DESCRIPTIVE NOTES

INTRODUCTION

New mapping in the Angikuni Lake area (Fig. 1), a component of the Western Churchill NATMAP project, updates reconnaissance work by Blake (1980), Tella and Eade (1985, 1986) and Eade (1986). The present map of NTS 65 J/5 compliments work in NTS 65 J/4 (Aspler and Chiarenzelli, 1997; Aspler et al.,1998a, b) and parts of NTS 65 K/1 and 65 K/8 (Aspler et al., 1999). Details of ancillary geochemical and isotopic studies are reported in Cousens (1998) and are summarized in Aspler et al. (1999).

In the general Angikuni Lake region, Archean map units define seven fault-bounded lithostructural domains (Fig. 2). Inter-domain stratigraphic relationships between supracrustal units are unknown, as are the relative ages of granitic intrusions. Only domains I-IV are exposed in northern Angikuni Lake. Domain I is characterized by extensive areas of greenschist- to amphibolite-grade supracrustal rocks. A northeast-trending dextral mylonitic shear zone forms the western boundary of Domain I. Domain II is an upper amphibolite grade orthogneiss and paragneiss complex which is cut by granitic and gabbroic rocks. The boundary between Domain II and Domain III is marked by short fault segments with north, northwest and northeast trends. Some of these faults define near-vertical zones of greenschist facies cataclasite. Domain III contains two sequences of greenschist grade supracrustal rocks. Domains III and IV are separated by a northeast-trending faulted/intrusive contact that is offset by northwest-trending cross-faults. Domain IV consists of granite, granodiorite and granitic gneiss, and contains rare enclaves of mafic volcanic rock. Domains V, VI and VII (Fig. 2) outcrop south and west of the present map area (see Aspler et al., 1998b, 1999).

Paleoproterozoic continental siliciclastic and volcanogenic rocks, of the Baker Lake Group (Dubawnt Supergroup) are exposed in two northeast-trending sub-basins and in numerous small outliers in the northern Angikuni Lake area. In addition, lamprophyre dykes, likely related to Baker Lake Group ultrapotassic volcanism, are scattered across the area.

LITHOSTRUCTURAL DOMAINS

Domain I: **AmvI**; **AsstI**; **Agh**; **Agb**

In the southeast corner of 65 J/5, greenschist- to amphibolite-grade volcanic rocks (**AmvI**) are exposed in two near-vertical, northeast-trending strips that are separated by a coarse-grained, foliated, hornblende leucogranite body (**Agh**). Sparse but consistent top indicators suggest that the strips originally formed a single northwest-younging sequence. The volcanic rocks are cut by numerous thin (< 10 m), likely synvolcanic, gabbro dykes and sills. Subaqueous sheet flows, pillow lavas and tuffs are predominant; local mm-scale amygdules imply relatively shallow water. Within the volcanic rocks is a thin lens (**AsstI**) consisting of three shallow-water components: cross-stratified, carbonate-cemented arkose; polymictic, framework-intact conglomerate (with mafic volcanic, felsic volcanic and sparse granitic clasts); and microbial laminated dolostone. Variably oriented gabbro dykes (**Agb**), of possibly more than one age, cut all units in Domain I.

Domain II: **Agn**; **Ag**; **Agb**

Amphibolite grade gneisses (**Agn**) are well exposed in the central part of Angikuni Lake. Psammitic and amphibolitic supracrustal gneisses are the oldest components, and form metre-scale layers and partially assimilated xenoliths within plutonic rocks and gneisses. Multiple generations of tonalitic to granitic neosome occur in the paragneiss and range from foliation-parallel lenses to cross-cutting injections. Granitic orthogneiss with a gneissosity defined by mafic restite and aligned phenocrysts, outcrops throughout the domain. Felsic plutonic rocks (**Ag**) range in composition from granite to tonalite, and form map-scale lozenges that are enveloped by anastomosing zones of gneiss. The granites cross-cut granitic, psammitic and amphibolitic gneiss, but also contain mylonitic and protomylonitic fabrics and hence are syntectonic. A coarse-grained syntectonic granite, sampled close to the shear zone between Domains I and II has yielded a preliminary U-Pb zircon age of ca. 2.61 Ga (W.J. Davis, unpublished data).

Most outcrops of Domain II are cut by variably deformed and metamorphosed gabbro bodies (**Agb**) that range from dykes a few cm to ca. 200 m wide, to km-scale plutons. The plutons commonly contain zones in which slightly rotated blocks of host gneiss and granite are engulfed by gabbro. Although the gabbros cut layering in host gneiss and granite, they commonly contain an internal fabric, and are locally transposed into the gneissic layering. Furthermore, they are cut by leucosomal pods and thin granitic sheets injected from the host gneiss. Moreover, mylonitized gabbros are found within the shear zones separating Domains I and II and at the northern margin of Domain V. Thus, the gabbros are considered syntectonic.

