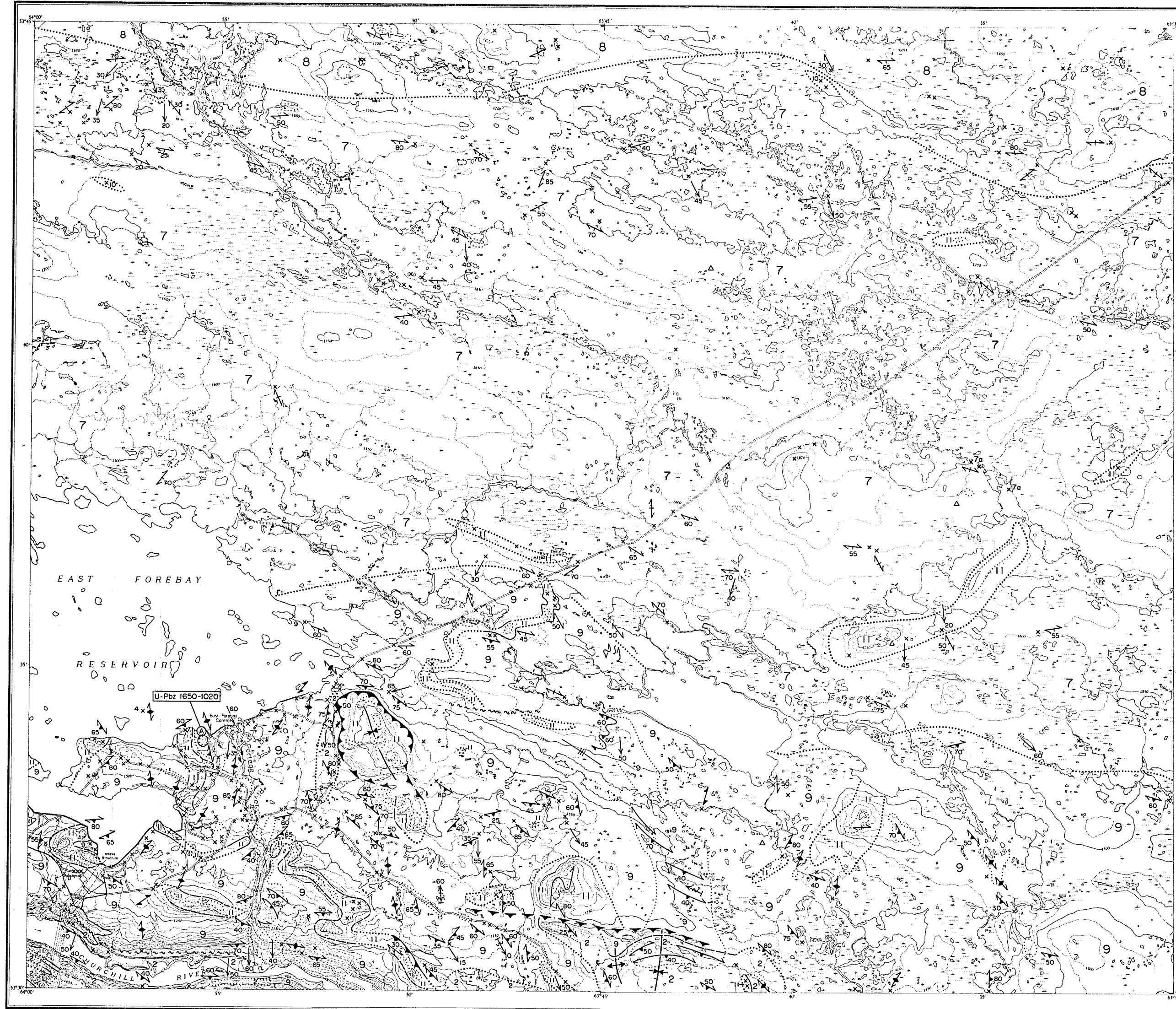
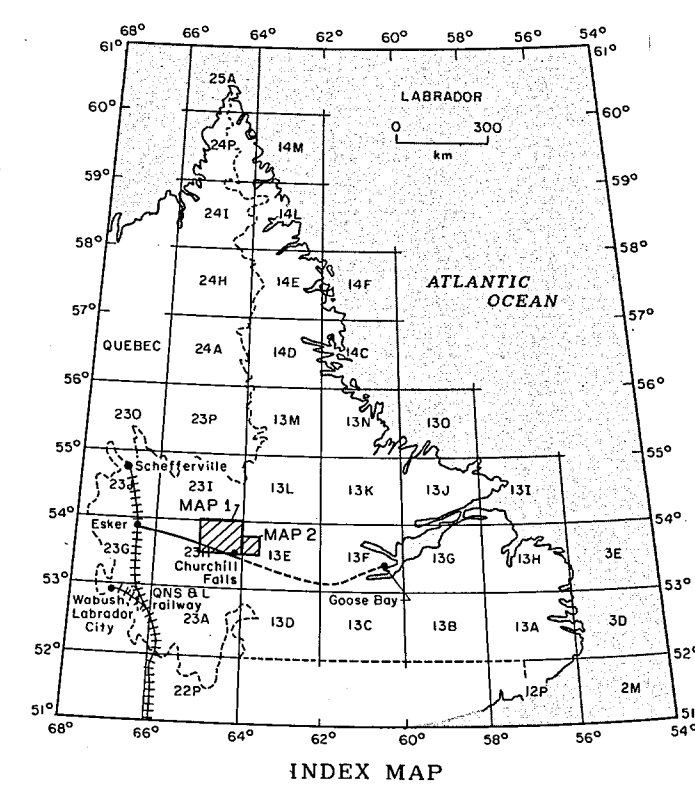


