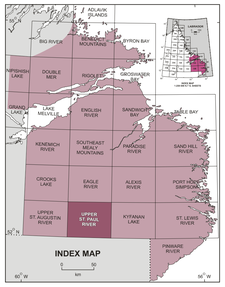
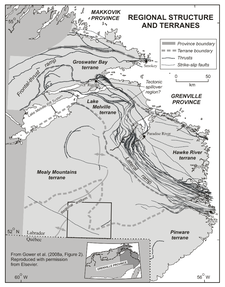
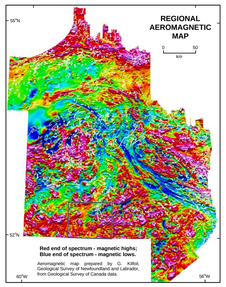
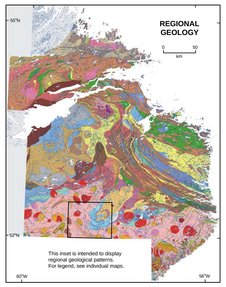
Newfoundland Labrador
NATURAL RESOURCES









MAP 2010-22
OPEN FILE 013B/0030

GEOLOGY OF THE UPPER ST. PAUL RIVER AREA (NTS SHEETS 13B/01, 02, 07 & 08) SOUTHEASTERN LABRADOR

LEGEND

DEVONIAN (?)

Dd — Sandwich Bay and Battle Harbour dykes

EARLY CAMBRIAN

Ckr — Forteau Formation

Cbr — Bradore Formation (subdivided into L'Anse-au-Clair, Crow Head and Blanc-Sablon members)

NEOPROTEROZOIC – EARLY CAMBRIAN

Nc/Lc — Lighthouse Cove Formation

NCBa — Bateau Formation

NEOPROTEROZOIC

NDmm | NGi | NSb

NDm — Double Mer Formation

NGi — Gilbert arkose

NSb — Sandwich Bay conglomerate

Nc | Ntd | Nq

Nc — Clastic dykes

Ntd — Long Range dykes

Nq — Quartz veins

LATE MESOPROTEROZOIC (M_3 1200 – 900 Ma)

LATE POST-GRENVILLIAN INTRUSIONS (M_{3D} ca. 975 – 955 Ma)
e.g., Chateau Pond granite

M_{3}gp | M_{3}qf | M_{3}ln | M_{3}mm | M_{3}mq | M_{3}mz | M_{3}yq | M_{3}d

M_{3}gp — Massive to weakly foliated megacrystic/porphyritic granite to quartz monzonite

M_{3}gr — Massive to weakly foliated granite to alkali-feldspar granite

M_{3}ln — Massive to weakly foliated leucogabbro to leuconorite

M_{3}mm — Massive to weakly foliated monzogabbro and monzonorite

M_{3}mq — Massive to weakly foliated quartz monzonite; mantled feldspar textures

M_{3}mz — Massive to weakly foliated monzonite to monzodiorite

M_{3}yq — Massive to weakly foliated syenite, quartz syenite and alkali-feldspar quartz syenite

M_{3}d — Unnamed mafic dykes

EARLY POST-GRENVILLIAN INTRUSIONS (M_{2C} ca. 985 – 975 Ma)
e.g., Beaver Brook and Picton Pond plutons

M_{2}gr | M_{2}ln | M_{2}mm | M_{2}mq | M_{2}rg | M_{2}yq | M_{2}d

M_{2}gr — Weakly to moderately foliated granite to alkali-feldspar granite

M_{2}ln — Weakly to moderately foliated leucogabbro to leuconorite

M_{2}mm — Weakly to moderately foliated monzogabbro to monzonorite

M_{2}mq — Weakly to moderately foliated monzonite to quartz monzonite

M_{2}rg — Weakly to moderately foliated gabbro, norite and troctolite

M_{2}yq — Weakly to moderately foliated syenite, quartz syenite and alkali-feldspar syenite

M_{2}d — L'Anse-au-Diable, York Point, Gilbert Bay mafic dykes

SYN-GRENVILLIAN INTRUSIONS (M_{2B} ca. 1085 – 985 Ma)

