Natural Resources Canada / Ressources naturelles Canada

GEOLOGICAL SURVEY OF CANADA / COMMISSION GÉOLOGIQUE DU CANADA

QUATERNARY

- Glacial, fluvial, and marine deposits. (Note: Quaternary is not differentiated in Phanerozoic map units and Precambrian units south of 60° N).

PALEOZOIC or PROTEROZOIC

- **Osc** Dolomitic limestone (Ordovician).
- **POi** Carey Lake impact structure: age in part uncertain; fused impact breccia and overlying Ordovician carbonate undifferentiated at this scale.

PROTEROZOIC

MESOPROTEROZOIC

- **PMd** Mackenzie dykes: gabbro, diabase, ca. 1.27 Ga.

PALEOPROTEROZOIC

ATHABASCA GROUP (1.7–1.65 Ga and possibly younger; units PAf–PAc)

- **PAc** CARSWELL FORMATION: stromatolitic and oolitic dolomite.
- **PAd** DOUGLAS FORMATION: mudstone, siltstone, and sandstone.
- **PAfo** FAIR POINT and OTHERSIDE formations.

OTHERSIDE FORMATION (PAOA–PAOB)

- **PAob** Quartz arenite.
- **PAoa** Pebbly quartz arenite, quartz arenite.

LOCKER LAKE FORMATION (PAlls–PAllm)

- **PAllm** Pebbly quartz arenite.
- **PAllb** Conglomeratic quartz arenite.
- **PAlls** Pebbly quartz arenite.
- **PAw** WOLVERINE POINT FORMATION: quartz arenite - mudstone.

LAZENBY LAKE FORMATION (PAlh–PAld)

- **PAld** Quartz arenite, siltstone, and mudstone.
- **PAll** Pebbly sandstone and sandstone.
- **PAls** Pebbly sandstone and sandstone.
- **PAlc** Quartz arenite, siltstone, and mudstone.
- **PAlh** Pebbly quartz arenite and conglomerate.

MANITOU FALLS FORMATION (PAmr–PAmd)

- **PAmd** Fluviatile intraclast-rich sandstone.
- **PAmdm** Thin mud beds.
- **PAmc** Fluviatile sandstone.
- **PAmbu** Fluviatile conglomerate and sandstone.
- **PAmbl** Conglomeritic quartz arenite.
- **PAmw** Quartz arenite.
- **PAmr** Pebbly quartz arenite.
- **PAs** SMART FORMATION: quartz arenite, local pebbly mudstone.
- **PArd** READ FORMATION: quartz arenite, conglomerate.
- **PAf** FAIR POINT FORMATION: mainly pebbly and cobbly sandstone.

DUBAWNT SUPERGROUP (PBLc–PBlp)
BARRENSLAND GROUP (ca. 1.72–1.54 Ga; PBta–PBlp)

- **PBlp** LOOKOUT POINT FORMATION: dolomitic limestone.
- **PBk** KUUNGAMI FORMATION: ultrapotassic mafic flows and tuffs.

THELON FORMATION (PBta–PBt)

- **PBt** Undifferentiated sandstone and lithofacies A; predominantly pink to purple, coarse grained, pebbly, lithic quartz sandstone.
- **PBtc** Lithofacies C: fine-grained arkosic sandstone.
- **PBtb** Lithofacies B: medium- to coarse-grained orthoquartzite with minor detrital feldspar.
- **PBta** Lithofacies A: conglomerate.
- **UPS** Unsubdivided Precambrian shield; garnet-biotite±cordierite, garnet, sillimanite paragneiss, granite, felsic orthogneiss, quartzofeldspathic gneiss with local

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- **PMcd** McRae dykes (include Halfway Hills dykes).
- **PNg** NUELTIN INTRUSIVE SUITE (ca. 1.76 Ga): porphyritic (K-feldspar, plagioclase, quartz) rapakivi granite.

WHARTON GROUP (ca. 1.78–1.75 Ga; (PWHP)

- **PWHp** PITZ FORMATION: rhyolite and dacite flows; sandstone, and tufa.

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- **PSpd** Sparrow diabase swarm: diabase dykes and sills, local flows (ca.1.82 Ga).

MARTIN GROUP (ca. 1.82 Ga)

- **PMR** Undifferentiated Martin Group: red to pink sandstone, siltstone, mudstone, conglomerate, basalt (ca. 1.82 Ga).

BAKER LAKE GROUP (ca. 1.84–1.78 Ga; PBLc–PBL)

- **PBL** Undifferentiated Baker Lake Group; South Channel, Kazan, Kunwak formations: red and pink pebbly sandstone, polymict conglomerate, minor siltstone; minor mudstone.
- **PBLc** CHRISTOPHER ISLAND FORMATION: ultrapotassic lamprophyre (minette) lavas; breccias, subaerial and subaqueous deposits.

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- **Pgn** Granite and granodiorite gneiss±garnet; granite with older tonalitic to granodioritic gneiss.
- **Pgd** Granite and granodiorite (age uncertain).
- **Pt** Tonalite, cordierite-bearing±tourmaline; late leucotonalite, biotite tonalite.

HUDSON SUITE (ca. 1.85–1.79 Ga; PHgr–PHg)

- **PHg** Hudson Granite and related rocks: biotite-bearing, massive to weakly foliated, equigranular to porphyritic, may contain disseminated magnetite and fluorite.
- **PHgr** Granite, foliated; in part megacrystic.
- **Pdl** Phlogopite lamprophyre and mafic syenite dykes

RAE DOMAIN

- **Pa** Anorthosite, anorthositic gabbro, and gabbroic anorthosite; includes Striding, Chipman, and Manchester Lake bodies.

NONACHO GROUP (ca. 1.90–1.87 Ga; PN–PNTc)

- **PN** Unsubdivided Nonacho Group (ca. 1.90-1.87 Ga): quartzite and arkose, quartzite and greywacke (PN); pink and grey polymictic conglomerate, minor grit (PNc); Thluicho Lake Group (PNT) pink to buff arkose, mudstone, siltstone, brecciated argillite-arkose, and minor conglomerate (PNTc); lower parts may be correlative to Ps4.
- **Pmy** Tectonite and highly laminated, sheared rocks: rectilinear, thinly layered gneiss or schist derived from plutonic and sedimentary protoliths, varicoloured. Local mylonite, protomylonite: age relative to PN uncertain, may in part post-date PHg.
- **Pdm** Metadiabase and metagabbro dykes and sills, includes Chipman (ca. 1.89 Ga) and post 2.3 Ga Orpheous Lake and Train Lake domain swarms; opx, cpx, and/or garnet bearing.

