Department of Infrastructure Energy and Resources
MINERAL RESOURCES TASMANIA

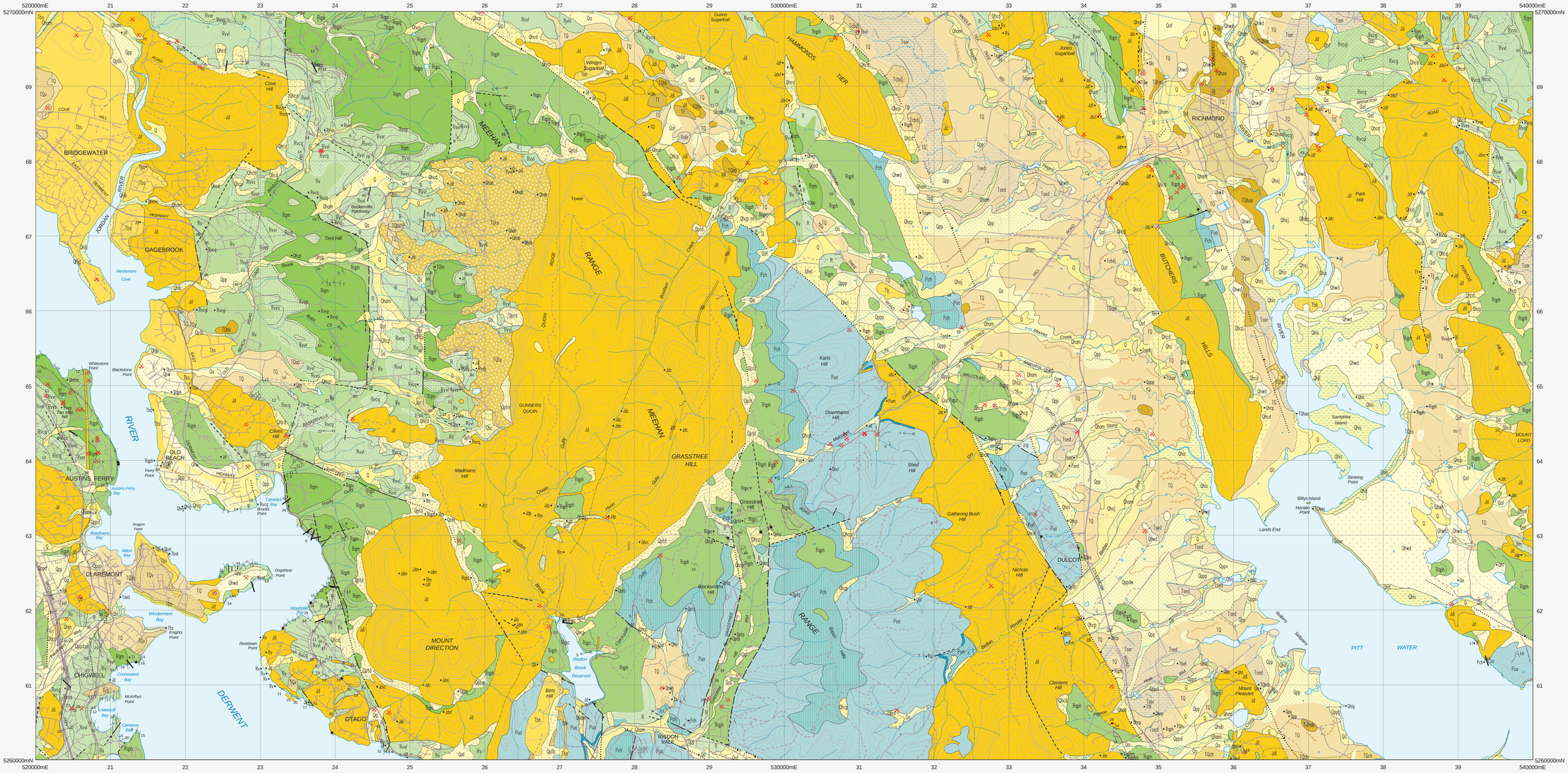
DIGITAL GEOLOGICAL ATLAS 1:25 000 SCALE SERIES
RICHMOND, SHEET 5226