M_{2B}gd | M_{2B}di | M_{2B}gr | M_{2B}ln | M_{2B}d

M_{2B}gd — Moderately to strongly foliated granodiorite to quartz diorite

M_{2B}gb — Moderately to strongly foliated megacrystic/porphyritic granodiorite to quartz diorite

M_{2B}gr — Moderately to strongly foliated granite to alkali-feldspar granite

M_{2B}yn — Moderately to strongly foliated aegerine- or nepheline-bearing syenite

M_{2B}d — Unnamed mafic dykes (Makkovik Province and adjacent Grenville Province)

PRE-GRENVILLIAN INTRUSIONS (M_{1B} ca. 1200 – 1085 Ma)
e.g., Gilbert Bay pluton

M_{1B}gr | M_{1B}mm

M_{1B}gr — Weakly to strongly foliated granite

M_{1B}mm — Weakly to strongly foliated monzonite to monzonorite

MIDDLE MESOPROTEROZOIC (M_2 1350 – 1200 Ma)
e.g., Upper North River intrusion

M_{2}gr | M_{2}rg | M_{2}yq | M_{2}d

M_{2}gr — Weakly to strongly foliated granite and alkali-feldspar granite

M_{2}rg — Weakly to strongly foliated gabbronorite (in database only - Lourdes-de-Blanc-Sablon intrusion, Quebec)

M_{2}yq — Weakly to strongly foliated syenite, quartz syenite and alkali-feldspar syenite

M_{2}d — Meaky dykes

EARLY MESOPROTEROZOIC (M_1 1600 – 1350 Ma)
e.g., Upper Paradise River, Kyfanan Lake and 138/12 intrusions, and Michael Gabbro

M_{1}an | M_{1}am | M_{1}dr | M_{1}gb | M_{1}gr | M_{1}ln | M_{1}mm | M_{1}mq | M_{1}mz | M_{1}rg | M_{1}qam | M_{1}yq | M_{1}d

M_{1}an — Massive or weakly foliated anorthosite to leucogabbronorite, indistinctly layered in places

M_{1}am — Weakly to markedly foliated amphibolite, plus leucocratic and melanocratic variants; granulite facies equivalents

M_{1}dr — Massive, weakly or strongly foliated diorite to amphibolite, *may be* metamorphic derivative of monzodiorite or leucogabbronorite

M_{1}gb — Massive, weakly or strongly foliated megacrystic/porphyritic granitoid rocks

M_{1}gr — Massive, weakly or strongly foliated granite to quartz monzonite

M_{1}ln — Massive, weakly or strongly foliated leucogabbronorite and anorthositic gabbro, locally grading into gabbronorite, locally coronitic

M_{1}mm — Moderately to strongly foliated monzonorite

M_{1}mq — Moderately to strongly foliated monzonite to quartz monzonite

M_{1}mz — Moderately to strongly foliated monzonite to monzodiorite

M_{1}rg — Massive to strongly foliated gabbro, norite and troctolite, commonly layered; subophitic and locally coronitic; includes recrystallized derivatives retaining igneous textures

M_{1}qam — Massive, weakly or strongly foliated ultramafic rocks, commonly layered and locally showing cumulate textures

M_{1}yq — Moderately to strongly foliated syenite and quartz syenite

M_{1}d — Mafic dykes; includes Michael Gabbro

LATE PALEOPROTEROZOIC AND EARLY MESOPROTEROZOIC (PM 1800 – 1350 Ma)
(Ages generally unknown, but ca. 1650 Ma and 1500 – 1470 Ma rocks identified)
RECRYSTALLIZED IGNEOUS ROCKS

PMdr | PMgd | PMgb | PMgr | PMln | PMmd | PMmq | PMrg | PMtn | PMyq | PMam

PMdr — Medium-grained, equigranular, recrystallized weakly to strongly foliated diorite, quartz diorite and to leucoamphibolite

PMgd — Weakly to strongly foliated granite to granodiorite

PMgb — Megacrystic/porphyritic recrystallized granite to quartz monzonite

PMgr — Medium- to coarse-grained, recrystallized weakly to strongly foliated granite and alkali-feldspar granite

