

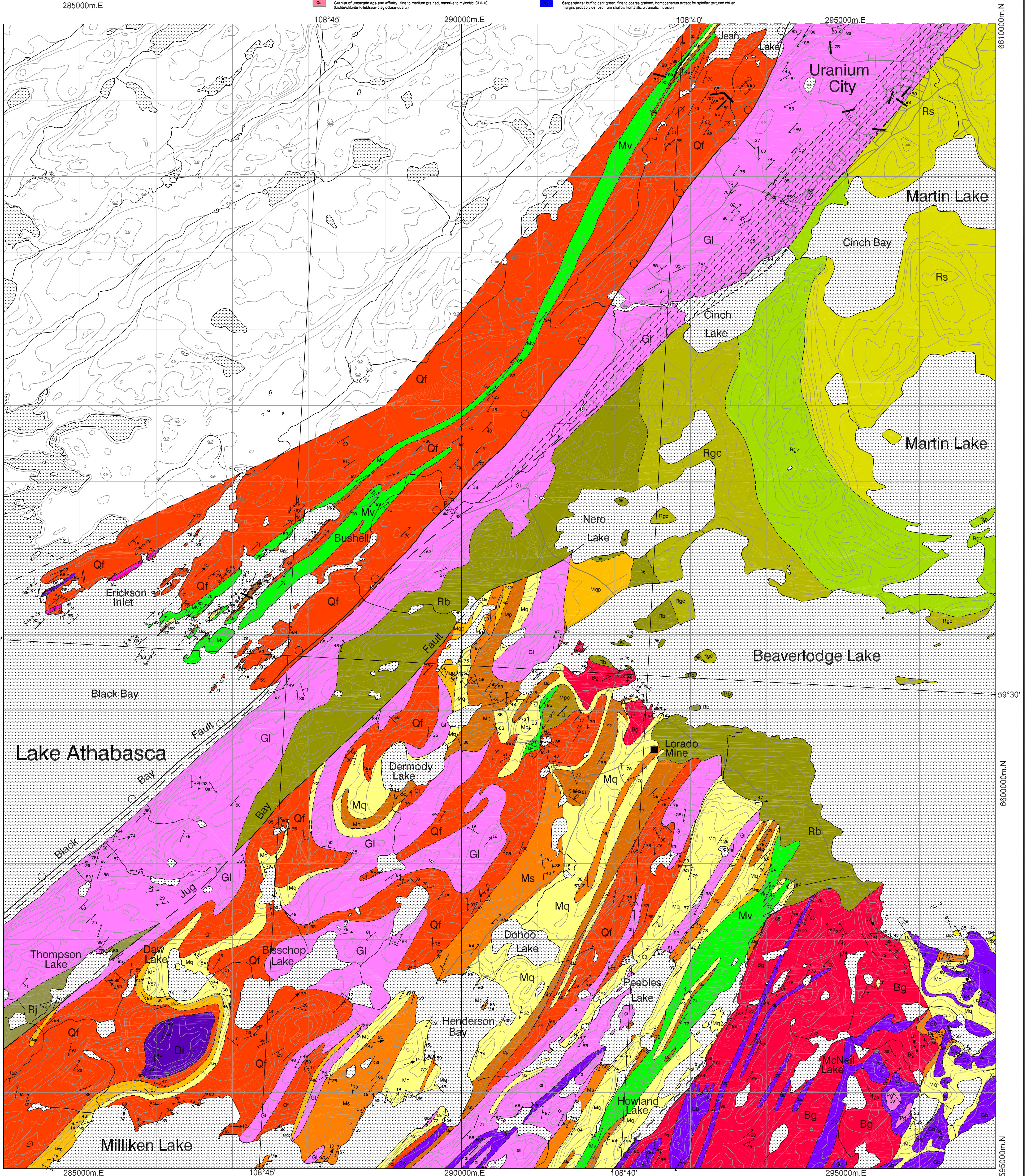
Geology of the Bushell Area (Part of NTS 74N/7 and 10) at 1:20 000 scale