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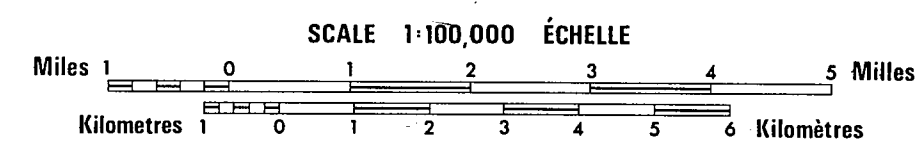
- LEGEND
- Late basalt dikes, undeformed.
- NEOHELKIAN**
- 14 14a, Pink sandstone, 14b, polyimictic conglomerate, strongly cleaved.
- PALEOHELKIAN**
- 13 Blueberry Lake group: Felsic and mafic volcanic rocks, moderately cleaved.
- 12 Mafic porphyry.
- Gabbroid Suite (10,11)**
- 11 Shabogamo Intrusive Suite: Gabbro, metagabbro, coronite gabbro, minor amphibolite.
- 10 Biotite gabbro and norite, often net-veined by granitoid material; minor amphibolite.
- Granitoid Suite (3-9)**
- 9 Granitoid gneisses: Gray to pink quartz + feldspar + biotite ± hornblende ± garnet gneisses derived mainly from units 4, 5 and 7. Composition is predominantly quartz monzonite but varies to quartz diorite, quartz monzonite and granodiorite. Gneisses are variably mylonitic and migmatitic in texture.
- 8 Michikamau Lake pluton: Pink, megacrystic quartz monzonite with minor amounts of granodiorite, granite, leucogranite and aplite. Largely undeformed to weakly deformed.
- 7 Pink heterogeneous granite and quartz monzonite: Variably textured pink granitoid rocks ranging from aplite and microgranite to medium or coarse grained equigranular or porphyritic rocks. Composition largely granite to quartz monzonite. 7a, minor gray granodiorite and tonalite. Unit strongly foliated and locally gneissic in south.
- 6 Gray quartz monzonite to tonalite. Fine to medium grained rocks, largely undeformed.
- 5 Valley River pluton: Gray, medium grained, locally porphyritic quartz monzonite and minor granite. Unit is strongly foliated to gneissic in south. 5a, Gray, gneissic quartz monzonite with irregular protoclastic(?) fabric.
- 4 Forebay pluton: Gray, coarse grained quartz monzonite and quartz monzonite with lesser amounts of monzonite and granodiorite. Contains abundant mafic inclusions. Southern parts of unit are strongly foliated and locally gneissic.
- 3 Sandgirt pluton: Gray, coarsely megacrystic granite with abundant mafic inclusions. Granite contains a weak to moderate primary foliation overprinted by cataclastic fabrics. 3a, Pink, medium grained, equigranular granite, microgranite and aplite.
- APHEBIAN**
- 2 Metasedimentary gneisses: Pink, quartz + feldspar + kyanite + biotite ± garnet gneisses, typically migmatitic and intricately folded. Minor amounts of gray quartzofeldspathic gneiss and rusty garnetiferous pelitic gneiss along Unknown River.
- ARCHEAN - APHEBIAN**
- 1 1a, Gray to pink granitoid gneisses, usually migmatitic and largely of tonalite-granodiorite composition but including some granitic material. 1b, Minor supracrustal gneisses including orthoquartzite, kyanite- and sillimanite-bearing pelitic gneisses, and possible metavolcanic gneisses. 1c, Metagabbro (in part probably equivalent to the Aphebian Montagnais Group), amphibolite and amphibolite gneiss. The latter rock types are derived from gabbroid protoliths which may be of more than one age. 1d, Minor ultramafic rocks.

Notes to Legend

This is a combined legend for Map 1 (23H, NE) and Map 2 (13E/12). Not all units shown are present on each map.
 Age relations between many units are imprecise or unknown. The order of units within each major stratigraphic division should not necessarily be regarded as chronological.



