



Ontario Geological Survey
 MAP P-3440
PRECAMBRIAN GEOLOGY
SHARBOT LAKE AREA
 Scale 1:50 000
 1000 m 0 1 2 km
 NTS Reference: 31 C15
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LEGEND
PHANEROZOIC
CENOZOIC
QUATERNARY
 Pleistocene and Recent
 Sand, gravel, mainly glacial till, ground moraine and organic deposits
UNCONFORMITY
PALEOZOIC
POST-MIDDLE ORDOVICIAN
 Veins: Calcite-barite veins ± galena
INTRUSIVE CONTACT
PRECAMBRIAN^{abc}
NEOPROTEROZOIC
ROBERTSON LAKE MYLONITE ZONE (RLMZ) (Units 27 to 29)
 29 Carbonate Rocks (massive and protomylonite)
 29a: Calcitic mylonite and protomylonite
 29b: Dolomitic mylonite and protomylonite
 29c: Brown weathering, massive dolomite
INTRUSIVE CONTACT
 28 Felicit Ultra- and Protomylonites
 28a: Felicit ultramylonite and protomylonite derived from units 11 and 13
 28b: Felicit ultramylonite and protomylonite of unknown protolith, includes felicitae
 28c: Felicit ultramylonite and protomylonite derived from siliceous clastic metasedimentary rocks
INTRUSIVE CONTACT
 27 Mafic Ultra- and Protomylonites
 27a: Mafic ultramylonite and protomylonite derived from gabbro
 27b: Mafic ultramylonite and protomylonite of unknown protolith
INTRUSIVE CONTACT
MESO- TO NEOPROTEROZOIC
LATE TECTONIC TO POSTTECTONIC INTRUSIVE ROCKS
 26 Potassic Pegmatitic Intrusive Rocks (1020–1170 Ma)
 Pink-weathering, syenite to pyrogranite pegmatite veins, locally contain tourmaline or muscovite of both
Metasedimentary Rocks of the Flinton Group (>1020 Ma, <1185 Ma)
 25 Felsic Formation:
 Biotite-quartz-feldspar-hornblende schist
 24a: Calcite marble, minor dolomite marble, with minor interlayered biotite schist (unit 24a)
 24b: Carbonate diast metamorphosed, calcite, commonly garnet and sillimanite-bearing
 24c: Scapolite-bearing metawacke and semipelite schist
 23 Bishop Corners Formation
 23a: Metaglomerate, metaquartzite
 23b: Metapelite
 22 Onkap Formation
 22a: Protonally-derived, heterolithic metaglomerate
 22b: Meta-arenite, calcareous meta-arenite
UNCONFORMITY
FRONTENAC TERRANE AND SHARBOT LAKE DOMAIN (Units 17 to 21)
 Kennington–Skootamatta Intrusive Suite^d (1050–1075 Ma)
 21 Felicit Intrusive Rocks
 Fine- to medium-grained pink leucogranite, locally containing fluorite and white mica
INTRUSIVE CONTACT
 20 Felicit Intrusive Rocks (>1100 Ma <1250 Ma)
 White-weathering, granodioritic to dioritic pegmatite veins or irregular masses, associated with unit 15
INTRUSIVE CONTACT
Frontenac Intrusive Suite^d (1150–1175 Ma)
 19 Felicit Intrusive Rocks
 19a: Coarse-grained, pink to brownish-weathering hornfels, syenite, granodiorite and monzonite
 19b: Fine- to medium-grained monzonite and granite (Silver Lake pluton)
 19c: Medium-grained monzonite (Bennett Bay pluton)
 19d: Diorite and gabbro
 19e: Fine- to medium-grained syenite
 19f: Medium- to coarse-grained granite
 19g: Intrusive rocks showing evidence of magma commingling
 19h: Medium- to coarse-grained monzonite of unknown age
 18 Intermediate Intrusive Rocks (Diorite)
 Monzonite and hornblende gabbro
 17 Mafic to Intermediate Intrusive Rocks (Gabbro, Anorthosite)
 Anorthositic gabbro, gabbro, anorthosite, generally granitic, interlayered with varied amounts of medium- to fine-grained, dark weathering, hornblende gabbro
INTRUSIVE CONTACT
FRONTENAC TERRANE (Units 14 to 16)
 16 Quartzofeldspathic Gneiss:
 Well-layered, quartz-biotite-feldspar gneiss of varied protolith, generally present within the Mabery shear zone; consists mainly of tectonized equivalents of units 18 and 19, with minor amounts of units 14 and 15
 15 Quartzofeldspathic Gneiss and Pyroxene Gneiss:
 Well-layered, quartz-biotite-garnet-feldspar gneiss ± garnet, locally containing cordierite, pyroxene or sillimanite and dark-green weathering pyroxene gneiss and pyroxene-hornblende gneiss, metacarbonate rocks
 14 Marble Tectonic Breccia and Massive Marble:
 White marble, some calc-silicates generally marble tectonic breccia that includes layers and fragments of rusty, pyritic and granitic gneisses, white pegmatite (unit 20), garnet gneiss (unit 15), and pyroxene-hornblende gneiss (unit 19)
INTRUSIVE CONTACT
Mabery Suite^d (1240–1250 Ma)
 13 Felicit Intrusive Rocks:
 Monzonitic, medium-grained, commonly layered or foliated, or both, commonly cut by granite pegmatite veins (unit 26)

