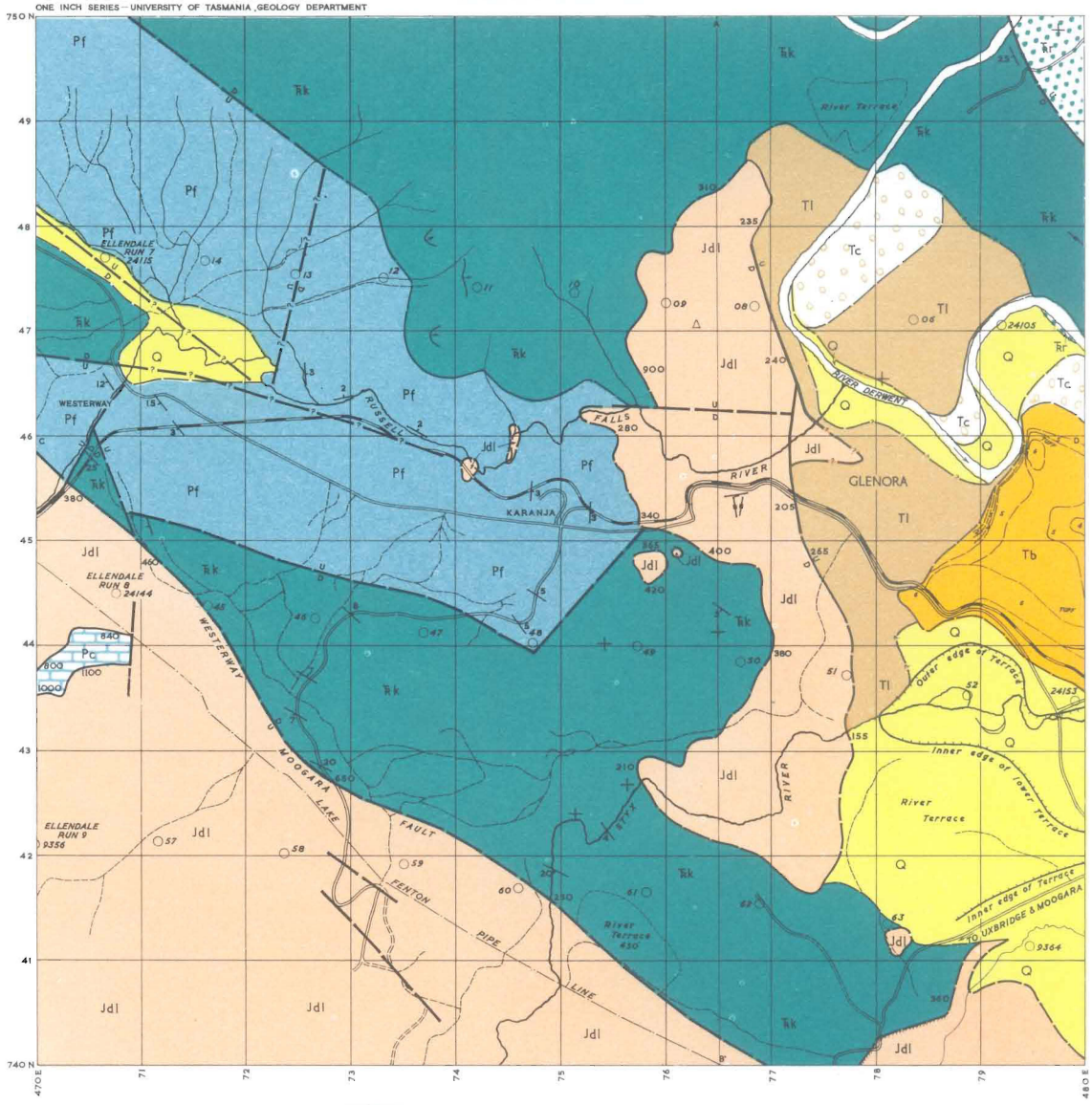
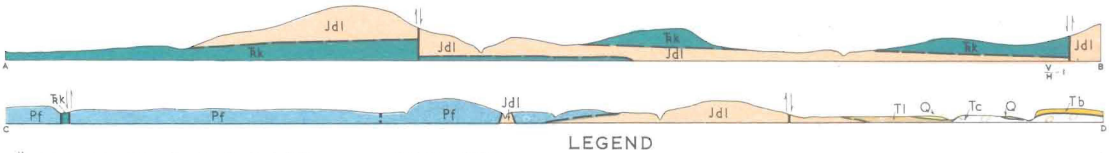
GEOLOGY OF TASMANIA