PMln — Medium- to coarse-grained, recrystallized leuconorite, leucogabbro

PMmd — Medium- to coarse-grained, recrystallized, weakly to strongly foliated, monzodiorite to monzonite

PMmq — Medium- to coarse-grained, recrystallized, weakly to strongly foliated quartz monzonite

PMrg — Medium- to coarse-grained, gabbro, norite and troctolite

PMtn — Medium- to coarse-grained, recrystallized, weakly to strongly foliated tonalite to granodiorite

PMyq — Medium- to coarse-grained, recrystallized, weakly to strongly foliated syenite, alkali-feldspar syenite and quartz syenite

PMam — Amphibolite; generally thought to be derived from mafic dykes

SUPRACRUSTAL ROCKS PROVISIONALLY ASSIGNED AS PITTS HARBOUR GROUP

PMsc | PMsp | PMsq | PMss | PMsx | PMvf | PMvm

Sedimentary protolith

PMsc — Calc-silicate rocks, compositionally layered, medium grained

PMsp — Pelitic schist and gneiss

PMsq — Quartzite, meta-arkose, thin to thick bedded

PMss — Quartz-feldspar psammitic schist and gneiss; medium grained

PMsx — Coarse-grained to pegmatitic-granitic material (dilatexite), characteristically associated with psammitic gneiss and quartzite

Volcanic protolith

PMvf — Fine- to medium-grained, banded quartzofeldspathic rocks; locally having lensoid shapes, possibly indicating felsic volcaniclastic protolith

PMvm — Fine- to medium-grained, banded amphibolite containing quartz-feldspar layers and calc-silicate pods; interpreted as mafic volcanic rocks

LATE PALEOPROTEROZOIC (P_3 1800 – 1600 Ma)

LATE LABRADORIAN GRANITOID INTRUSIONS (P_{3C} 1650 – 1600 Ma)
e.g., Paradise Arm intrusion and Hawke Bay intrusive suite

P_{3C}gr | P_{3C}ga | P_{3C}gd | P_{3C}gb | P_{3C}gr | P_{3C}mm | P_{3C}mq | P_{3C}mz | P_{3C}yq | P_{3C}d

P_{3C}dr — Diorite, quartz diorite and tonalite; locally grading into leucogabbronorite

P_{3C}ga — Alkali-feldspar granite, granite and quartz syenite forming discrete plutons

P_{3C}gd — Granite to granodiorite forming discrete unmigmatized plutons

P_{3C}gb — Megacrystic/porphyritic granite to granodiorite

P_{3C}gr — Granite and minor alkali-feldspar granite

P_{3C}mm — Monzonorite and monzogabbro

P_{3C}mq — Quartz monzonite, including rare quartz syenite

P_{3C}mz — Monzonite, including minor syenite

P_{3C}yq — Syenite to quartz syenite forming discrete plutons

P_{3C}d — Unnamed mafic dykes

LATE LABRADORIAN ANORTHOSITIC AND MAFIC INTRUSIONS (P_{3C} 1660 – 1600 Ma)
e.g., White Bear Arm complex and Sand Hill Big Pond intrusion

P_{3C}ag | P_{3C}am | P_{3C}an | P_{3C}rg | P_{3C}ln | P_{3C}lt | P_{3C}um

P_{3C}ag — Weakly to markedly foliated mafic granulite, plus leucocratic and melanocratic variants

P_{3C}am — Weakly to markedly foliated amphibolite, plus leucocratic and melanocratic variants

P_{3C}an — Massive to strongly foliated anorthosite and leucogabbronorite

P_{3C}rg — Massive to strongly foliated gabbro and norite, commonly layered; subophitic and locally coronitic

P_{3C}ln — Primary textured to recrystallized leucogabbronorite and leucogabbro; coronitic locally

P_{3C}lt — Primary textured to recrystallized leucotroctolite

P_{3C}um — Massive, weakly or strongly foliated ultramafic rocks, commonly layered and locally showing cumulate textures