Domain III: **Afdp**; **Aca**; **Amf**; **AsstIII**; **AsstIIItif**

Two sequences, likely separated by an unconformity, are exposed in Domain III. The lower and upper sequences are folded together. Folds are open, with steeply-dipping, northeast-trending axial surfaces and shallow plunges to the northeast and southwest. The lower sequence consists of three subunits: 1) mafic to felsic volcanic rocks with pyroclastic breccia, plagioclase crystal tuff, graded ash beds, dolomite-cemented sandstone and pelite (**Afdp**); 2) interbedded microbial laminates (locally stromatolitic), pelites and carbonate-altered intermediate to felsic tuffs (**Aca**); and 3) mafic volcanic rocks (**Amf**). Interfingering of component rock types indicates that these subunits are conformable, but their stratigraphic order remains uncertain. Top indicators in the middle carbonate/pelite unit (**Aca**) suggest that it overlies unit **Afdp** and underlies the mafic volcanic unit (**Amf**). Loveridge et al. (1988) reported U-Pb zircon ages, from unit **Afdp** of 2680 +29/-25 Ma (containing ca. 3.04 Ga xenocrystic zircon; Eade, 1986).

The upper sequence is exposed in the southwest corner of 65 J/5 and in the western and central parts of northern Angikuni Lake. It consists mainly of interlayered subarkose and framework-intact quartz pebble conglomerate (**AsstIII**). Metre-scale mudstone interbeds are common. In view of the paucity of mudrocks in pre-vegetative continental deposits, mixing of mature arenites and conglomerates with mudstones suggests shallow-subaqueous, rather than subaerial, deposition. On a large island in the west-central part of northern Angikuni Lake, is a unique interval of iron formation in which magnetite is concentrated at the top of cm- to dcm-scale sandstone to pelite fining-upward sequences (**AsstIIItif**). Occurring within a sequence of relatively mature sandstones and conglomerates, this iron formation was probably deposited in a shallow shelf (but below wave base) setting. A second unique interval, exposed on the southeast corner of northern Angikuni Lake, contains fine-grained sandstone, siltstone and mudstone. Small-scale wave ripples (wavelength = 5 cm; height = 0.7 cm) and mudcracks signify shoaling to shallow-water and emergent conditions.

Conglomerates in unit **AsstIII** contain clasts reworked from older quartz-rich sandstones. Basal beds are pyritic and yield high Ni, Cr, and V, and detectable Pt and Pd values (Table 1), signifying erosion of an ultramafic source. This combination suggests derivation from quartz arenite-ultramafic sequences in the Rae Domain such as the Prince Albert Group (e.g. Schau, 1997) or the Woodburn Group (e.g. Donaldson and de Kemp, 1998). In addition, Sm-Nd isotopic study of a mudrock interbed yielded an initial $\varepsilon_{Nd}t$ value of - 2.0 ± 0.8 (assuming a depleted mantle $\varepsilon_{Nd}t$ value of +3 at 2680 Ma), suggesting that it includes detritus derived from significantly older crust (Cousens, 1998). Tentatively, we interpret the lower contact of this subunit to be an unconformity because: 1) the abrupt appearance of quartz pebble conglomerate above mafic and felsic volcanic rocks requires a period of intense weathering; 2) the unit appears to cut out lower sequence stratigraphy ; and 3) the unit appears to be distributed as outliers (paleolow-infills ?).

Domain IV: **AgIV**; **Amv**

Domain IV consists of granite, granodiorite and granitic gneisses (**AgIV**) and rare enclaves of mafic volcanic rock (**Amv**). Domains IV and III are separated by a northeast-trending faulted/intrusive contact similar to the zones of granitic cataclasite that separate domains II and III. This contact is offset by northwest-trending cross-faults which also contain zones of cataclasite. In the northwest corner of 65 J/5, both lithologies and NW-trending fabrics in Domain IV continue across the geophysical trace of the Snowbird tectonic zone (Geological Survey of Canada, 1981).

TECTONITES

Dextral ductile shear zone

Separating domains I and II along the eastern shore of Angikuni Lake is a near-vertical, upper amphibolite grade mylonitic shear zone, up to 0.5 km wide (**Amy**). Along most of its length, mineral and stretching lineations plunge shallowly (5 - 15°). Shear sense indicators are consistently dextral. Intrusions, each up to several metres wide, and with a full range of composition from gabbro to granite, occur within the shear zone. These bodies contain the mylonitic fabric and are locally transposed along the shear zone, but are also locally discordant and are thus syntectonic. The shear zone displays evidence of a post-ductile brittle history in the form of local breccia zones and quartz stockwork veins.