PRECAMBRIAN^{abc} METASEDIMENTARY ROCKS
SHARBOT LAKE DOMAIN (Units 8 to 10) (GREENVILLE SUPERGROUP)
 10 Calcitic Carbonate Metasedimentary Rocks
 10a: Medium- to coarse-grained, white calcite marble, massive, may include some dolomite marble horizons and zones of buff-weathering dolomitization
 10b: Medium- to coarse-grained, white calcite marble, massive, locally layered
 10c: Fine- to medium grained, grey calcite marble, bedded
 9 Siliceous Clastic Metasedimentary Rocks
 9a: Metasediment, metasiltsstone, felsite, may include some volcanic component, generally rusty weathering
METAVOLCANIC ROCKS
 8 Tholeiitic Mafic Metavolcanic Rocks
 Amphibolite, generally fine-grained, likely derived from basaltic flow and tuffs
 6 Calcitic Carbonate Metasedimentary Rocks
 6a: Calcite marble, generally medium- to coarse-grained and massive, locally layered, medium-grained calcite marble, may include zones with intact bedding layers of siliceous clastic metasedimentary rocks (unit 4 and 5)
 6b: Dolomite marble, generally medium- to coarse-grained and massive, may include zones of buff-weathering dolomitization
 5 Siliceous Clastic Metasedimentary Rocks
 Biotite quartzofeldspathic gneiss, fine-grained, 10 to 50% biotite, mainly derived from metawacke, minor metapelite and rusty schist, minor metaglomerate horizons
 4 Siliceous Clastic Metasedimentary Rocks
 Biotite quartzofeldspathic gneiss, fine-grained, 10 to 50% biotite, mainly derived from metawacke, minor metapelite and rusty schist, minor metaglomerate horizons
 3 Tholeiitic Mafic to Felicit Metavolcanic Rocks (Mabery Suite Formation and Equivalents) (1240–1250 Ma)
 Dominantly quartzofeldspathic schist and gneiss, likely derived from intermediate to basic flows and tuffs, minor interlayered mafic schist and gneiss, likely derived from mafic flows and tuffs
 2 Calc-Alkaline Mafic to Felicit Metavolcanic Rocks (Kashwakamak Formation and Equivalents) (1285–1290 Ma)
 2a: Dominantly amphibolite and mafic gneiss, likely derived from basaltic to andesitic flows and tuffs
 2b: Dominantly quartzofeldspathic schist and gneiss, likely derived from intermediate to felsic flows and tuffs
 1 Tholeiitic Mafic Metavolcanic Rocks (Tudor Formation and Equivalents) (>1285 Ma)
 Amphibolite and mafic gneiss, likely derived from basaltic flows and tuffs

