ROSEDALE

AUSTRALIA 1:100 000 GEOLOGICAL SERIES — QUEENSLAND — SHEET 9248

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The grid reference is a six figure abbreviated MGA 94 coordinate to the nearest 100 metres

MINING SYMBOLS

- Prospect
- Major quarry
- Quarry
- Coolean

Ag - silver, Agg - aggregate (quarry rock), Ay - amethyst, Au - gold, Bi - bismuth, Cu - copper, Fe - iron, Gr - gravel, Ls - limestone, Mn - manganese, Mo - molybdenum, Oi - oil shale, Pb - lead, Rm - road base, Rr - rip-rap, Sf - sand (foundry), So - soil, W - tungsten, Zn - zinc

HOLOCENE

- Qha — Sand, silt and clay; active stream channels and low terraces

QUATERNARY

- Qe — Clay, silt, sand, gravel; flood-plain alluvium

LATE TERTIARY (MIOCENE - PLIOCENE)

- Mottled, leached and kaolinised rock; deep weathering profile

Burdekin Basalt Volcanics

- Tb — Mostly olivine basalt; some areas of nepheline, basanite
- Tbtara — Tararan Basalt (2.09 ± 0.09 Ma; 2.99 ± 0.05 Ma) — Olivine-nepheline, analcime-nepheline, basanite, hawaiite and mugearite
- Tbsr — Stony Range Basalt (4.89 ± 0.58 Ma) — Nepheline, basanite and hawaiite commonly containing megacrysts and xenoliths of thercolite
- Tbmn — Maroondan Basalt — Fine-grained, grey-black hawaiite-basalt
- Tbti — Tirroan Basalt — Dark grey to black, fine-grained to glassy olivine basalt, basanite; some basal clastogenetic lava and yellow-brown streaky glass with black glass bands
- Tbp — Olivine basalt, basanite

MIDDLE TERTIARY

- Td — Dunkrosbie Formation — Dunkrosbie/Lakeacocks at the top of deep weathering profiles, including ferricrete and silcrete; dunkrosbie/ old land surfaces
- Ts — Clayey sublabile to quartzose sandstone, sandy claystone, laminated siltstone and minor conglomeratic; high level gravel colluvium

EARLY MIOCENE

- Te — Elliott Formation — Quartzose to sublabile sandstone, conglomeratic, siltstone, mudstone, shale

EOCENE

Lowmead Graben

- Tlok — Korenan Oil Shale Member — Dark brown to dusky yellowish-brown very thinly laminated oil shale, including minor siliceific argillite beds and traces of bioturbation
- Tlow — Wheatley Oil Shale Member — Brownish black, carbonaceous oil shale; minor interbedded olive-grey claystone
- Tlor — Harpur Creek Member — Dominantly calcareous claystone interbedded with siltstone and sandstone; minor oil shale
- Tlob — Hobble Creek Member — Dominantly sandstone with interbedded claystone; red, yellow and green mottling in part

LATE CRETACEOUS - PALAEOCENE

Burdekin Basalt Volcanics

- KTc — Cabbage Tree Creek beds — Coarse-grained sandstone containing shale fragments, pebble conglomerate, white to khaki mudstone, siltstone, shale and interbedded basalt
- KTgg — Gin Gin Basalt (64.1 ± 0.4 Ma, 64.7 ± 0.3 Ma) * — Microporphyritic olivine basalt

LATE JURASSIC - EARLY CRETACEOUS

- JKd — Mount Talkiberan Rhyolite — Pinkish brown to grey, hornblende-phyric to aphyric, flow-banded and autobrecciated rhyolite
- JKr — Maryborough Basin Grahams Creek Volcanics — Andesitic to rhyolitic lavas and volcaniclastics; volcaniclastic sandstone; some basalt near base

LATE TRIASSIC

Triassic Igneous Province

- Tr — Wallaville Basalt (187.5 ± 15.6 Ma) *** — Mostly weathered, fine-grained equigranular syenogranite and medium-grained equigranular granite
- Trw — Olivine to quartz-normative tholeiitic basalt and minor bedded tuff
- Trgwt — Watalgan Granite — Leucocratic biotite granite, biotite-granodiorite, biotite-hornblende granite; quartz dioritic, quartz monzonitic
- Trgwu — Fine to medium-grained biotite leucogranite, in places with strong granophyric textures; common feldspar porphyry dykes
- Trgm — Molangul Granite — Pink, medium-grained, equigranular, hornblende syenogranite with common rounded, fine-grained granite and microgranite inclusions
- Trgb — Borilla Granite — Pale pink, medium-grained, seriate, granophyric syenogranite commonly with small miarolitic cavities generally with quartz and K-feldspar infill
- Trgg — Grevillea Granite — White to light grey, coarse-grained equigranular to porphyritic granite
- Trgf — Trgqf — White, very fine to fine-grained leucogranite