ONE INCH SERIES — UNIVERSITY OF TASMANIA, GEOLOGY DEPARTMENT

GLENORA

4774





LEGEND

- FAULT WITH DOWNTHROWN SIDE INDICATED
- FAULT — POSITION APPROXIMATE
- FAULT INFERRED
- FAULT CONCEALED
- FORMATION BOUNDARY

Dolerite Boundaries

- CONCORDANT SILL
- DISCORDANT INTRUSIVE BOUNDARY
- EDGE OF RIVER TERRACE
- STRIKE AND DIP OF STRATA
- HORIZONTAL DIP
- VERTICAL JOINTS
- STRIKE AND DIP OF JOINTS
- ROAD
- RAILWAY LINE
- VEHICULAR TRACK
- FOOT TRACK

NUMBERS ON DOLERITE BOUNDARIES ARE TOPOGRAPHIC HEIGHTS.

NUMBERED LINES ON BASALT INDICATE FLOWS REFERRED TO IN TEXT

Quaternary System

- Q — ALLUVIUM AND RIVER SEDIMENTS

Tertiary System

- Tl — LACUSTRINE SEDIMENTS
- Tc — CONGLOMERATES

Triassic System

- Rk — KNOCKLOFTY SANDSTONE AND SHALE
- Rc — ROSS SANDSTONE

Permian System

- Pf — FERNTREE FORMATION
- Pc — CASCADES GROUP

IGNEOUS ROCKS

Tertiary System

- Tb — BASALT

Jurassic (?) System

- Jdl — DOLERITE

KEY MAP SHOWING MAGNETIC DECLINATIONS. SECULAR VARIATION 7 MINS. P.A.

Compilation from Aerial Photographs. Trigonometric Station Control by courtesy Lands and Surveys Dept. and Hydro Electric Commission. Origin of co-ordinates 400,000 yds. West and 1,800,000 yds. South of True Origin of Zone 7.

MAPPED BY M.A. ANANDALWAR 1957

SCALE

0 — 2 MILES

GEOLOGY OF GLENORA

SHEET 4774

Physiography

The Westerway-Moogara plateau forms the main feature to the south and south-west of the sheet. Pre-basaltic "Lake Glenora" forms the basin bordered by the western end of the Kenmore Hill and Sugarloaf Hill. The Derwent River has developed entrenched meanders. The Styx River flows in the area as a lateral stream with prominent depositional flats.

Stratigraphy

The Permian Ferntree Mudstone is exposed from Karanja to Westerway. The overlying Triassic rocks on the north side of Russell Falls River show an angular unconformity with the underlying rocks (475 • 746.4). A conglomerate bed at the base of the Knockiofty Formation is exposed in the same area. Tertiary lake sediments in the Glenora area include 30 feet of basal conglomerate and 150 to 200 feet of sandstones and claystones. Claystones in the Dobson Highway east of Glenora contain plant fossils.

Structure

The Westerway-Moogara Fault forms the main structural feature and is exposed in the Styx Valley Road. The Meadowbank Fault and the Clarendon-Norton Fault define the Derwent Graben.

References

Anand Alwar, M.A., 1960, Geology and Structure of the Middle Derwent Valley. **Pap. Roy. Soc. Tasm.** Vol. 94.

Banks, M. R., 1955, Tertiary Fossil Forest at Macquarie Plains. **Tas. Nat.,** Vol. 11, No. 3, pp. 1-11 (for earlier references).

