MAP 2011-30

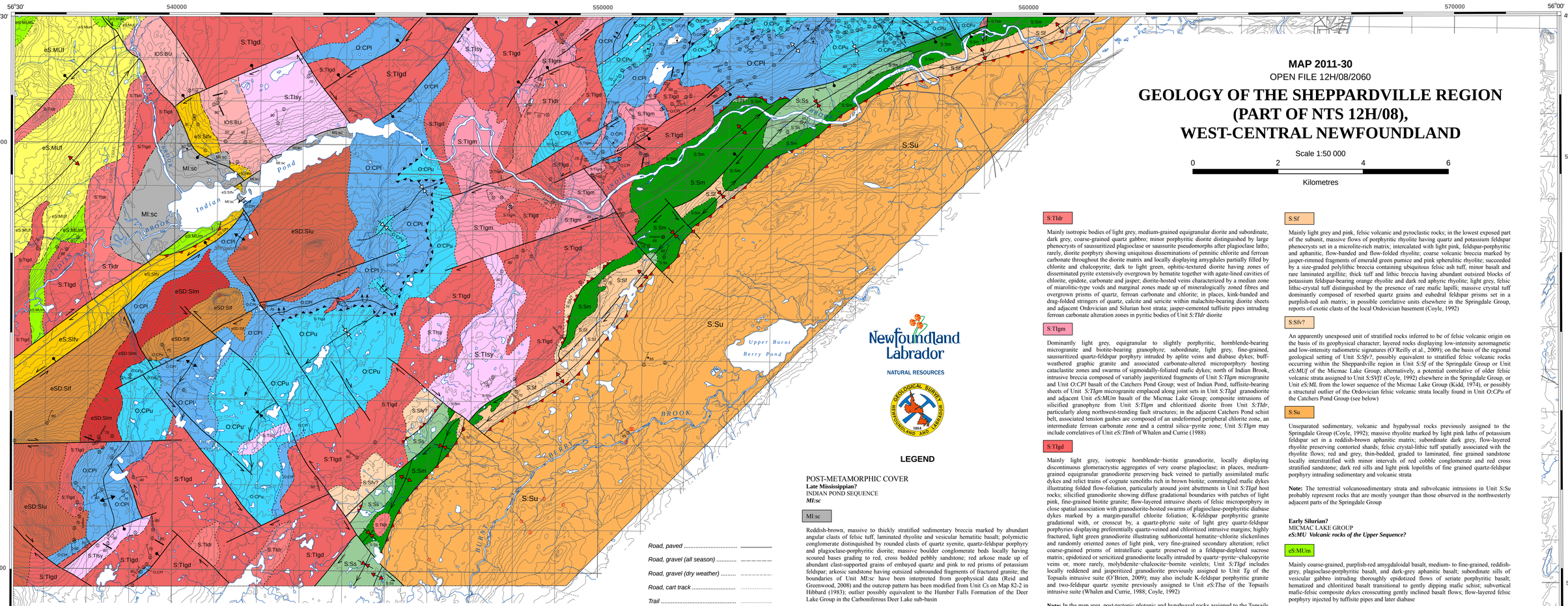
OPEN FILE 12H/08/2060

GEOLOGY OF THE SHEPPARDVILLE REGION (PART OF NTS 12H/08), WEST-CENTRAL NEWFOUNDLAND

Scale 1:50 000

0 2 4 6

Kilometres



Road, paved .....

Road, gravel (all season) .....

Road, gravel (dry weather) .....

Road, cart track .....

Trail .....

SYMBOLS

Stratigraphical or intrusive contact (approximate) .....

Stratigraphical or intrusive contact (assumed) .....

Unconformity (approximate) .....

Unconformity (assumed) .....

Limit of geological mapping .....

Major structures in posttectonic intrusive and older rocks

Transcurrent or lateral fault (sinistral strike-slip; approximate) .....

Transcurrent or lateral fault (dextral strike-slip; approximate) .....

Normal oblique-slip fault (solid circle in dip direction of high-angle structures or on down-dropped side of subvertical structures; arrow indicates sense of fault-parallel offset in plan) .....

Major structures in Silurian stratified rocks

Axial trace of anticline (red fill on fold symbol; upright; plunge direction of fold axis indicated) .....

