PRELIMINARY SERIES

LEGEND

	One or More Occurrences	Area of Occurrences
STRATIFIED DEPOSITS OF SEDIMENTARY ORIGIN		
Bedded sedimentary deposits	o	●
Sedimentary iron deposits containing minor manganese	+	+++
Bog deposits	b	b
UNSTRATIFIED DEPOSITS		
Veins, lenses, stringers, nodules, disseminations of uncertain origin	△	▲
Mainly epigenetic veins and deposits containing metallic minerals and manganiferous gangue	◊	
DEPOSITS NOT WELL KNOWN OR DEFINED	×	
Locality number referred to in text	19	

Open symbols indicate occurrences only

Closed symbols and most area symbols indicate former producers or large deposits of low grade material

Compiled by A. G. Johnston and W. D. McCartney, 1964

Cartography by the Geological Survey of Canada, 1964

LEGEND

SEDIMENTARY AND VOLCANIC ROCKS

CENOZOIC

PLEISTOCENE AND RECENT — Q — *Alluvium, glacial drift; included sand and gravel in District of Franklin may be in part Tertiary*

OLIGOCENE — Φ — *Sedimentary rocks: sandstone, conglomerate*

PALEOCENE AND EOCENE — E — *Sedimentary rocks: sandstone, shale; conglomerate; coal measures*

TERTIARY — Tv — *Mainly volcanic rocks: basalt, andesite. May include some Upper Cretaceous rocks*

Ts — *Mainly sedimentary rocks: sandstone, shale, conglomerate; coal measures. Many occurrences on Axel Heiberg and Ellesmere Islands not indicated*

MESOZOIC

UPPER CRETACEOUS — Ku — *Mainly sedimentary rocks: shale; sandstone, conglomerate, marine and non-marine; oil and natural gas, coal, bentonite*

LOWER CRETACEOUS — Kl — *Mainly sedimentary rocks: sandstone, shale, conglomerate; marine and non-marine; oil and natural gas, coal, tar sand. Includes some Triassic and Jurassic beds south of Peace River*

CRETACEOUS (Undivided) — K — *Sedimentary rocks*

JURASSIC AND CRETACEOUS — JK — *Undivided Jurassic and Lower Cretaceous in Rocky Mountains and District of Franklin*

JURASSIC — J — *Sedimentary and volcanic rocks: argillite, greywacke, sandstone; limestone; andesite, volcanic breccia, tuff. Includes considerable Lower Cretaceous and some Triassic rocks. Oil in Alberta and Saskatchewan*

TRIASSIC — Tr — *Sedimentary and volcanic rocks: argillite, quartzite, limestone; andesite, volcanic breccia, tuff. Includes Jurassic rocks. May include some Palaeozoic limestone in southwestern Yukon Territory. Natural gas at Fort St. John*

MESOZOIC (Undivided) — M — *Sedimentary and volcanic rocks: some coal measures. Includes some Palaeozoic in Yukon Territory*

PALÆOZOIC

CARBONIFEROUS AND PERMIAN — C — *Sedimentary and volcanic rocks: argillite, cherty argillite; limestone, quartzite; andesite, volcanic breccia, tuff, sandstone, shale, conglomerate*

PENNSYLVANIAN — Cp — *Mainly sedimentary rocks: sandstone, shale, conglomerate; some volcanic rocks; coal measures*

MISSISSIPPIAN — Cm — *Mainly sedimentary rocks: limestone; shale, sandstone, conglomerate; volcanic rocks; gypsum, anhydrite; oil and natural gas*

DEVONIAN AND CARBONIFEROUS — DC — *Sedimentary rocks: limestone; dolomite, shale; gypsum, anhydrite; oil and natural gas. Includes some Cambrian and Triassic in Rocky Mountains*

DEVONIAN — D — *Sedimentary and volcanic rocks: shale, limestone, dolomite; conglomerate, sandstone; volcanic rocks; salt; oil and natural gas*

