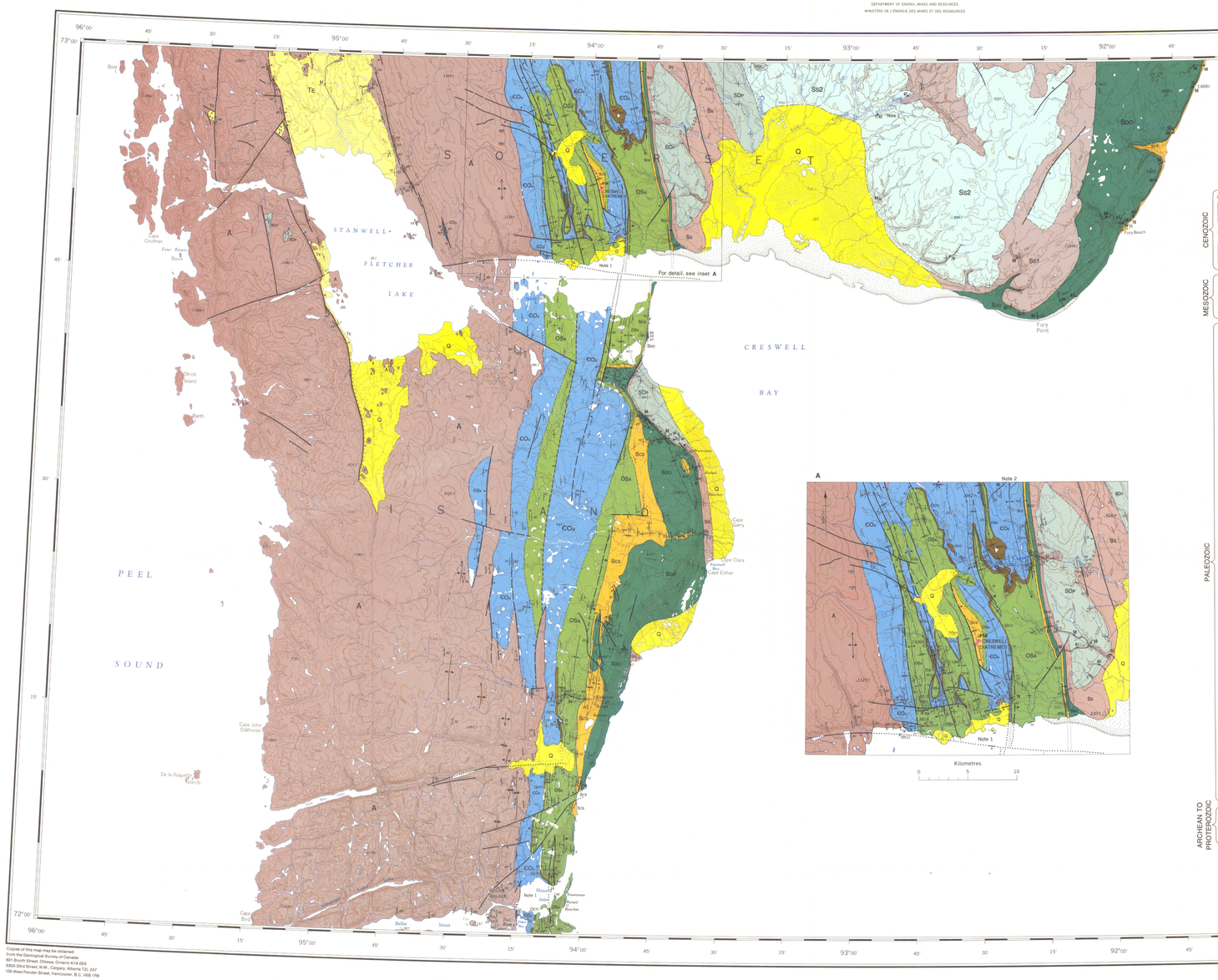
GEOLOGICAL SURVEY OF CANADA COMMISSION GÉOLOGIQUE DU CANADA

DEPARTMENT OF ENERGY, MINES AND RESOURCES
MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES



Canada

Copies of this map may be obtained from the Geological Survey of Canada:
601 Booth Street, Ottawa, Ontario K1A 0E8
3303-33rd Street, N.W., Calgary, Alberta T2L 2A7
100 West Pender Street, Vancouver, B.C. V6B 1R8