Axial trace of syncline (red fill on fold symbol; upright; plunge direction of fold axis indicated) .....

Thrust fault (double red teeth indicate direction of dip; assumed) .....

High-angle reverse fault (red barbs drawn on hanging wall; teeth in direction of dip; approximate) .....

Major structures in Ordovician stratified rocks

Axial trace of early-formed anticline with plunge direction indicated (upright; overturned; locally neutral or synformal; includes M-folds) .....

Axial trace of early-formed syncline with plunge direction indicated (upright; overturned; locally neutral or antiformal; includes W-folds) .....

Axial trace of late-formed antiform with plunge direction indicated (upright; approximate) .....

Axial trace of late-formed synform with plunge direction indicated (upright; approximate) .....

Fold axis (arrow head in plunge direction) .....

Folded early-formed thrust (foliation-parallel fault; solid barbs drawn on hanging wall; defined) .....

Folded early-formed thrust (foliation-parallel fault; solid barbs drawn on hanging wall; assumed) .....

Late-formed reverse fault (open barbs drawn in dip direction; defined) .....

Minor structures

Bedding (tops unknown, known) .....

Foliation or cleavage (generation unknown, 1st) .....

Fault .....

Joint, dip known .....

Dyke .....

Vein .....

Exposure

O'Brien (2008, 2009) .....

Coyle (1992) .....

MODS .....

Dickson and Kerr (2007) .....

Geology by B. H. O'Brien (2008, 2009); field assistance by J. Flight (2008) and J. Haley (2009). Geological point data assembled by C. Gidge (2011).

GIS/digital cartography by A. Paltanavage.

Base map in digital format published by Geomatics Canada, Earth Sciences Sector, Natural Resources Canada, Ottawa.

Approximate magnetic declination, 2011, at centre of map 20° 34' west, decreasing 12.3' annually.

Elevations in metres above mean sea level. Contour interval 10 metres.

Universal Transverse Mercator projection (UTM) Zone 21.

North American Datum (NAD) 1927.

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Department Website: http://www.nr.gov.nl.ca/nr
Geological Survey Website: http://www.nr.gov.nl.ca/nr/mines/Geoscience/

This map is subject to revision and modification. Symbols for bedding and selected minor structures are plotted near the exposure location.

Published 2011

Recommended Citation
O'Brien, B. H.
2011: Geology of the Sheppardville region (part of NTS 12H/08), west-central Newfoundland. Scale 1:50 000. Government of Newfoundland and Labrador, Department of Natural Resources, Geological Survey, Map 2011-30, Open File 12H/08/2060.

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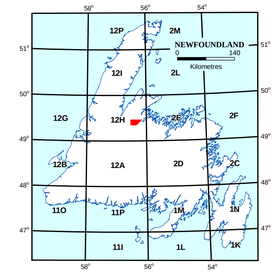

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Newfoundland Labrador
NATURAL RESOURCES

LEGEND

POST-METAMORPHIC COVER

Late Mississippian?
INDIAN POND SEQUENCE
MI:sc

MI:sc

Reddish-brown, massive to thickly stratified sedimentary breccia marked by abundant angular clasts of felsic tuff, laminated rhyolite and vesicular hematitic basalt; polymictic conglomerate distinguished by rounded clasts of quartz syenite, quartz-feldspar porphyry and plagioclase-porphyritic diorite; massive boulder conglomerate beds locally having scoured bases grading to red, cross bedded pebbly sandstone; red arkose made up of abundant clast-supported grains of embayed quartz and pink to red prisms of potassium feldspar; arkosic sandstone having outsized subrounded fragments of fractured granite; the boundaries of Unit *MI:sc* have been interpreted from geophysical data (Reid and Greenwood, 2008) and the outcrop pattern has been modified from Unit *Cs* on Map 82-2 in Hibbard (1983); outlier possibly equivalent to the Humber Falls Formation of the Deer Lake Group in the Carboniferous Deer Lake sub-basin

