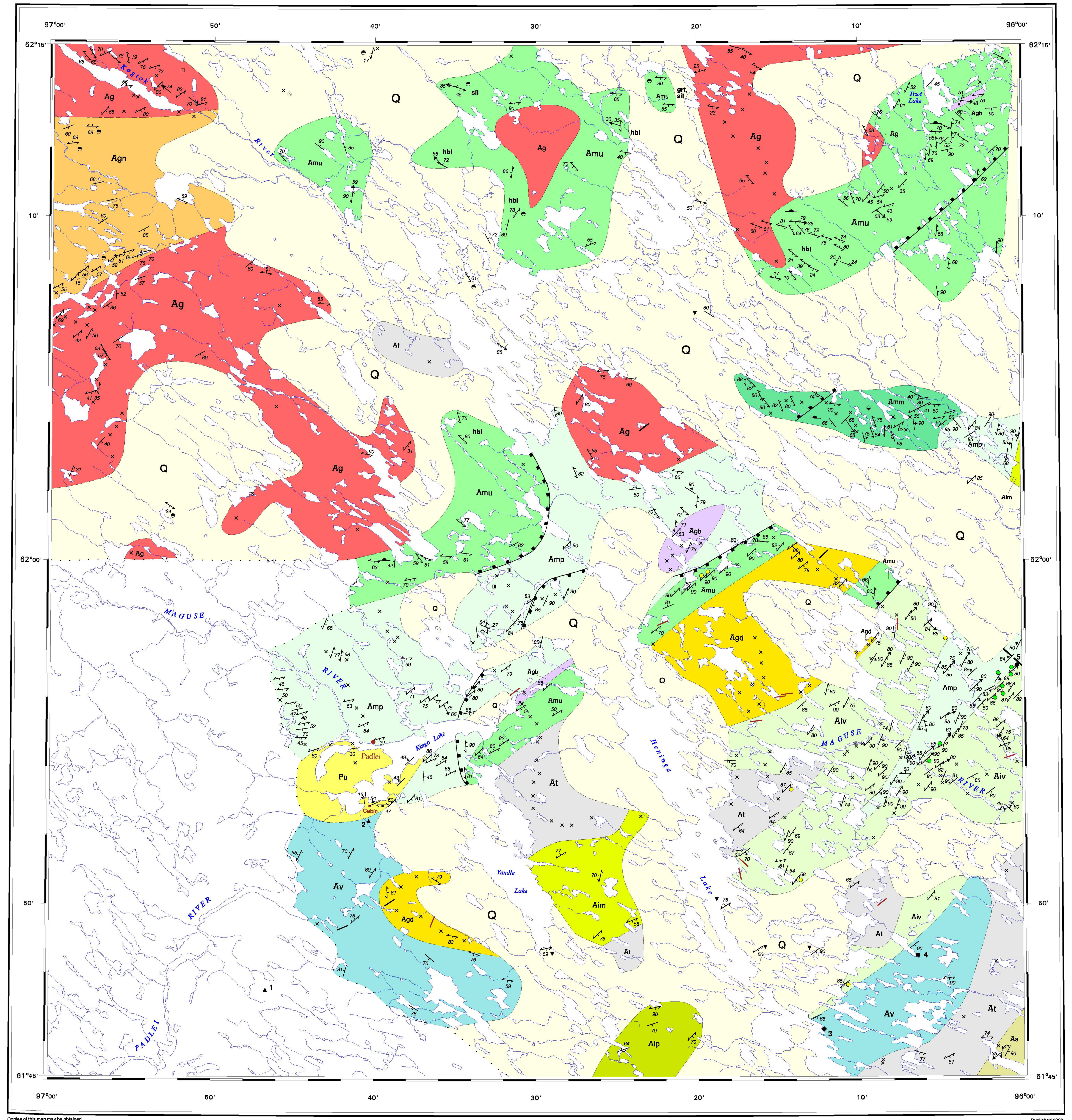
Natural Resources Canada / Ressources naturelles Canada

GEOLOGICAL SURVEY OF CANADA — COMMISSION GÉOLOGIQUE DU CANADA

NATMAP
CARTNAT
Canada's National Geoscience Mapping Program
Le Programme national de cartographie géoscientifique du Canada

DESCRIPTIVE NOTES



Published 1998

OPEN FILE 3648
GEOLOGY

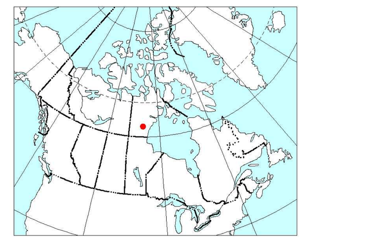
HENINGA LAKE - KOGTOK RIVER AREA, KIVALLIQ REGION

