

LEGEND

QUATERNARY
Q Glacial and glacio-fluvial deposits; sand, gravel, boulder clay, fill, and peats.

CARBONIFEROUS
CB BARACHOIS GROUP (Pennsylvanian–Upper Carboniferous)
 Mainly red and green sandstone, siltstone, shale, and mudstone; minor coal seams; conglomerates.
C SHANADITHIT FORMATION: Mainly poorly indurated red and gray sandstone and conglomerate, minor limestone and siltstone.

SILURIAN
SPmi PUDDLE POND COMPLEX (ca. 431 Ma)
 Foliated to unfoliated, dark gray to green, mainly medium- to coarse-grained, partly amphibolite-equigranular to plagioclase-gneissic hornblende diorite, gabbro, or diabase. Gabbro locally contains layers of pyroxene and pyroxenite pods. Cut by pink felsic dykes of the Lake of the Hills Intrusive Suite (LSI). Mafic rocks commonly have inclusions of non-apatite compositions. Locally orthopyroxene- or clinopyroxene-bearing in the Cormacks Lake complex.
SPc Foliated to unfoliated, mainly layered cumulate sequence of anorthosite, troctolite, olivine rocks, norite, gabbro/norite, olivine gabbro, and gabbro, with minor pyroxenite. Minor alteration to epidote, hornblende and/or actinolite and chlorite.

ORDOVICIAN
OSBtg SOUTHWEST BROOK COMPLEX (ca. 481 Ma)
 Generally well foliated, white, medium- to coarse-grained, mainly biotite- and/or hornblende-bearing, tonalite and/or granodiorite. Includes minor quartz-diorite. Commonly contains abundant mafic enclaves or schollen of diorite, amphibolite, and hornblende. Mafic enclaves or schollen are locally so abundant that the rock appears aegirine. The mafic enclaves/schollen in part probably represent relict co-mingling structures largely destroyed by continuous veining by tonalite. Commonly displays epidote alteration. Locally includes crosscutting pink muscovite-bearing apite, granite and pegmatite dykes of the Lake of the Hills Intrusive Suite (LSI) and gabbro or diorite of the Puddle Pond Complex (SPmi).
OSBdt Generally well foliated, medium- to coarse-grained, biotite and hornblende-bearing quartz diorite and/or tonalite. Characteristically contains abundant blue quartz eyes and displays various degrees of epidote alteration. Aegirine structure due to enclaves or schollen of amphibolite and hornblende is common. Contains locally apite and pegmatite dykes, and massive quartz xenoliths (2–5 cm). Is intruded by members of OSBg.
OSBg Foliated to unfoliated biotite granodiorite and/or granite, locally with K-feldspar megacrysts. May in part be equivalent to SPc. Some granites containing muscovite and may be equivalent to Si-ne.
NEOPROTEROZOIC TO MIDDLE ORDOVICIAN
Ocg CORMACKS LAKE COMPLEX (> 483 Ma)
 Mainly well-banded granodiorite to tonalite orthogneiss (ca. 483 Ma).
Ocmi Metagabbro, orthopyroxene- and/or clinopyroxene-bearing.
COcmv Strongly foliated, locally allowed or layered mafic volcanic rock. Probably also includes minor diabase and gabbro. Generally intensely metamorphosed into garnet and/or orthopyroxene-bearing amphibolite. Some mafic rocks contain layers rich in goethite, which suggest that some volcanic rocks experienced pre-metamorphic hydrothermal alteration.

DENNIS POND COMPLEX (> 486 Ma)
COdps Mainly gabbro. Includes minor troctolite and trondhjemite.
COdpsr Mainly layered ultramafic rock. Includes dunite, harzburgite, thezolite, wehrlite, wadsite, pyroxenite. Locally contains chromite-rich layers. Also includes minor gabbro and trondhjemite. Variably metamorphosed and altered to anthophyllite, cumingtonite, serpentinite, talc, and chlorite.
NODpsm Characteristically unlayered and chaotic; strongly metamorphosed and migmatitic mélange, consisting of abundant large blocks and cobbles of mafic rocks in a pelitic to sericitic matrix.
NODps Mainly chlorite and muscovite bearing schistose mixture of granulite and metasediments, with local tectonic inclusions of other Dennis Pond complex units; the metasediments in part are correlative to Mischief Mélange of Hall and van Staal (1990).
NOSgs Tectonic zone consisting of granulite orthogneiss and calc-silicates, strongly deformed paragneisses, orthopyroxene, garnet, and anorthosite; mylonite and calc-silicate protomylonites are principally sedimentary (NOCps), but also granulite (COdps), and anorthosite (MSMA); may include minor amounts of Silurian granitoids (SG).