EARLY LABRADORIAN MAFIC AND ASSOCIATED ROCKS (P_{3B} 1710 – 1660 Ma)
e.g., Alaxis River anorthosite (assigned here although age is uncertain)

P_{3B}ag | P_{3B}ln | P_{3B}lt | P_{3B}mm | P_{3B}rg | P_{3B}um

P_{3B}aq — Weakly foliated to gneissic amphibolite and mafic granulite, plus leucocratic and melanocratic variants

P_{3B}an — Weakly foliated to gneissic anorthosite and leucogabbronorite

P_{3B}ln — Weakly foliated to gneissic leucogabbronorite and leucogabbro; coronitic locally

P_{3B}mm — Weakly foliated to gneissic monzonorite and monzogabbro

P_{3B}rg — Weakly foliated to gneissic gabbro and norite

P_{3B}um — Massive, weakly or strongly foliated ultramafic rocks, commonly layered and locally showing cumulate textures

EARLY LABRADORIAN GRANITOID AND ASSOCIATED ROCKS (ca. 1678 and 1671 Ma)
e.g., Neveslik Island and Red Island events

P_{3eB}dr | P_{3eB}gd | P_{3eB}gb | P_{3eB}gr | P_{3eB}mq | P_{3eB}rz | P_{3eB}ya | P_{3eB}am

P_{3eB}dr — Foliated to gneissic diorite to quartz diorite, and compositionally equivalent well-banded gneiss; in part derived from leucogabbronorite

P_{3eB}gd — Foliated to gneissic granodiorite and compositionally equivalent well-banded gneiss

P_{3eB}gb — Foliated to gneissic megacrystic/porphyritic granitoid rocks, augen gneiss

P_{3eB}gr — Foliated to gneissic granite and alkali-feldspar granite, and compositionally equivalent well-banded gneiss

P_{3eB}mq — Foliated to gneissic quartz monzonite, grading into diorite or syenite, and compositionally equivalent well-banded gneiss

P_{3eB}mz — Foliated to gneissic monzonite and monzodiorite, and compositionally equivalent well-banded gneiss

P_{3eB}ya — Foliated to gneissic syenite, alkali-feldspar syenite and alkali-feldspar granite, and compositionally equivalent well-banded gneiss

P_{3eB}am — Amphibolite skialiths, lenses and layers (mainly remnants of former dykes)

PRE-LABRADORIAN GRANITOID ROCKS (P_{3A} 1800 – 1710 Ma)

P_{3A}aq | P_{3A}dr | P_{3A}gd | P_{3A}gb | P_{3A}gr | P_{3A}ln | P_{3A}am

P_{3A}ag — Mafic granulite skialiths, lenses and layers

P_{3A}dr — Foliated to gneissic diorite to quartz diorite, and compositionally equivalent well-banded gneiss

P_{3A}gd — Foliated to gneissic granodiorite and compositionally equivalent well-banded gneiss

P_{3A}gb — Foliated to gneissic megacrystic/porphyritic granitoid rocks, augen gneiss

P_{3A}gr — Foliated to gneissic granite and alkali-feldspar granite, and compositionally equivalent well-banded gneiss

P_{3A}ln — Foliated to gneissic leucogabbronorite, and compositionally equivalent well-banded gneiss

P_{3A}am — Amphibolite skialiths, lenses and layers (mainly remnants of former dykes)

PRE-LABRADORIAN SUPRACRUSTAL ROCKS (P_{3A} 1800 – 1710 Ma)
(Age uncertain; certainly pre-1670 Ma, probably 1800 – 1770 Ma)

P_{3A}sc | P_{3A}sp | P_{3A}sq | P_{3A}ss | P_{3A}sx | P_{3A}vf | P_{3A}vm

Sedimentary protolith

P_{3A}sc — Calc-silicate rocks, compositionally layered, medium grained

P_{3A}sp — Fine- to medium-grained pelitic schist and gneiss

P_{3A}sq — Quartzite, meta-arkose, thin to thick bedded

P_{3A}ss — Quartz-feldspar psammitic schist and gneiss; medium grained and commonly rusty-weathering

P_{3A}sx — Metasedimentary datexite; coarse grained to pegmatitic and characteristically white-weathering