MAP 1596A

GEOLOGY

SOMERSET ISLAND SOUTH

DISTRICT OF FRANKLIN

Scale 1:250 000

Kilometres 6 0 6 12 18 Kilometres

Universal Transverse Mercator Projection

LEGEND

Coloured legend blocks indicate map units that appear on this map

CENOZOIC

QUATERNARY
- Q — *Stream, deltaic, glacial and marine beach sediments (mapped only where underlying bedrock geology could not be inferred with reasonable certainty)*

TERTIARY
LOWER TERTIARY
- Te — *EUREKA SOUND FORMATION: sandstone; siltstone; shale; minor conglomerate; dominantly continental*

MESOZOIC

CRETACEOUS
UPPER CRETACEOUS
- Kx — *KANGUK FORMATION: shale, black, fissile; minor limestone, black, thin bedded; marine*

PALEOZOIC

SILURIAN AND (?) DEVONIAN
UPPER SILURIAN TO (?) LOWER DEVONIAN
- SDp — *PEEL SOUND FORMATION: sandstone; conglomerate, polymictic; with interbedded sandstone, pebbly; rare siltstone*

SILURIAN
UPPER SILURIAN
- Ss2 — *SOMERSET ISLAND FORMATION (Ss1-Ss2) Upper member: dolostone and limestone, grey, greenish or buff, laminated; siltstone, red, green or variegated; rare limestone, bioclastic*
- Ss1 — *Lower member: dolostone and limestone, grey, greenish or buff, laminated; limestone, argillaceous or bioclastic,rubbly weathering (minor in west, becoming more common eastward)*
- Ss — *SOMERSET ISLAND FORMATION: undivided*
- Sdo — *DOURO FORMATION: limestone, argillaceous; limestone, dolomitic, mottled; grey to greenish grey; rubbly weathering; minor limestone, bioclastic or intraclastic; distinctive reefoid mounds*
- Scs — *CAPE STORM FORMATION Western areas: dolostone, grey, buff or brown; lesser limestone and sandstone; minor siltstone and shale East coast: dolostone, buff brown, parts sandy; limestone, dolomitic, grey, parts sandy; sandstone; rare evaporites. All lithologies thin to medium bedded, recessive*

ORDOVICIAN AND SILURIAN
UPPER ORDOVICIAN TO UPPER SILURIAN
- OSa — *ALLEN BAY FORMATION: dolostone, buff to pale grey, finely crystalline, medium to massive bedded, parts stromatolitic or bioclastic; resistant. Basal part probably includes dolomitized lateral equivalents of the Thumb Mountain Formation in areas where that formation was not recognized*

ORDOVICIAN
MIDDLE AND UPPER ORDOVICIAN
CORNWALLIS GROUP (Oca - Ocn)
- Ocn — *IRENE BAY FORMATION: limestone, argillaceous or dolomitic; shale; greenish grey; recessive*
  THUMB MOUNTAIN FORMATION: limestone, dolomitic; dolostone, calcareous; pale grey, cream or greenish grey; fossiliferous; resistant
- Oca — *BAY FIORD FORMATION: dolostone, dark grey or greenish grey, fissile, very fine grained; recessive*

LOWER TO MIDDLE ORDOVICIAN
- Os — *SHIP POINT FORMATION: dolostone, pale grey or buff, thin- to medium-bedded, parts stromatolitic or bioclastic; rare chert nodules; sandstone common locally*

CAMBRIAN AND ORDOVICIAN
UPPER CAMBRIAN TO LOWER ORDOVICIAN
- COTc2 — *TURNER CLIFFS FORMATION (COTc1-COTc2) Upper member: dolostone, pale grey or buff, fine grained, cherty, dominantly thick- to massive-bedded; resistant*
- COTc1 — *Lower member: dolostone, grey to buff, commonly laminated, thin- to medium-bedded; dolostone, greenish, fissile to thin bedded; sandstone, grey to white, locally red brown; common intraformational breccia and conglomerate; local stromatolitic units. Lithology highly variable laterally*
- CO_u — *CAMBRO-ORDOVICIAN formations: undivided*

ARCHEAN TO PROTEROZOIC

ARCHEAN-APHEBIAN
- A — *Crystalline rocks: predominantly gneiss; minor metapegmatite, metabasite, granite and diabase; distinctive calc-silicate and marble bands*