Cataclasite

Greenschist-grade cataclasites (**Acg**) outcrop along the flanks of Domain III where they define steeply-dipping, north-, northwest- and northeast- trending zones, up to 300 metres wide. In addition, along the southwest margin of 65 J/5, rocks of both Domain III and Domain IV are cut by a north-trending zone of cataclasite. This zone forms the eastern boundary to down-dip lineated gneisses that constitute Domain VI in western Angikuni Lake (Fig. 2). The cataclasite is commonly non-foliated and consists of host rock fragments that are cut and separated by variably oriented, narrow (mm -scale and less), chloritic veinlets and irregular zones of pseudotachylite. Greenschist-grade cataclasites consistently cross-cut amphibolite-grade mylonitic rocks in the Angikuni region. It remains unclear if cataclasites represent changes in strain rate and/or temperature during a single Archean event, or if they reflect significantly younger (Paleoproterozoic) rejuvenation.

Dubawnt Supergroup; Christopher Island Formation: **PDal**; **PDau**; **PDcif**; **PDcifcg**; **PDcifsst** (Baker Lake Basin)

Two NE-trending Baker Lake Group sub-basins are exposed in northern Angikuni Lake. In the central part of the northern sub-basin, a wedge of Angikuni Formation (Blake, 1980) outcrops unconformably between Archean basement and the Christopher Island Formation (**PDcif**). The lower part of the Angikuni Formation (**PDal**) consists of tan-coloured, carbonate-cemented, parallel and cross-stratified arkose with metre-scale interbeds of conglomerate and pebbly sandstone. Decimeter-scale trough cross beds in arkose indicate northwest paleocurrents.The conglomerate is clast-supported and contains angular to sub-rounded gneissic and granitic clasts in a coarse sand to granule matrix. The upper part of the Angikuni Formation (**PDau**) consists of red siltstone, mudstone and parallel-stratified, fine-grained sandstone, and contains abundant mudcracks, mudchip breccia layers and wave ripple marks. These rocks were probably deposited in fluvial (lower part) and sand flat/playa (upper part) environments. An angular discordance between the Angikuni and Christopher Island formations is well-exposed near the eastern shores of northern Angikuni Lake. Shallowly (ca. 10°) east-dipping Christopher Island mafic and felsic minette flows lie above moderately (ca. 45°) east-dipping Angikuni strata, forming a tongue that cuts the lower/upper Angikuni Formation contact. The Angikuni Formation wedge at northern Angikuni Lake probably represents an isolated fault-bounded trough tilted before Christopher Island Formation volcanism.

Blake (1980) considered the Angikuni Formation to lie unconformably beneath the South Channel Formation, a thick locally-developed basal fanglomerate unit defined from the eastern Baker Lake region (Donaldson, 1965; Rainbird et al., 1999). Immediately north of, and in fault-contact with, the Angikuni Formation is a strip of non-carbonate cemented, framework-intact, polymictic conglomerate, granulestone, pebbly sandstone and arkose that is conformably overlain by Christopher Island Formation flows and breccias (**PDcifcg**). Blake (1980) assigned this strip, as well as open-framework, polymictic cobble-conglomerate and cross-stratified red arkose to the south and east, to the South Channel Formation. However, because the latter are interlayered with volcanic flows on scales of 5-10 m, they are more appropriately interpreted as part of the Christopher Island Formation, and we now consider that the strip of conglomerate is a basal Christopher Island lens (cf. Aspler et al., 1998a).

Elsewhere in the northern sub-basin, and in the southern sub-basin, the Christopher Island Formation (**PDcif**) directly overlies basement. It consists of massive to layered phlogopite-bearing mafic and felsic minette flows, and volcanic breccias containing intraformational volcanic clasts (with irregular margins and alteration rinds), local vesicular bombs and foliated basement pebbles, and rare accretionary lapilli interbeds. Minette dykes, likely feeders to the flows, occur throughout the region and display strong northeast trends. Local vent facies comprise beds containing up to 70% angular basement clasts (up to 50 cm) interlayered with volcanic flows. Interbeds of cross-stratified red arkose (**PDcifsst**) and open-framework polymictic conglomerate (**PDcifcg**) indicate fluvial sedimentation coeval with volcanism.

Beyond the limits of the two sub-basins, the Christopher Island Formation is exposed as small scattered outliers, most of which are represented schematically. Volcanic flows coat the basement surface and define an exhumed paleotopography with a minimum relief of 25 m (see also Donaldson, 1965). With the exception of local sedimentary infilling of paleojoints, a paleoregolith is absent. The outliers are significant because they demonstrate that changes in structural level of Archean basement took place before Christopher Island Formation volcanism, and that volcanic rocks once blanketed the entire region. Current age estimates for Christopher Island Formation magmatism are imprecise: 1850 +30/-10 (U-Pb zircon, Tella et al. 1985); 1825 ± 2 Ma ($^{40}Ar/^{39}Ar$ hornblende, Roddick and Miller 1994) and 1832 ± 28 Ma (Pb/Pb isochron, apatite, MacRae et al. 1996).

