (b) quartz-tourmaline veins in Keweenaw-type lavas; (c) replacement deposits in shear zones; (d) quartz veins carrying some pyrite in carbonate zones; and (e) quartz-tourmaline veins mineralized with arsenopyrite and some pyrite.

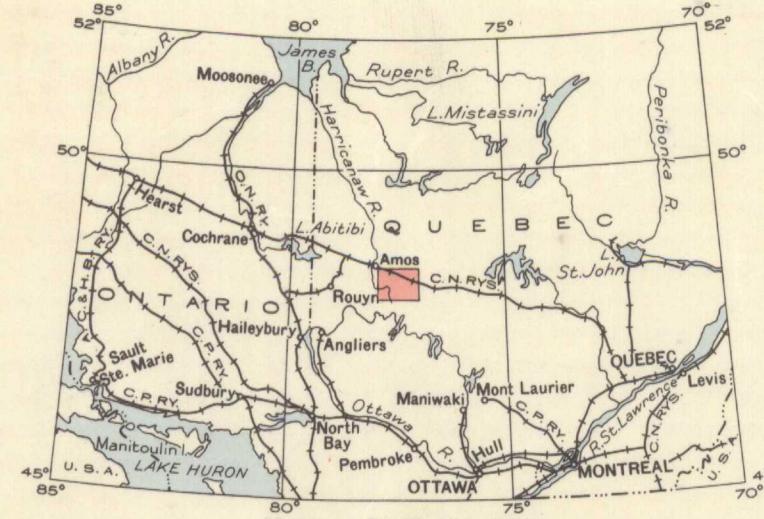
Base metal deposits occur as replacement lenses along shear zones containing pyrite, sphalerite, and minor galena, with some gold and silver, in sericite schist and acidic to intermediate lavas.

Malgourette occurs in quartz and pegmatite veins at the Lacorne north and southeast of Lac Fiedmont. Pegmatites of the Lacorne area contain molybdenite, beryl, spodumene, bismuthinite, and columbite-tantalite.

PUBLISHED 1950.

MAP 997A
SENNETERRE
QUEBEC

Scale: One Inch to Two Miles = 1/26,220



REFERENCE

- | | |
|--------------------|-------------------------------------|
| Main highway | Telephone line |
| Road and buildings | Bridge: iron or wood |
| Wagon road | Triangulation station |
| Trail or portage | Forestry tower |
| Railway | Bench mark |
| Church | Township boundary |
| School | Surveyed line |
| Post Office | Range number |
| Telegraph office | Lot number |
| Ranger cabin | Falls and rapids |
| Sawmill | Marsh |
| Cemetery | Height in feet above mean sea-level |
| Power line | |

Base-map compiled and drawn by the Surveys and Mapping Bureau, 1947.
Approximate magnetic declination, 15°00' West.

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5.1.9 Senneterre, Que.
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