ABBREVIATIONS
 ap apatite
 ar arsenopyrite
 au silver
 auv gold
 bi biotite
 bm biotite
 br biotite
 ca calcite
 cd corundum
 chl chlorite
 co copper
 cr corundum
 f feldspar
 fl fluorite
 g garnet
 gr graphite
 h hematite
 hyl hydrothermal
 ka kaolinite
 mg magnetite
 mbc marble
 mca malachite
 mica mica
 mo monazite
 mlt molybdenum
 ms muscovite
 ni nickel
 nlc nickel
 nlc nickel
 py pyrite
 py pyrite
 qtz quartz
 r rutile
 sc sillimanite
 sm sulphide mineralization
 th thorium
 tr tourmaline
 ur uranium
 znc zinc
 ba biotite Ar-Ar plateau date, in Ma
 hA hornblende Ar-Ar plateau date, in Ma
 mK muscovite Ar-Ar date, in Ma
 pA potash Ar-Ar plateau date, in Ma
 pU potash U-Pb date, in Ma
 st stannite U-Pb date, in Ma
 zU zircon U-Pb date, in Ma

PAST-PRODUCERS AND PROPERTIES
 1. AIM Explorations Limited (L)
 2. Booth Mine (Au, Ag, Cu)
 3. Booth Mine (Au, Ag, Cu, Zn)
 4. Canadian Arrow Mines Limited (L)
 5. Consolidated Imperial Resources Limited (L)
 6. Cook (Au, Ag)
 7. Connaught Resources Limited (L)
 8. Connaught Resources Limited (L)
 9. Emery, V. (L)
 10. Fyke, M.H. and Associates (L)
 11. Ganda Silver Mines Limited (L)
 12. Gundersen Resources Limited (L)
 13. Hawley, W. (L)
 14. Kennel Mining Group (L)
 15. Kennel Mining Group (L)
 16. Marlin Mines Limited (L)
 17. Morrow, A. (Au, Ag)
 18. McLaughlin, R. (Au, Ag)
 19. Pennick Lake (Au)
 20. Pionier Copper and Silver Mines Limited (Cu, Au)
 21. Ram Petroleum Limited (L)
 22. Ram Petroleum Limited and Tamar Resources Limited (L)
 23. Rickard, D.W. (L)
 24. Robertville (Mississippi) Iron Mine (Fe, Ti, Cp)
 25. Rock Lake-Dose Lake (Au, Ag)
 26. Sisco Incorporated (James Mine) (S, Cu, Ag)
 27. Sisco Incorporated (Webber Property) (Ag, Cu)
 28. Sillimanite occurrence (Little Green Lake) (L)
 29. Sucker Lake (L)
 30. Westward Mines Limited (L)
 31. Wilson, N. (L)

SYMBOLS
 Bedding, sedimentary, inclined, no facing
 Bedding, sedimentary, inclined, with facing
 Isograd, fold axial, indicating temperature >500°C, test on high-grade side
 Isograd, test on high-grade side
 Antiform, unknown generation, limbs dip in opposite direction, interpreted
 Syncline, first generation, limbs dip in opposite direction, interpreted
 Anticline, second generation, limbs dip in opposite direction, interpreted
 Syncline, second generation, limbs dip in opposite direction, interpreted
 Mineral occurrence (number corresponds to 'Past-Producers and Properties' list)
 Location of isotopic age determination, age in Ma
 Bedding, sedimentary, inclined, no facing
 Bedding, sedimentary, inclined, with facing
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 Location of isotopic age determination, age in Ma

SOURCES OF INFORMATION
 Thematic information on this map is tied to a digital base map derived from Map 31 C15 of the National Topographic System, scale 1:50 000, UTM projection, datum NAD 83, zone 18E.
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 Magnetic declination approximately 13°09'W in 2000.
 Metric conversion factor: 1 foot = 0.3048 m.

CREDITS
 Geological compilation by R.M. Easton and G. McMaster, 1987-88, R.M. Easton, 2001-01.
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