GOSSANS

Analytical results from eleven gossans are presented in Table 1. Sulphide veins cutting Christopher Island Formation conglomerates (Gossans1, 2, and 3) failed to yield significant values. Gossans 4, 5 and 6 are in quartz pebble conglomerates at the base of the sandstone-conglomerate sequence (**AsstIII**) that appears to unconformably overlie volcanic and carbonate rocks in Domain III. They have abundant matrix pyrite (presumably paleoplacer) and display slightly elevated Au values (14, 8, 5 ppb respectively), detectable Pt and Pd, and high Ni, Cr and V values. A mafic flow from Domain III (Gossan 7), extensively replaced by carbonate, has high Ni (1781 ppm) and Cr (1166 ppm). Gossans 9 and 10, with high Cu (12,267 and 54,301 ppm), are from chalcopyrite-pyrite-bearing quartz veins that are part of late brittle stockworks. Gossan 9 has elevated gold (45 ppb), whereas gossan 10 has elevated silver (18.3 ppm).

REFERENCES

Aspler, L.B. and Chiarenzelli, J.R.
1997: A preliminary transect across east - central Angikuni Lake, District of Keewatin, Northwest Territories; *in* Current Research 1997-C, Geological Survey of Canada, p. 133-143.

Aspler, L.B., Chiarenzelli, J.R., Powis, K. and Cousens, B.L.
1998a: Progress report: Precambrian Geology of the Angikuni Lake area, District of Keewatin, NWT. *in* Current Research 1998-C, Geological Survey of Canada, p. 55-66.
1998b: Geology of southern Angikuni Lake area, District of Keewatin, Northwest Territories; Geological Survey of Canada Open File 3608, scale 1:50,000.

Aspler, L.B., Chiarenzelli, J.R., Cousens, B.L. and Valentino, D.
1999: Precambrian geology, northern Angikuni Lake, and a transect across the Snowbird tectonic zone, western Angikuni Lake, Northwest Territories (Nunavut). *in* Current Research 1999-C, Geological Survey of Canada, p.107-118.

Blake, D.H.
1980: Volcanic rocks of the Paleohelikian Dubawnt Group in the Baker Lake - Angikuni Lake area, District of Keewatin, N.W.T. Geological Survey of Canada Bulletin 309, 39p.

Cousens, B.L.
1998: Geochemistry and neodymium systematics of Archean and Proterozoic igneous rocks from the Angikuni and Yathkyed lakes areas, western Churchill Province, Northwest Territories. Indian Affairs and Northern Development Canada Open File EGS 1998-6, 41p.

Donaldson, J.A.
1965: The Dubawnt Group, Districts of Keewatin and Mackenzie. Geological Survey of Canada Paper 64-20, 11p.

Donaldson, J.A., and de Kemp, E.A.
1998: Archean quartz arenites in the Canadian Shield: examples from the Superior and Churchill Provinces. Sedimentary Geology, v. 120, p. 153-176.

Eade, K.E.
1986: Precambrian geology of the Tulemalu Lake-Yathkyed Lake area, District of Keewatin. Geological Survey of Canada Paper 84-11, 31 p.

Gall, Q., Peterson, T.D., and Donaldson, J.A.
1992: A proposed revision of the Early Proterozoic stratigraphy of the Thelon and Baker Lake basins, Northwest Territories. *in* Current Research, Part C; Geological Survey of Canada, Paper 92-1C, p. 129-137.

Geological Survey of Canada
1981: Magnetic anomaly map of Dubawnt River, Northwest Territories. Geological Survey of Canada Map 1567 A, scale 1:1,000,000

LeCheminant, A.N. and Heaman, L.M.
1989: Mackenzie igneous events, Canada: Middle Proterozoic hotspot magmatism associated with ocean opening; Earth and Planetary Science Letters, v. 96, p. 38-48.

Loveridge, W.D., Eade, K.E., and Sullivan, R.W.
1988: Geochronological studies from Precambrian rocks from the southern District of Keewatin. Geological Survey of Canada Paper 88-18, 36p.

MacRae, N.N., Armitage, A.E., Miller, A.R., Roddick, J.C., Jones, A.L., and Mudry, M.P.
1996: The diamondiferous Akluilâk lamprophyre dyke, Gibson Lake area, N.W.T., *in* LeCheminant, A.N., Richardson, D.G., DiLabio, R.N.W., and Richardson, K.A., eds., Searching for diamonds in Canada, Geological Survey of Canada Open File 3228, p. 101-107.

