GEOLOGICAL SURVEY OF CANADA / COMMISSION GÉOLOGIQUE DU CANADA
DEPARTMENT OF ENERGY, MINES AND RESOURCES
MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES

LEGEND

PHANEROZOIC

LATE PROTEROZOIC

- Q — *Quaternary cover: drift, eskers, raised beaches*
- Gg — *GUNBARREL GABBRO: medium- to coarse-grained gabbro*
- Cd — *CLEAVER DIABASE: mainly west-northwest-trending diabase dykes, altered*

GREAT BEAR MAGMATIC ZONE (SUPRACRUSTRAL ROCKS)

McTAVISH SUPERGROUP

LABINE GROUP (LCBa–Ly)

- Ly — *Ash-flow tuffs, simple cooling units of strongly eutaxitic tuff generally 100-200 m thick and of unknown source, most contain 15-30 per cent broken phenocrysts of potassium feldspar, quartz, plagioclase and altered ferromagnesian minerals; some units contain boudlery lag deposits, secondary flow folds and lineated pumice fragments; intercalated lithic sandstone and conglomerate (Ly/s)*
- LAs — *ANIMAL ANDESITE: aphyric and pargasite-augite-plagioclase porphyritic andesitic lavas and breccias; some flows contain conspicuous quartz and potassium feldspar xenocrysts; minor lapilli tuff and pyroclastic breccia; intrusive phases (LAa')*

EARLY PROTEROZOIC

CLUT CAULDRON COMPLEX

- LUt / LU — *URANIUM POINT FORMATION: LU, predominantly sedimentary and pyroclastic rocks deposited within Clut Cauldron; interbedded sandstone, siltstone, mudstone, ashstone, crystal and lapilli tuff, pebbly conglomerate; LUt, ash-flow tuff member, simple cooling unit of purple weathering, lithic-rich ash-flow tuff*
- LWt / LWc — *WHITE EAGLE TUFF: LWt, densely welded, lithic-rich, propylitized intracauldron lithic tuff containing 25-35 per cent broken phenocrysts of altered plagioclase, amphibole, biotite, and in the stratigraphically lower portions, quartz; megabreccia zone containing kilometre-size blocks of older rocks occurs in the southwest corner of the White Eagle Falls sheet; LWtc, outflow facies tuff, simple cooling units of White Eagle tuff, commonly contains abundant black pumice fragments to 10 cm; LWtc, polymictic bouldery conglomerate; LWtv, crystal-vitric tuff; LWm, mesobreccia member, breccia comprising dominantly angular fragments of Balachey Pluton and Camsell River Formation; interfingers with, and grades into LWt*

BLACK BEAR CAULDRON COMPLEX

- LCs / LCb / LCs / LCc / LCa — *CAMSELL RIVER FORMATION: LCt, amygdaloidal, augite-plagioclase porphyritic andesitic, dacitic and basaltic lava flows and breccia; Note: contacts within this unit indicate individual flows; LCe, explosion breccia; LCs, sandstone, ashstone, lapilli tuff; LCc, conglomerate and laharic breccia; LCa, andesitic ash-flow tuff*
- LTs / LT — *TERRA FORMATION: upper member; LTs, volcanogenic lithic arkose, granular to pebbly, fine- to coarse-grained, ripple laminated and crossbedded, contains interbedded purplish brown mudstone drapes and rip-ups, minor polymictic cobbly conglomerate. Lower member; LTm, finely laminated mudstone with intercalated rhyolitic ashstone; LTr, rhyolitic lavas and breccias; LTd, interbedded dolomite, argillite, rhyolitic ashstone; LTb, sedimentary breccia; LTb', redecorated LTb*
- LMt / LMst / LMsf / LMs / LMr — *MOOSE BAY TUFF: upper member; LMt, densely welded, lithic-rich, rhyolite ash-flow tuff containing 15-25 per cent broken phenocrysts of quartz, potassium feldspar, and chloritized biotite; exclusively intracauldron facies; weathers red to flesh in stratigraphically higher parts, white to pale green in lower parts; LMst, andesitic-basaltic lapilli tuff; LMsf, andesitic-basaltic lava flows; LMs, volcanogenic sandstone; LMl, lower member; LMfa, plagioclase porphyritic andesite lava flow; LMs, sandstone; LMb, breccia comprising angular fragments of sedimentary rocks; LMm, mudstone, concretionary, ouroliah red; LMc, polymictic conglomerate; LMfl, ash-flow tuff*

- LBb — *BLOOM BASALT: pillow basalt, pillow breccia, minor mudstone, ashstone; LBd, stromatolitic-oolitic dolomite*
- LCBm / LCBa — *CONJUROR BAY FORMATION: upper member; LCBm, mudstone, ashstone, conglomerate, breccia, lapilli-crystal tuff. Lower member; LCBa, crossbedded quartz arenite, quartz pebbly conglomerate*