POST-TECTONIC INTRUSIVE ROCKS

Early Silurian to Early Devonian?
SHEFFIELD LAKE COMPLEX
eSD:SI Sheffield Lake Plutonic Suite

eSD:Slf

Mainly isotropic felsic plutonic bodies having distinctive inclusion-free potassium feldspar rims around a crystal core of twinned, exsolved or partially hematized plagioclase; the ferromagnesium mineral-rich matrix is typically composed of clinopyroxene grains intergrown with intratelluric amphibole clots; Unit *eSD:Slf* includes pink to red, medium-grained, equigranular to feldspar-phyric granite, syenite and quartz-feldspar porphyry that host fault gouge zones intruded by composite mafic-felsic dykes; quartz-bearing dikes characterized by large phenocrysts of olivine displaying a serpentine-hornblende corona; light grey microgranite, granophyre and graphic granite having relict clinopyroxene overgrown by dark green amphibole and brown biotite; pink, medium- to fine-grained, quartz-phyric, perthite-rich syenite having abundant magnetite and illmenite; geophysically characterized by a relatively high aeromagnetic signature and, locally, an extremely high radiometric signature (Reid and Greenwood, 2008); Unit *eSD:Slf* may include saussuritized, carbonitized, silicified and hematized bodies of quartz-feldspar porphyry correlative with Unit *eS:Slp* of Coyle et al.(1986) or small enclaves of felsic volcanic rocks containing secondary graphite and abundant chlorite in open-space quartz veinlets; the unit may also include peralkaline felsic plutonic and hypabyssal rocks (Whalen and Currie, 1988) which may contain fayalite, aegerine, magnetite, riebeckite or arfvedsonite in addition to two feldspars, calcite and fluorite (Coyle, 1992)

eSD:Slm

Mainly isotropic mafic plutonic bodies, particularly a mafic porphyry phase characterized by coarse clinopyroxene phenocrysts; Unit *eSD:Slm* includes dark grey, equigranular, medium- to fine-grained, two-pyroxene diorite and hornblende-bearing leucodiorite intruded by quartz-bearing aplite veins; within the quartz-poor diorite bodies, hornblende and biotite inclusions are present in the core of large zoned plagioclase phenocrysts mantled by hematite or jasper; pervasively jointed, magnetite-rich, carbonate-altered diorite porphyry bodies marked by matrix-disseminated chlorite, branched chlorite veinlets and chlorite-lined fracture zones that are crosscut by composite diabase dykes; locally, chalcopyrite-filled amygdules in diabase; cumulate-layered porphyritic diorite containing extensive graphite-chlorite-pyrite-quartz veins together with matrix-disseminated pyrite and chalcopyrite; similar hydrothermal alteration also present in adjacent younger bodies of quartz-bearing felsic porphyry also assigned to the *eSD:Sf* plutonic suite

eSD:SIu

Mainly mafic and felsic plutonic rocks adjacent to Unit *eS:Slf* and Unit *eS:Slm* that are grouped together in Unit *eS:SIu* but appear, nevertheless, to be made up of several discrete bodies on the basis of their geophysical properties; magnetic felsic intrusions included within Unit *eS:SIu* are marked, in places, by high total potassium count values (O'Reilly et al., 2009); Unit *eS:SIu* possibly comprises a bimodal intrusive suite similar to the one mapped in the Sheffield Lake complex to the immediate west and north, although back veining and other features indicative of felsic-mafic magma mixing are locally observed within this unit on the outcrop scale

Note 1: In order to make the legend for the Sheffield Lake complex in the Sheppardville area, the term *plutonic suite* is used for three reasons; first, the lack of exposure of the primary intrusive boundaries of these lithodemic units; second, the absence of an undisputable geological record of their relative intrusive order and, third, the uncertainty about whether the internal map units comprise a cogenetic grouping of plutonic rocks, regardless of their age span

Note 2: Rocks included in the plutonic suite of the Sheffield Lake complex are post-tectonic with respect to the symetamorphic structures developed in strata of the Catchers Pond Group

Early to Late Silurian?
TOPSAILS IGNEOUS SUITE
S:TI Topsails Intrusive Suite

S:TIsy

Mainly red and light pink, medium- to fine-grained, porphyritic to equigranular bodies of isotropic quartz syenite, potassium feldspar-phyric syenite, quartz-feldspar porphyry and granophyre; maroon, variably jasperitized, biotite-bearing syenite crosscut by composite dykes of fresh diabase; light pink, feldspar-phyric plutons and minor intrusions of Unit *S:TIsy* having disseminations of dusty hematite throughout the matrix or having deep red, silicious alteration zones arranged bilaterally about systematic joint surfaces; abundant chlorite-hematite-jasper-quartz veinlets in purplish-red, fine-grained syenite sheets; cataclastite zones in syenite, granite and stratified host rocks injected by minor intrusions, such as pyritic felsic microporphyries, fractured aplite dykes and pinnate quartz veins; widespread conjugate dykes of porphyritic and aphanitic diabase