Rainbird, R.H., Hadlari, T., and Donaldson, J.A.
1999: Stratigraphy and paleogeography of the Baker Lake Group in western Baker Lake Basin, Nunavut ; *in* Current Research 1999-C, Geological Survey of Canada, p. 43-54.

Roddick, J.C., and Miller, A.R.
1994: An ^{40}Ar - ^{39}Ar age from the REE-enriched Enekatcha ultrapotassic intrusive suite and implications for timing of ultrapotassic magmatism in the central Churchill Province, Northwest Territories. *in* Radiogenic and Isotopic studies: Report 8; Geological Survey of Canada, Current Research 1994-F, p. 69-74.

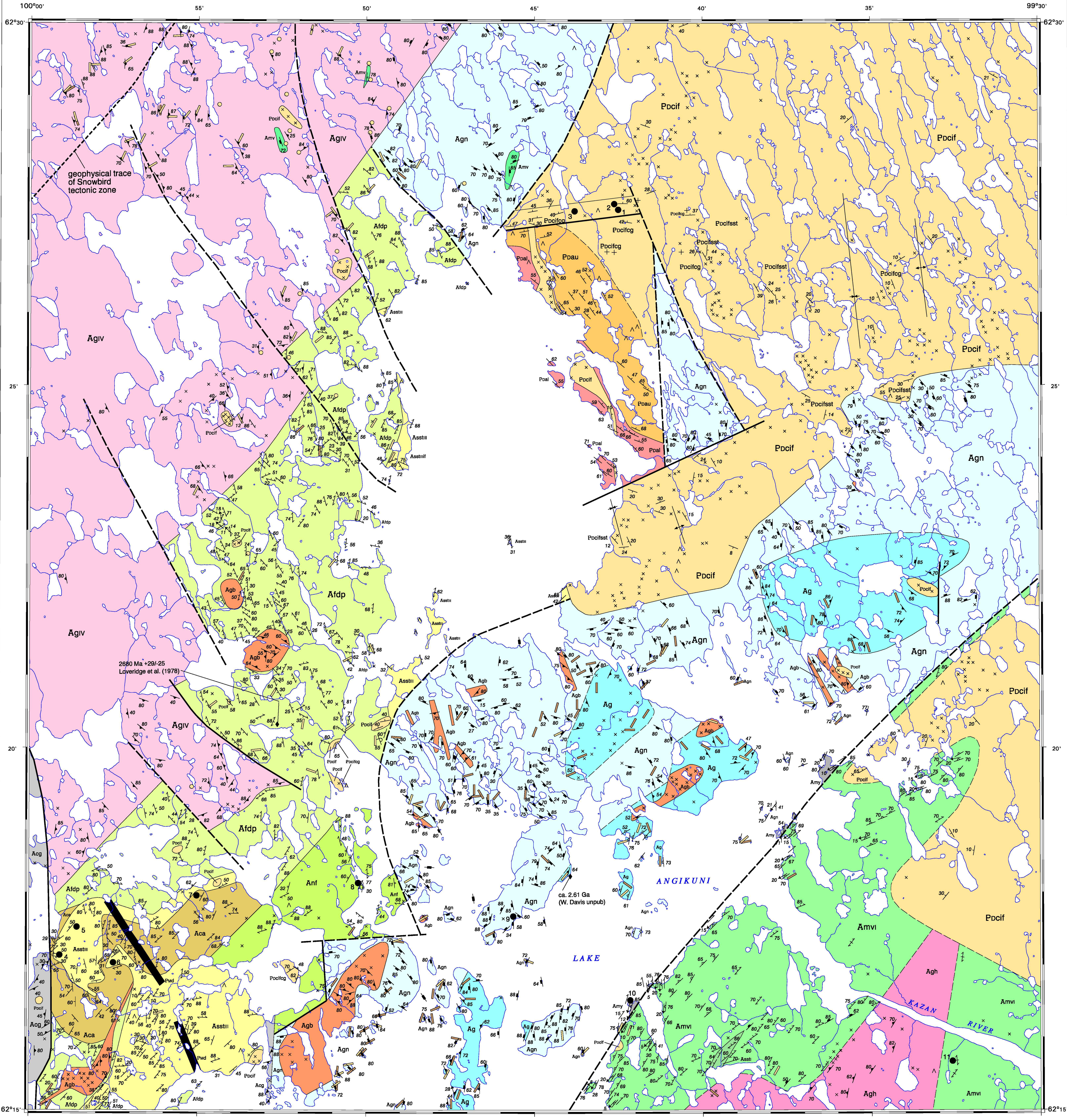
Schau, M.
1997: Geology of the Archean Prince Albert Group in the Richards Bay area, northeastern Melville Peninsula, District of Franklin, Northwest Territories. Geological Survey of Canada Bulletin, 44 p.