UPPER PALEOZOIC OR MESOZOIC
- μPMi — *Igneous rocks: kimberlite diatremes*

HELIKIAN AND HADRYNIAN
- Pi — *Igneous rocks: diabase and gabbro dykes, sills and plugs. At least two periods of intrusion: Mackenzie (ca. 1240 Ma) and Franklin (ca. 750 Ma)*

LEGEND

- *Geological boundary (defined, approximate, assumed)*
- *Geological boundary, fold axis, fault or flexure (inferred under water or Quaternary sediment cover)*
- *Boundary of Quaternary sediments*
- *Trace of distinctive marker bed (approximate, assumed)*
- *Lines of facies change (approximate)*
- *Bedding, tops known (horizontal; inclined, showing measured dip; vertical; overturned, showing measured dip)*
- *Bedding, observed from aircraft (gentle, 0 - 10°; moderate, 10 - 30°; steep, 30 - 60°; very steep, 60 - 90°)*
- *Foliation (inclined, showing measured dip; vertical; dip estimated from aircraft)*
- *Fault, extension (solid circle indicates apparent downthrow side; defined, approximate, assumed)*
- *Fault, sense of displacement unknown (defined, approximate, assumed)*
- *Fault line scarp (defined, approximate)*
- *Monoclinal flexure (arrow indicates downflexed side; defined, approximate, assumed)*
- *Joint (vertical)*
- *Anticline (trace of axial surface; defined, approximate, assumed; arrow indicates plunge)*
- *Syncline (trace of axial surface; defined, approximate, assumed; arrow indicates plunge)*
- *Antiform (in crystalline Precambrian Shield rocks; trace of axial surface, defined; arrow indicates plunge)*
- *Synform (in crystalline Precambrian Shield rocks; trace of axial surface, defined; arrow indicates plunge)*
- *Fossil locality, showing GSC locality number* C-84067
- *Location of measured section (showing section number and location or line of traverse; index to sections given in accompanying GSC Paper 83-26)* 17

Geological map compilation by W.D. Stewart and J.Wm. Kerr, 1981-1982, based on geological mapping by J.Wm. Kerr, 1975- 1976, and on published and unpublished sources

To accompany GSC Paper 83-26 by W.D. Stewart and J.Wm. Kerr

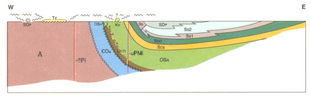
ACKNOWLEDGMENTS

Operation Boothia sections measured by A.D. Miall, 1976. University of Ottawa sections measured by D.L. Dineley and B.R. Rust, 1965; J. Dixon, 1970; M.R. Gibling, 1973-1974, 1976; J.M. Saville, 1973; and G.M. Narbonne, 1975-1976. Kimberlite diatreme studied by R.H. Mitchell.

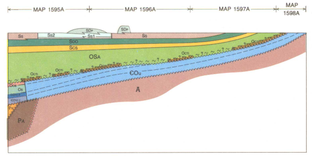
NOTES

1. The Ocn map unit was too thin to be represented accurately at this scale in certain areas immediately north of Creswell Bay, and in the areas immediately north and south of Hazard Inlet. In these areas, the width of the unit has been exaggerated on the map.
2. Measured sections 46 and 47 are composite sections, components of which were measured at more than one locality.

SCHEMATIC STRATIGRAPHIC RELATIONSHIPS



SCHEMATIC REGIONAL STRATIGRAPHIC RELATIONSHIPS ALONG EASTERN FLANK OF BOOTHIA UPLIFT BETWEEN 73°35' AND 70°45'N LATITUDE



Unconformity (defined, projected, possible)

Geological cartography by G.S. Whitman, Institute of Sedimentary and Petroleum Geology, Geological Survey of Canada

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

Base map from 1:250,000 scale maps "Creswell Bay" 58B, published by the Army Survey Establishment, R.C.E. in 1966 and part of "Fitzgerald Bay" 58A, published by the Surveys and Mapping Branch, Department of Energy, Mines and Resources in 1986

Copies of the topographical edition of these maps may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa

Magnetic declination 1983 varies from 34°08.7' westerly at the centre of the west edge to 56°12.6' westerly at the centre of the east edge. Mean annual change 12.4' westerly

Elevations in feet above mean sea level

Printed by the Surveys and Mapping Branch, Published, 1984

Recommended citation:
Stewart, W.D. and Kerr, J.Wm.
1984: Geology of Somerset Island South, District of Franklin; Geological Survey of Canada, Map 1596A, scale 1:250,000.