RICHMOND

Scale: 1:25 000

0 500 1000 1500 2000 2500m

Tasmania
Explore the possibilities



CENOZOIC

QUATERNARY

Q

- **Qhmm** — Man made deposits (Qhmm), selected mine tailings and man disturbed ground indicated (Qhm).
- **Qhi** — Paralic clay, silt, sand and minor gravel deposits (Qhi); of modern salt marsh and associated tidal flats (Qhis), of brackish delta marsh (Qhib), of lagoons (Qhl), predominantly coarse gravel with overlying marsh at places (Qhig), low terrace sand overlying shelly sand (Qhit).
- **Qit** — Terrace deposits 5m ASL of inferred estuarine origin, composed of sandy clay, silt, clayey sand and cross–bedded or planar laminated sand; clay or sand with charcoal at 2m ASL; and interfingering pebble gravel at places (Qit).
- **Ql** — Lag deposit (Ql); after ferricrete (Qhf), after Paleogene – Neogene silicified rock (Qls).
- **Qhw** — Aeolian and locally derived sand (Qhw); aeolian dune and sheet sand commonly with calcareous root casts at estuary shores (Qhwd); Holocene (Qhwh); Pleistocene generally with Holocene disturbed fringe and cover deposits (Qpw).
- **Qhc** — Colluvium (Qhc); clayey gravel derived from deliente (Qhcd), sandy, derived from Upper Parmeener rocks (Qhcp), derived predominantly from Lower Parmeener rocks (Qhcl).
- **Qhab** — Swamp deposits (Qhab).

Qa

- **Qhaj** — Alluvial gravel sand and clay (Qa), alluvial fans (Qaf). Holocene alluvium (Qhaj), alluvial and marsh deposits of modern flood plains; of gravel, sand, silt and clay commonly with organic top layer (Qham), dominantly of gravel (Qhag).
- **Qpp** — Probable Pleistocene low gradient alluvial fan and alluvial terrace deposits (Qpp); clasts predominantly of dolerite (Qppd), clasts predominantly of dolerite with thin (<10mm) weathering rinds (Qppdw), clasts predominantly of Parmeener rocks (Qppp), clasts predominantly of Parmeener rocks, dolerite clasts with thick (>40mm) clay weathering rinds (Qppv).
- **Qrr** — Dolerite scree deposits of angular clasts and generally lacking matrix (Qrr).
- **Qpt** — Talus and remobilised talus deposits (Qpt); basalt talus (Qptb), talus predominantly of Upper Parmeener sandstone and sand (Qptp), silty talus breccia derived from Lower Parmeener rocks (Qptp), talus of dolerite and subordinate Upper Parmeener rocks (Qptup), talus dominantly of dolerite boulders and in places subordinate Parmeener rocks (Qptd).

TQ

- **TQw** — Carbonate spring deposits (TQw).
- **TQss** — Dominantly sand, clayey sand and sandy clay and subordinate clay and gravel of probable mixed alluvial and aeolian origin (TQss), of possible estuarine origin (TQsse).
- **TQsp** — Partly consolidated granule sand (TQsp), alluvial red brown friable sandstone with lenses of coarse–grained sandstone and granules (TQspr).
- **TQh** — Gravel deposits (TQh); late Cenozoic alluvial terrace deposits, of well–rounded gravel predominantly derived from Parmeener and Paleogene – Neogene units, clasts commonly of basalt and in places dolerite, deposits commonly overlie Paleogene – Neogene basalt and pass up into sand and clay of alluvial/aeolian origin and inter–finger with or are overlain by tributary dolerite gravel at places (TQhag); of well rounded pebbles and cobbles preserved as isolated remnants of relatively high (12 to 20m) alluvial terraces (TQhab); clayey cobble deposits dominantly of dolerite and Parmeener rocks with notable silicified wood and hornfels clasts (TQhb); deposit of extremely weathered dolerite and Parmeener clasts to small boulder size and with clayey matrix (TQhc).
- **TQv** — Supra–basalt moderately lithified conglomerate with interbedded sandstone at places, clasts of well rounded siliceous cobbles and pebbles, of Paleogene – Neogene derived silica, and rarely of dolerite (TQv).
- **TQds** — Poorly–consolidated to unconsolidated sand, clayey labile sand, silt and subordinate clay and fine–grained gravel; includes deposits related to probable former course of Derwent River (TQds).

CENOZOIC — PALEOGENE – NEOGENE

TQ

- **TQte** — Undifferentiated predominantly dolerite boulder talus and disrupted to insitu Jurassic dolerite sheet base, with overlying alluvial gravel and fine–grained swamp deposits (TQte).
- **TQbs** — Poorly–sorted clay to boulder deposit, variable proportion of clasts, predominantly Parmeener and occasionally dolerite derived, matrix of clay, sandy clay or sand (TQbs).
- **Tf** — Ferricrete (Tf), laterite developed on Paleogene – Neogene deposits (Tfl).