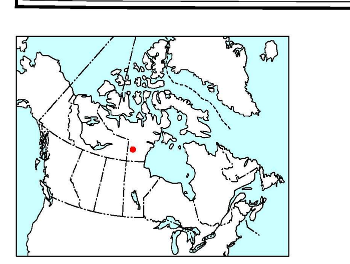
Tella, S., and Eade, K.E.
1985: Geology, Kamilukuak Lake, District of Keewatin, Northwest Territories; Geological Survey of Canada Map 1629A, scale 1:250,000.

Tella, S., and Eade, K.E.
1986: Occurrence and possible tectonic significance of high-pressure granulite fragments in the Tulemalu fault zone, District of Keewatin, N.W.T., Canada. Canadian Journal of Earth Sciences, v. 23, p. 1950-1962.

Tella, S., Heywood, W.W., and Loveridge, W.D.
1985: A U-Pb age from a quartz syenite intrusion, Amer Lake, District of Keewatin; a part of the Churchill structural province. Geological Survey of Canada Paper 85-1B, p. 367-370.

Natural Resources Canada | Ressources naturelles Canada
Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada
GEOLOGICAL SURVEY OF CANADA | COMMISSION GÉOLOGIQUE DU CANADA
NATMAP
CARTNAT
Canada's National Geoscience Mapping Program
Le Programme national de cartographie géoscientifique du Canada




LOCATION MAP

OPEN FILE 3781

EGS 1999-04

GEOLOGY

NORTHERN ANGIKUNI LAKE AREA

NUNAVUT

Scale 1:50 000 - Échelle 1/50 000

kilometres 1 0 1 2 3 4 kilomètres

Universal Transverse Mercator Projection | Projection transverse universelle de Mercator

Geology by L.B. Aspler, J.R. Chiarenzelli, 1996, 1997, 1998; B.L. Cousens, and K.B. Powis, 1997

Geological compilation by L.B. Aspler, 1998

Co-ordinated through the auspices of the NATMAP Western Churchill Project

Digital cartography by R.L. Allard, Geoscience Information Division

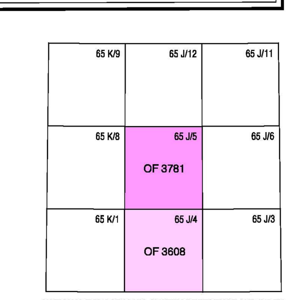
Electrostatic plot produced by the Geoscience Information Division

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 Geomatics Canada, modified by the Geoscience Information Division

The proximity of the North Magnetic Pole causes the magnetic compass to be erratic in this area

Magnetic declination 1999, 7° 33' E, decreasing 11.6' annually



NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO ADJOINING SURVEY OF CANADA MAPS

LEGEND

MESOPROTEROZOIC

MACKENZIE DIABASE

PMd — *Northwest-trending diabase dykes: non-foliated, unmetamorphosed. 1267 +/- 2 Ma baddeleyite (LeCheminant and Heaman, 1989)*

PALEOPROTEROZOIC

DUBAWNT SUPERGROUP; BAKER LAKE GROUP

PDcif — *Christopher Island Formation (**PDcif**): lamprophyre dykes; minette flows and volcanic breccia; conglomerate and arkose (**PDcifcg**); arkose (**PDcifsst**)*

PDau — *Angikuni Formation, upper: redbed siltstone, mudstone, fine-grained arkose*

PDal — *Angikuni Formation, lower: conglomerate, arkose*

- - - - - UNCONFORMITY - - - - -

ARCHEAN

TECTONITES

Acg — *Greenschist-grade cataclasite; predominantly granitic*

Amy — *Amphibolite-grade mylonitic gabbro, tonalite, granodiorite, granite and amphibolite*

- - - - - TECTONIC CONTACT - - - - -

INTRUSIVE ROCKS AND ALLIED GNEISSES

Note: relative ages of granitic plutons are unknown

AgIV — *Granite, granodiorite, gneiss (Domain IV)*

Agb — *Gabbro dykes, sills and stocks*

Agn — *Gneiss; granitic, tonalitic, amphibolitic, psammitic, pelitic*

Ag — *Granite to tonalite (Domain II)*

Agh — *Granite; coarse-grained, hornblende-bearing (Domain I)*

- - - - - INTRUSIVE CONTACT - - - - -

HENIK GROUP

Note: Inter-domain relationships of supracrustal units are unknown

AsstIII — *Subarkose, quartz pebble conglomerate, pelite; iron formation (**AsstIIItif**)*

