

**SURFICIAL GEOLOGY**  
 This legend is common to Open Files 1356 and 1357

**PROGLACIAL AND GLACIAL ENVIRONMENTS**

**Glaciolacustrine Deposits:**

- Varved or massive clay and silt
- Fine Sands, sands, and deltaic sand

**Glaciofluvial and Ice Contact Deposits:**

- Outwash sands and gravel
- End moraine, interlobe moraine; sand, gravel and boulders
- Esker or kame complex; sand, gravel, boulders

**Glacial Deposits:**

- Predominantly clayey till
- Predominantly silty to sandy till

**NONGLACIAL ENVIRONMENT**

- Bedrock

Complexes: when two or more types of glacial or non-glacial environment are interspersed in a mosaic or repeating pattern, the relative dominant/subordinate amount of each type is indicated by sequential order. For example, 2/1 indicates predominantly silty to sandy till with lesser clayey till.

**SYMBOLS**

- Surficial geological boundary
- Striae
- Fluting, drumlin or drumlinoid ridge
- Esker, kame or kame complex

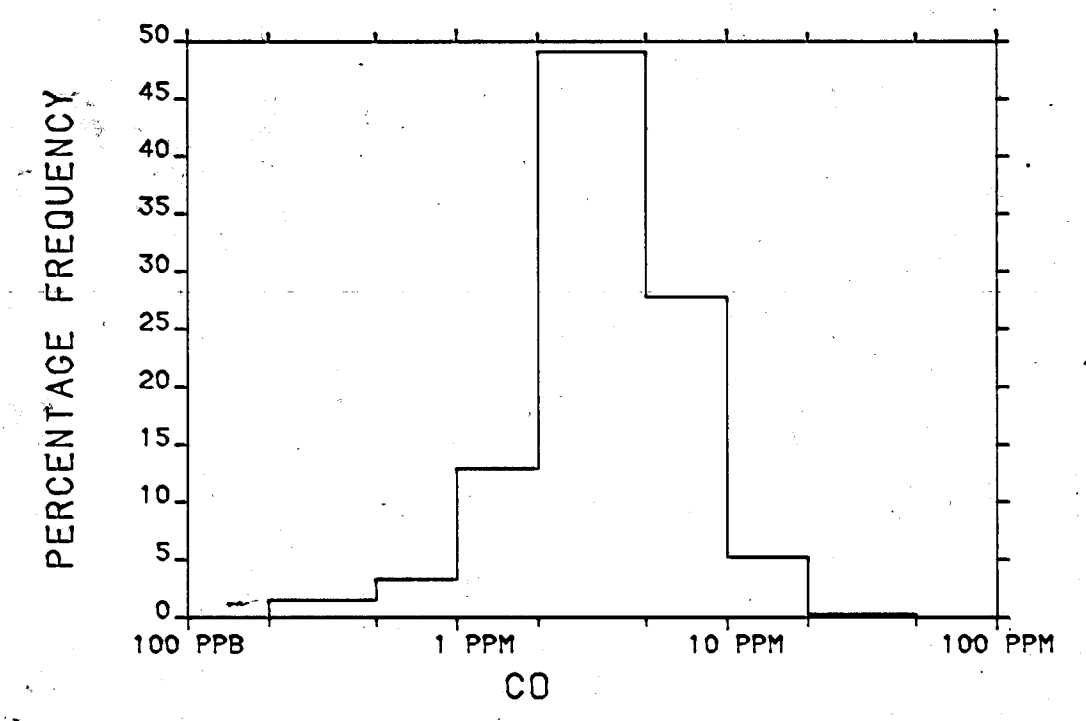
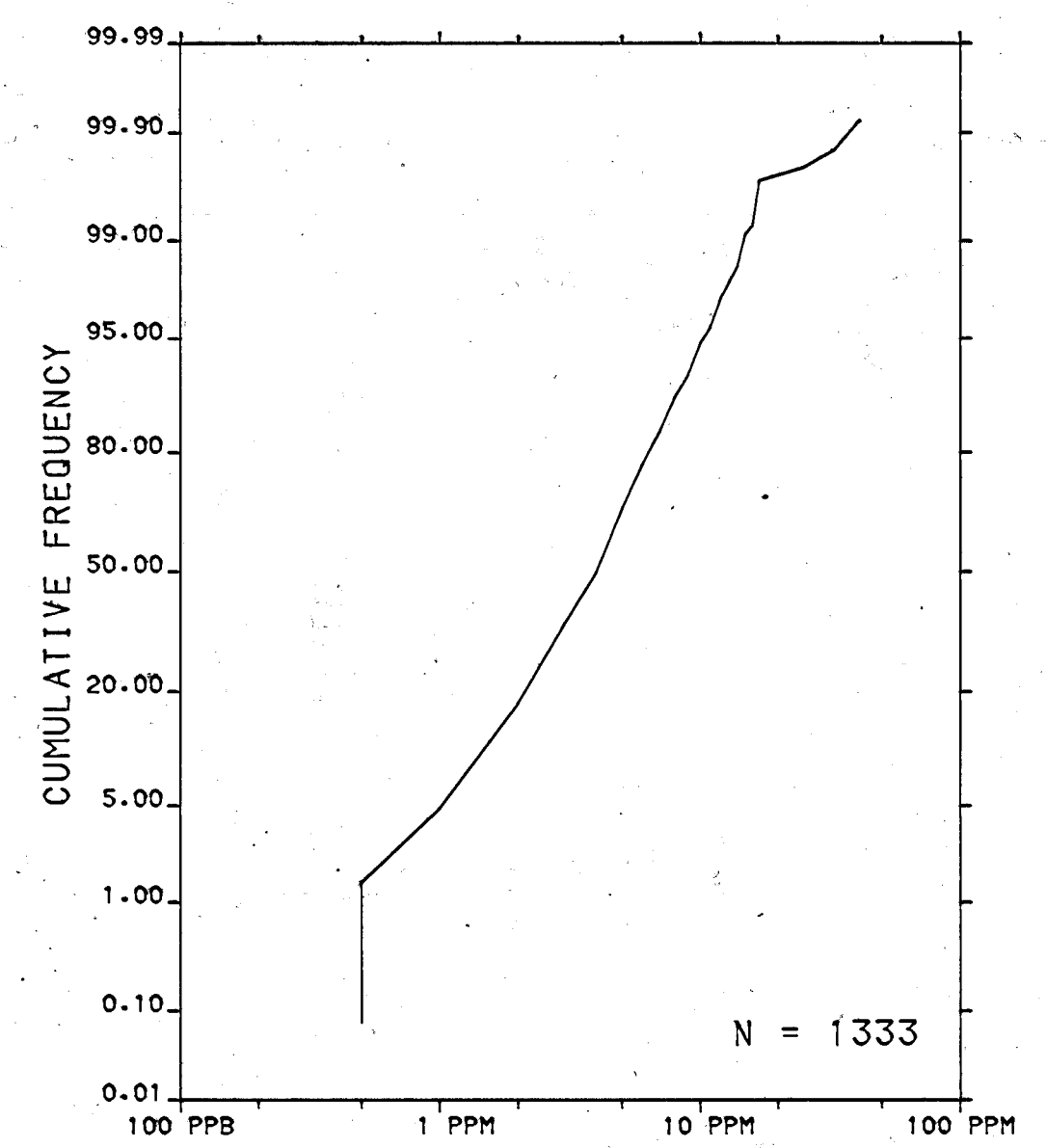
Surficial geology derived from:  
 Boissonneau, A.N. (1965), Map S465, Ontario Department of Lands, Forests, and Parks.  
 Press, V.K., Grant, D.R., and Rampton, V.N. (1969), Glacial Map of Ontario, Geological Survey of Canada, Map 1253A (Scale: 1:5 000 000).

Geological Survey of Canada  
 Mineral Resources Division  
 Exploration Geochemistry Subdivision