HOTTAH TERRANE

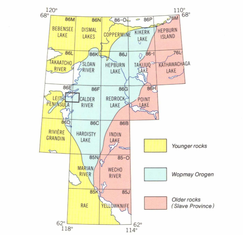
- Hd — *Medium- to coarse-grained hornblende-biotite quartz diorite, granodiorite; Hdm, monzogranite; Hdx, biotite syenogranite, generally foliated; Hdp, alkali feldspar porphyritic phases*
- Hhi — *Metasedimentary rocks, retrogressed cordierite-biotite-muscovite-quartz-feldspar rocks in the Flattrap Lake area; sheared pelites, semipelites, and quartzites in the Conjuror Bay area*

GREAT BEAR MAGMATIC ZONE (PLUTONIC ROCKS)

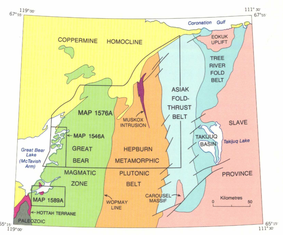
- s' — *Leucocratic syenogranite*
- s — *Coarse grained biotite syenogranite; some phases alkali feldspar porphyritic*
- fp — *Fine grained biotite granite*
- bq — *Biotite-quartz porphyry*
- R — *RICHARDSON PLUTON: mainly coarse grained biotite-hornblende monzogranite characterized by centimetre-size clots of quartz and locally by megacrysts of alkali feldspar*
- H — *HOOKER PLUTON: hornblende-biotite syenogranite; the presence of alkali feldspar phenocrysts up to 5 cm is distinctive*
- T — *TLA PLUTON: medium grained hornblende-biotite monzogranite and quartz monzonite, commonly with fine grained patches containing potassium feldspar megacrysts*
- m — *Mafic and intermediate dykes*
- P — *GROUARD PORPHYRIES: mainly north trending porphyritic dykes containing variable amounts of plagioclase, hornblende, biotite, quartz, and alkali feldspar in a pink to brick-red aphanitic matrix*
- Y — *YEN PLUTON: medium grained hornblende-biotite and biotite-hornblende monzogranite, quartz monzonite, and granodiorite. It generally contains 20-25 per cent ferromagnesium minerals, typically forming clots*
- pp — *Plagioclase porphyry, contains albitized plagioclase (1-3 mm) and irregular mafic clots sitting in a fine grained aphanitic matrix, weathers pink to flesh, locally brecciated country rocks*
- d — *Quartz diorite, fine grained slightly porphyritic, locally brecciated older rocks at margins*
- kcp — *Potassium feldspar-quartz-plagioclase porphyry*
- ir — *Biotite-quartz microporphyritic intrusions, lava flows and breccia, includes rocks of several different ages; porphyritic phases (ir')*
- Cqm — *CALDER QUARTZ MONZONITE: hornblende-biotite quartz monzonite, minor monzogranite*

- Bic — *BALACHEY PLUTON: seriate quartz monzonite, monzonite and quartz monzodiorite; has a wide alteration halo comprising an inner albitized zone, a central zone of magnetite-apatite-actinolite breccias, pods, veins, disseminations and an outer pyrite halo*
- RL — *RAINY LAKE INTRUSIVE COMPLEX: RLb, plagioclase porphyritic border phase containing 30-35 per cent plagioclase phenocrysts; RLmd, lower monzodiorite containing 60 per cent plagioclase phenocrysts; RLm, monzonite; RLs, pseudosyenite, mostly albite*
- maa — *Magnetite-apatite-actinolite pods*
- dm — *Monzonite-diorite intrusions*
- a — *Augite porphyritic intrusions*
- q — *Quartz porphyritic intrusions*

- g — *Plagioclase glomeroporphyritic gabbro and diabase sills*
- x — *Porphyritic dykes and sills, centimetre-size phenocrysts of cryptoperthite, plagioclase and quartz in a flesh red or grey aphanitic matrix*



DETAILED MAPPING PROJECTS (1:25 000 TO 1:125 000 SCALES)