Volcanic protolith

P_{3A}vf — Fine- to medium-grained, banded quartzofeldspathic rocks; locally have lensoid shapes, possibly indicating felsic volcaniclastic protolith

P_{3A}vm — Fine- to medium-grained, banded amphibolite containing quartz-feldspar layers and calc-silicate pods; interpreted as mafic volcanic rocks

MID PALEOPROTEROZOIC (P_2 2100 – 1800 Ma)

LATE MID PALEOPROTEROZOIC (P_{2C} 1900 – 1800 Ma)
Granitoid and related intrusive rocks

P_{2C}dr | P_{2C}ga | P_{2C}gd | P_{2C}gb | P_{2C}gr | P_{2C}mq | P_{2C}mz | P_{2C}ya | P_{2C}yq

P_{2C}dr — Foliated to gneissic diorite to quartz diorite, and compositionally equivalent well-banded gneiss

P_{2C}ga — Alkali-feldspar granite, granite and quartz syenite

P_{2C}gd — Foliated to gneissic granodiorite and compositionally equivalent well-banded gneiss

P_{2C}gb — Foliated to gneissic megacrystic/porphyritic granitoid rocks, augen gneiss

P_{2C}gr — Foliated to gneissic granite and alkali-feldspar granite, and compositionally equivalent well-banded gneiss

P_{2C}mq — Foliated to gneissic quartz monzonite, grading into diorite or syenite, and compositionally equivalent well-banded gneiss

P_{2C}mz — Foliated to gneissic monzonite to monzodiorite, and compositionally equivalent well-banded gneiss

P_{2C}ya — Foliated to gneissic syenite to alkali-feldspar syenite, and compositionally equivalent well-banded gneiss

P_{2C}yq — Syenite to quartz syenite

Mafic and associated intrusive rocks

P_{2C}am | P_{2C}rg | P_{2C}d

P_{2C}am — Amphibolite skialiths, lenses and layers (mainly remnants of former dykes)

P_{2C}rg — Massive to strongly foliated gabbro and norite, commonly layered; subophitic and locally coronitic

P_{2C}d — Unnamed mafic dykes

Sedimentary protolith

P_{2C}sc | P_{2C}sp | P_{2C}sq | P_{2C}ss

P_{2C}sc — Calc-silicate rocks, compositionally layered, medium grained

P_{2C}sp — Conglomerate and agglomerate, partially of volcanic origin

P_{2C}sq — Fine- to medium-grained pelitic schist and gneiss

P_{2C}ss — Quartzite, meta-arkose, thin to thick bedded

P_{2C}ss — Quartz-feldspar psammitic schist and gneiss; medium grained and commonly rusty-weathering

Volcanic protolith

P_{2C}vb | P_{2C}vf | P_{2C}vl | P_{2C}vm | P_{2C}vp

P_{2C}vb — Volcanic breccia, angular clasts, grading into agglomerate

P_{2C}vf — Fine- to medium-grained, banded quartzofeldspathic rocks; locally have lensoid shapes, possibly indicating felsic volcaniclastic protolith

P_{2C}vl — Intermediate volcanic rocks

P_{2C}vm — Fine- to medium-grained, banded amphibolite containing quartz-feldspar layers and calc-silicate pods; interpreted as mafic volcanic rocks

P_{2C}vp — Felsic volcanic porphyry interpreted to be hypabyssal

NOTES

1. Legend is common to all maps (Map 2010-01 to Map 2010-25), but all units do not appear on every map.
2. Uncoloured units do not appear as polygons on maps, but are in unit-designator strings in database.
3. Some mafic dykes also shown as polygons (especially where orientation is unknown).