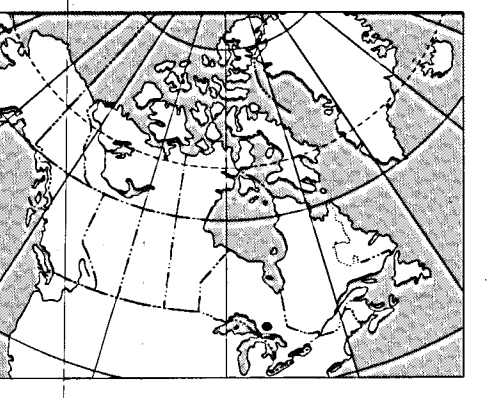
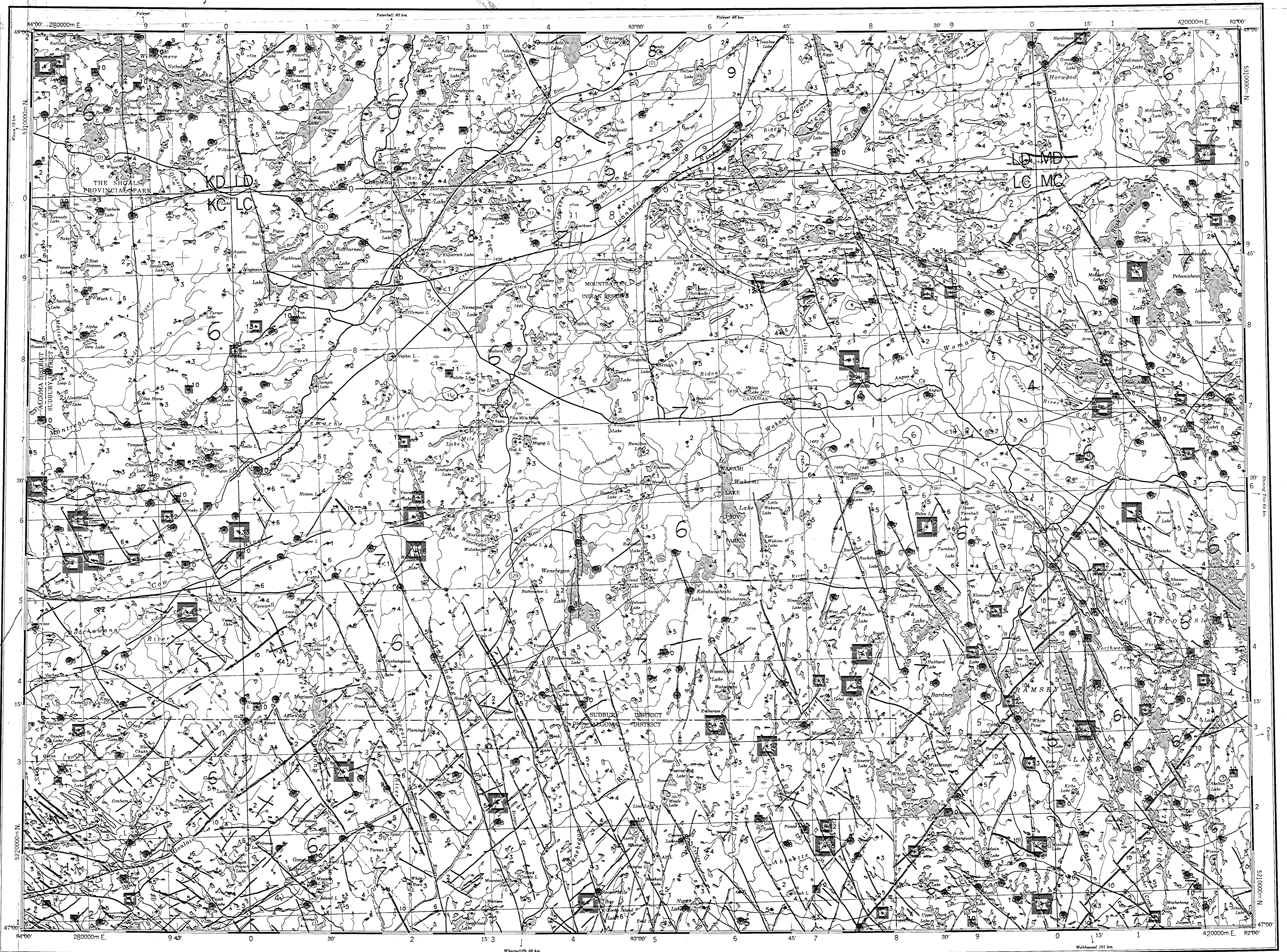
**CONTRACTORS**

- Sample collection by SIAL Géophysique Inc., Montreal
- Sample preparation by Golder Associates, Ottawa
- Sediment chemical analyses by Barringer Magenta Ltd., Rexdale, Ontario
- Water analyses by Chemex Labs Limited, Vancouver
- Water chemical analyses by Barringer Magenta Laboratories (Alberta) Ltd., Calgary

The regional geochemical trend map displayed above utilized a moving weighted average using an inverse distance function (1/d<sup>2</sup>) to filter out minor irregularities and emphasize broad-scale regional features. Single point anomalies may be suppressed or eliminated, however, geological units which are chemically enriched, or large metallic deposits undergoing weathering would be expected to produce identifiable anomalies.