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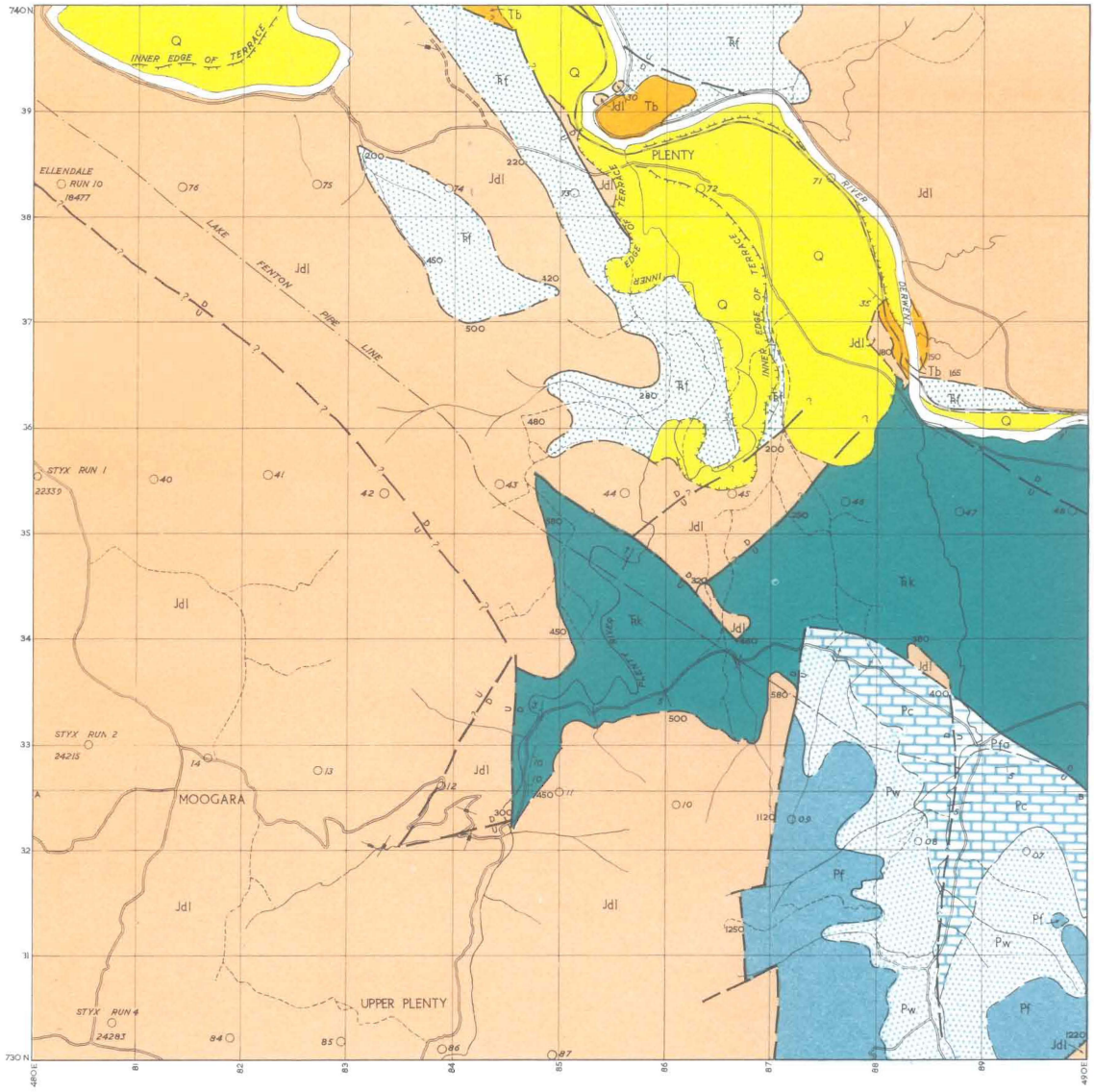
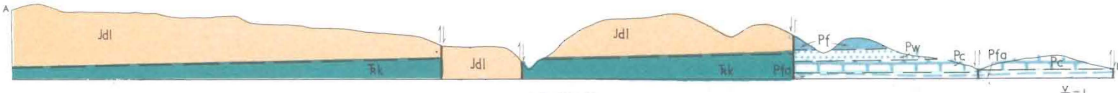
PLENTY

4873





LEGEND

- D/U — FAULT WITH DOWNTHROWN SIDE INDICATED
- FAULT POSITION APPROXIMATE
- ? — FAULT INFERRED
- FORMATION BOUNDARY
- FORMATION BOUNDARY POSITION APPROX.