NEOPROTEROZOIC AND OLDER
MSMA STEEL MOUNTAIN COMPLEX
 Massive to strongly foliated pegmatitic white to lilac anorthosite, gabbroic anorthosite, and anorthosite gneiss, cumulate textures along the margin.
MNCL UNDIFFERENTIATED CORNER BROOK LAKE COMPLEX (ca. 1510 Ma)
 Quartz-feldspathic gneiss and migmatite, with interbedded amphibolite, minor quartzite, marble, and quartz-feldspar-mica paragneiss, orthopyroxene-bearing gneisses may include gneisses related to Here Hill Complex (Nery) (see OF421); a local occurrence of apite and pegmatite dykes.

Geological boundary (approximate, assumed, gradational)
 Fault, unlined (assumed)
 Fault, approximate (sinistral)
 Unconformity
 Outcrop (this study, compiled)
 Bedding, top known (overturned)
 Bedding, top unknown (inclined, vertical)
 Foliation: S₁, main and/or extension (inclined, vertical)
 Lineation: main, mineral or extension
 Z-fold, plunge and plunge direction (generation unknown)
 M-fold, plunge and plunge direction (generation unknown)
 U/Pb zircon age determination
 Mineral occurrence; National Mineral Inventory Number

REFERENCES

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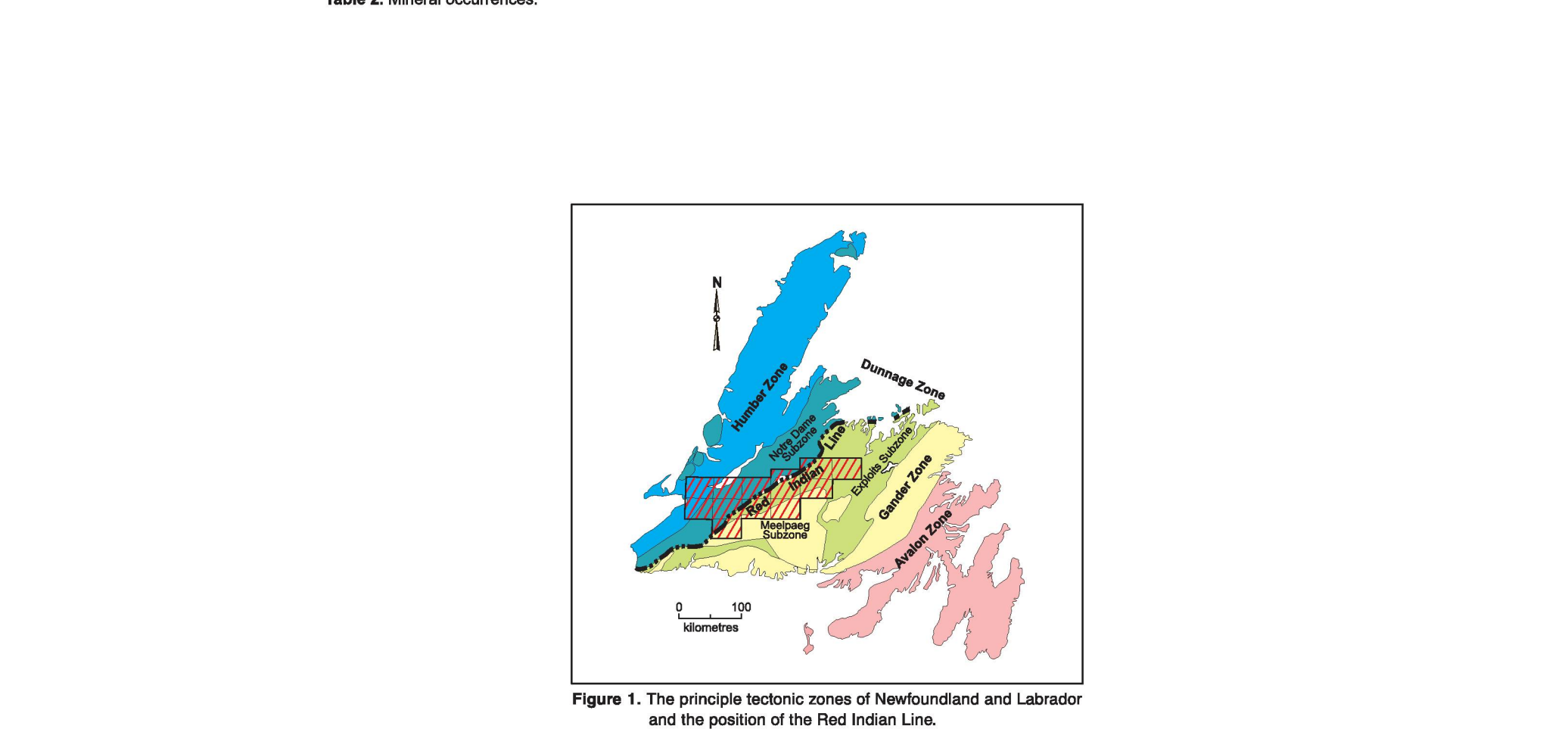
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Sample number	NL geochron database	UTM (zone 21, NAD 83) easting	UTM (zone 21, NAD 83) northing	Crystallization age / Ma	Year of analysis	Laboratory	Reference
81-HPAD-218		424130	5367602	431 ± 2	1990	ROM	Dunning et al., (1990)
POB-SP-02-738 (Z7516)		421893	5357950	ca. 463	2002	GSC	McNicol and Pehrson, unpublished
POB-SP-02-782 (Z7523)		423137	5357921	ca. 430	2002	GSC	McNicol and Pehrson, unpublished