Taltson Magmatic Zone (ca. 1.98–1.93 Ga; PTgp–PNTga)

- **PTga** Massive anatectic granite and pelitic diatexite (ca. 1.92 Ga).
- **PTgl** Pink leucogranite and minor pelitic gneiss; minor orthogneiss; may include undifferentiated ca. 1.8 Ga granite correlative with PHg.
- **PTsg** Slave granites; megacrystic granite; pegmatite (ca 1.93 Ga).
- **PTg** Taltson Magmatic Suite: granite, tonalite, quartz monzodiorite to diorite.
- **PTgd** Taltson Magmatic Suite: granodiorite to granite, megacrystic granodiorite.
- **PTgp** Granulite grade undivided quartzofeldspathic gneiss: Heterogeneous layered, dominantly quartzofeldspathic gneiss of both supracrustal and granitoid parentage but in large part of undetermined origin; U-Pb (zircon, monazite) mixed igneous and metamorphic age 1970±20 Ma.

- **Ps** Early Paleoproterozoic sedimentary sequences (ca. 2.3–1.92 Ga) Unsubdivided metasedimentary sequences; quartzite, psammite, semipelite, carbonate, quartz-chlorite and quartz-biotite schists and gneisses; meta-arkose, conglomerate; includes Amer Group (PSA), Hill Island Lake Assemblage (PSH), Waugh Lake Group (PSW), Mama Moose Complex (PSM); may include undifferentiated Murmac Bay group.
- **PsK** Sequence 3: pelite, semipelite, biotite±corderite-andalusite schist; ±graphite and sulphide; (includes middle Amer Group <1.95 Ga, > 1.87Ga).
- **PsTv** Sequence 2: amygdaloidal and pillowed metabasalt, plagioclase-phyric metabasalt and gabbro; unknown age, possibly equivalent to sequence 2 basalts of the Amer/Ketyet groups.
- **Ps1/2** Sequence 1 and 2: white, buff, and pink quartzite; quartz arenite, minor siltstone, argillite, pelite, and semipelite, minor mafic dykes, sills, flows (includes lower parts of the Amer Group).

MURMAC BAY GROUP (ca. 2.3 Ga)

- **PMB** Unsubdivided meta-sandstone; quartz arenite; siltstone; mafic-ultramafic volcanic rocks; sills; mafic metavolcanic rocks; ultramafic sills and metamorphosed equivalents.
- **PNSg** North Shore Plutons: pink, coarse-grained to K-feldspar megacrystic granite, homogeneous, massive to well foliated (2.35–2.3 Ga).
- **PTa** Thoa gabbro and equivalents; metagabbro, gabbroic anorthosite, minor anorthosite.

NEOARCHEAN AND/OR PALEOPROTEROZOIC

- **Py** Syenite, hornblende syenite, monzonite (ca. 1.85 Ga).
- **Pdg** Diorite, gabbro, pyroxenite; green, poikilitic, with hornblende, clinopyroxene oikocryst.
- **Pdd** Undifferentiated diabase dykes.
- **APmy** Tectonite, protomylonite to ultramylonite, straight gneiss, strongly foliated gneisses; ±garnet±clinopyroxene±orthopyroxene±magnetite.
- **APfn** Massive to poorly foliated granitic rocks; mainly granite.
- **APgd** Granodiorite; massive to poorly foliated.
- **APgdt** Foliated to gneissic granodiorite to tonalite; hornblende quartzo-feldspathic gneiss±hypersthene.
- **APdg** Foliated diorite to gabbro (retrogressed granulite).
- **APmg** Mafic gneiss, amphibolite, gabbro, metagabbro, and peridotite.
- **APgn** Undifferentiated mixed gneiss, granite, orthogneiss, quartzofeldspathic migmatite; minor metavolcanic and metasedimentary gneisses; mainly Archean but may include Proterozoic undifferentiated gneiss.
- **APmi** Hornblende quartzofeldspathic gneiss and migmatite interlayered with biotite-amphibole gneiss (APdg), ±hypersthene.
- **APgnc** Felsic-intermediate gneiss complex with abundant cataclastite & mylonite.
- **APga** Mafic, hornblende-rich, foliated, augen granite; typically sheared.
- **APTp** Unsubdivided high grade metasedimentary rocks; migmatite, plagioclase-hornblende and/or biotite schist and gneiss, calc-silicate gneiss, garnetiferous schist, amphibolite and amphibolitic migmatite; (±hornblende, clinopyroxene, orthopyroxene, garnet, and sillimanite; min. 1.99 Ga); uppermost amphibolite to granulite grade; metamorphic equivalents in part to Ps, as well as undifferentiated older sequences (Taltson Magmatic Zone).
- **APgr** Foliated to mylonitic granite to granodiorite; ±garnet±hypersthene.
- **APsm** Metasedimentary rocks; greywacke, psammopelitic-psammitic sediments, biotite feldspar paragneiss.

ARCHEAN

NEOARCHEAN

- **Atg** Tonalite, granodiorite, granite, foliated, variably recrystallized, ca. 2.55–2.5 Ga, may be in part correlative with Queen Maud block granitoid units.

MESOARCHEAN

- **Ab** Granite-tonalite white to pink, medium-grained, foliated to mylonitic, variably altered (3.0 Ga).
- **ACmg** Chipman mafic granulite gneiss.
- **ACt** Chipman Batholith; highly strained gneiss; foliated to mylonitic tonalite with numerous xenotliths of amphibolite and pyroxenite (ca. 3.2 Ga).
- **ACdx** Chipman diatexite and medium- to coarse-grained tonalite with muscovite and biotite.