- - - - - UNCONFORMITY ? - - - - -

Amf — *Mafic to felsic volcanic rocks*

Aca — *Microbial laminated and stromatolitic dolostone; pelite; felsic tuff*

Afdp — *Intermediate to felsic volcanic rocks: pyroclastic breccia; crystal tuff; agglomerate; sandstone; pelite*

Amv — *Mafic volcanic enclaves in plutonic and gneissic rocks outside of Domain I*

AsstI — *Sandstone, conglomerate, microbial laminated dolostone*

AmvI — *Mafic volcanic-gabbro dykes and sills: subaqueous sheet flows, local pillow lavas, pillow breccia, tuffs, dacitic interbeds (Domain I)*

Geological boundary (defined, approximate)
Fault (defined, approximate)
Axial trace (anticline, syncline)
Outcrop
Frost heave; probable subjacent outcrop
Bedding (upright, overturned, horizontal, tops unknown) 67 45 76
Bedding from pillow lavas strike and dip (upright) 34
Foliation in plutonic rocks, unspecified generation, strike and dip (inclined) 49
Foliation in supracrustal rocks, unspecified generation, strike and dip (inclined, vertical) 65
Gneissosity, strike and dip (inclined, vertical) 23
Mylonitic foliation, strike and dip (inclined, vertical) 53
Shear sense indicator
Stretching lineation (azimuth and plunge) 25
Gossan (with sample site number) 5
Age ca. 2.61 Ga