TRIASSIC IGNEOUS PROVINCE

- Trgko — Koonanella Granite — Pink, fine to medium-grained, equigranular biotite granite; locally mineralised (chalcopyrite and pyrite)
- Trgul — Ulangool Granite — Medium to very coarse-grained porphyritic biotite granite; common rhyolite and dacite dykes; locally weakly foliated
- Trgel — Mount Elmo Granite — Pink, medium to coarse-grained equigranular biotite monzogranite
- Trgcd — Cedarvale Granite — Coarse-grained, porphyritic biotite granite with rapakivi texture
- Trgng — North Gwynne Granite — Pale pink to red, coarse to very coarse-grained biotite granite; medium-grained porphyritic biotite monzogranite
- Trgro — Rosevale Granite — Coarse-grained equigranular to porphyritic biotite syenogranite
- Trgtb — Toonboro Granite — Strongly altered and silicified, medium-grained, equigranular hornblende granodiorite
- Trgjc — John Clifford Road Granite — Pale to dark pink, medium-grained, uneven-grained, leucocratic alkali feldspar granite
- Trgha — Hawthorne Granite — Pale pink to pink or pale brown to brown (weathered), fine to medium-grained, uneven-grained to moderately porphyritic, leucocratic biotite granite; commonly partly granophyric; locally with miarolitic cavities
- Trgel — Glenelm Granite — Pink, medium to coarse-grained, equigranular biotite granite; minor diorite dykes
- Trgbc — Moolboolaman Granodiorite (224.5 ± 2.3 Ma) ** — Biotite-hornblende granodiorite, diorite, pyroxene-hornblende tonalite, pyroxene-hornblende granite
- Trgwl — Wailly Creek Quartz Monzodiorite — Pinkish grey, medium-grained, slightly porphyritic biotite-hornblende granodiorite; moderately altered
- Trgmy — Moolyung Granodiorite (227.6 ± 1.5 Ma) — Pale grey to white, coarse-grained, equigranular hornblende granodiorite with scattered microdiorite enclaves up to 3 cm across
- Trgmb — Mount Bania Granite (229.5 ± 2.1 Ma) — Pink, medium-grained, porphyritic hornblende-biotite monzogranite with scattered inclusions of fine-grained, pale grey granite to 3 cm; medium-grained, equigranular hornblende quartz syenitic; pale grey medium-grained hornblende granodiorite
- Trgtn — Towaran Granodiorite — White, fine-grained, leucocratic, moderately porphyritic biotite-hornblende and (hornblende-) biotite granodiorite; commonly partly altered

MIDDLE TRIASSIC - LATE TRIASSIC

- Trva — Agnes Water Volcanics — Porphyritic andesite-dacite flows interbedded with volcaniclastic sediments, plagioclase-rich tuffaceous sandstone and siltstone
- Trvmv — Mount Whaccogo Volcanics — Basaltic to andesitic lavas, thin pyroclastic deposits, volcaniclastic sandstone to boulder conglomerate
- Trvhw — Bobby Volcanics — Feldspar-phyric rhyolitic to dacitic lava and ignimbrite, porphyritic andesite to basalt lava and volcaniclastics, epiclastic sandstone and conglomerate and minor mudstone
- Trvbt — Gympie Province Brooweena Formation — Greenish brown, hornblende and feldspar-phyric andesitic; minor amygdaloidal, porphyritic basalt, rhyolite and trachyte; volcanic breccia, mudstone and siltstone, locally with plant remains

EARLY TRIASSIC - MIDDLE TRIASSIC

- Tb — Captain Osborne Tonalite (250.8 ± 2.1 Ma) — Medium to coarse-grained, thick-bedded sandstone (locally cross-bedded), siltstone, mudstone, shale; pebble to boulder conglomerate and some volcaniclastic rocks; locally bioturbated near plutons

LATE PERMIAN - EARLY TRIASSIC (?)