ARCHEAN (undivided)

- **Agu** Felsic intrusive rocks; granite to quartz monzonite massive to slightly foliated.
- **Agd** Granodiorite to diorite; massive to foliated.
- **Agdm** Quartz monzonite to granite (ca. 2.60 Ga); coarse-grained, porphyritic K-feldspar augens, locally gneissic and non-porphyritic.
- **Adg** Diorite-gabbro: dark green, fine- to coarse-grained, massive to weakly foliated.
- **Agl** Gneissic granite to leucotonalite.
- **Agc** Granodiorite to tonalite; recrystallized, variably foliated; opx-bearing; charnockite to enderbite.
- **Agdt** Foliated to gneissic granodiorite to tonalite.
- **Ago** Granodioritic orthogneiss with locally up to 40% mafic xenoliths.
- **Ams** Metasedimentary rocks; paragneiss, pelitic, psammopelitic, psammitic gneiss, minor carbonate, iron-formation, hornblende-plagioclase gneiss; local garnet, cordierite, and sillimanite.
- **Adx** Granulitic paragneiss; garnetiferous pelitic migmatite to diatexite; garnet-biotite±orthopyroxene, sillimanite; ±hornblende; local iron-formation; characteristic blue quartz phenoscrysts, min. 2.55 Ga.
- **Agf** Foliated to mylonitic granite to granodiorite, granulite; garnet, feldspar, orthopyroxene.
- **Akg** Mafic-rich, K-feldspar augen granodiorite to tonalite, hornblende-bearing ±clinopyroxene±orthopyroxene±garnet, recrystallized, well-foliated to flaser-textured or protomylonitic, in Chipman panel with up to 30% metamorphosed mafic dykes.
- **Aguf** Foliated to gneissic granodiorite to gabbro.
- **Ampn** Mafic gneiss, layered pyrobolite, and norite.
- **Amv** Mafic metavolcanic and related rocks; amphibolite, mafic gneiss and layered to massive metagabbro, chlorite schist, biotite-hornblende schist; interbedded with iron-formation, mafic tuffs, minor pelitic metasedimentary rocks, and felsic pyroclastic rocks. Locally intruded by felsic plutonic rocks dated at ca. 2.7 Ga.
- **Amvg** Granulite grade amphibolite; mafic gneiss and layered to massive amphibolite; sediments; banded iron-formation.
- **Aiv** Intermediate volcanic and volcaniclastic gneiss.
- **Ai** Banded iron-formation.

HEARNE DOMAIN

PROTEROZOIC

- **PCwg** Chipewyan-Wathaman Batholith (1865–1840 Ma): granite, monzogranite, granodiorite, minor quartz diorite; PCwgr megacrystic granite phase.
- **PKy** Kiyuk Group: grey to pink conglomerate, arkose, intraformational breccia; may be correlative with Martin or Baker Lake groups.

PALEOPROTEROZOIC

HURWITZ GROUP (PHa–PHuc)
Upper Hurwitz Group (2.11–1.88 Ga)

- **PHuc** Undifferentiated quartz arenite, calc-silicate rocks, calcic pelite, mixed calc-silicate, and pelitic gneiss, marble, arkose, minor gabbro (max. 1.95 Ga).
- **PHup** Pelitic, psammopelitic and psammitic gneisses; psammitic to meta-arkosic gneiss, metaquartzite.
- **PHuq** Quartzite, quartzofeldspathic gneiss, felsic volcaniclastic rocks.
- **PHw** WATERSON FORMATION: marble, calc-silicate rocks, dolomite, phyllite, and dacite volcanic flows.
- **PHd** DUCKER FORMATION: greywacke, psammopelite, pelite, psammite, calc-silicate rocks.

Lower Hurwitz Group (2.45–2.11 Ga)

- **PHa** AMETO FORMATION: slate and shale, paragneiss, hybrid gneiss.

WOLLASTON SUPERGROUP (ca. 2.1-1.88 Ga; Pwa–Pwc)

- **Pwc** Calc-silicate rocks, calcic psammopelitic and pelitic gneiss.
- **Pwpf** Graphitic pelitic gneiss.
- **Pwps** Mixed meteasediment; pelitic, psammopelite gneiss.
- **Pwpr** Graphitic pelitic gneiss with abundant psammitic interlayers.
- **Pwqp** Quartzite, psammitic gneiss and meta-arkose.
- **Pwq** Impure quartzite to quartzite.
- **Pwa** Amphibolite; interlayered amphibolite, meta-arkose, psammopelite and calc-silicate.

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- **Pgb** Gabbro, metagabbro dykes and sills; age relative to the Great Island and Wollaston groups uncertain.

NEOARCHEAN AND/OR PALEOPROTEROZOIC

- **APg** Felsic gneiss, mainly plutonic mixed gneisses with layered orthogneiss, granitoids, paragneiss (and migmatite), diatexite and mafic gneiss of sedimentary and volcanic origin.
- **APab** Amphibole-biotite gneisses.
- **APgq** Diorite, quartz diorite.

ARCHEAN

- **Agb** Gabbro, metagabbro; includes Kaminak dykes.
- **Ag** Granite, leucogranite, massive to foliated.
- **Agg** Garnetiferous granite.
- **Agn** Layered orthogneiss; in part mylonitic and includes K-feldspar augen granite (Ag); may include unsubdivided Paleoproterozoic granitoid and metasedimentary rocks.
- **Agdr** Granodiorite.
- **At** Tonalite, leucotonalite.
- **Ae** Hypersthene tonalite (enderbite), likely Archean.
- **Adt** Foliated to gneissic granodiorite to tonalite; mainly Archean but may include Proterozoic granites.
- **Au** Mafic to ultramafic intrusions includes gabbro, pyroxenite, peridotite, and ultramafic schist.
- **Adi** Diorite.

ENNADAI GROUP (ca. 2.72–2.65 Ga; AEif–AEu)

- **AEu** Unsubdivided Ennadai Group: basic volcanics, local ultramafic flows, greywacke, and iron-fomation; ca. 2.68 Ga.
- **AEs** Undivided metasedimentary rocks; psammopelitic-pelitic schist and gneiss; feldspathic psammitic gneiss; siltstone-mudstone.
- **AEv** Mixed felsic, intermediate, and mafic volcanic and volcaniclastic rocks.
- **AEf** Felsic volcanic and volcaniclastic rocks.
- **AEim** Mafic-intermediate volcanic and volcaniclastic rocks.
- **AEmp** Mafic-intermediate volcanic rocks, dominantly pillowed.
- **AEif** Banded iron-formation.

Synvolcanic complex (ca. 2.68 Ga and older)

- **Afg** Granitic migmatite complex: 2.68 Ga, may include unsubdivided older gneisses.
- **Ac** Hypersthene granite (charnockite).
- **Atm** Tonalitic migmatite complex: granodiorite diatexite to biotite metatexite, ±garnet; 2.7 Ga and older.
- **Apn** Pelitic gneiss (of uncertain age): grey to dark grey, well foliated, fine- to coarse-grained, biotite, quartz, plagioclase.
- **Aam** Amphibolite of uncertain age and origin.