SYMBOLS

- *Geological contact*
- *Normal fault*
- *Strike-slip fault*
- *Thrust fault*
- *Normal fault reactivating thrust*
- *Fold axial plane (1st, 2nd, 3rd generation)**
- *S-fold axis (1st generation)*
- *Z-fold axis (1st generation)*
- *Dyke (affinity unspecified)*
- *Fault (sense of movement unknown, dextral, sinistral, normal)*
- *Joint*
- *Linear fabric (1st, 2nd, 3rd generation)**
- *Fold axis (1st, 2nd, 3rd generation)**
- *Slickenside*
- *Geological data station*
- *Geological data station (no fabric measured)*
- *Bedding (tops known, unknown)*
- *Enclave*
- *Foliation (1st, 2nd, 3rd generation)**
- *Gneissosity (1st, 2nd generation)**
- *Igneous layering (tops known, unknown)*
- *Vein*
- *Shear zone (sense of movement unknown, dextral, sinistral, reverse)*
- *Mineral occurrence*
- *Geochronology location*

MINERAL OCCURRENCE ABBREVIATIONS

Amz	Amazonite
Au	Gold
Bt	Biotite
Cly	Clay
Cr	Chromium
Cu	Copper
Fe	Iron
Fel	Feldspar
Fl	Fluorite
Grt	Garnet
Ilm	Ilmenite
Lst	Limestone
Mgt	Magnetite
Mo	Molybdenite
Ms	Muscovite
Neph	Nepheline
Ni	Nickel
Pb	Lead
Pd	Palladium
Po	Pyrrhotite
Pt	Platinum
Pyr	Pyrite
Saph	Sapphire
Si	Silica
Sm	Dimension stone
Th	Thorium
Tourm	Tourmaline
Tpz	Topaz
U	Uranium
V	Vanadium
Zn	Zinc
Zr	Zirconium
(?)	Occurrence reported but validity suspect

NOTE:
All mineral occurrence and structural symbols do not appear on each map.

Vertical structures use 90° dip value.

* Generation of structure only applicable at observation site.

AGE GENERALLY POORLY CONSTRAINED

β | δ

β — Brittle deformation; cataclastic rocks, pseudotachylite

δ — Ductile deformation; mylonite, straight gneiss

AGE GENERALLY POORLY CONSTRAINED

f | k | p | q

f — Aplite, microgranite (felsite)

k — Carbonate vein

p — Pegmatite

q — Quartz vein

UPPER ST. PAUL RIVER

A preliminary coloured version of this map appeared page-size, together with a report, based on data collected during the 1999 field season (Gower, 2000). The present map also incorporates field data collected by Eade (1962), making use of original field notes recorded by K.E. Eade and assistants. The map is augmented by follow-up examination of stained slabs, petrographic thin sections, whole-rock geochemical analyses, and inclusion of U-Pb geochronological results (Gower et al., 2008b) and previously unpublished Nd-Sm isotopic data (R.A. Creaser, unpublished – see digital database). Localities designated as mineral occurrences are based on observations made during the 1999 field season (see Mineral Occurrence Table; current to 2009).

Since the preliminary report, there has been minor re-interpretation and redefinition of geological boundaries and units. The changes result from a compilation approach applied to the whole of eastern Labrador, and from integration with data from adjacent map areas. Data station locations are based on GPS-supported readings. Geological boundaries are poorly controlled, being positioned from outcrop data and extrapolated using structural observations, regional aeromagnetic data and topographic trends.

As is characteristic of metamorphic and plutonic terranes, individual outcrops are typically very complex, and commonly embody several different rock types. Generally, the unit polygon depicted is based on what was judged to be the dominant rock type present, but this approach was not universally followed, due to the exigencies of specific situations, such as the need to emphasize minor rock types deemed to have high significance. All rock types recorded from any individual outcrop may be determined by consulting the 'Unit designator' string for that locality given in the digital database. The user is alerted to the fact that, in the digital database, no attempt has been made to reconcile rock names applied to field outcrops, versus those applied to stained slabs, or petrographic thin sections. Differences may be due to subsequent, more refined identifications, but other reasons may apply, such the sample (or thin section) not being representative of its source material. Unit designator and polygon labels applied are based on an awareness of such factors.

Recommended citation
Gower, C.F., 2010: Geology of the Upper St. Paul River area (NTS sheets 13B/01, 02, 07 and 08), southeastern Labrador. Geological Survey, Mines Branch, Department of Natural Resources, Government of Newfoundland and Labrador, Map 2010-22, Open File 013B/0030.