Tu

- **Tb** — Basalt (Tb).
- **Tsqm** — Silicastone developed on Paleogene – Neogene or older rocks (Tsqm).
- **Tbat** — Basaltic agglomerate, tuff and associated volcaniclastic rocks (Tbat), coarse crystal tuff (Tbac).
- **Tsph** — Sub–basalt, very poorly–consolidated, well sorted sandstone, clayey sandstone and subordinate claystone (Tsph).
- **Tcb** — Poorly–sorted large boulder to pebble grade deposits (Tcb), inferred dolerite boulder beds or Paleogene – Neogene weathered Jurassic dolerite bedrock (Tcbdj).
- **Tsed** — Dominantly plastic poorly–consolidated light cream, grey or tan coloured mudstone, siltstone and sandstone with some soft, friable sandstone (Tsed).
- **Tser** — Dominantly plastic poorly–consolidated light grey, green or brown mudstone, siltstone and sandstone with some friable sandstone, may include beds with granules and pebbles, common ferruginous cemented beds and laminae, leaf fossils at places (Tser).

Erosional surface.

MESOZOIC

TRIASSIC

PR — R — Rv — UPPER PARMEENER SUPERGROUP

- **Rvcg** — Upper Parmeener rock contact metamorphosed by Jurassic dolerite (Rm). Thick– to thin–bedded volcanic lithic sandstone, siltstone, mudstone and coal seams fossil plants on some horizons (Newtown Coal Measures in part) (Rvcg), inferred from log of silicified wood, tuff and quartz porphyry clasts (Rvcg).
- **Rvcq** — Interbedded cross–bedded white quartzose sandstone, quartz–rich lithic sandstone, siltstone and mudstone; upper interval with common dark grey carbonaceous mudstone, occasional thin lenticular coal seams and fossil plants in places (Newtown Coal Measures in part) (Rvcq).
- **Rvvl** — Interbedded yellow brown or grey carbonaceous siltstone, mudstone and thin– to thick–bedded quartz–rich lithic, arkosic sandstone, some fossil plants, common siltstone paleosols (Rvvl). Inferred Rvvl unit with most outcrops steeply dipping, brecciated, disrupted or transported, with associated Paleogene – Neogene white leached clay and quartz pebble lag deposits at places (Rvvl).
- **Rvvs** — Predominantly fine–grained quartz sandstone, commonly partly silicified, uncommon horizons with quartz granules and very rarely pebbles; interbedded with mudstone and lithic sandstone at places (Rvvs).
- **Rvvr** — Predominantly brown, buff, grey carbonaceous and green siltstone and mudstone, interbedded with lithic sandstone, quartz sandstone and thin beds of silicified sandstone, horizons of crowded vertical burrows, siltstone paleosols, and plant fossils at places (Rvvr).
- **Rvvp** — Lenticular variable medium– to coarse–grained sandstone, generally containing quartz granules or pebbles, less commonly cobbles and conglomerate, crowded vertical burrows at places (Rvvp).

Rv = Rvcg + Rvcq + Rvvl + Rvvs + Rvvr + Rvvp

PR — R — Rm

- **Rqm** — Interbedded micaceous brown, red–purple, green and grey carbonaceous siltstone, shale, mudstone and planar bedded, ripple–laminated or cross–bedded sandstone and notable thin beds of silicified bioturbated sandstone (Rqm).

PR — R — Rqp

- **Rqp** — Freshwater predominantly cross–bedded quartzose to feldspathic sandstone commonly with overturned cross–bedding and subordinate micaceous siltstone with some red–purple beds, sparse plant and vertebrate fossils (Rqp), – Knocklofty Formation (Rqph) contact metamorphosed by Jurassic dolerite (Rqphm), intervals predominantly of siltstone, shale, mudstone and sandstone indicated (Rqpc), granule sandstone and pebbly sandstone indicated (Rqpg).

PR — R — Pch

- **Pch** — Freshwater cross–bedded arkosic to quartzose sandstone and micaceous siltstone, lower interval with some graphitic or carbonaceous sandstone, large calcareous concretions in some areas, thin beds of quartz pebble conglomerate near base in many areas; upper interval less feldspathic (correlate in part of Cygnet Coal Measures) (Pch).