SLAVE PROVINCE

PROTEROZOIC

- **Psdg** Fortress gabbro.
- **Pss** Undivided Great Slave Supergroup and Et-Then Group mixed sedimentary rocks.
- **Pso** Sosan Group: pink to red sandstone quartzite, grit, conglomerate.
- **Psi** Undivided intrusive rocks.

ARCHEAN

- **Asg** Granite and granitoid gneiss.
- **Asm** Undivided Yellowknife Supergroup metasedimentary rocks.
- **Asmv** Undivided Yellowknife Supergroup metavolcanic rocks.

Geological boundary (approximate) . . . .
Fault (approximate) . . . .
Shear zone . . . .

Geochronology data with symbol reference number (refer to Tables 1 and 2)

U/Pb, Pb/Pb, K/Ar, Ar/Ar, Rb/Sr 15
Nd/Sm 20
Sample sites where P-T age data was obtained . . . .

Mineral occurrence with symbol reference number (refer to Table 3)

Kimberlite, locally diamondiferous . . . .
Au-bearing 42
Cu-bearing 4
Ni-bearing 25
U-bearing 32
Polymetallic 2

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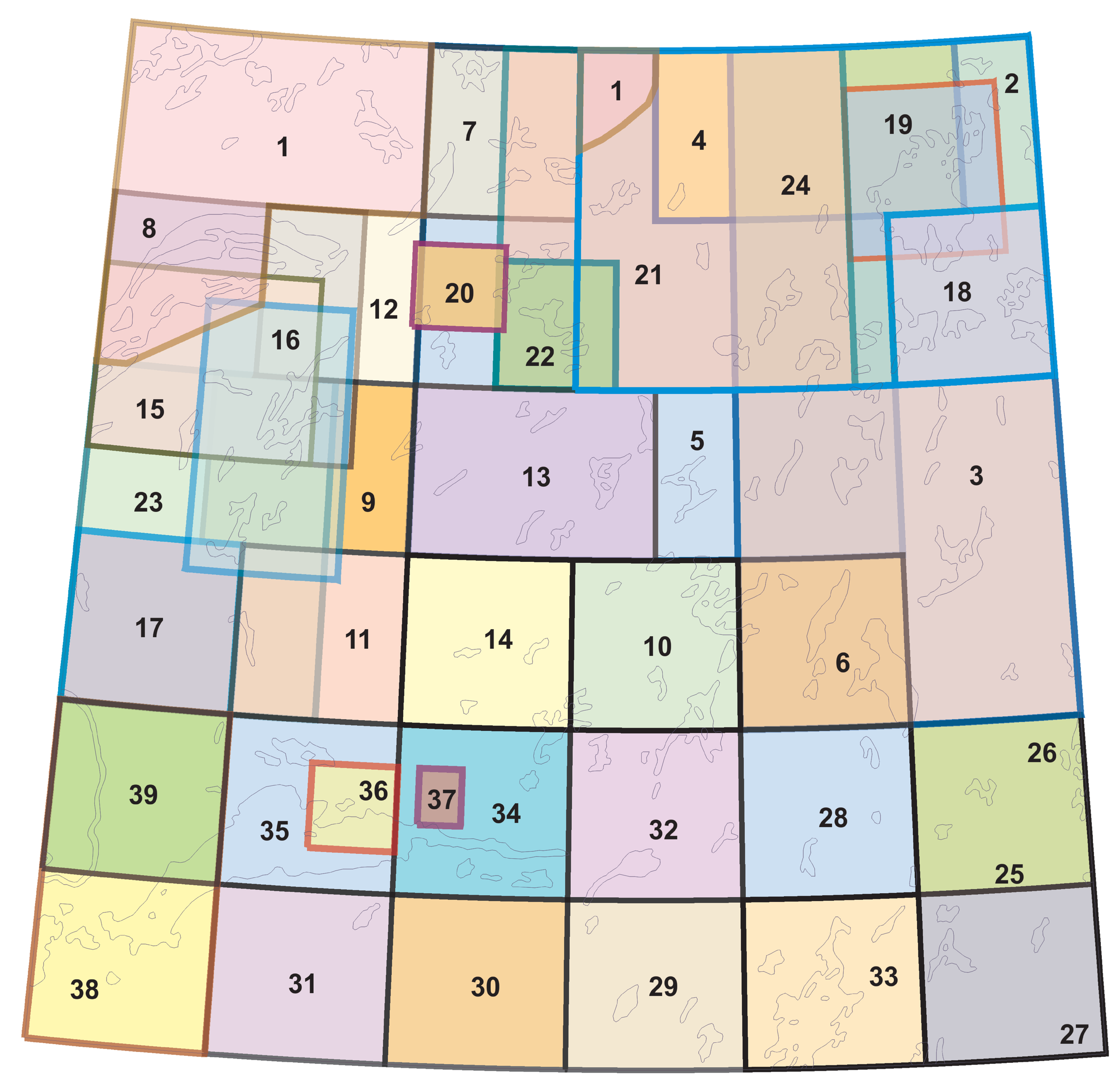

MAP SOURCES FOR BEDROCK GEOLOGY COMPILATION

Northwest Territories

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Manitoba

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Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