- PTgc — Pyroxene-biotite-hornblende diorite; hornblende diorite to clinopyroxene hornblendite
- PTgg — Fine to medium-grained biotite granite, also equigranular hornblende monzogranite (dyke?)
- PTgq — Grey, fine to coarse-grained, equigranular to porphyritic gabbro, hornblende diorite and quartz diorite to biotite-hornblende quartz monzodiorite

LATE PERMIAN

- Pgpc — Captain Osborne Tonalite (250.8 ± 2.1 Ma) — Speckled white, medium-grained, moderately porphyritic plagioclase-hornblende to biotite tonalite to granodiorite, commonly deformed and partly recrystallised
- Pgmo — Monduran Granite — Pale pink, medium to coarse-grained, porphyritic biotite monzogranite
- Pgbo — Gaeta Diorite (262.6 ± 2.5 Ma) — Pink, medium-grained, equigranular hornblende quartz diorite; dark-green, coarse-grained, equigranular hornblende-pyroxene gabbro
- Pgbg — Pgmg — Dark grey to black, medium to coarse-grained, equigranular hornblende gabbro; medium to coarse-grained, equigranular hornblende gabbro
- Pg — Pegmatite, in places containing tourmaline
- Pgok — Old Kolonga Gabbro — Brownish grey, fine to medium-grained, equigranular, hornblende quartz diorite; dark-green, coarse-grained, equigranular hornblende-pyroxene gabbro

GYMPIE PROVINCE

- Pgbo — Bororen Tonalite — Pale brown to brown, medium-grained biotite tonalite; extensively weathered, decomposed; locally deformed and partly recrystallised

Gympie Group

- Py — Fine-grained siltstone, mudstone, shale
- Pya — Basalt, andesite, dacite, and minor fine-grained sediments
- Pyls — Limestone
- Pyg — Conglomerate and coarse-grained sandstone

LATE CARBONIFEROUS - EARLY PERMIAN

- CPg — Granite, granodiorite, microgranite

Capella Subprovince

- CPgm — Cassillis Granite — Mostly discomposed, fine to medium-grained, equigranular biotite granodiorite to monzogranite
- CPgmh — Conella Granodiorite — Porphyritic hornblende-biotite monzogranite to granodiorite; foliated in places
- CPgbc — Bootoo Creek Granite — Foliated pale pink porphyritic biotite granite and microgranite
- CPgdh — Dahls Hill Complex (~300 Ma) dec. (282.4 ± 2.5 Ma) meta — Dark grey, medium-grained, eebuitic biotite and biotite-muscovite orthogneiss, migmatite, interleaved granitic rocks and minor muscovite schist
- CPgge — Glen Eva Complex (327.6 ± 3.3 Ma, 322 ± 5.3 Ma) dec (270.8 ± 4.6 Ma, 274.9 ± 3.2 Ma) meta — Grey, foliated, biotite-hornblende gneiss, slightly porphyritic biotite monzogranite; some interleaved biotite gneiss and migmatitic gneiss

CARBONIFEROUS - PERMIAN

Wandilla Province

Capella Subprovince

- CPs — Good Night beds — Slate, phyllite, argillite, chert, jasper, arenite, limestone, basic metavolcanics, clarnicite
- CPq — Hematitic chert or jasper and radiolarian chert
- CPv — Rhyolitic volcaniclastic rocks including breccia and flow-banded, locally porphyritic rhyolite
- CPva — Andesite lava (locally porphyritic) and andesitic volcaniclastic rocks including volcanic siltstone

CARBONIFEROUS

- Cca — Shoalwater Formation — Quartzose sandstone, mudstone; local quartz-muscovite-biotite schist
- Cgy — Gaythorn Metamorphics — Pale grey, fine to medium-grained biotite-muscovite schist, greenish-grey, well-cleaved metasiltstone and pale grey, fine-grained quartzose metasandstone
- Ctc — Tincat Road Metamorphics — Biotite-rich gneiss, biotite-muscovite gneiss, muscovite leucogneiss; minor migmatite and pegmatite
- Cdp — Duckpond Road Metamorphics (215.7 ± 3.1 Ma) dec (261 - 266 Ma) meta — Biotite gneiss, migmatitic gneiss and associated granite, mica schist, amphibolite, quartzite; minor pegmatite