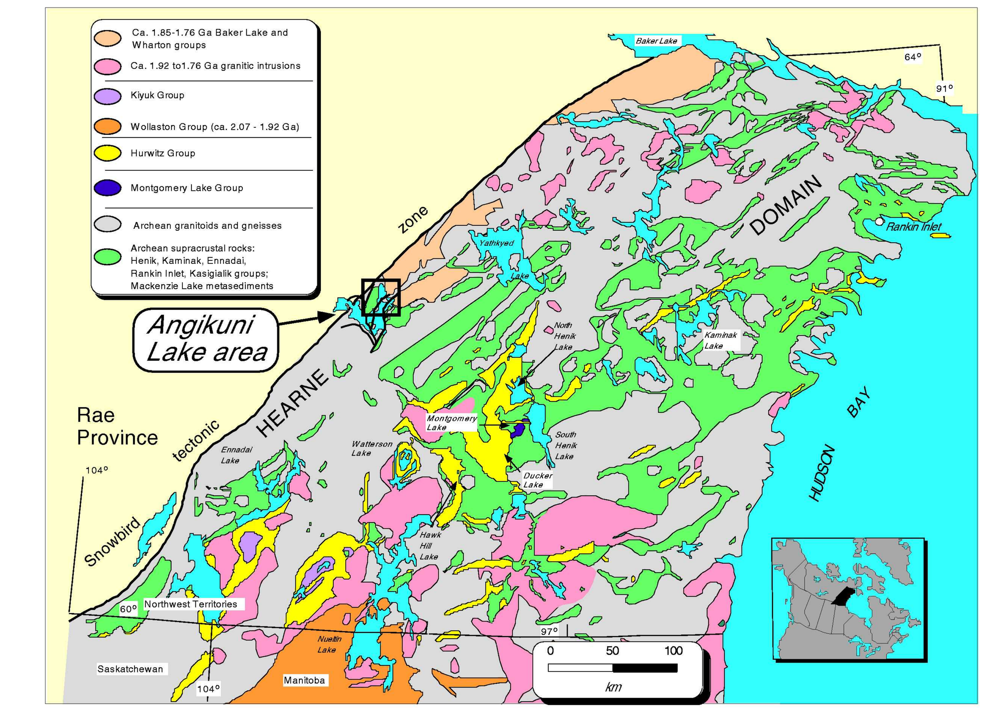


Figure 1. Simplified geology of Hearne Domain and location of study area

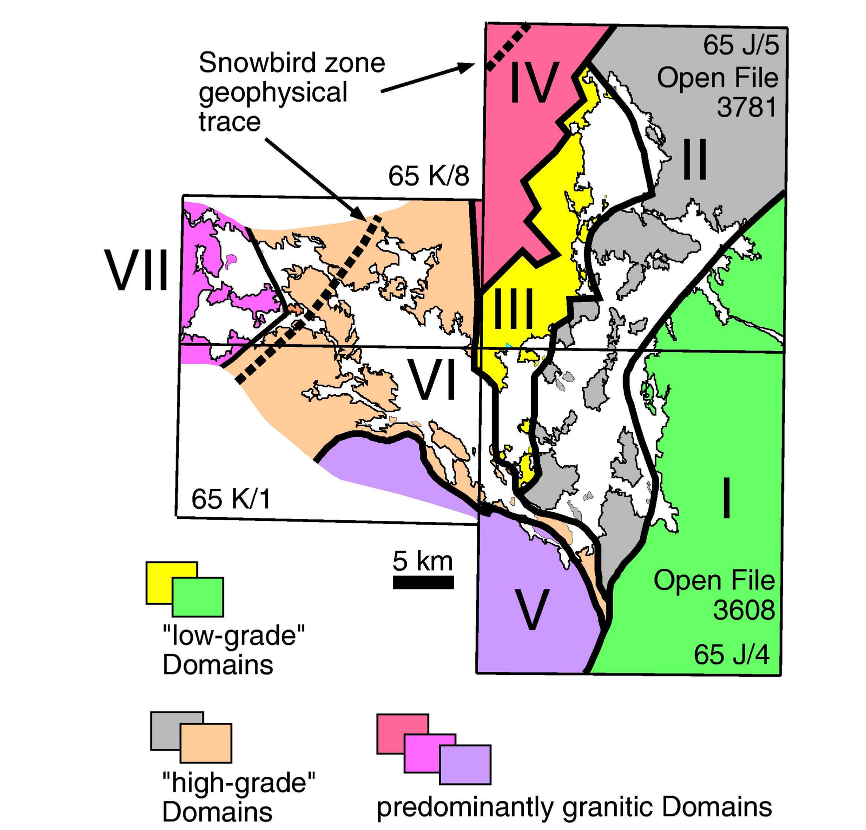


Figure 2. Archean lithostructural domains, Angikuni Lake

Table 1. Geochemistry of grab samples from gossans. ICP-MS by Acme Analytical Laboratories Ltd., Vancouver

Site	Easting/Northing	Sample	Lithology	Au	Ag	Pt	Pd	Cu	Pb	Zn	Ni	Cr	V	Mo	Fe	Mn	Co	As	Hg	W	Mg	Sb	U
			Element Detection Limit	2 ppb	0.3 ppm	1 ppb	1 ppb	1 ppm	3 ppm	1 ppm	1 ppm	1 ppm	1 ppm	1 ppm	0.01 %	2 ppm	1 ppm	2 ppm	1 ppm	2 ppm	0.01 %	2 ppm	5 ppm
1	463450/692505	97-25-23	sulphide veins	< 2	0.3			16	31	5	4	10	3	1	1.93	27	2	5	<1	2	0.04	< 3	< 8
2	463350/692520	97-25-24	in Christopher Island	< 2	< 0.3			10	19	6	6	12	3	5	1.53	21	7	2	<1	4	0.04	< 3	< 8
3	462350/692485	97-25-27	Formation arkose	< 2	< 0.3			15	6	4	6	14	5	2	1.32	52	3	< 2	<1	2	0.01	< 3	< 8
4	448700/690615	96-43-31	pyritic quartz	14	0.4	2	1	195	19	43	598	496	155	4	22.55	1116	40	259	2	4	0.79	31	< 5
5	449350/690685	96-43-37	pebble	8	< 0.3	3	5	192	21	34	565	274	62	5	17.39	414	90	383	< 1	3	0.48	< 2	< 5
6	450300/690575	96-43-44	conglomerate	5	< 0.3	5	3	117	11	36	641	1088	116	2	20.04	553	79	55	1	< 2	0.58	< 2	< 5
7	452450/690765	97-51-13	sulphide-carbonate altered mafic volcanic	< 2	1.5			180	46	5	1781	1166	< 3	< 1	32.16	576	194	151	< 1	< 2	0.33	< 3	< 5
8	456600/690785	96-33-14a	sulphides in quartz	7	< 0.3			521	30	1014	477	89	14	4	13.03	386	62	9	< 1	< 2	1.69	4	< 5
8		96-33-14b	veins and lenses in mafic volcanic rocks	1	< 0.3			251	26	193	126	32	23	5	14.99	614	38	< 2	2	2	1.57	6	< 5
9	460550/690690	96-31-20b	Cu sulphides in late	45	3.2			12267	109	78	53	21	1	5	11.84	27	39	21	< 1	7	0.1	< 2	< 5
10	463550/690470	96-29-3 b	quartz veins	< 2	18.3			54301	43	25	17	32	64	1	6.53	573	14	3	< 1	3	0.55	< 3	< 8
11	471800/690315	97-56-27	sulphides in iron formation	< 2	< 0.3			342	6	50	63	26	101	1	8.16	628	41	< 2	< 1	3	0.31	< 3	< 8

OPEN FILE
DOSSIER PUBLIC
3781
GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA
OTTAWA
11/99

Recommended citation:
Aspler, L.B., Chiarenzelli, J.R., Cousens, B.L. and Powis, K.B.
1999: Northern Angikuni Lake Area, Nunavut; Geological Survey of Canada Open File 3781, scale 1:50 000

Canada