S:TIdr

Mainly isotropic bodies of light grey, medium-grained equigranular diorite and subordinate, dark grey, coarse-grained quartz gabbro; minor porphyritic diorite distinguished by large phenocrysts of saussuritized plagioclase or saussurite pseudomorphs after plagioclase laths; rarely, diorite porphyry showing uniquitous disseminations of pennitic chlorite and ferroan carbonate throughout the diorite matrix and locally displaying amygdules partially filled by chlorite and chalcopyrite; dark to light green, ophitic-textured diorite having zones of disseminated pyrite extensively overgrown by hematite together with agate-lined cavities of chlorite, epidote, carbonate and jasper; diorite-hosted veins characterized by a median zone of miarolitic-type voids and marginal zones made up of mineralogically zoned fibres and overgrown prisms of quartz, ferroan carbonate and chlorite; in places, kink-banded and drag-folded stringers of quartz, calcite and sericite within malachite-bearing diorite sheets and adjacent Ordovician and Silurian host strata; jasper-cemented tuffisite pipes intruding ferroan carbonate alteration zones in pyritic bodies of Unit *S:TIdr* diorite

S:TIgm

Dominantly light grey, equigranular to slightly porphyritic, hornblende-bearing microgranite and biotite-bearing granophyre; subordinate, light grey, fine-grained, saussuritized quartz-feldspar porphyry intruded by aplite veins and diabase dykes; buff-weathered graphic granite and associated carbonate-altered microporphyry hosting cataclastite zones and swarms of sigmoidally-foliated mafic dykes; north of Indian Brook, intrusive breccia composed of variably jasperitized fragments of Unit *S:TIgm* microgranite and Unit *O:CPl* basalt of the Catchers Pond Group; west of Indian Pond, tuffisite-bearing sheets of Unit *S:TIgm* microgranite emplaced along joint sets in Unit *S:TIgd* granodiorite and adjacent Unit *eS:MUm* basalt of the Micmac Lake Group; composite intrusions of silicified granophyre from Unit *S:TIgm* and chloritized diorite from Unit *S:TIdr*, particularly along northwest-trending fault structures; in the adjacent Catchers Pond schist belt, associated tension gashes are composed of an undeformed peripheral chlorite zone, an intermediate ferroan carbonate zone and a central silica–pyrite zone; Unit *S:TIgm* may include correlatives of Unit *eS:TImh* of Whalen and Currie (1988)

S:TIgd

Mainly light grey, isotropic hornblende–biotite granodiorite, locally displaying discontinuous glomeracrystic aggregates of very coarse plagioclase; in places, medium-grained equigranular granodiorite preserving back veined to partially assimilated mafic dykes and relict trains of cognate xenoliths rich in brown biotite; commingled mafic dykes illustrating folded flow-foliation, particularly around joint abuttments in Unit *S:TIgd* host rocks; silicified granodiorite showing diffuse gradational boundaries with patches of light pink, fine-grained biotite granite; flow-layered intrusive sheets of felsic microporphyry in close spatial association with granodiorite-hosted swarms of plagioclase-porphyritic diabase dykes marked by a margin-parallel chlorite foliation; K-feldspar porphyritic granite gradational with, or crosscut by, a quartz-phyric suite of light grey quartz-feldspar porphyries displaying preferentially quartz-veined and chloritized intrusive margins; highly fractured, light green granodiorite illustrating subhorizontal hematite–chlorite slickenlines and randomly oriented zones of light pink, very fine-grained secondary alteration; relict coarse-grained prisms of intratelluric quartz preserved in a feldspar-depleted sucrose matrix; epidotized or sericitized granodiorite locally intruded by quartz–pyrite–chalcopyrite veins or, more rarely, molybdenite–chalcocite–bornite veinlets; Unit *S:TIgd* includes locally reddened and jasperitized granodiorite previously assigned to Unit *Tg* of the Topsails intrusive suite (O'Brien, 2009); may also include K-feldspar porphyritic granite and two-feldspar quartz syenite previously assigned to Unit *eS:TIsa* of the Topsails intrusive suite (Whalen and Currie, 1988; Coyle, 1992)