CONCENTRATION	FREQUENCY
14 to 41	N = 27( 2.0%)
12 to 13	N = 29( 2.2%)
10 to 11	N = 54( 4.1%)
7 to 9	N = 191(14.3%)
<1 to 6	N=1032(77.4%)



Elevation in feet above mean sea level

Mean magnetic declination 1987, 8°20' West, increasing 10.9' annually. Readings vary from 9°07'W in the SE corner to 7°30'W in the NW corner of the map area

**COBALT (ppm)  
 LAKE SEDIMENTS  
 GSC OPEN FILE 1357**

REGIONAL GEOCHEMICAL RECONNAISSANCE MAP 93-1986  
 CANADA - ONTARIO  
 MINERAL DEVELOPMENT AGREEMENT (1986-1990)  
 LAKE SEDIMENT AND WATER GEOCHEMICAL SURVEY  
 CENTRAL ONTARIO, 1986

Scale 1:250 000 - échelle 1/250 000

Universal Transverse Mercator Projection  
 Projection transversale universelle de Mercator

Base map at the same scale published by the Surveys and Mapping Branch in 1979

**LEGEND**

**PRECAMBRIAN**

**LATE PRECAMBRIAN**

- 11 LPAC\* Carbonatite - alkalic complexes; alkalic syenite, pulaskite, brecciated and fenitized rocks, nepheline syenite, sovite, magnetite-apatite rock, urtite, ijolite, melteigite

**EARLY TO MIDDLE PRECAMBRIAN**

- 10 LPAD Diabase dykes

**EARLY PRECAMBRIAN (ARCHEAN)**

- 9 ASUB Shawmere Anorthosite Complex; anorthosite to gabbro, gneissic to flaser-textured tonalite and monzonite
- 8 AKN Kapuskasing structural zone rocks; meta-igneous rocks, melanocratic granulite, pelitic and psammitic granulites, metasedimentary gneiss and arkosic metasediments
- 7 AGM Massive felsic to intermediate plutonic rocks; granite, granodiorite, tonalite, quartz monzonite, monzodiorite, pegmatite
- 6 AGN Foliated to gneissic felsic to intermediate plutonic rocks; granite, granodiorite, tonalite, quartz monzonite, diorite, migmatite
- 5 AUB Mafic and ultramafic intrusive rocks, including gabbro, diorite and serpentinized ultramafics
- 4 ASGN Paragneiss, orthogneiss and migmatite
- 3 ACP Metasediments; greywacke, arkose, quartzite, conglomerate, argillaceous and migmatized metasediments, biotite-quartz-feldspar schist and gneiss
- 2 ANWF Felsic to intermediate metavolcanics; rhyolite to dacite flows, and fragmentals, tuff, lapilli-tuff, agglomerate, breccia, porphyritic flows
- 1 ANWB Mafic to intermediate metavolcanics; basalt to andesite flows, porphyritic flows, and pillow lavas, mafic pyroclastics, layered amphibolite, diorite, gabbro, migmatized mafic metavolcanics

IF Iron formation

\*A mnemonic code assigned to rock types and recorded as part of field observations.

Geological boundary: . . . . .

Fault . . . . .

No analytical results . . . . .

The geology base and legend for these geochemical maps were derived from: Geology - Chapleau - Foley, Map 2221 Geological Compilation Series, Ontario Department of Mines, 1:253 400, McCrack, G.F.D., Misiura, J.D., and Brown, P.A. (1979), Geology - Plutonic Rocks in Ontario, Geological Survey of Canada Map 1533A, to accompany GSC Paper 80-23.

Copies of map material and listings of field observations, analytical data and methods, from which the open file was prepared, are available from:

K.G. Campbell Corporation  
 880 Wellington St.  
 Box 238  
 Ottawa, Ontario  
 K1R 6K7

Digital data are available on IBM-PC compatible diskette from:

Geological Survey of Canada  
 Publications Distribution  
 601 Booth St.  
 Ottawa, Ontario K1A 0E8  
 Tel: (613)995-4342

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**COBALT (ppm)  
 LAKE SEDIMENTS  
 GSC OPEN FILE 1357  
 CENTRAL ONTARIO, 1986**

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Contribution to Canada - Ontario Mineral Development Agreement 1986 - 1990, a subsidiary agreement under the Economic and Regional Development Agreement. Project funded by the Geological Survey of Canada.



Energy, Mines and Resources Canada  
 Énergie, Mines et Ressources Canada