Table 1. U-Pb geochronology.

Mineral Occurrence ¹	UTM (zone 21, NAD 83) easting	UTM (zone 21, NAD 83) northing	Name	Commodity	Status
Au 001	403227	5358530	Flat Bay Brook	Au, Ag, Cu, Sb, As	Showing
Cr 001	412700	5356550	Dennis Pond South Chromite	Chromium	Showing
Fe 001	401450	5361730	Bishop North	Fe, V, Ti	Past producer (dormant)
Fe 002	401050	5361400	Bishop South	Fe, V, Ti	Past producer (dormant)
Fe 003	400800	5361100	Bishop No 3	Fe	Prospect
Fe 004	399800	5359450	Hayes Prospect	Fe, V, Ti	Prospect
Fe 005	399250	5357450	Hudson Prospect	Fe, Cu	Prospect
Fe 006	401750	5360000	Brinly Brook East	Fe	Showing
Fe 007	406550	5369050	Barachois Pond	Fe	Showing
Fe 008	426200	5368100	Southwest Brook South	Fe	Showing
Fe 009	412700	5358900	Dennis Pond South Iron	Fe	Showing
Gyp001	394850	5361000	Sheep Brook	Gypsum, anhydrite	Developed prospect
Gyp002	382450	5358900	Coal Brook	Gypsum, anhydrite	Past producer (dormant)
Pyp01	425550	5317450	Southwest Brook Northeast	Pyrite	Showing

Table 2. Mineral occurrences.



OPEN FILE 1666
GEOLOGY
MAIN GUT
NEWFOUNDLAND AND LABRADOR
 Scale 1:50 000/Echelle 1/50 000

Authors: S.J. Pehrson, A.G. Brem, and C.R. van Staal
 New geology and interpretation by S.J. Pehrson, A.G. Brem, and C.R. van Staal (2000–2010)
 Geological compilation by C.R. van Staal and N. Rogers (2003)
 Pre-existing geological data presented on map compiled from Dunning (1984), Hed and Dunning (1979), and van Staal and Currie (1988)
 Distribution of units and position of geological boundaries in part inferred from geophysical data (Oreash et al., 2001, 2002)

Cartography by P. St-Amour, Data Dissemination Division (DDD)
 Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada
 Digital base map from data compiled by Natural Resources Canada, modified by DDD
 Some geographical names subject to revision
 Magnetic declination 2013, 19°45'W, decreasing 11.3" annually
 Elevations in feet above mean sea level

NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO KNOWLEDGE GEOLOGICAL SURVEY OF CANADA M166

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