Note: In the map area, post-tectonic plutonic and hypabyssal rocks assigned to the Topsails intrusive suite are mapped to crosscut regional structures that affect the stratified rocks of the Springdale Group, the Micmac Lake Group and the Sheffield Lake complex

Late Ordovician to Early Silurian?
BURLINGTON GRANODIORITE?
IOS:BU

IOS:BU

Mainly light grey to pink, isotropic, coarse-grained, equigranular to porphyritic hornblende-biotite granodiorite; subordinate, light grey, very coarse-grained, quartz-phyric, hornblende-bearing granodiorite having widely spaced zones of augen schist that are, in places, transitional to mylonite; pervasively fractured granodiorite hosting multi-coloured alteration zones intruded by swarms of relatively fresh aplite dykes and intrusive sheets of felsic porphyry; in certain localities, especially along systematic joint sets, epidotized and chloritized granodiorite passes into strongly hematized granodiorite; gently dipping dykes of aphanitic diabase offset along synmagmatic vertical joints in isotropic granodiorite

Note: Unmetamorphosed granodioritic rocks located to the north of Indian Pond, and included in the Burlington Granodiorite by Hibbard (1983) and Dickson and Kerr (2007), are herein mapped as having intruded stratified rocks of the Micmac Lake Group and the Sheffield Lake complex. They are similar to the isotropic plutonic rocks grouped in the oldest observed part of the Topsails intrusive suite (*Unit S:TIqd; cf. Unit Tg* of O'Brien, 2009) but, following precedence, have been tentatively assigned to Unit *eS:BU* despite being markedly dissimilar to the mylonitized Burlington Granodiorite that occurs to the east of Black Brook in the southern part of NTS 12H/9. Two other smaller bodies of this granodiorite have been previously mapped as having intruded the Catchers Pond Group in the area east of Sheppardville (Hibbard, 1983); however, rather than including them in a southern extension of Unit *eS:BU* on the present map, they have been re-assigned to several younger intrusive units belonging to the Topsails intrusive suite and the Sheffield Lake complex

STRATIFIED ROCKS

Post-Ordovician Terrestrial Overlap Sequences

Early to Middle Silurian
TOPSAILS IGNEOUS SUITE
SPRINGDALE GROUP
S:S Sedimentary and volcanic rocks

S:Ss

Mainly clast-supported polymictic conglomerate interstratified with subordinate matrix-supported pebble conglomerate; lesser amounts of pebbly sandstone having ubiquitous clasts of angular basalt; near the base of the subunit, very thickly stratified, red and grey conglomerate containing rare, well-rounded extrabasinal clasts of granite and gabbro, minor cobbles of grey ignimbrite and orange rhyolite, and ubiquitous purplish-red boulders of variably hematized basalt; massive to thickly stratified sedimentary breccia characterized by basalt clasts displaying internal hematite-rich spherical bands and having concentric leached zones in the matrix surrounding them; medium-bedded red sandstone and grey pebbly sandstone showing irregular zones of hematite locally replacing the sedimentary matrix; in other localities, pre-incorporation redox banding in basalt boulders; yellowish-grey, parallel laminated interbeds of fine grained sandstone within a thin succession of red sandstone lying above the youngest observable conglomerate lenticule; open-spaced veins of chlorite-hematite-calcite-quartz near joint sets in conglomerate and sandstone

S:Sm

Mainly dark grey, light green and purplish-red basalt flows and mafic pyroclastic rocks; volcanic agglomerate illustrating giant blocks of glassy rhyolite and vesicular basalt in the lowest exposed part of the subunit; succeeding vesicular grey basalt and intercalated purplish-red basalt passing into basaltic breccia and mafic tuff; within the mafic pyroclastic strata, some angular grey clasts of flow-layered rhyolite present in addition to the more common dark-green clasts of scoraceous basalt; in places, basalt breccias being made up entirely of red hematized blocks of vesicular lava and also containing isolated fragments of mafic tuff completely replaced by jasper; in most localities, a very coarse-grained breccia composed of intrabasinal volcanic clasts set in a red sedimentary matrix and capped by parallel-laminated sandstone; purplish-red, fine-grained, plagioclase porphyritic, amygdaloidal basalt having flow top crevasses filled by red sandstone; crosscutting epidote-carbonate-chlorite alteration zones in light green vesicular basalt and amygdaloidal gabbro sills, especially near faults; prominent jasper-hematite-pyrite-quartz veinlets along feathered joints in reddish-grey basalt; sequential chlorite-chalcedonic quartz-ferroan carbonate-pyrite alteration in strongly amygdaloidal basalt flows