Dolerite Boundaries

- CONCORDANT SILL
- DISCORDANT INTRUSIVE BOUNDARY
- VERTICAL JOINTS
- STRIKE AND DIP OF STRATA
- ROADS
- RAILWAY
- VEHICULAR TRACK
- TRACK
- PIPE LINE
- EDGE OF RIVER TERRACE

NUMBERS ON DOLERITE BOUNDARIES ARE

Quaternary System

- Q — ALLUVIUM AND RIVER SEDIMENTS

Triassic System

- Trf — FELDSPATHIC SANDSTONE
- Trk — KNOCKLOFTY SANDSTONE

Permian System

- Pf — FERNTREE FORMATION
- Pw — WOODBRIDGE GLACIAL FORMATION
- Pc — CASCADES GROUP
- Pfa — FAULKNER GROUP

IGNEOUS ROCKS

Tertiary System

- Tb — BASALT

Jurassic (?) System

- Jdl — DOLERITE

KEY MAP SHOWING MAGNETIC DECLINATIONS SECULAR VARIATION 7 MINS. P.A.

Compilation from aerial photographs.
Trigonometric Station Control by courtesy Forestry Commission.
Origin of co-ordinates 400,000 yds. West and 1,800,000 yds. South of True Origin of Zone 7.

MAPPED BY M.A. ANANDALWAR 1957

SCALE

0 1 2 2 MILES

0 1 2 3 4 5000 10000 FEET

GEOLOGY OF PLENTY

SHEET 4873

Physiography

Moogara plateau (the north-eastern face of which is a fault line scarp) forms the major feature rising to a height of 2000 feet. Quaternary depositional flats around Plenty are noteworthy.

Stratigraphy

The spur south of the Glen Fern Road and Moogara Road junction exposes a complete sequence of Permian rocks from Bundella Mudstone to Ferntree Mudstone through the Faulkner and Cascades Groups. The Knocklofty Formation and "Feldspathic" Sandstone are exposed around Plenty.

Structure

The Glen Fern Fault with a throw of 1800 feet is exposed at the Glen Fern-Moogara Road junction, bringing Bundella Mudstone and the Knocklofty Formation into contact. The Westerway and Moogara Faults form the continuation of the Glen Fern Fault. The Lawitta Fault has a throw of 500 feet towards the Derwent River. The Plenty Fault with a throw in the opposite direction delimits the Derwent Graben.

References

Anand Alwar, M.A., 1960, Geology and Structure of the Middle Derwent Valley. **Pap. Roy. Soc. Tasm.** Vol. 94.

Gulline, A. B., 1959, Coal Prospects of the Maccquarie Plains and Plenty Areas. **Tas. Dept. Mines Tech. Repts.** 3, pp. 108-111.

