

LEGEND

This legend is common to Open Files 4683 to 4701. Coloured legend blocks indicate map units that appear on this map. Not all map symbols shown in the legend necessarily appear on this map.

SURFICIAL DEPOSITS

QUATERNARY

HOLOCENE

COLLUVIUM: block and rubble accumulations, 1-50 m thick.

Ca Talus: active block and rubble accumulations as much as 50 m thick forming talus (fence) aprons and fans below cliffs resulting from rock falls and debris flows; commonly crossed by debris flow channels and levees.

Cr Rock glacier debris: talus, generally 10-50 m thick, deformed by active flow of interstitial or buried ice to form rock (debris) glaciers with transverse ridges and furrows, and pits, with steep, unstable sides and fronts.

FLUVIAL SEDIMENTS: alluvium; gravel and sand, 2-30 m thick.

Ap Alluvial plains: active braided floodplains; includes active proglacial outwash.

At Alluvial terraces: gravel and sand, 2-20 m thick.

Af Alluvial fans: gravel and sand, 2-20 m thick.

MARINE AND GLACIAL MARINE SEDIMENTS: gravel, sand, silt, and clay, 1-20 m thick, deposited in deltaic and beach environments during regression of the postglacial sea.

Mr Beach sediments: gravel and sand, 1-5 m thick, forming ridges and swales.

Mt Deltaic sediments: clay, silt, sand, and gravel, 5-20 m thick, forming coarsening upward sequences under dissected terraces.

Mv Deepwater proglacial silt veneers: silt, clay silt, and fine sand with dropstones, 1-2 m thick.

Mb Deepwater proglacial silt blankets: silt, clay silt, and fine sand with dropstones and minor gravel, 2-10 m thick.

GLACIAL LACUSTRINE SEDIMENTS: clay, silt, sand, and gravel deposited in glacier dammed lakes in deepwater, beach, and deltaic environments.

Lt Deltaic sediments: clay, silt, sand, and gravel, 5-20 m thick, forming coarsening upward sequences under dissected terraces.

Lv Deepwater proglacial silt veneers: silt, clay silt, and fine sand with dropstones, 1-2 m thick.

Lb Deepwater proglacial silt blankets: silt, clay silt, and fine sand with dropstones, 2-5 m thick.

GLACIOFLUVIAL SEDIMENTS: gravel and sand, 1-10 m thick, deposited behind, at, and in front of the ice margin.

Gp,t,f Proglacial outwash: gravel and sand, 1-10 m thick, forming braided floodplains, Gp; terraces, Gt; and fans, Gf.

Gr,h Ice contact stratified drift: gravel and sand, 1-5 m thick, forming eskers, Gc; and kames, Gh.

EARLY HOLOCENE AND WISCONSINAN

TILL: nonsorted stony muds, 0.5-60 m thick, deposited in subglacial and ice marginal environments; lithic composition generally reflects underlying bedrock.

Tm End moraine: 5-60 m high, composed of or mantled by till, extensively kettled in places; large features mainly covered by debris-rich relict glacier ice.

Tv Till veneer: 0.5-2 m thick and discontinuous.

Tvw Washed till veneer: 0.5-2 m thick, surface armored by stones due to washing by subglacial meltwater.

Tb Till blanket: 2-10 m thick forming an undulating blanket with drumlins and ribbed moraines in places.

Tbr Ribbed till blanket: 2-10 m thick forming ribbed (Rogen) moraines.

BEDROCK

PRE-QUATERNARY

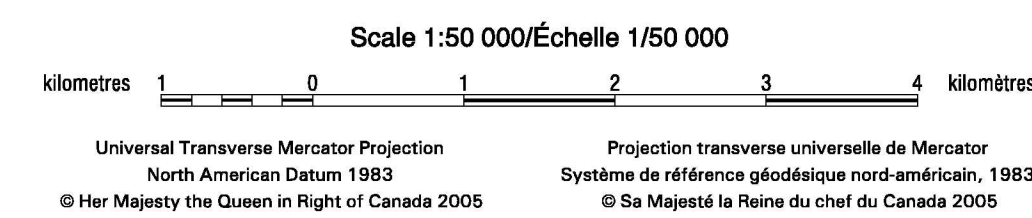
R ROCK: rock of various compositions and ages (Jackson and Sangster, 1987) variably modified by glacial erosion during the Quaternary and with patchy till cover; hilly and hummocky surfaces, ice moulded in places, with lake basins in subglacially eroded regions; smooth surfaces exhibiting little or no sign of glacial erosion in peninsular interiors (Dyke, 1993); cliffs resulting from glacial over-steepening; in places veneered by thin till, commonly bouldery.