Note: Most basalts shown in Unit *S:Sm* on this map were included within Unit *S:SVm4* of Coyle (1992) and thus situated in the middle part of the Springdale Group; the southwesternmost exposures of Unit *S:Sm* were previously assigned to Unit *S:SVs* and placed near the base of the group (Coyle, 1992)

S:Sf

Mainly light grey and pink, felsic volcanic and pyroclastic rocks; in the lowest exposed part of the subunit, massive flows of porphyritic rhyolite having quartz and potassium feldspar phenocrysts set in a microlite-rich matrix; intercalated with light pink, feldspar-porphyritic and aphanitic, flow-banded and flow-folded rhyolite; coarse volcanic breccia marked by jasper-rimmed fragments of emerald green pumice and pink spherulitic rhyolite; succeeded by a size-graded polylithic breccia containing ubiquitous felsic ash tuff, minor basalt and rare laminated argillite; thick tuff and lithic breccia having abundant outsized blocks of potassium feldspar-bearing orange rhyolite and dark red aphyric rhyolite; light grey, felsic lithic-crystal tuff distinguished by the presence of rare mafic lapilli; massive crystal tuff dominantly composed of resorbed quartz grains and euhedral feldspar prisms set in a purplish-red ash matrix; in possible correlative units elsewhere in the Springdale Group, reports of exotic clasts of the local Ordovician basement (Coyle, 1992)

S:Sfv?

An apparently unexposed unit of stratified rocks inferred to be of felsic volcanic origin on the basis of its geophysical character; layered rocks displaying low-intensity aeromagnetic and low-intensity radiometric signatures (O'Reilly et al., 2009); on the basis of the regional geological setting of Unit *S:Sfv?*, possibly equivalent to stratified felsic volcanic rocks occurring within the Sheppardville region in Unit *S:Sf* of the Springdale Group or Unit *eS:MUf* of the Micmac Lake Group; alternatively, a potential correlative of older felsic volcanic strata assigned to Unit *S:SVf1* (Coyle, 1992) elsewhere in the Springdale Group, or Unit *eS:ML* from the lower sequence of the Micmac Lake Group (Kidd, 1974), or possibly a structural outlier of the Ordovician felsic volcanic strata locally found in Unit *O:CPu* of the Catchers Pond Group (see below)

S:Su

Unseparated sedimentary, volcanic and hypabyssal rocks previously assigned to the Springdale Group (Coyle, 1992); massive rhyolite marked by light pink laths of potassium feldspar set in a reddish-brown aphanitic matrix; subordinate dark grey, flow-layered rhyolite preserving contorted shards; felsic crystal-lithic tuff spatially associated with the rhyolite flows; red and grey, thin-bedded, graded to laminated, fine grained sandstone locally interstratified with minor intervals of red cobble conglomerate and red cross stratified sandstone; dark red sills and light pink lopoliths of fine grained quartz-feldspar porphyry intruding sedimentary and volcanic strata

Note: The terrestrial volcanosedimentary strata and subvolcanic intrusions in Unit *S:Su* probably represent rocks that are mostly younger than those observed in the northwesterly adjacent parts of the Springdale Group

Early Silurian?
MICMAC LAKE GROUP
eS:MU Volcanic rocks of the Upper Sequence?

eS:MUm

Mainly coarse-grained, purplish-red amygdaloidal basalt, medium- to fine-grained, reddish-grey, plagioclase-porphyritic basalt, and dark-grey aphanitic basalt; subordinate sills of vesicular gabbro intruding thoroughly epidotized flows of seriate porphyritic basalt; hematized and chloritized basalt transitional to gently dipping mafic schist; subvertical mafic-felsic composite dykes crosscutting gently inclined basalt flows; flow-layered felsic porphyry injected by tuffisite pipes and later diabase