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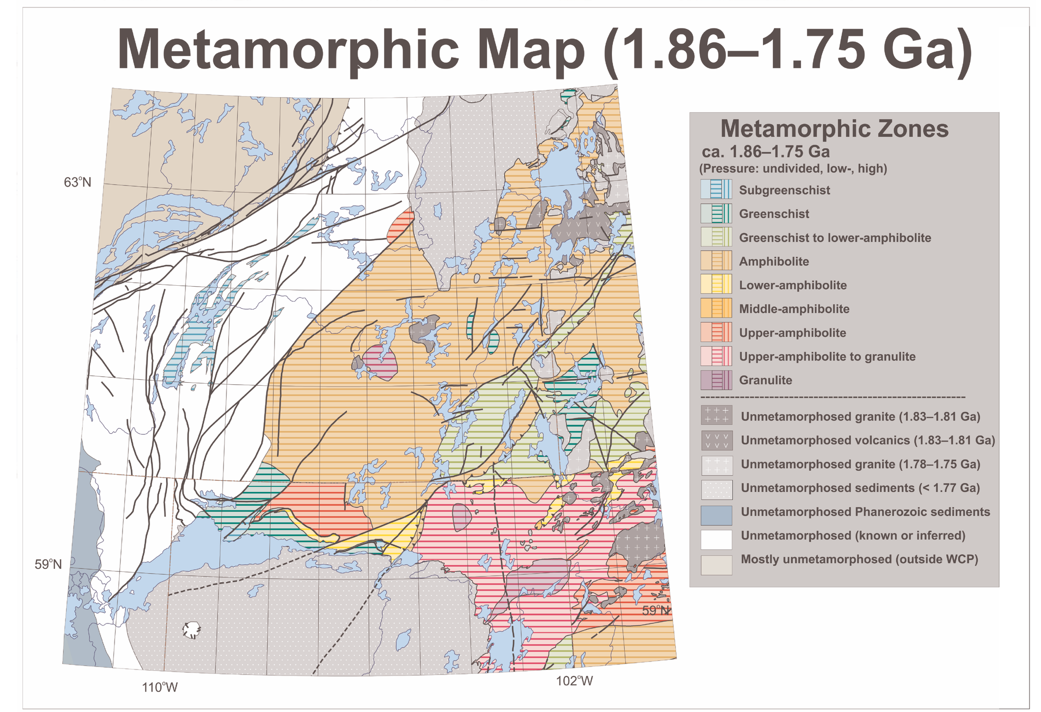

Figure 1. Metamorphic map for the ca. 1.86–1.75 Ga time period (Hudsonian orogeny). *Modified from* Berman (2010), who provides point source geochronological constraints.

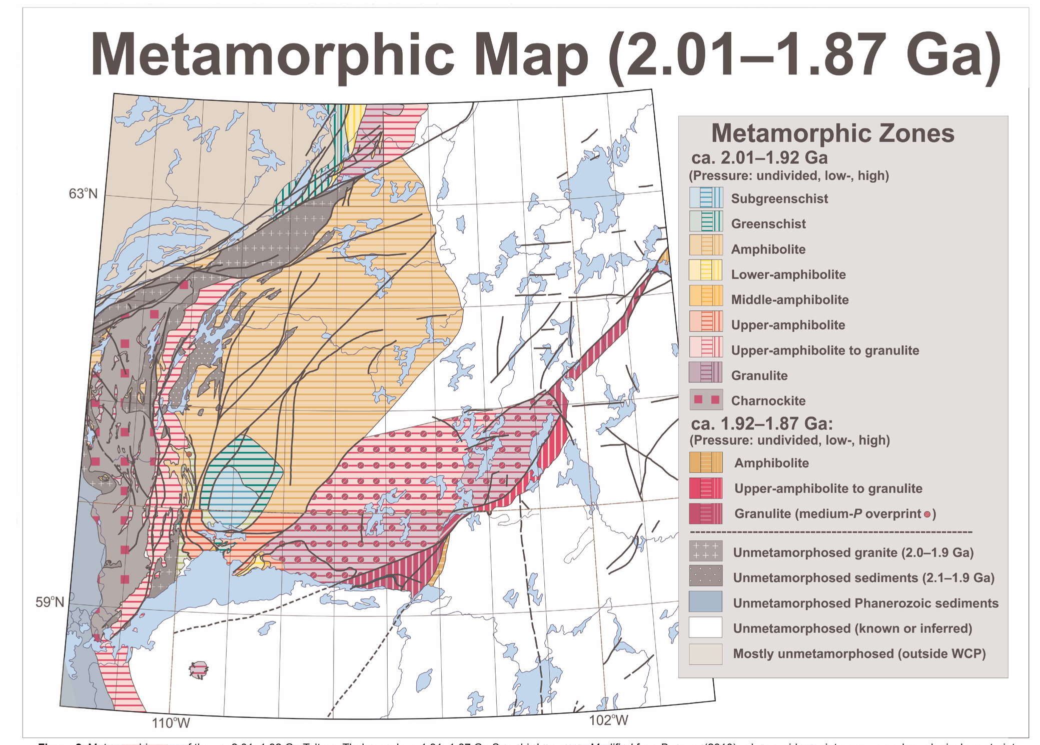

Figure 2. Metamorphic map of the ca. 2.01–1.92 Ga Taltson-Thelon and ca. 1.91–1.87 Ga Snowbird orogens. *Modified from* Berman (2010), who provides point source geochronological constraints.

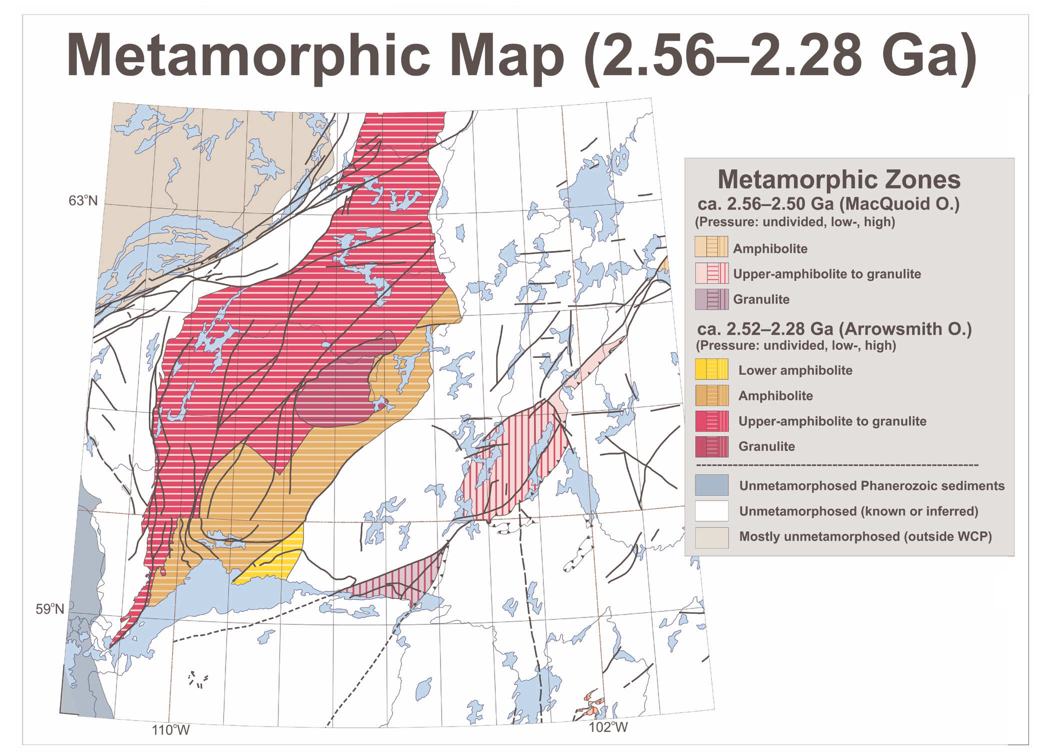

Figure 3. Metamorphic map of the ca. 2.56–2.50 Ga MacQuoid and ca. 2.52 – 2.28 Ga Arrowsmith orogens. *Modified from* Berman (2010), who provides point source geochronological constraints.