TECTONIC ZONES OF WOPMAY OROGEN

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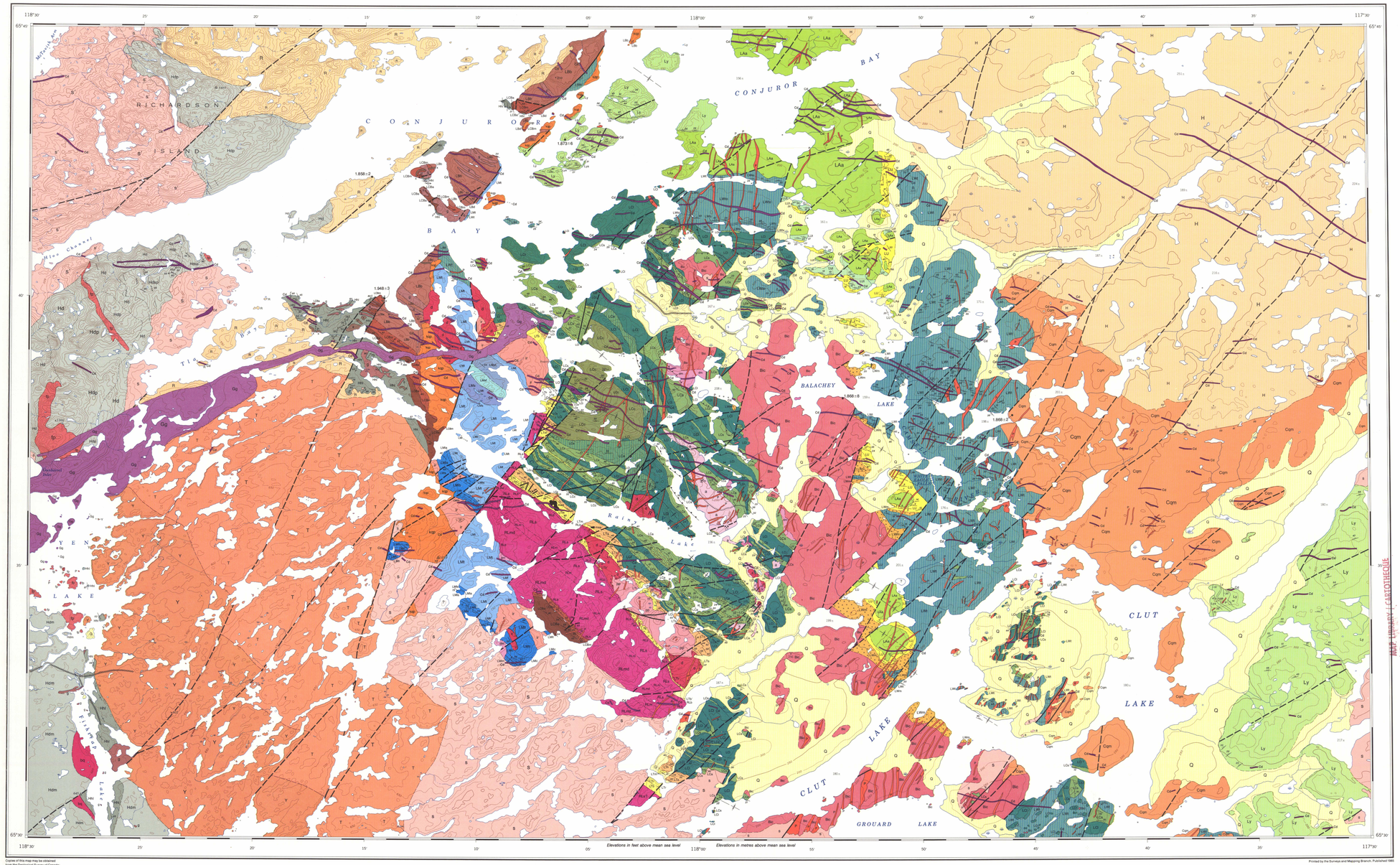
1984: Geology, Rainy Lake-White Eagle Falls, District of Mackenzie, Northwest Territories; Geological Survey of Canada, Map 1589A, scale 1:50 000



INDEX MAP

- Breccia
- Geological boundary (defined, approximate, gradational)
- Bedding, tops known (inclined, vertical, overturned)
- Bedding, tops unknown (inclined, vertical)
- Schistosity, cleavage (inclined, vertical)
- Strike of schistosity on horizontal surface
- Eutaxitic foliation
- Lineation (inclined)
- Fault (defined, approximate)
- Anticline (approximate, arrow indicates plunge)
- Syncline (approximate, arrow indicates plunge)
- Esker (direction of flow known)
- Mine
- Balachey Pluton Alteration Halo
  - Outer limit albite zone
  - Outer limit magnetite-apatite-actinolite zone
  - Outer limit pyrite zone
- (U-Pb zircon sample locality (age in Ga, 1 sigma error)
  - Courtesy of Bowring and Van Schmus, University of Kansas — 1.868±2 ●

MAP 1589A
GEOLOGY

RAINY LAKE - WHITE EAGLE FALLS

DISTRICT OF MACKENZIE
NORTHWEST TERRITORIES

Scale 1:50 000

Kilometres 1 0 1 2 3 4 Kilometres

Universal Transverse Mercator Projection

Geological compilation and interpretation by R. S. Hildebrand, 1982, based on mapping by R. S. Hildebrand, B. J. Johnson and K. S. Pelletier, 1979-80 with minor revisions 1983. The project was funded both in and out of the field by Indian and Northern Affairs, Canada, and the support of W. Padgham and his staff is acknowledged with pleasure. The geology of this map area is described in Geological Survey of Canada Paper 83-20

Geological cartography by F. J. Heney, Geological Survey of Canada

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

Base maps at the same scale published by the Surveys and Mapping Branch in 1956, 1976. Topography east of longitude 118°00' redrawn by the Geological Survey of Canada for this edition

Copies of the topographical editions covering this map area may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, Ontario K1A 0E9

Approximate magnetic declination 1984, 35°46.3' East, decreasing 16.1' annually

Elevations in feet above mean sea level, west of longitude 118°00'; in metres above mean sea level east of longitude 118°00'

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

RAINY LAKE – WHITE EAGLE FALLS
NORTHWEST TERRITORIES