DISTRICT OF KEEWATIN
NORTHWEST TERRITORIES

Scale 1:125 000 - Échelle 1/125 000

Kilometres 2 0 2 4 6 8 10 Kilomètres

Universal Transverse Mercator Projection — Projection transverse universelle de Mercator



LOCATION MAP

Geology by S. Hanmer, H.A. Sandeman, R.H. Rainbird, T.D. Peterson, and J.J. Ryan, 1997

Geological compilation by S. Hanmer, 1998

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

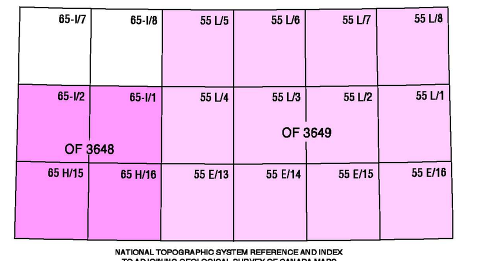
Electrostatic plot produced by the Geoscience Information Division

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

Digital base map assembled and modified by the Geoscience Information Division from digital bases provided by Geomatics Canada

Mean magnetic declination 1998, 1° 51'E, decreasing 8.1' annually. Readings vary from 0° 47'E in the NE corner to 2° 54'E in the SW corner of the map

Coordinated through the auspices of the Western Churchill NATMAP Project



LEGEND

Note: This legend is common to Open File 3648 and 3649. Not all units or symbols will appear on each map.

QUATERNARY

- Q

PROTEROZOIC

HURWITZ GROUP (Pn-Pu)

- Pu — Undifferentiated
- Pcs — Magnetite-chlorite schist
- Pag — AMETO FORMATION: gabbro, minor volcanic rocks
- Paa — AMETO FORMATION: argillite and siltstone
- Pav — AMETO FORMATION: pillowed and massive volcanic flows
- Pad — AMETO FORMATION: dolomite
- Pkw — KINGA FORMATION: Whitercock Member, quartz arenite
- Pkm — KINGA FORMATION: Maguse Member, arenite
- Pp — PADLEI FORMATION: polymictic conglomerate, quartz pebble conglomerate and argillite

ARCHEAN

- Asp — SPI GROUP: breccia, conglomerate and arenite
- Agb — Gabbro
- Agbx — Agmatitic and migmatitic gabbro
- Agd — Granodiorite
- Ag — Granite
- Agn — Granitic gneiss with metasedimentary rock inclusions
- Ap — Quartz/feldspar porphyry
- Ad — Diorite
- Admt — Diorite, magnetite-bearing
- At — Tonalite
- Am — Monzonite
- Amg — Monzogranite, microcline megacrysts
- Aqd — Quartz monzodiorite
- Amp — Mafic/intermediate volcanic pillow flows
- Amm — Mafic/intermediate volcanic flows
- Amu — Undifferentiated mafic-intermediate volcanic rocks
- Amu' — Undifferentiated mafic-intermediate volcanic rocks, banded or schistose
- Amp' — Mafic-intermediate pillowed volcanic rocks, banded or schistose
- Aip — Intermediate/mafic volcanic pillow flows
- Aim — Intermediate/mafic volcanic flows
- Aiv — Intermediate/mafic volcaniclastic rocks
- Av — Mixed volcanic rocks, including felsic component
- Af — Felsic volcanic rocks
- As — Clastic sedimentary rocks

Lithological contact
Contact inferred from magnetic anomaly
Fault, undifferentiated
Synform (Proterozoic)
Overturned synform (Proterozoic)
Antiform (Proterozoic)
Antiform (Archean)
Synform (Archean)
Hornblende isograd
Garnet isograd
Kaminak dyke
Mackenzie dyke
Tulemalu dyke
Minette dyke
Undifferentiated dyke
Limit of mapping
Outcrop
Bedding or layering, top unknown 85
Bedding or layering, top known 73
Bedding or layering, overturned 40
S_1 foliation 67
S_2 foliation 35
S_3 foliation 86
F_1 fold axis 26
F_1, minor fold axis, s-asymmetry 91
F_1, minor fold axis, z-asymmetry 59
F_2 fold axis 79
F_2, minor fold axis, z-asymmetry 61
Extension lineation 27
Crenulation lineation 21
Pillows
Carbonate-sericite
Quartz-carbonate veins
Gossan
Granite
Porpyhry
Tonalite
Diorite
Gabbro
Felsic volcanic rocks
Mafic volcanic rocks
Metasedimentary rocks
Banded iron formation
Base metal occurrence, with id number 4
Gold occurrence, with id number 5
Uranium occurrence, with id number 2
Polymetallic occurrence, with id number 3