Number	Age (Ma)	Error Plus	Error Minus	Age Interpretation	Age Method	LONGITUDE	LATITUDE	AUTHORS
262	2731.0	22.0	22.0	Detrital	U/Pb Zircon	-103.7611	58.1439	Annesley et al., 1992
263	2689.0	19.0	18.0	Igneous Crystallization	U/Pb Zircon	-103.5289	58.0781	Annesley et al., 1992
263	1923.0	8.0	7.0	Igneous Crystallization	U/Pb Zircon	-103.9628	58.3035	Annesley et al., 1992
264	2518.0	20.0	18.0	Protolith age	U/Pb Zircon	-103.5509	58.2627	Annesley et al., 1992
265	1133.0	31.0	30.0	Pb Loss	U/Pb Zircon	-103.3292	58.4127	Annesley et al., 1992
266	2706.0	5.0	5.0	Igneous Crystallization	U/Pb Zircon, Monazite	-103.7981	58.2624	Annesley et al., 1992
266	2600.0	280.0	280.0	Deposition	Rb/Sr Whole Rock	-107.1711	59.2917	Armstrong, R.L. and Ramaekers, P., 1985
267	2600.0	270.0	270.0	Deposition	Rb/Sr Whole Rock	-104.9403	58.9708	Armstrong, R.L. and Ramaekers, P., 1985
268	1700.0	0.0	0.0	Igneous Crystallization	Rb/Sr Apatite, Whole Rock	-110.2081	59.8511	Baadsgaard, H. and Godfrey, J.D. 1972
268	1740.0	0.0	0.0	Metamorphic	Rb/Sr Apatite, Whole Rock	-110.2374	59.7212	Baadsgaard, H. and Godfrey, J.D. 1972
269	2250.0	0.0	0.0	Igneous Crystallization	Rb/Sr Apatite, Whole Rock	-110.2406	59.6632	Baadsgaard, H. and Godfrey, J.D. 1972
269	1865.0	0.0	0.0	Igneous Crystallization	Rb/Sr Apatite, Whole Rock	-110.0707	59.5434	Baadsgaard, H. and Godfrey, J.D. 1972
270	1998.0	0.0	0.0	Cooling (ca. 260-350° C)	K/Ar Biotite	-107.0444	62.7722	Baadsgaard, H. and Godfrey, J.D. 1972
271	2603.0	8.0	8.0	Igneous Crystallization	U/Pb Zircon	-106.0091	59.3998	Baldwin et al., 2003
271	2500.0	22.0	22.0	Protolith age	U/Pb Zircon	-106.1067	59.3600	Baldwin et al., 2003
271	2200.0	100.0	100.0	Igneous Crystallization	Rb/Sr Whole Rock	-108.4667	59.6167	Beck, L.S., 1969
271	1820.0	100.0	100.0	Igneous Crystallization	Rb/Sr Whole Rock	-106.2167	59.4500	Beck, L.S., 1969
272	1775.0	55.0	55.0	Peak Metamorphic	Rb/Sr Whole Rock	-109.4750	58.3727	Bell, K., 1985
273	2025.0	44.0	44.0	Igneous Crystallization	Rb/Sr Whole Rock	-109.4835	58.4536	Bell, K., 1985
274	2020.0	20.0	20.0	Igneous Crystallization	Rb/Sr Whole Rock	-108.3658	59.4742	Bell, K. and Bikerman, M., 1985
275	2010.0	70.0	70.0	Igneous Crystallization	Rb/Sr Whole Rock	-108.2600	59.4528	Bell, K. and Bikerman, M., 1985
276	1640.0	30.0	30.0	Deposition	Rb/Sr Whole Rock	-109.2500	58.5500	Bell, K. and Blenkinsop, J., 1984
277	1980.0	0.0	0.0	Model Age	Rb/Sr Whole Rock	-107.1033	59.6500	Bell, K. and Blenkinsop, J., 1984
278	1950.0	125.0	125.0	Metamorphic	Rb/Sr Whole Rock	-107.1250	59.7000	Bell, K. and Blenkinsop, J., 1984
279	2630.0	130.0	130.0	Peak Metamorphic	Rb/Sr Whole Rock	-107.6000	59.6000	Bell, K. and Blenkinsop, J., 1984
280	1470.0	30.0	30.0	Deposition	Rb/Sr Whole Rock	-107.7825	59.1000	Bell, K. and Macdonald, R., 1982
281	2148.0	239.0	269.0	Reset	U/Pb Zircon	-110.4421	61.5120	Bostock, H.H. and Loveridge, W.D., 1988
282	2334.0	22.0	18.0	Igneous Crystallization	U/Pb Zircon	-110.5270	60.6768	Bostock, H.H. and Loveridge, W.D., 1988
283	2167.0	5.9	5.9	Detrital	U/Pb Zircon	-109.8913	60.5343	Bostock, H.H. and Van Breemen, O., 1994
284	1632.0	32.0	32.0	Reset	Rb/Sr Whole Rock	-106.5833	58.3167	Fahrig, W.F. and Loveridge, W.D., 1987