Geological boundary (defined, assumed)
 Areas covered by perennial icefields during the Little Ice Age (indicated by a white pattern)
 Glacial lake spillway
 Marine limit
 Marine limit elevation in metres 60
 Weakly developed strandline
 Cliff in bedrock
 Lateral meltwater channel; barb on upslope side
 Subglacial and proglacial meltwater channel (large, small)
 Esker
 Kame
 Ice contact face
 Ribbed moraine
 Lateral moraine
 End moraine
 Margin of glacial dispersal train; teeth toward axis, steep side of teeth face down ice
 Lateral sliding boundary; teeth on sliding side, coal-based ice on other side, steep side of teeth face down ice
 Iceberg scour
 Drumlinoid hill
 Crag-and-fall
 Ice moulded bedrock
 Strike (ice flow direction known, unknown)
 Crossed strata (numbers indicate relative age, 1 being the oldest)
 Field observation site: boundary diameter (bd), boundary gravel (bg), diamicton (d), gravel (g), gravelly sand (gs), mud (m), muddy sand (ms), rock (r), sand (s), sandy gravel (sg), stony mud (sm), till (t)
 Field observation site: material as above near rock outcrop
 Radiocarbon date
 Date
 Material
 Lab no.
 Elevation (m)

OPEN FILE 4697
SURFICIAL GEOLOGY
COCKBURN RIVER
BAFFIN ISLAND
NUNAVUT

Author: A.S. Dyke
 Geology by A.S. Dyke, 2004

Field data provided by De Beers Canada Corporation, 2003
 Digital cartography by M.M. Prosku, Earth Sciences Sector Information Division (ESS Info)
 This map was produced from processes that conform to the ESS Info Publishing Services Subdivision Quality Management System, registered to the ISO 9001:2000 standard
 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 ESS Info
 Locational accuracy of the base appears to be ±100 m based on plotting of GPS measured field site locations
 Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area
 Mean magnetic declination 2005, 44°53'W, decreasing 42.6' annually
 Elevations in metres above mean sea level
 Contour interval 20 m
 Field altimetry and the placement and trend of raised shorelines may conflict significantly with the contours

37 1713	37 1714	37 1715	37 1716
OF4685	OF4686	OF4687	OF4688
37 1717	37 1718	37 1719	37 1720
OF4689	OF4690	OF4691	OF4692
37 1721	37 1722	37 1723	37 1724
OF4693	OF4694	OF4695	OF4696
37 1725	37 1726	37 1727	37 1728
OF4697	OF4698	OF4699	OF4700
37 1729	37 1730	37 1731	37 1732
OF4701	OF4702	OF4703	OF4704
37 1733	37 1734	37 1735	37 1736
OF4705	OF4706	OF4707	OF4708
37 1737	37 1738	37 1739	37 1740
OF4709	OF4710	OF4711	OF4712

REFERENCES

Dyke, A.S., 1993: Landscapes of cold-climate Late Wisconsinan ice caps, Canadian Arctic; Progress in Physical Geography, v.17, p.323-347.
 Jackson, G.D. and Sangster, D.F., 1987: Geology and resource potential of a proposed national park, Bylot Island and northwest Baffin Island, Northwest Territories; Geological Survey of Canada, Paper 87-11, 31 p.

OPEN FILE DOSSIER PUBLIC 4697

Open file are products that have not gone through the GSC formal publication process.
 Les dossiers publics sont des produits qui n'ont pas été soumis au processus officiel de publication de la GSC.

Recommended citation:
 Dyke, A.S., 2005: Surficial geology, Cockburn River, Baffin Island, Nunavut; Geological Survey of Canada, Open File 4697, scale 1:50 000.