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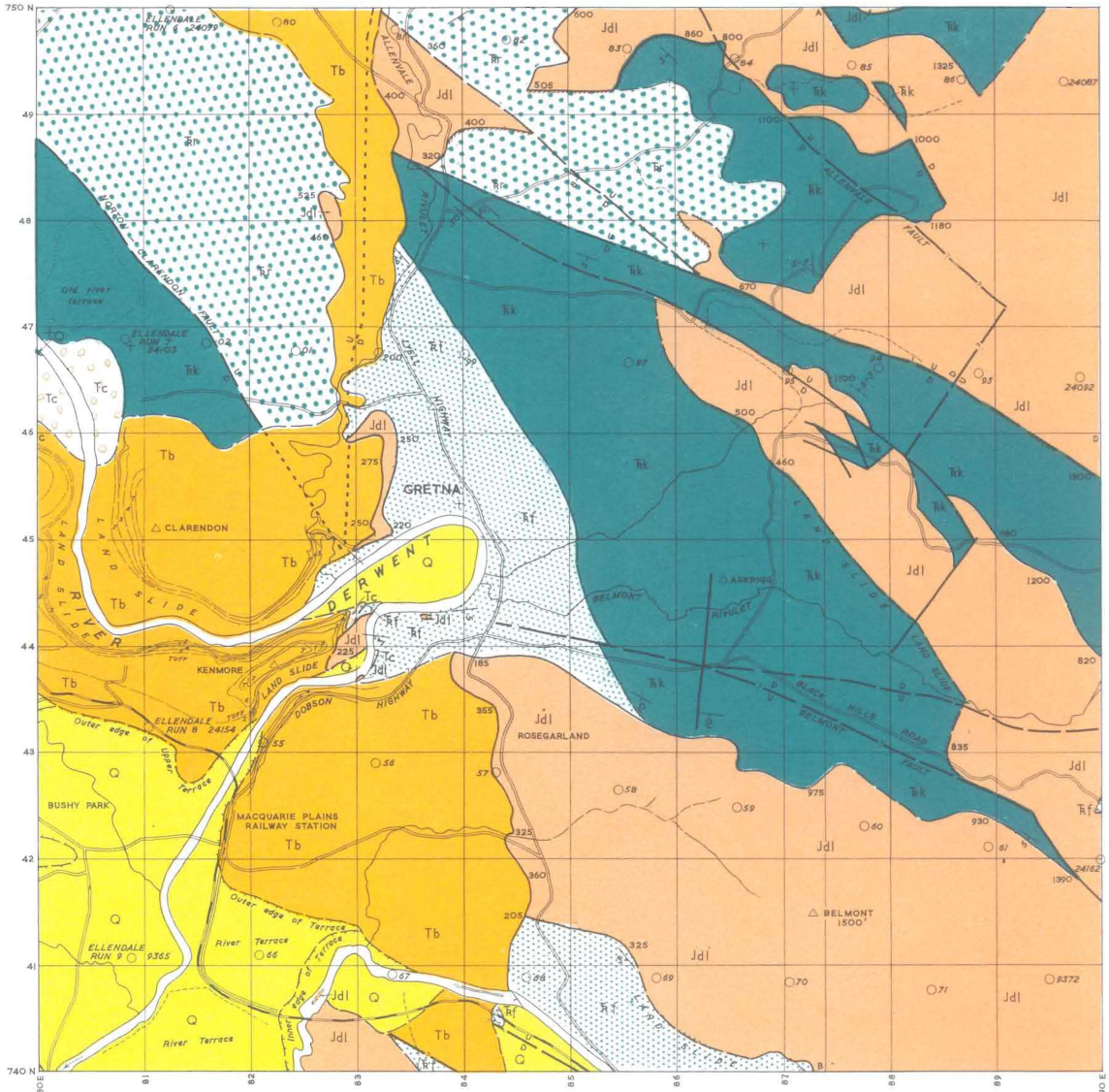
MACQUARIE PLAINS

4874



LEGEND

- FAULT WITH DOWNTHROWN SIDE INDICATED
- FAULT – POSITION APPROXIMATE
- FAULT INFERRED
- FAULT CONCEALED
- FORMATION BOUNDARY

Dolerite Boundaries
- CONCORDANT SILL
- DISCORDANT INTRUSIVE BOUNDARIES

- EDGE OF RIVER TERRACE
- STRIKE AND DIP OF STRATA
- HORIZONTAL DIP
- ROAD
- RAILWAY LINE
- VEHICULAR TRACK
- FOOT TRACK

NUMBERS ON DOLERITE BOUNDARIES ARE TOPOGRAPHIC HEIGHTS.
NUMBERED LINES ON BASALT INDICATE FLOWS REFERRED TO IN TEXT.

Quaternary System
- Q — ALLUVIUM AND RIVER SEDIMENTS

Tertiary System
- Tc — CONGLOMERATES

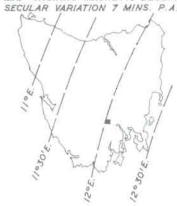
Triassic System
- Trf — FELDSPATHIC SANDSTONE FORMATION
- Trk — KNOCKLOFTY SANDSTONE AND SHALE
- Tro — ROSS SANDSTONE

Permian System
- Pf — FERNTREE FORMATION

IGNEOUS ROCKS
Tertiary System
- Tb — BASALT

Jurassic (?) System
- Jdl — DOLERITE

KEY MAP SHOWING MAGNETIC DECLINATIONS SECULAR VARIATION 7 MINS. P.A.



Compilation from Aerial Photographs
Trigonometric Station Control by courtesy Lands and Surveys Dept. and Hydro Electric Commission.
Origin of co-ordinates 400,000 yds. West and 1,800,000 yds. South of True Origin of Zone 7.

MAPPED BY M. A. ANANDALWAR 1957

— SCALE —
0 2 MILES
0 1 2 3 4 5000 10,000 FEET

GEOLOGY OF MACQUARIE PLAINS

SHEET 4874

Physiography

Mt. Belmont (dolerite) rises to a height of 1500 feet. The Black Hills range rises to 2000 feet further east. Kenmore forms a basaltic tableland in the middle of the Derwent Valley.