PALEOZOIC

PERMIAN

PR — P — LOWER PARMEENER SUPERGROUP — Lymingtonian Stage — REKUMAN SERIES

- **Puo** — Generally unfossiliferous, glaciomarine interbedded non–fissile and fissile siltstone and silty sandstone, common bioturbation, lonestones; uppermost beds of laminated to massive siltstone with some thin beds of well–sorted sandstone (Abels Bay Formation) (Puo).
- **Pur** — Cliff forming massive, bioturbated to homogeneous, moderately well–sorted feldspathic quartz sandstone with thin pebble– and cobble–rich layers (Risdon Sandstone) (Pur).
- **Pum** — Generally poorly fossiliferous interbedded glaciomarine fine– to medium–grained sandstone and fissile to non–fissile siltstone with common lonestones and pebble rich patches, top beds richly fossiliferous (Mabina Formation) (Pum).

IGNEOUS ROCKS

MESOZOIC — CENOZOIC — PALEOGENE – NEOGENE

- **Tb** — Basalt (Tb), basanite (Tbb), alkali basalt (Tba), alkali olivine basalt (Tbao), hawaiite (Tbh), transitional olivine basalt (Tbr), tholeiite (Tbs), quartz tholeiite (Tbq), olivine tholeiite (Tbt).
- **Tbn** — Olivine nephelinite (Tbn).

MESOZOIC — JURASSIC

- **Jd** — Dolerite (Jd), with orthopyroxene (Jdo), granophyre and pegmatite indicated (Jdp), dolerite inferred beneath soil or Cenozoic deposits (Jds). Dolerite of grainsize 0 – 0.7mm (Jdvf); 0.7 – 1.5mm (Jdf); 1.5 – 3mm (Jdm); > 3mm (Jdc); > 6mm (Jdvc) indicated.
- Country rock metamorphosed by dolerite indicated by small cross overprint.

Geological boundary – position accurate or approximate.
Geological boundary – inferred.
Intrusive boundary – position accurate or approximate.
Slope break.
Scarp.
Photo lineament.
Fault – unspecified type, position accurate or approximate.
Fault – unspecified type, inferred.
Fault – unspecified type, concealed.
Fault – position accurate or approximate, downthrown side indicated.
Fault – inferred, downthrown side indicated.
Fault – concealed, downthrown side indicated.
Limit of mapping.
(white line) Limit of mapping of sub–unit within undifferentiated rock unit.

Strike and dip of bedding, right way up.
Horizontal bedding.
Trend and plunge of lineation of unspecified type.
Strike of outcrop–scale fault, type unspecified; downthrown side indicated.
Strike and dip of outcrop–scale fault, type unspecified; thrust fault.
Trend and plunge of slickenslides, movement sense unspecified.
Strike and dip of dominant joint set; vertical.
Trend of dyke or vein, rock type or mineral specified by RCODE in Point Attribute Table.
Generalised palaeocurrent direction, showing sense of movement.
Trend and plunge of palaeocurrent lineation, polarity down–plunge.
Small outcrop or lag occurence.
Field station for adjacent readings on the map.
Mineral deposit location – hardrock
Construction material/industrial mineral/gemstone location
(Data derived from Mineral Resources Tasmania DEPOSITS database. Data point position has not been verified in every case.)

Compiled by S.M. Forsyth, B.Sc.(Hons), 2002 from the following sources (see responsibility diagram):

A S.M. Forsyth, 1998–1999. New 1:25 000 geological mapping.

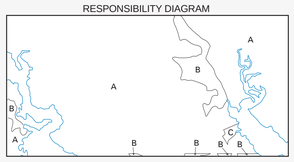
B S.M. Forsyth, 2000. Aerial photo interpretation.

C HOLZ, G.K. 1993. Principles of Soil Occurrence in the Lower Coal Valley, Southeast Tasmania. Ph.D. thesis, Uni. of Tas. (unpubl.).

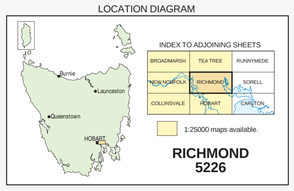
Other sources:

J.L. Everard, D.E. Leaman, J. McPhie, W.R. Moore, F.L. Sutherland.

RESPONSIBILITY DIAGRAM



LOCATION DIAGRAM



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GDA94 – MGA Zone 55. Contour Interval: 20 metres.

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