Preliminary Geological Map (2000)
by K.E. Ashton, J. Kraus, and R. Morelli

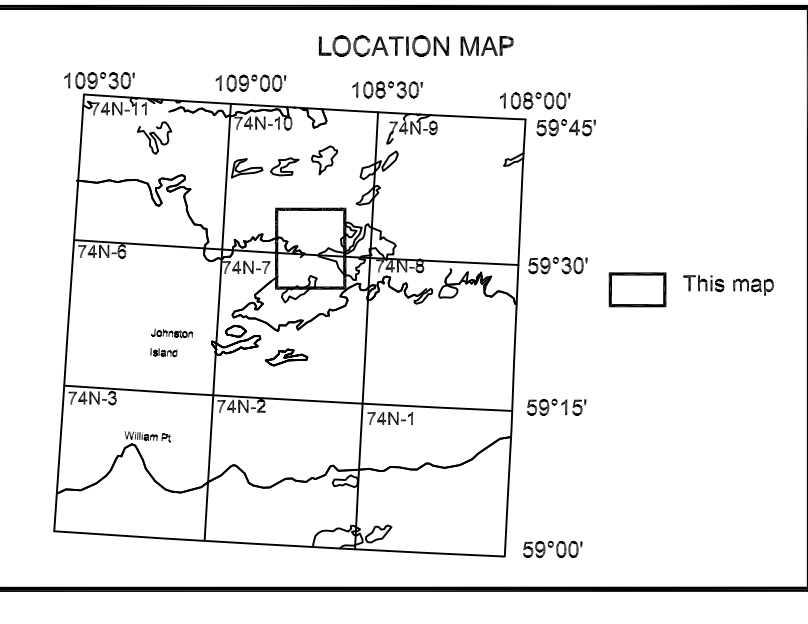
Catalogue Number 99-4-2 (3.2)

ATHABASCA GROUP	Q	Mv
Amf Manitou Falls Formation - fluvial sandstone, commonly interbedded with siltstone	Q1 Laugochite: pink, fine to medium grained, Cl 0-6 (biotite-chlorite-feldspar-quartz-plagioclase), occurs as small plugs and areas of fine matrix or lens of matrix, age relative to Q1, Q2, and Q3 uncertain	Mv1 Dolomite: buff to white or pale green, fine to medium grained (dolomite + dolomite + actinolite), locally interbedded with quartzite
U Undifferentiated quartzofeldspathic rock: grey, white to buff, pink, fine to medium grained, Cl 0-10, foliated to sheared mix of Ms, Q1, and Q2, minor Q3 and D3 (plagioclase-quartz + K-feldspar + sericite + biotite/actinolite)	Q2 Diorite: grey, medium grained, Cl 30-40 (hornblende-plagioclase)	Mv2 Ductile facies iron formation: (magnetite-quartz)
M Marble: black, medium to coarse grained, multi-phase, Cl 45-70, (hornblende-plagioclase), hornblende appropriate spacing primary quartz + feldspar, locally massive to coarse amphibolite facies conditions	Q3 Granite: pink, coarse grained, homogeneous, Cl 5-10 (K-feldspar-plagioclase-quartz + biotite/actinolite + hornblende)	Mv3 Felsite: white, fine grained, homogeneous (plagioclase-quartz), possibly syn-tectonic
Mt Sandstone with locally amygdaloidal basaltic flows	Q4 Indication-rich to migmatitic laugochite granites to tonalites: white to pink grey, medium grained, Cl 0-5 (biotite-chlorite-quartz-plagioclase + hornblende + K-feldspar), unfoliated and contains inclusions of Murchison Bay Group (primarily ca. 2.84 Ga age, formerly part of Donohoe Lake Gneiss)	Mv4 Amphibolite: black, fine to medium grained, variably layered (hornblende-plagioclase), mainly derived from mafic and minor intermediate volcanic rocks
Rg Sandstone and conglomerate	Q5 Deformation, M1 metamorphism, unconformity	Mv5 Basalt: black, fine grained, exhibiting primary flow layering, cooling cracks, and local amygdalites
Rg1 Sandstone and conglomerate	M Murchison Bay Group (Archean)	Mq Quartzite, minor felsitic quartzite: white, fine to medium grained
Rg2 Sandstone and conglomerate	Ma Psammite: minor felsitic quartzite, grey, fine to medium grained, generally layered (cm to m scale), Cl 1-15 (plagioclase-quartz + K-feldspar + biotite + sericite)	Mv6 Interlayered quartzite and psammite
Rg3 Sandstone and conglomerate	Mb Ferruginous siltstone and argillite: red, fine to medium grained	Mv7 Interlayered quartzite and carbonate, derived calc-silicates: includes pegmatitic dolomite
Rg4 Sandstone and conglomerate	Mc Psammopelite to psammite: grey-brown, fine to medium grained (biotite-white mica-feldspar-quartz + sericite + biotite)	Mv8 Quartzite gneiss: white to red (ferrogneiss), medium grained
Rg5 Sandstone and conglomerate	Md Psammopelite to pelitic gneiss and migmatite: grey-brown with approximately 50% white medium-grained melt inclusions and well defined melanosome, garnet up to 1.5 cm (biotite-feldspar-quartz + garnet + sillimanite + graphite)	Mv9 Interlayered quartzite, gneiss, and oligoclitic conglomerate: quartzite (pebbles and rare coarser in a quartzite matrix)
Rg6 Sandstone and conglomerate	Me Calcic psammopelite to psammite: grey, fine to medium grained (hornblende-bearing), commonly involved by leucogranite, may be metamorphosed G and/or Mv in part	U Unconformity
Rg7 Sandstone and conglomerate	Mf Gabbro: dark green to black, fine to medium grained, homogeneous, broadly coeval with ultramafic intrusions	Q6 Granitoid rocks: pink to white, medium grained, massive to well foliated, rare mafic inclusions (ca. 3.05 Ga age)
Rg8 Sandstone and conglomerate	Mg Serpentinite: buff to dark green, fine to coarse grained, homogeneous except for spinellite (textured chert margin, probably derived from shallow-tectonic ultramafic intrusion)	