Stratigraphy

The Triassic Ross, Knocklofty and "Feldspathic" Formations are exposed in the Clarendon and Gretna area. Tertiary lake sediments and basalts form the main feature of the Derwent Valley. A tuff bed at Kenmore is 75 feet thick and includes big boulders of dolerite.

Petrology

East of Rose Garland at grid 484.6 • 743.3 near the base of the Belmont sill is an amygdaloidal dolerite with globules of mesostasis. Basalts in the Kenmore cliff carry brown opal with an abnormal specific gravity.

Structure

The Magra, Askrigg and Belmont Faults form a system of step faults on the east side of the Derwent Graben. Clarendon and Mt. Belmont form horsts in this graben. A volcanic centre is suspected west of Allen Vale Rivulet.

References

Anand Alwar, M.A., 1960, Geology and Structure of the Middle Derwent Valley. **Pap. Roy. Soc. Tasm.** Vol. 94.

Banks, M. R., 1955, Tertiary Fossil Forest at Macquarie Plains. **Tas. Nat.** Vol. 11, No. 3, pp. 1-11., (for earlier references).

Gulline, A. B., 1959, Coal Prospects of the Macquarie Plains and Plenty Areas **Tas. Dept. Mines Tech. Repts.** 3, pp. 108-111.

GEOLOGY OF TASMANIA

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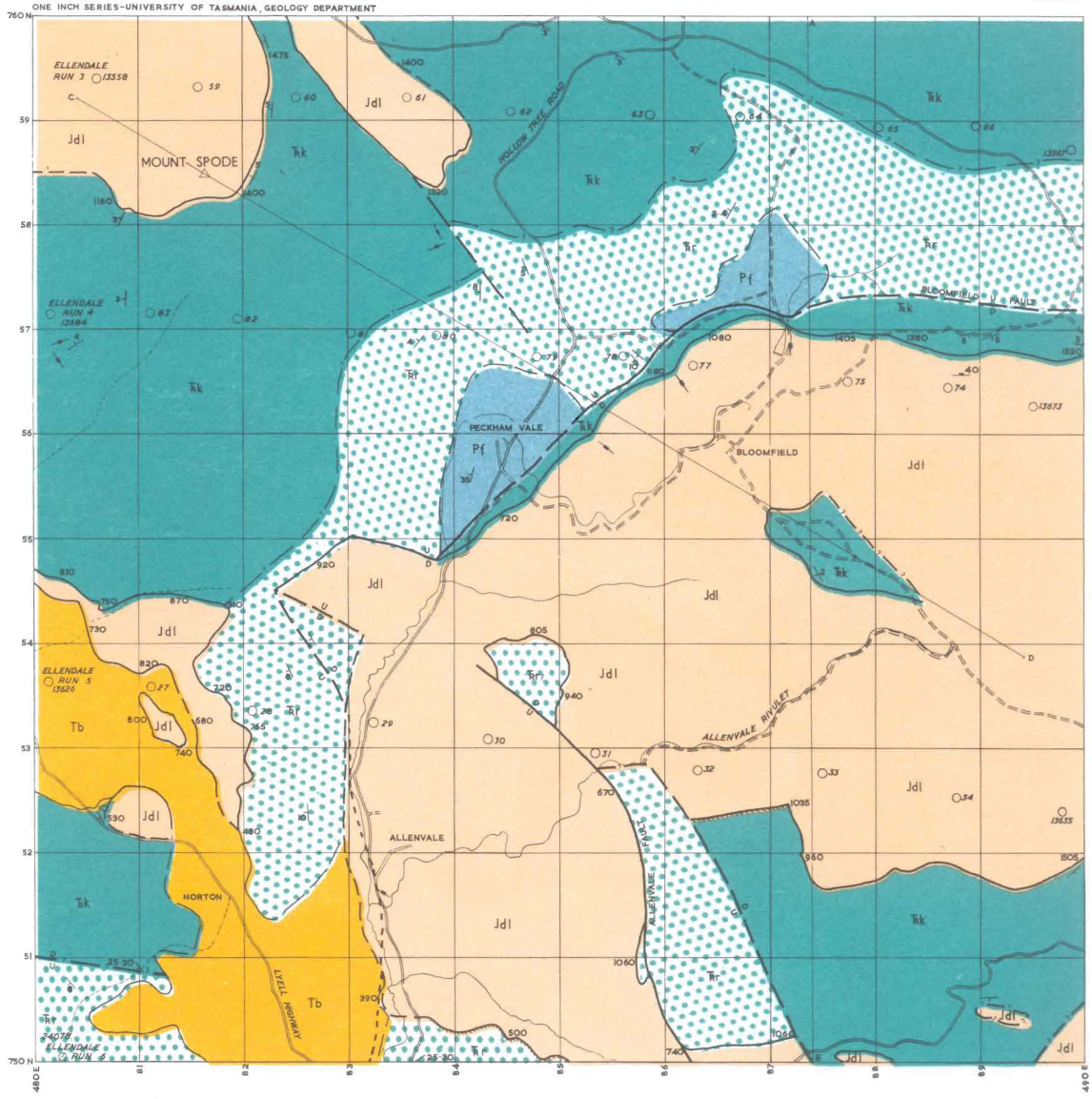
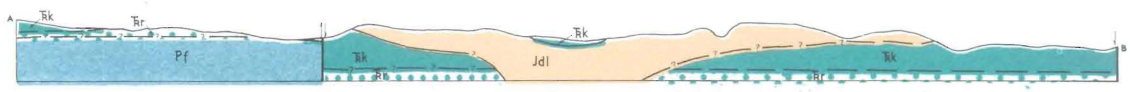
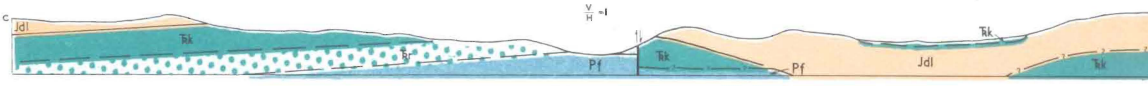
MOUNT SPODE