SILURIAN — S — *Mainly sedimentary rocks: sandstone, shale, limestone, dolomite; conglomerate; some volcanic rocks; gypsum, salt; oil and natural gas*

ORDOVICIAN — O — *Sedimentary rocks: limestone, dolomite, shale, argillite, sandstone, quartzite, grit; oil and natural gas*

ORDOVICIAN AND SILURIAN — OS — *Sedimentary rocks. Includes some Devonian on mainland north of Great Bear Lake*

CAMBRIAN — € — *Sedimentary rocks: dolomite, limestone, shale, chert, quartzite; sandstone, conglomerate*

PALÆOZOIC (Undivided) — P — *Mainly sedimentary rocks. May include some Mesozoic and Precambrian rocks in northern Cordillera and Precambrian rocks on Ellesmere Island*

PRECAMBRIAN

LATE PROTEROZOIC — Pu — *Sedimentary and volcanic rocks: sandstone, quartzite, conglomerate, shale; iron-formation, basalt. Includes younger rocks in Yukon Territory*

Pus — *Sedimentary and volcanic rocks and derived metamorphic rocks: argillite, quartzite, limestone; schist, gneiss, crystalline limestone; andesite, greenstone. May be in part Palaeozoic*

EARLY PROTEROZOIC — Pl — *Sedimentary and volcanic rocks: shale, argillite, slate, chert; limestone, dolomite (algal structures) ; sandstone, quartzite, arkose, greywacke, conglomerate; andesite, basalt, trachyte; tuff, volcanic breccia; iron-formation*

PROTEROZOIC (Undivided) — P — *Sedimentary and volcanic rocks*

ARCHÆAN — As — *Mainly sedimentary and derived metamorphic rocks: argillite, slate, arkose, quartzite, greywacke, conglomerate; sedimentary gneiss and schist, iron-formation. Asg; Grenville*

Av — *Mainly volcanic and derived metamorphic rocks: andesite, dacite, basalt; rhyolite, trachyte; minor volcanic breccia and tuff; greenstone schist, hornblende gneiss*

ARCHÆAN (Undivided) — A — *Sedimentary, volcanic, and metamorphic rocks*

INTRUSIVE ROCKS

MESOZOIC AND CENOZOIC

7 — *Acid rocks: granodiorite, quartz monzonite, quartz diorite; granite, syenite*

6 — *Basic and ultrabasic rocks: gabbro, pyroxenite, peridotite*

PALÆOZOIC

5 — *Acid, basic, and ultrabasic rocks: granite, and related rocks; peridotite, pyroxenite, gabbro; serpentine; asbestos deposits*

PROTEROZOIC

4 — *Acid rocks: granite; granodiorite, diorite; gneissic rocks in Yukon Territory*

3 — *Basic rocks: diabase sills and dykes*

ARCHÆAN AND/OR PROTEROZOIC

2 — *Mainly acid rocks: granodiorite, granite, quartz diorite granite gneiss. Includes much granitized sedimentary and volcanic rock. Represents undivided Precambrian in lesser known parts of Canadian Shield*

1 — *Basic and ultrabasic rocks: mainly anorthosite and gabbro*

Geology derived from published and unpublished maps and reports of the Geological Survey of Canada, Provincial Departments of Mines, mining companies, and other sources. Cartography by the Geological Survey of Canada, 1954, with some revisions, 1962.

GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF MINES AND TECHNICAL SURVEYS

MAP 15-1964

PAPER 64-37

METALLOGENIC MAP

MANGANESE IN CANADA

SCALE: 1 INCH TO 120 MILES $\frac{1}{7,603,200}$

MILES 100 0 100 200 300 400 MILES

KILOMETRES 100 0 100 200 300 400 500 KILOMETRES

MANUSCRIPTS
OCT 22 1964
G.S.C.

MANUSCRIPTS
1964

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