MAP 2
GEOLOGY OF THE CHURCHILL FALLS
AREA, LABRADOR
(13E/12 - SONA LAKE)



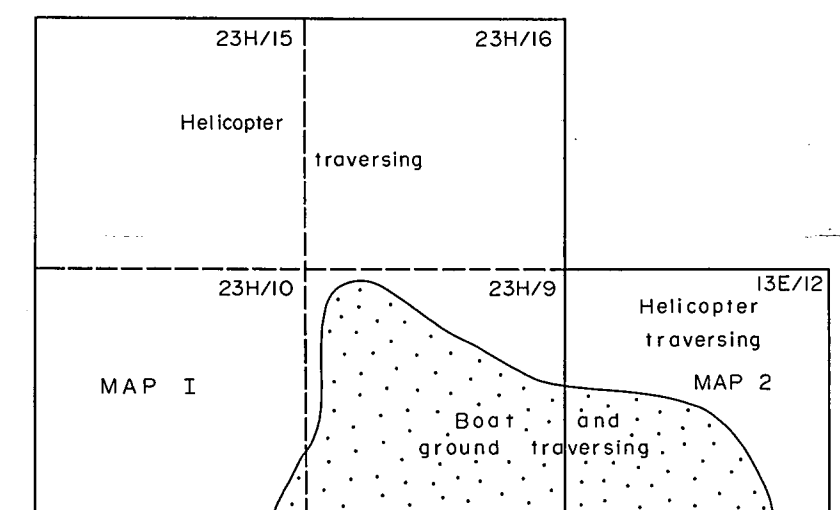
MAP 84-19

Symbols

- Angular glacial float Δ
- Rock outcrop, area of continuous or scattered outcrop x
- Piezometer drill core site o
- Geological boundary (defined, approximate, assumed) /
- Geological boundary inferred from aeromagnetic information - - - - -
- Bedding, tops known (horizontal, inclined, vertical) +
- Bedding, tops unknown (inclined) /
- Igneous layering, tops unknown (inclined) /
- Foliation (inclined, vertical, dip unknown) /
- Primary igneous foliation (inclined, vertical) /
- Foliation trend, with dip /
- S₂ foliation (inclined, vertical) /
- Gneissosity (inclined, vertical, irregular trend, dip unknown) /
- Gneissosity trend, with dip /
- Lineation /
- Minor fold axis, with sense of fold style /
- Lineament (from air photograph) /
- Shear zone or fault (defined, approximate, assumed) /
- Thrust fault (defined, approximate, assumed) /
- Dike (diabase-metadiabase) /
- Major fold axis (F₂), antiform, synform /
- Mineral showing or prospect x
- cp = chalcopyrite
- py = pyrrhotite
- py = pyrite
- Mo = molybdenite
- Al = aluminite
- Ap = apatite
- Age date locality, age in millions of years @
- Rb-Sr = Rubidium-Strontium whole rock isochron age
- Rb-Sr biot. = Rubidium-Strontium biotite mineral age
- U-Pb = Uranium-Lead zircon age
- K-Ar biot. = Potassium-Argon biotite mineral age

Topographic Symbols

- Roads
- all weather, unpaved
- summer only, unpaved
- Powerline
- Earth-filled dike, with water-flow control structure. Roads extend along dike crests
- Rock quarry
- Esker



RELIABILITY DIAGRAM

Geology compiled by R.J. Wardle from field work by R.J. Wardle and J.M. Britton in 1980, and R.J. Wardle in 1981.

This map may be subject to revision and correction.

Geological cartography by Drafting Section, Mineral Development Division, Newfoundland Department of Mines and Energy.

Copies of this map may be obtained from the Publications and Information Section, Mineral Development Division, Newfoundland Department of Mines and Energy, P.O. Box 4750, St. John's, Newfoundland, A1C 5T7.

Flooding is extensive in the areas of Lobstick and Michikamau Lakes and the Forebay Reservoir. Base maps at 1:50,000 scale, published by Surveys and Mapping Branch, Department of Energy, Mines and Resources, Ottawa, have been revised for this map by the Mineral Development Division using 1:40,000 scale air photographs and 1:50,000 scale photo mosaics supplied by the Churchill Falls (Labrador) Corporation. Copies of the revised base maps at 1:50,000 and 1:100,000 scale are available from Publications and Information Section, Mineral Development Division, Newfoundland Department of Mines and Energy, P.O. Box 4750, St. John's, Newfoundland, A1C 5T7.

Approximate magnetic declination for Churchill Falls was 31° 53' west at center of map in 1959, decreasing 4' annually.

Approximate magnetic declination for Sona Lake was 32° 10' west at center of map in 1960, decreasing 4' annually.

Elevations in feet above sea level.

Field work was funded by the Departments of Regional Economic Expansion (45%) and Energy, Mines and Resources (45%) of the Government of Canada, and the Government of Newfoundland and Labrador (10%).