4875







LEGEND

- FAULT WITH DOWNTHROWN SIDE INDICATED
- FAULT CONCEALED
- FAULT POSITION APPROXIMATE
- FAULT INFERRED
- FORMATION BOUNDARY
- FORMATION BOUNDARY APPROXIMATE

Dolerite Boundaries

- CONCORDANT BOUNDARY
- DISCORDANT INTRUSIVE BOUNDARY
- VERTICAL JOINT
- STRIKE AND DIP OF JOINTS
- STRIKE AND DIP OF STRATA
- ROAD
- VEHICULAR TRACK
- FOOT TRACK

NUMBERS ON DOLERITE BOUNDARIES ARE TOPOGRAPHIC HEIGHTS

Triassic System

- Tk — KNOCKLOFTY SANDSTONE AND SHALE
- Rr — ROSS SANDSTONE

Permian System

- Pf — FERNTREE FORMATION

IGNEOUS ROCKS

Tertiary System

- Tb — BASALT

Jurassic(?) System

- Jdl — DOLERITE

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MAPPED BY M.A. ANANDALWAR 1957

SCALE — 2 MILES — 0 1 2 3 4 — 5,000 — 10,000 FEET

KEY MAP SHOWING MAGNETIC DECLINATIONS SECULAR VARIATION 7 MINS. P.A.

GEOLOGY OF MOUNT SPODE

SHEET 4875

Physiography

Physiography is dominantly controlled by the structure and the complex dolerite intrusion. Mt. Spode a dolerite mass, rises to a height of 1600 feet with Triassic rocks flanking the eastern and southern sides.

Stratigraphy

The sedimentary sequence includes the Permian, Ferntree Mudstone, overlain by Triassic Ross and Knocklofty Formations with conglomerate at the base of the Ross Sandstone. The conglomerate bed near the base of the Knocklofty Formation is of stratigraphic significance (488.4 • 755.8) Igneous rocks include Jurassic dolerite and Tertiary basalts.

Petrology

Granophyric differentiates of the Jurassic dolerite are seen east of Bloomfield at grid 490 • 754.5. Contact metamorphism of the dolerite due to Tertiary flows is seen west of Allen Vale homestead (483 • 751.9).

Structure

The Bloomfield area forms a centre of dolerite intrusion accompanied by cauldron subsidence. The Bloomfield Fault forms a partial ring fault with a throw of 1000 $\pm$ feet. Radial tensional faults and joints are present.

References

Anand Alwar, M.A., 1960, Geology and Structure of the Middle Derwent Valley. **Pap. Roy. Soc. Tasm.** Vol. 94.