Minerals

Hornblende — hbl
Garnet — grt
Sillimanite — sil
Cordierite — crd

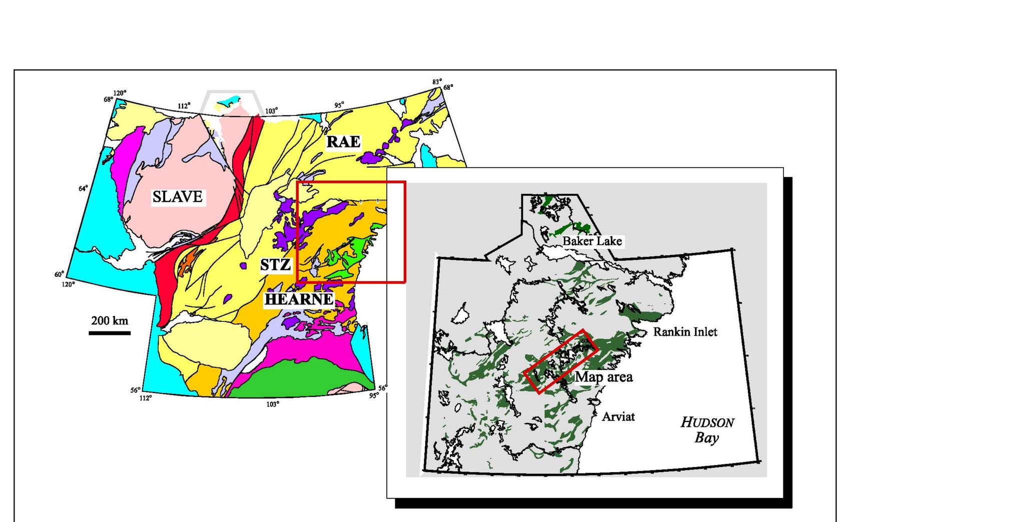


Figure 1. Schematic location of the map area represented by this set of maps. The Western Churchill Province is composed of the Rae and Hearne domains, separated by the Snowbird tectonic zone (STZ). Greenstone belt rocks in the enlargement window are represented in green.

TABLE 1. SUMMARY INFORMATION ON THE PRINCIPAL MINERAL OCCURRENCES WITHIN THE AREA COVERED BY THIS SET OF MAPS.