Note: Some minor intrusions within this terrestrial basalt succession may be possibly related to high-level plutonism within the Topsails Igneous Suite rather than volcanism in the Micmac Lake Group

eS: MUf

Mainly porphyritic rhyolite flows and felsic pyroclastic rocks, particularly pink ash flow tuff; minor trachytic-textured flows having crosscutting syenite dykes; the boundary of Unit *eS: MUf* felsic volcanic rocks with Unit *eS:Mum* mafic volcanic rocks was interpreted from detailed aeromagnetic maps (Reid and Greenwood, 2008) but not mapped in the field

Note 1: Some of the felsic volcanic strata presently included within Unit *eS: MUf* were previously assigned to Unit *11a* of an unnamed Silurian volcanosedimentary sequence by Neale and Nash (1962) and to Unit *DSm*, a stratigraphically undivided part of the Micmac Lake Group, by Hibbard (1983)

Note 2: In the type area, the Micmac Lake Group was separated into two unconformity-bounded terrestrial sequences by Kidd (1974). Based on regional structural considerations, Micmac Lake volcanic rocks in the Sheppardville region have been tentatively assigned to the upper sequence

Early Silurian?
TOPSAILS IGNEOUS SUITE
SHEFFIELD LAKE COMPLEX
eS:SI Sheffield Lake Volcanic Suite?

eS:Slfv

Mainly poorly stratified to well bedded rhyolite flows and felsic pyroclastic rocks, most having abundant phenocrysts of feldspar and/or resorbed quartz; light grey, massive aphanitic rhyolite; grey and red, hematite-veined, potassium feldspar-phyric rhyolite; dark red to maroon, pervasively hematized, flow-banded rhyolite; light grey, size-graded autobreccia made up of light pink to maroon fragments of laminated, banded and flow-folded rhyolite and minor ignimbrite; in places, pink, felsic crystal-lithic tuff interstratified with grey felsic breccia distinguished by outsized fragments of aphanitic rhyolite, feldspar-phyric rhyolite, flow-layered rhyolite and, in particular, quartz-phyric rhyolite porphyry; synvolcanic replacement and partial jasperitization of the grey glassy matrix of rhyolite and breccia prior to the accumulation of bedded felsic tuff; some of these rocks may have been included in Unit *eS:SVf2* of Coyle et al. (1986)

Note: In the region southwest of Indian Pond, subcropping felsic volcanic rocks are assigned to the Sheffield Lake complex and, in this mainly unexposed area, Unit *eS:Slfv* may possibly include some non-magnetic felsic intrusive rocks

ROCKS FORMED IN THE IAPETUS OCEAN

Early Ordovician
CATCHERS POND GROUP
O:CP Volcanic and sedimentary rocks

O:CPu

Mainly unexposed to poorly exposed metavolcanic rocks locally altered to pyritic quartz-sericite schist; Unit *O:CPu* is interpreted as being dominantly made up of felsic pyroclastic and epiclastic sedimentary strata but also having subordinate basalt lenticles and/or discontinuous gabbro sills; geophysically characterized by a relatively low aeromagnetic signature and a relatively high radiometric signature (Boisvert and Mouton, 1999; O'Reilly et al., 2009); probably correlative with rocks occurring in the stratigraphically higher parts of the group in NTS 12H9, including strata previously assigned to the *Cfr, Cla* and *Cms* lithostratigraphic divisions of the Catchers Pond Group in the type area (O'Brien, 2010)

O:CPl

Mainly unexposed to poorly exposed metavolcanic rocks locally altered to chalcopyrite-bearing chlorite schist; Unit *O:CPl* is interpreted as being dominantly made up of mafic and intermediate volcanic strata that locally display pyritic gossan zones, especially in the southwestern part of the map area; geophysically characterized by a relatively high aeromagnetic signature and a relatively low radiometric signature (Moore et al., 2002; O'Reilly et al., 2009); probably correlative with rocks occurring in the stratigraphically lower parts of the group in NTS 12H9, including strata previously assigned to the *Cbc* and *Cmi* lithostratigraphic divisions of the Catchers Pond Group in the type area (O'Brien, 2010); partly modified from the 1:100 000 scale geological map of Coyle (1992)