Geological cartography by T. Paltanavage, Cartographic Unit, Geological Survey, Department of Natural Resources.

Digital NTS base maps (13B/01, 02, 07 and 08) used for this map are available from Surveys and Mapping Branch, Natural Resources Canada.
Magnetic declination at the centre of the map at the start of 2010 was 22° 01' W.
Elevations are in metres above sea level. Contour interval is 20 metres.
UTM (Universal Transverse Mercator) Grid Zone 21, NAD (North American Datum) 27.

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Copies of this map may be obtained from the Geoscience Publications and Information Section, Geological Survey, Mines Branch, Department of Natural Resources, Government of Newfoundland and Labrador, P.O. Box 8700, St. John's, NL, A1B 4J6, Canada. Email: pub@gov.nl.ca.

NOTE: Map 2010-22 is one of twenty-five maps on the geology of the Grenville Province in eastern Labrador and adjacent eastern Makkovik Province produced by the Geological Survey, Mines Branch, Department of Natural Resources, Government of Newfoundland and Labrador.

Mines Branch website: http://www.nr.gov.nl.ca/nr/mines/index.html.

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2008a: Indentor tectonism in the eastern Grenville Province. Precambrian Research, Volume 167, pages 201-212.

Gower, C.F., Kamo, S., Kwok, K. and Krogh, T.E.
2008b: Proterozoic southward accretion and Grenvillian orogenesis in the interior Grenville Province in eastern Labrador; evidence from U-Pb geochronological investigations. Precambrian Research, Volume 165, pages 61-95.

MINERAL OCCURRENCE DATA SOURCES

Inventory No.	*Map label*	*Status*	*Easting*	*Northing*	*Reference*
013B/01/Pyr/001	Pyr	Indication	406398	5780182	GSNL (field notes; GS99-341)
013B/07/Cu-001	Cu	Indication	388004	5815168	GSNL (field notes; GS99-233)
013B/07/Mo/001	Bt	Indication	391643	5806282	GSNL (field notes; GS99-155)

GSNL (Geological Survey of Newfoundland and Labrador)

GEOLOGICAL DATA SOURCES

Personnel	*Stations*	*Year(s) data collected*	*Project name*	*Mapping references*
C.F. Gower (project geologist)	369	1999	Upper St. Paul River	Gower (2000)
D. Mahaffy (assistant geologist)	9	1961	Battle Harbour - Cartwright	Eade (1962)
S. Lowey (supporting geologist)	9	1999	Upper St. Paul River	Gower (2000)
K.E. Eade (project geologist)	4	1961	Battle Harbour - Cartwright	Eade (1962)
C. Reynolds (assistant geologist)	3	1961	Battle Harbour - Cartwright	Eade (1962)

ISOTOPIC DATA

U/Pb Geochronology

Sample number
Rock type
Inherited/detrital age
Emplacement age
Metamorphism/closure/cooling/undefined
Pb loss age

Mineral abbreviations:
a - allanite
b - baddeleyite
m - monazite
r - rutile
t - titanite
x - xenotime
z - zircon
Concordia abbreviations:
c - concordant
nc - near-concordant
l.i. - lower intercept
u.i. - upper intercept

Nd/Sm Geochronology

Sample number
Rock type
Epsilon value
Depleted mantle age
Age of rock
(? age inferred)

Rb/Sr Geochronology

Sample number
Rock type
Initial Sr ratio calculated from time t
Age of rock
(? age inferred)
(* one of two or more analyses)

K/Ar Geochronology

Sample number
Rock type
Age
Mineral; Method
(* average of two or more analyses)

Biot - biotite
Hbl - hornblende
Musc - muscovite
WR - whole rock
plat - plateau age
tot. gas - total gas age

ISOTOPIC DATA SOURCES

Method	*Reference(s)*	*Samples*
U-Pb	Gower et al. (2008b)	CG99-050A; CG99-050B; CG99-195A; CG99-195B; CG99-254; CG99-259A; CG99-259B; CG99-259C; CG99-364
Nd-Sm	Creaser (unpublished)	CG99-195A; CG99-254; CG99-364
Rb-Sr	no data	
K-Ar	no data	