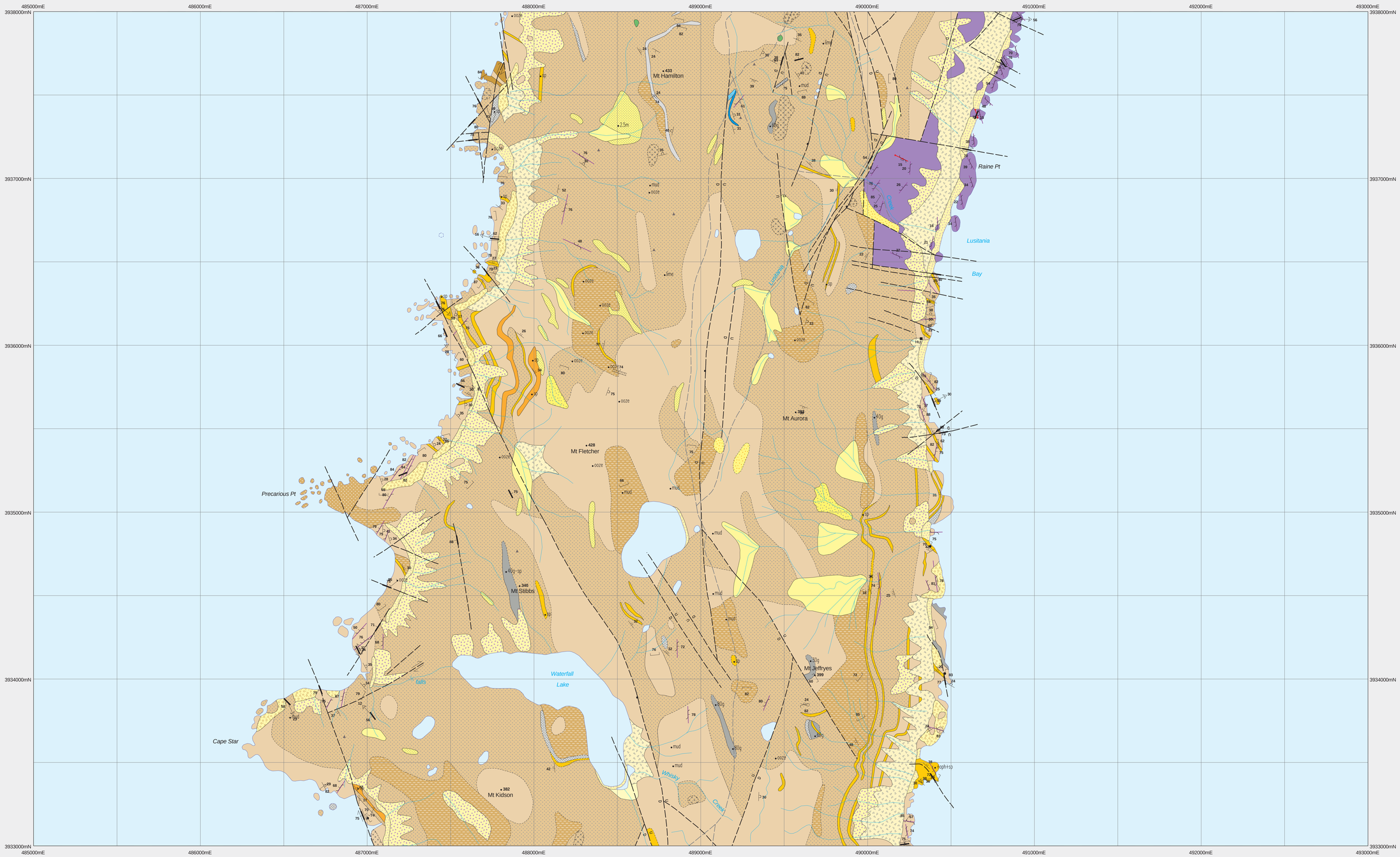
MACQUARIE ISLAND SHEET 6 1998
GEOLOGICAL 1:10,000 SERIES
TASMANIAN GEOLOGICAL SURVEY

GEOLOGY OF MACQUARIE ISLAND –SHEET 6

MINERAL RESOURCES TASMANIA
Tasmania



Geology by B.D.Goscombe, BSc.(Hons), PhD and J.L.Everard, BSc.(Hons).. December 1994 – May 1995; September 1995 – January 1996. Project initiated and supervised by A.V.Brown, BSc.(Hons), PhD, Director, Mineral Resources Tasmania, with funds provided by the Australian Antarctic Foundation, and logistical support provided by the Australian Antarctic Division.

Base map drawn from several sources;
The Spot multispectral satellite mosaic produced by the Australian Centre for Remote Sensing (ACRES) 1994.
Division of National Mapping Macquarie Island 1:50,000 topographic map (1971) warped to conform with the satellite mosaic along coastline and lakes.
Incomplete aerial photography flown in 1976 (mainly in the north of the island).
GPS positions and field observations.

Map produced by the Data Management Group, Mineral Resources Tasmania, using GIS software. Original map produced March 1998.
Absolute position with respect to horizontal datum and topographic features is approximate.