285	2606.6	13.5	10.8	Igneous Crystallization	U/Pb Zircon	-106.6619	59.3034	Hanmer, S.,et al, 1994
286	1787.0	100.0	100.0	Cooling	K/Ar Biotite	-101.0000	62.3083	Leech et al., 1963
287	1753.0	98.0	98.0	Cooling	K/Ar Biotite	-105.7250	60.1694	Leech et al., 1963
288	1753.0	3.0	2.0	Igneous Crystallization	U/Pb Zircon	-100.1903	62.8514	Loveridge et al., 1987
289	3262.0	0.0	0.0	Igneous Crystallization	U/Pb Zircon	-101.3300	60.0333	Loveridge et al., 1988
290	1812.0	100.0	100.0	Cooling	K/Ar Biotite	-108.9722	61.8139	Lowdon et al, 1963
291	2318.0	4.0	4.0	Detrital	U/Pb Zircon	-110.0284	59.8132	McDonough, M.R. and McNicoll, V.J., 1997
291	1919.0	2.0	2.0	Detrital	U/Pb Zircon	-110.6516	59.0279	McDonough, M.R. and McNicoll, V.J., 1997
291	1923.0	2.0	2.0	Igneous Crystallization	U/Pb Zircon	-110.0772	59.9428	Mcdonough, M.R., et al., 1995
291	1959.0	3.0	3.0	Igneous Crystallization	U/Pb Zircon	-110.2257	59.9459	Mcdonough, M.R., et al., 1995
291	1779.0	72.0	72.0	Igneous Crystallization	Rb/Sr Whole Rock	-108.2972	59.6083	Sassano, G.P., et al., 1974
291	1935.0	20.0	20.0	Igneous Crystallization	Rb/Sr Whole Rock	-108.4822	59.5542	Sassano, G.P., et al., 1972
292	1757.0	23.0	23.0	Cooling	K/Ar Muscovite	-101.8917	62.8250	Stevens, R.D., et al., 1982
292	2592.0	31.0	20.0	Igneous Crystallization	U/Pb Zircon	-109.1257	60.0617	Stevenson, R., et al., 1987
292	3450.0	0.0	0.0	Model Age	Sm/Nd Whole Rock	-109.8056	60.7872	Theriault, R.J., 1992
292	2860.0	0.0	0.0	Model Age	Sm/Nd Whole Rock	-109.2083	60.6667	Theriault, R.J., 1992
292	2513.0	36.0	22.0	Igneous Crystallization	U/Pb Zircon	-108.4083	59.5903	Tremblay, L.P., et al., 1991
293	3293.0	3.0	3.0	Detrital	U/Pb Zircon	-109.7330	61.8444	van Breemen, O. and Aspler, L.B., 1994
293	2380.0	4.0	4.0	Detrital	U/Pb Zircon	-110.0581	61.2779	van Breemen, O. and Aspler, L.B., 1994
293	2392.0	2.0	2.0	Detrital	U/Pb Zircon	-110.1635	61.1717	van Breemen, O. and Aspler, L.B., 1994
293	2340.0	7.0	7.0	Igneous Crystallization	U/Pb Zircon	-109.5919	60.5516	van Breemen, O. and Bostock, H.H., 1994
294	2596.0	10.0	10.0	Igneous Crystallization	U/Pb Zircon	-109.0323	59.8335	Van Schmus, et a;., 1986.
294	1851.0	60.0	60.0	Cooling	K/Ar Biotite	-105.8167	62.9500	Wanless, R.K., et al 1965
294	2687.0	99.0	99.0		K/Ar Hornblende	-101.7500	58.7825	Weber, W., et al., 1975
294	2037.0	0.0	0.0	Cooling (ca. 260-350° C)	K/Ar Biotite	-105.9167	62.1667	
294	1674.0	0.0	0.0	Cooling (ca. 260-350° C)	K/Ar Biotite	-106.2500	62.2500	
295	1910.0	0.0	0.0	Cooling (ca. 260-350° C)	K/Ar Biotite	-107.6667	60.8833	
296	1831.0	0.0	0.0	Cooling (ca. 260-350° C)	K/Ar Biotite	-103.8333	60.5944	
297	1854.0	39.0	39.0	Cooling (ca. 450-525° C)	K/Ar Hornblende	-101.2667	62.3055	
298	1748.0	55.0	55.0	Cooling (ca. 325-375° C)	K/Ar Muscovite	-109.9367	61.2150	
299	3100.0	50.0	50.0	Igneous Crystallization	U/Pb zircon	-103.05	60.36	Martel et al., 2005
300	2736.0	6.0	6.0	Igneous Crystallization	U/Pb zircon	-103.85	60.63	Martel et al., 2005
301	2668.0	8.0	8.0	Igneous Crystallization	U/Pb zircon	-103.32	60.95	Martel et al., 2005
302	2547.0	5.0	5.0	Igneous Crystallization	U/Pb zircon	-103.33	60.38	Martel et al., 2005
303	2067.0	3.0	5.0	Detrital-maximum deposition	U-Pb zircon	-103.36	60.39	Martel et al., 2005