ID NUMBER	NAME	ALTERNATE NAME	STATUS	COMMODITIES	DEPTYPE	DESCRIPTION	NOTABLE ASSAYS, ETC.	NORMIN.DB#	CANMINDEX#	REFERENCE
1	Wolks Lake	DEN Claims	drilled prospect	U	Paleoplacer	py & uraninite/pitchblende disseminations in quartz-pebble conglomerate; 5 diamond drill holes (ddh)	2430 ppb Au on "Grid C" (DIAND AR082737)		00933700	DIAND AR019955; locations "e" & "f" in GSC Paper 69-52, Fig.3
2	Mac Bay	KIM & TEQUILA Claims	drilled prospect	U, Ag	Paleoplacer	radioactive layers (2 km long) in polymictic conglomerate with py matrix; 8 ddh			00933400	DIAND AR019958
3	Heninga Lake: Central Zone		reserves	Zn, Cu, Ag, Au	VMS	sulphide disseminations & layers in felsic to intermediate volcaniclastic rocks; 3 ore zones: Central, West & East - East is high grade	5.5 Mt of 9.0% Zn, 1.3% Cu, 68.6 g/t Ag & 1.03 g/t Au (Northwest Mines 20/03/1980)	065HNE0001	00159400	DIAND AR EGS-1983-9, pp. 89-91
4	MAG	E tip of Mag Lake	drilled prospect	Zn, Cu, Pb, Ag	VMS	sulphide disseminations & layers in silicified & sericite-altered felsic volcaniclastic rocks	31% Zn, 2.5% Cu, 135.0 g/t Ag & 0.255 g/t Au (DIAND AR082189)	065HNE0010	01048900	DIAND AR083285
5	False Hook Lake	NE of "SPI 16" showing*	drilled prospect	Au	Vein gold	quartz veins in sheared quartz-carbonate-altered volcanic rocks	8.9 g/t Au: 1 ddh gave insignificant gold (DIAND AR083309)			DIAND AR083177
6	Hook Lake	SPI 7 claim, W of JOYCE 1	drilled prospect	Au	Vein gold	quartz-carbonate veins in sheared iron carbonate-altered mafic volcanic rocks	10.36 g/t Au; ddh: 3.78 g/t Au over 3.7 m (DIAND AR083309)			DIAND AR082775
7	Turquetil Lake: Discovery	JOYCE 1 claim	reserves	Au	Vein gold	quartz-carbonate veins in sheared iron carbonate-altered mafic volcanic rocks	0.5 Mt of 6.31 g/t Au (>60 ddh) (Noble Peak Resources Ltd. Annual Report 1994)		01088600	DIAND AR082822
8	Spi Lake	DEE Claims	drilled prospect	Zn, Cu, Pb, Au, Ag	VMS	sulphide pods and stringers in silicified & sericite-altered felsic to intermediate volcaniclastic rocks; two mineralized zones: Southern & Northern	ddh: 4.25% Zn & 0.1% Cu, 23.31 g/t Ag & 0.857 g/t Au over 4.27 m	055LSW0133	00533200	DIAND NWT MIR 1973 EGS 1976-9, pp. 18-20
9	Unnamed	SE of Arrowhead Lake	drilled prospect	Zn, Cu, Ag, Au	VMS	sulphide disseminations & layers at contact between chlorite & sericite altered mafic volcanic rocks near a contact with sericite schist	ddh: 6.80% Zn, 0.31% Cu, 4.98 g/t Ag & 2.18 g/t Au over 1.5 m	055LSW0142		DIAND AR061294
10	Unnamed	S of Arrowhead Lake	drilled prospect	Cu, Ag	Vein	quartz-cbt veins in hornblende-basalt and diabase; ddh cut po-py stringers in rhyolite breccia (nb: ddh 300m NE tested py-po in argillite with 0.3% Zn)	channel sample: 0.02% Cu & 2.74 g/t Ag over 1.5 m	055LSW0141		DIAND AR061294
11	Unnamed	NE of Arrowhead Lake	drilled prospect	Zn, Cu	VMS	EM anomaly; ddh: po stringers in rhyolite breccia above fault contact with andesite	ddh: 0.12% Zn & 0.02% Cu over 1.5 m	055LSW0144		DIAND AR061294
12	VG Prospect	KAM Claims	drilled prospect	Au	Vein gold	quartz veins in sericite-altered felsic volcaniclastic rocks at sheared contact with chert-pyrrhotite-magnetite iron-formation	709.7 g/t Au			DIAND AR082938
13	Mule	Elbow Lake	drilled prospect	Zn, Cu, Fe	VMS	chert-pyrrhotite-magnetite iron-formation in felsic to intermediate volcaniclastic rocks		055LSE0025	01088200	DIAND AR082938
14	Unnamed		drilled prospect	Cu	VMS	sulphide disseminations in felsic tuff; diamond drill hole on nearby EM anomaly intersected disseminated pyrite and pyrrhotite		055LSE0029		DIAND AR080438
15	MAC Gold Zone		drilled prospect	Au	Vein gold	quartz veins with prominent sulphide halos in sheared chlorite & carbonate-altered mafic volcanic rocks near a contact with a quartz-feldspar dyke	ddh:13.989 g/t Au over 3.40 m	055LSE0060		DIAND AR082891
16	Unnamed		drilled prospect	Au	Vein gold	quartz veins in sheared, sericitized & quartz-carbonate-altered felsic volcaniclastic rocks	22.29 g/t Au	055LSE0060		DIAND NWT MIR 1988-89, p.55
17	LAO Zone		drilled prospect	Cu	Vein	quartz veins in carbonate and sericite-altered shear zone along contact between mafic and felsic volcaniclastic rocks		055LSE0057	00354100	DIAND AR017007
18	Kaminak Lake NE-2 (PETER)		drilled prospect	Au	Vein gold	quartz-carbonate veins in talc-sericite schist		055LSE0257	01089400	NMI No. 50282B or 055L07AU001; GSC Map 1216A
19	Cache Zone		reserves	Au	Vein gold	quartz veins and quartz-iron carbonate veins in sheared, sericitized & iron carbonate-altered felsic volcaniclastic rocks near contact with a quartz feldspar porphyry plug	0.364 Mt of 9.26 g/t Au (13 ddh)	055LSE0056		DIAND AR082888

Note: ID numbers 1 to 5 are located on Open File 3648 and ID numbers 6 to 19 are located on Open File 3649.

OPEN FILE
DOSSIER PUBLIC
3648
GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA
OTTAWA
09/98

Recommended citation:
Hanmer, S., Sandeman, H.A., Rainbird, R.H., Peterson, T.D., Ryan, J.J. and Goff, S.P.
1998: Geology, Heninga Lake - Kogtok River area, Kivalliq Region, Northwest Territories; Geological Survey of Canada, Open file 3648, scale 1:125 000

Canada