Australian Antarctic Division

ALLUVIAL, LACUSTRINE AND SWAMP DEPOSITS

Alluvium, including deposits at the margin of lakes.

Colluvium of wash slopes.

Bogs, swamps and "featherbed" (includes significant areas of peat without bedrock outcrops.

SLOPE DEPOSITS

Scree slopes.

Alluvial fans, with slopes of less than 22 degrees.

Deposits of large (2–20m) boulders along coasts, typically in bays on west coast.

BEACH AND AEOLIAN DEPOSITS

Pebbly to cobbly beach deposits.

Aeolian silt and sand deposits, often with gravel lag; approximate thickness of deposit in metres indicated where known.

Palaeo–beach deposits of rounded and smoothed cobbles and pebbles, less commonly with coarse sand; mostly on the plateau, but also on the isthmus (495750mE 3960750mN) at up to 9m above sea level, and below peat cover along the northern west coast (not indicated).

Scattered palaeo–beach cobbles and pebbles (shown as overprint on underlying units).

GLACIOGENE DEPOSITS

Isolated striated, facetted and polished cobbles and boulders.

SEDIMENTARY ROCKS

Mudstone and siltstone, usually laminated and red.

Conglomerate, usually clast supported, consisting of sub–rounded to sub–angular cobble– to boulder–sized clasts of basalt and dolerite, in a mudstone to sandstone matrix.

Sedimentary rock matrix between pillows in lavas or blocks in breccia indicated:
ooze – pale grey to green siliceous ooze.
lime – fawn to pale pink limestone.
mud – red to grey mudstone.

VOLCANICLASTIC ROCKS

Hyaloclastite breccia consisting of angular to sub–rounded blocks of usually aphyric basalt in a glass matrix. Plagioclase–phyric blocks indicated (sp); % proportion of glass indicated (20g).

Volcaniclastic breccia, matrix–supported, with blocks of usually aphyric basalt; plagioclase–phyric basalt blocks indicated (sp).

Volcaniclastic breccia, clast–supported, with blocks of usually aphyric basalt; plagioclase–phyric basalt blocks indicated (sp).

Breccia containing isolated pillows or lenticular zones of pillows indicated (pil).

LAVAS

Pillow basalt, aphyric to very sparsely phyric (<5% plagioclase phenocrysts), usually amygdaloidal.

Pillow basalt, sparsely to moderately phyric (5–30% plagioclase phenocrysts), usually amygdaloidal.

Pillow basalt, densely to very densely phyric (>30% plagioclase phenocrysts), usually amygdaloidal.

20g *Hyaloclastite (glass and basalt fragments) matrix of pillows indicated; % proportion of glass (20g); with hyaloclastite matrix containing plagioclase phenocrysts (20g–sp).*

Disaggregated pillows indicated by overprint.

Tabular basalt flows, medium– to fine–grained, usually aphyric; rarely sparsely plagioclase–phyric (sp) or densely plagioclase–phyric (pp). Rarely with zones of pillows (pil).

Tabular basalt flows, medium– to coarse–grained with mesoscopically visible plagioclase laths, usually aphyric, rarely sparsely plagioclase–phyric (sp). Rarely with zones of pillows (pil). Autobrecciation indicated (brec).

Hornblende–phyric massive tabular basalt flows, medium–grained. Rarely sparsely plagioclase–phyric (sp). Rarely with mesoscopically visible plagioclase laths (oph).

Small plugs of picrite.

INTRUSIVE ROCKS

Sheeted dolerite dykes, with screens of massive, coarse–grained gabbro absent, minor (<5%) or abundant (5–30%). % proportion of gabbro screens (30gab) and individual gabbro screens indicated.

Gabbro screen within sheeted dolerite dykes; orientation known, trace.

Geological boundary – position approximate.

Geological boundary – inferred.

Fault – position approximate.

Dolerite dykes, trace or trend.

Gabbro screen.

Track.

Topographic high point.

Bedding in sedimentary rock – right way up.

Bedding defined by orientation of massive tabular lava units.

Bedding defined by lithological layering of distinct rock units.

"Bedding" defined by plane of pronounced flattening of pillows.

Strike and dip of palaeo–canyon or palaeo–slot, filled by conglomerate and/or block breccia.

Strike and dip of dyke or vein.

Cleavage, fracture–cleavage or fractures – dipping.

Strong penetrative cleavage with possible grain–refinement.

Strike and dip of outcrop scale fault.

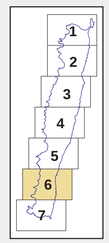
Trend and plunge of slickenside, within indicated fault plane.

Sense of movement on fault or ductile shear zone – dextral, sinistral. (note: for scarps on the plateau, the most recent, but not necessarily the most important, sense of movement is indicated).

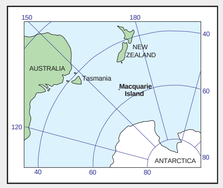
Scale: 1:10 000

0 200 400 600 800 1000m

Projection: Universal Transverse Mercator
Horizontal datum –WGS 1984 Zone 57



INDEX MAP



LOCATION DIAGRAM

Plotfile generated 08-DEC-1998

WARNING: INKS ARE LIGHT SENSITIVE