LATE DEVONIAN - CARBONIFEROUS

- DCcw — Wandilla Formation — Mudstone, lithic sandstone (locally containing silicified oolites), siltstone, jasper, chert, slate, local schist

Capella Subprovince

- PPgc — Hazeldene Quartz Diorite (268.7 ± 7 Ma) — Dark grey, fine to medium-grained, moderately porphyritic orthopyroxene-biotite quartz diorite, with scattered inclusions (to ~10 cm) of biotite gneiss and quartz
- PPgnm — New Moonta Diorite (269.2 ± 1.6 Ma) ** — Biotite-pyroxene diorite, hornblende-pyroxene quartz diorite
- PPgbc — Bucandy Creek Granite — Biotite granite; porphyritic biotite monzogranite
- PPgcs — Carmans Syenogranite — Pale to dark pink, medium-grained, uneven-grained, leucocratic biotite - alkali feldspar granite
- PPgd — Dingle Granite — Pink, medium-grained, uneven-grained to slightly porphyritic biotite monzogranite
- PPgdc — Thornhill Gabbro — Dark grey to black, medium to coarse-grained gabbro; fine-grained equigranular diorite
- PPgbn — Benano Granite — Coarse-grained highly weathered granite
- PPgdh — Diamond Hill Granite — Mostly discomposed medium to coarse-grained biotite granite (syenogranite) with abundant microgranite and rhyolite dykes
- PPgkc — Kantaka Monzogranite — Medium-grained slightly porphyritic biotite monzogranite with common enclaves of microdiorite and metamorphic biotite gneiss
- PPgnd — Nangandie Granite — Equigranular granite to granodiorite; red, strongly altered syenogranite

PERMIAN

Gympie Province

- PPgbo — Bororen Tonalite — Pale brown to brown, medium-grained biotite tonalite; extensively weathered, decomposed; locally deformed and partly recrystallised

Gympie Group

- Py — Fine-grained siltstone, mudstone, shale
- Pya — Basalt, andesite, dacite, and minor fine-grained sediments
- Pyls — Limestone
- Pyg — Conglomerate and coarse-grained sandstone

LATE CARBONIFEROUS - EARLY PERMIAN

- CPg — Granite, granodiorite, microgranite

Capella Subprovince

- CPgm — Cassillis Granite — Mostly discomposed, fine to medium-grained, equigranular biotite granodiorite to monzogranite
- CPgmh — Conella Granodiorite — Porphyritic hornblende-biotite monzogranite to granodiorite; foliated in places
- CPgbc — Bootoo Creek Granite — Foliated pale pink porphyritic biotite granite and microgranite
- CPgdh — Dahls Hill Complex (~300 Ma) dec. (282.4 ± 2.5 Ma) meta — Dark grey, medium-grained, eebuitic biotite and biotite-muscovite orthogneiss, migmatite, interleaved granitic rocks and minor muscovite schist
- CPgge — Glen Eva Complex (327.6 ± 3.3 Ma, 322 ± 5.3 Ma) dec (270.8 ± 4.6 Ma, 274.9 ± 3.2 Ma) meta — Grey, foliated, biotite-hornblende gneiss, slightly porphyritic biotite monzogranite; some interleaved biotite gneiss and migmatitic gneiss

CARBONIFEROUS - PERMIAN

Wandilla Province

Capella Subprovince

- CPs — Good Night beds — Slate, phyllite, argillite, chert, jasper, arenite, limestone, basic metavolcanics, clarnicite
- CPq — Hematitic chert or jasper and radiolarian chert
- CPv — Rhyolitic volcaniclastic rocks including breccia and flow-banded, locally porphyritic rhyolite
- CPva — Andesite lava (locally porphyritic) and andesitic volcaniclastic rocks including volcanic siltstone

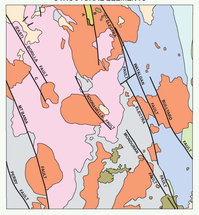
CARBONIFEROUS

- Cca — Shoalwater Formation — Quartzose sandstone, mudstone; local quartz-muscovite-biotite schist
- Cgy — Gaythorn Metamorphics — Pale grey, fine to medium-grained biotite-muscovite schist, greenish-grey, well-cleaved metasiltstone and pale grey, fine-grained quartzose metasandstone
- Ctc — Tincat Road Metamorphics — Biotite-rich gneiss, biotite-muscovite gneiss, muscovite leucogneiss; minor migmatite and pegmatite
- Cdp — Duckpond Road Metamorphics (215.7 ± 3.1 Ma) dec (261 - 266 Ma) meta — Biotite gneiss, migmatitic gneiss and associated granite, mica schist, amphibolite, quartzite; minor pegmatite