Table 1. Selected isotopic ages for the South Rae and western Hearne province map area. References from Skulski and Villeneuve, 1999, except Martel et al., 2008. *See* references cited.

Deposit No	Name	Status	Classification	Longitude	Latitude	SYM REF NO
2	Box		lode gold	-108.5203	59.4550	145
166	Nicholson Bay	past producer	hydrothermal U, Au, PGE	-108.4222	59.4556	143
125	Spindel Lake C Zone	showing	intrusion-related U, REE	-103.6033	59.6561	109
126	Viking Lake Deposit; Prince Lake REE; Laredo Mines	showing	intrusion-related U, REE	-108.2444	59.5917	115
127	Corrigan-Stinson; Pinkham Lake U-Allanite Pegmatites	showing	intrusion-related U, REE	-104.0947	59.4694	110
223	5034 Pipe; Gahcho Kue; Kennady Lake	deposit	Diamond-kimberlite	-109.2087	63.4355	34
225	Faraday Pipe	drilled showing	Diamond-kimberlite	-109.0461	63.5047	37
227	Doyle Sill	drilled showing	Diamond-kimberlite	-109.3455	63.3701	28
238	Munn Lake Sill; Yuryi	drilled showing	Diamond-kimberlite	-109.8310	63.7095	22
240	MZ Lake Sill 73	drilled showing	Diamond-kimberlite	-109.6180	63.4823	23
13	Rex 'A' Vein; Ridley prospect; Regina Bay prospect		Kiruna-type Fe oxide, Cu, Au	-110.2958	62.4464	55
21	Har Prospect; Har Claims		Kiruna-type Fe oxide, Cu, Au	-110.0569	62.4853	50
176	Swamp; Don 1; Little Huey	drilled showing	lode gold	-101.5020	60.9508	101
186	Rochon Lake; Moon 5	advanced prospect	lode gold	-101.9109	60.8211	100
187	Cobalt	trenched showing	lode gold	-100.3457	60.4610	103
153	Rutledge 10/25; Conductor 5a; 10/26; Occurrence 5; South Grid	drilled showing	magmatic Ni-Cu-PGE	-110.7980	61.5670	83
154	Rutledge 8/40; Eckarts Showing; Mushroom Peninsula North Zone; Conductor 10a	drilled showing	magmatic Ni-Cu-PGE	-110.8321	61.6985	77
156	Rut Conductor 9; 8/30; 8/31; B10367	drilled showing	magmatic Ni-Cu-PGE	-110.8369	61.6126	80
157	Rut Conductor 14; DH86R008	drilled showing	magmatic Ni-Cu-PGE	-110.6708	61.8365	75
158	Rut Conductor 13; DH86R010	drilled showing	magmatic Ni-Cu-PGE	-110.6466	61.7978	76
159	ART 23; Smart Lake	drilled showing	magmatic Ni-Cu-PGE	-106.5791	63.5074	40
167	Thye Lake; Tha Lake; Thoa Lake; Nickel King; 75002; NWT-3	advanced prospect	magmatic Ni-Cu-PGE	-104.9282	60.0610	111
168	Nickel King Main Zone; Thye Lake; ANKI	deposit	magmatic Ni-Cu-PGE	-104.5276	60.2571	95
169	Hank; Stern Lake	drilled showing	magmatic Ni-Cu-PGE	-111.7584	61.0881	92
170	C-6 Conductor; SAN; Rivett Lake	drilled showing	magmatic Ni-Cu-PGE	-111.8318	63.3563	1
129	Johnston Lake	showing	Cu, U, Th, REE	-102.0292	58.9172	107
57	Mermaid; Mer; Maid; Reliance; Fly	advanced prospect	Sandstone U	-109.2833	62.6417	47
6	Ennadai Lake (Nueltin Project); Prospecting Permit 136		sediment-hosted copper	-101.2000	60.6139	102
7	Stark Lake - Wilson Lake; Par 3/ 56/ 57		sediment-hosted copper	-110.1583	62.4667	51
8	Poorfish Lake; Prospecting Permit 132; Nueltin Project		sediment-hosted copper	-100.5236	60.1856	105
9	Stony Island		sediment-hosted copper	-111.4167	59.6167	170
152	Rutledge Occurrence 4; 12/28; Conductor 6; Lodge showing	drilled showing	Au, Ag, Cu, Ni, As	-110.7709	61.5893	81
63	Mallen Lake; Canadian Occidental Petroleum	deposit	unconformity-associated U	-103.8792	58.4097	195
69	Janine	advanced prospect	unconformity-associated U	-109.5472	58.3683	171
71	Close Lake (tucker Lake)	advanced prospect	unconformity-associated U	-104.8333	58.0667	187
72	Natona Bay	deposit	unconformity-associated U	-104.2389	58.1778	190
75	Dub Claims (Dunkel Lake Project)	advanced prospect	unconformity-associated U	-102.8000	63.1167	42
80	Raven Uranium Deposit	advanced prospect	unconformity-associated U	-103.7635	58.1515	208
82	Eagle Point South Uranium Deposit; Eagle Point Uranium Mine	producer	unconformity-associated U	-103.6045	58.2957	201
87	Sue Uranium Deposits; Sue A, B, C, D (CQ) and E deposits; McLean Lake Project	producer	unconformity-associated U	-103.8035	58.2638	197
89	Midwest Lake Uranium Deposit; Mink Arm Main, A, B and C Zones; South McMahon Lake Deposit	under development	unconformity-associated U	-104.0865	58.3031	192
91	Maurice Bay Uranium Deposit	advanced prospect	unconformity-associated U	-109.9009	59.3853	169
92	Stewart Island Uranium Showing; Main, West, East, and Far East Zones or Lenses	advanced prospect	unconformity-associated U	-108.8978	59.3298	168
99	Boomerang Lake Prospect; Boomerang Prospect; Boomerang Lease; Boom 1-5	drilled prospect	unconformity-associated U	-104.9979	62.6405	45
123	Nisto Uranium Mine; Nisto Uranium Mine Adit ; Nisto Zones 1 to 8 and A to J; Nisto North Uranium Showing; Nisto South Uranium Showing	past producer	unconformity-associated U	-105.4444	59.2103	112
28	Pitchie Uranium Zone 1; Uranium Ridge Uranium Mine; Pitche 1-12 Claim Group	past producer	vein U, Cu	-108.6764	59.4889	146
38	Enex Resources Ltd. Trenches T1-5; Scope	drilled prospect	vein U	-108.6892	59.5497	148
43	Orb Claims-Zone 6a; Augier Lake/Pitch-Ore Group	past producer	vein U	-108.7800	59.6050	161
45	Gulch Mine	deposit	vein U	-108.8589	59.4439	167
48	Pitch-Ore Uranium Mine	deposit	vein U, Cu	-108.5542	59.5389	121
49	New Hosco; Fold Lake No. 70/75; NN-70/75	advanced prospect	vein U	-108.6381	59.6211	162
51	Tena Group Adit; Consolidated Beta Gamma Zone 1; Mokta 307-1	past producer	vein U	-109.0675	59.5389	166
52	Jos/ml-5079/dl	advanced prospect	vein U	-109.0000	59.7847	166

Table 2. Selected mineral occurrences of the South Rae and western Hearne province map area. Selected mineral occurrences from NORMIN (http://www.nwtgeoscience.ca/normin/) and Saskatchewan Mineral Deposit Index (http://economy.gov.sk.ca/SMDI).

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SOUTH RAE AND WESTERN HEARNE PROVINCES

CHURCHILL PROVINCE

NORTHWEST TERRITORIES, SASKATCHEWAN, NUNAVUT, MANITOBA, AND ALBERTA

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Recommended citation
Pehrsson, S.J., Currie, M., Ashton, K.E., Harper, C.T., Paul, D., Pana, D., Berman, R.G., Bostock, H., Corkery, T., Jefferson, C.W., and Tella, S., 2014. Bedrock geology compilation south Rae and western Hearne provinces, Churchill Province, Northwest Territories, Saskatchewan, Nunavut, Manitoba, and Alberta; Geological Survey of Canada, Open File 5744, scale 1:550 000. doi:10.4095/292232

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