Although the Department of Energy and Mines has exercised all reasonable care in the compilation, interpretation, and production of this map, it is not possible to ensure total accuracy, and all persons who rely on the information contained herein do so at their own risk. The Department of Energy and Mines and the Government of Saskatchewan do not accept liability for any errors, omissions, or inaccuracies that may be included in or derived from the map.



Project M-123 of 2000, Database No. 0047
The area was mapped by K.E. Ashton (project leader), J. Kraus, R. Morelli, and R.P. Hartlaub, in the summer of 2000, with the assistance of S. Croston, S. Elnes, D. Bavin, and A. Yano.
The map was printed from the geologist's digital file. Geological data were processed using Fieldlog version 3.0 provided by the Geological Survey of Canada. Base maps were compiled from 1:50 000 scale digital topographic maps licensed from Saskatchewan Land Information Services Corporation. The map was processed overall using AutoCAD Release 14 software.
The map is saved in a package with the Summary of Investigations 2000 Volume 2, Saskatchewan Geological Survey, and is available separately.
This map may be referenced as part of the following publication:
Ashton, K.E., Kraus, J., Hartlaub, R.P., and Morelli, R. (2000). Uranium City revisited: a new look at the rocks of the Beaverlodge Mining Camp, in Summary of Investigations 2000 Volume 2, Saskatchewan Geological Survey, Sask. Energy Mines, Misc. Rep. 2000-4.2.



Symbols:

	Ductile shear zone
	Geophysical contact
	Bedding (S0, dips from unknown)
	Main S01/2 transposition foliation (inclined, vertical)
	S34 foliation (inclined, vertical)
	Minor S fold (F2, F34)
	Minor Z fold (F2, F34)
	Minor W fold (F2, F34)
	Minor symmetrical fold (F2, F34)
	Axial plane (F2, F34)
	Lineament (tectonic stretching, mineral, unknown)
	Lineament (tectonic stretching, mineral, unknown)
	Amphibolite-rich rock (syn-tectonic Mg metamorphic alteration)
	Past-producing Uranium Mine
	Past-producing Gold Mine
	Contour/Interval: 50 feet
	Road
	Trail

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Other major sources used in the compilation of this map:
Hartlaub, R.P. (1990). New insights into the geology of the Murchison Bay Group, Rae Province, northwest Saskatchewan, in Summary of Investigations 1999, Saskatchewan Geological Survey, Sask. Energy Mines, Misc. Rep. 99-4.2, 117-26.
Hartlaub, R. and Simmen, W.L. (1980). Bedrock geology of the Clearwater-Beaverlodge area, NTS 74N/10 to 11, Saskatchewan Energy and Mines, Map 241A, scale 1:100 000.
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Thomas, D.J. (1982). Uranium mesozoic studies: Vicky Lake area, in Summary of Investigations 1982, Saskatchewan Geological Survey, Sask. Energy Mines, Misc. Rep. 82-4, p31-35.

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59°30' 59°30' 6610000m.N 6610000m.N 6610000m.N