LATE DEVONIAN - CARBONIFEROUS

- DCcw — Wandilla Formation — Mudstone, lithic sandstone (locally containing silicified oolites), siltstone, jasper, chert, slate, local schist

STRUCTURAL ELEMENTS



TERTIARY
- Lowmead Graben Sediments

LATE CRETACEOUS
- Burdekin Basalt Volcanic Province — Basalt

EARLY CRETACEOUS
- Maryborough Basin Marine sediments

TRIASSIC
- Granitic intrusions — Triassic Igneous Province
- Felsic to mafic volcanics — Burdekin Basalt Volcanic Province

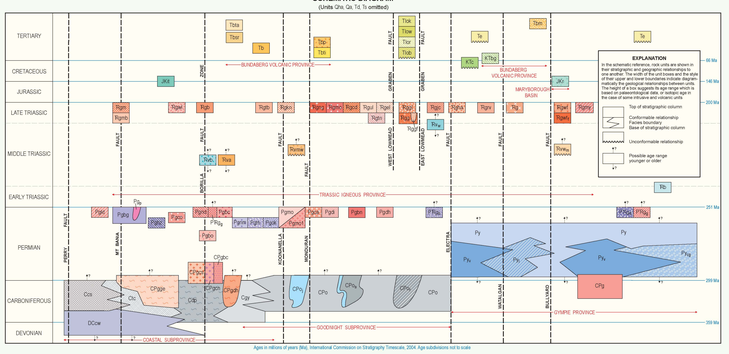
- Sediments — Ayrshire Province
- Metasediments
- Intrusions

DEVONIAN - CARBONIFEROUS
- Coastal and Goodnight Subprovinces — Metasediments

A - WEST LOWMEAD GRABEN FAULT
B - EAST LOWMEAD GRABEN FAULT
C - (WEST) BURELLA FAULT

SCHEMATIC DIAGRAM

(Units Qha, Qe, Td, Ts omitted)



Ages in millions of years (Ma), International Commission on Stratigraphy Timescale, 2004. Age subdivisions not to scale

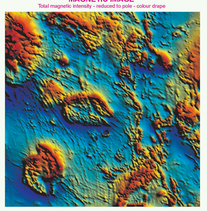
RADIOMETRIC IMAGE

Red-green-blue ternary (potassium-thorium-uranium)

The radiometric image shows the relative concentrations of the radioactive elements potassium, thorium and uranium in the topmost 20-30 cm of the Earth's surface, as measured by an airborne detector that records gamma radiation. The data are displayed as a composite coloured image, with potassium in red, thorium in green and uranium in blue. The colours in the image are created by mixing proportional amounts of red, green and blue light to produce different colours. Those with relatively high contents of all three elements appear whitish on the image (like the Toonboro Granite in the centre of the image); high contents of potassium which appear in deep reds, are related to Late Triassic granites like Mt Bania, Koonanella and Diamond Hill Granites; and those with low contents are dark (like black responses for the Old Kolonga Gabbro and the Thornhill Gabbro as well as the water body (Lake Monduran).

MAGNETIC IMAGE

Total magnetic intensity - reduced to pole - colour drape

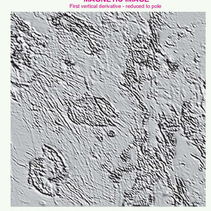


The total magnetic intensity image shows variations in the Earth's magnetic field caused by differences in the magnetic properties of rock units in the upper crust. The magnetic response of rocks is directly related to the content of magnetic minerals, and is depicted by means of a rainbow colour scale from red (strongly magnetic like the rounded intrusive body of the Mt Bania Granite) to violet (weakly magnetic like the Mt Bania Granite to the east of Mt Bania in the south-east), to blue (generally weak to non-magnetic like the meta-sedimentary units on the western edge of the sheet). The structure has been enhanced by draping the coloured image over a grey-scale version of the same data to which a NE sun-angle has been applied.

Images generated from airborne geophysical data available from the Department of Mines and Energy, Brisbane

MAGNETIC IMAGE

First vertical derivative - reduced to pole



The first vertical derivative of the total magnetic intensity data enhances short-wavelength magnetic features relative to those with long wavelengths. This image emphasises the high gradients around the edges of magnetic bodies, and in particular highlights narrow linear magnetic features such as dykes. Variations in magnetic intensity are depicted by means of a grey scale, with the most magnetic areas shown in white. Black areas are either reversely magnetised rock units, or a 'shadow' effect adjacent to highly magnetic features.

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INDEX TO 1:100 000 MAPS
1:250 000 maps shown in blue

			MIYUKU SHE		
BANANA BHE	BLOCK KHO	CALLIOPE EHE	BRADENTAL EHE		
	MOUNT MORGAN				
THEODORE BHE	GLADA KHE	MONTO KHE	ROSEDALE EHE	BARGARA KHE	
	MOUNT PERRY			CHILDERS	
CRACOW BMT	FAIRVILLE BHE	EGGVALE EHT	MOUNT PERRY EHE	CHILDERS EHE	TABLE EHE
	BUNDABERG				
BUNGABEE BHE	AUSPEN EHE	MUNGUL BEFA EHE	GAYNDAH EHE	WOODWOOD EHE	MARY BOROUGH EHE

Geology: 1969 by P.L. Ellis
1978–1982 by A.D.Robertson
1985 by M.J.McConnochie and D.A.Hemsworth
Graben - A.B.S.
2003-2006 by P.J. van Gneldinski, R.J.Buttifant, D.J.Purdy, M.J.Carroll, J.J.Connor (GA) and D.Young (AuScope)
Mineral occurrence mapping: 1996-1997 by T.J.Demaris, D.A.Monwood and M.Fitzsell
Compiled by P.E.von Gnielinski and A.Robertson
Cartography by A.Robertson, Graphic Services, GSQ, Department of Mines and Energy

Queensland Government
Department of Mines and Energy

SCALE 1:100 000

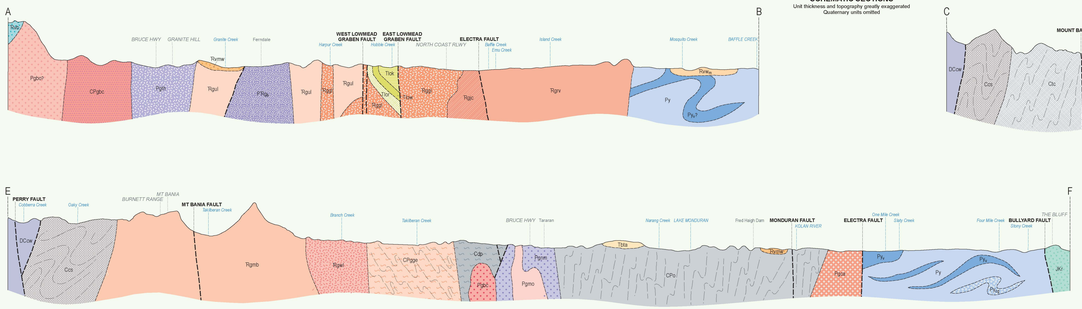
1 0 1 2 3 4 5 6 7 8 9 10
KILOMETRES

GREY NUMBERED LINES ARE 1 000 METRE INTERVALS OF THE MAP GRID OF AUSTRALIA 1994, ZONE 56
UNIVERSAL TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: GEOCENTRIC DATUM OF AUSTRALIA 1994 (GDA94)

GDA

SCHEMATIC SECTIONS

Unit thickness and topography greatly exaggerated
Quaternary units omitted



GEOLOGICAL SYMBOLS

- Geological boundary
- Weathering boundary
- Fault
- Dyke or vein - andesitic, ss - dacitic, gr - granite, mgr - microgranite, p - porphyry, q - quartz, rh - rhyolite
- Where location of boundaries, faults and folds is approximate, line is broken; where inferred, dashed; where concealed, boundaries and folds are dotted; faults are shown by short dashes
- Strike and dip of strata
- Strike and dip of strata, facing unknown
- Vertical strata
- Trend line — Aeromagnetic interpretation
- Lineament
- Strike and dip of foliation
- Vertical foliation
- Strike and dip of platy alignment
- Macrofossil locality
- Plant fossil locality
- Vertebrate fossil locality
- Crater edge
- Volcanic vent — 1 - Mount Landsborough vent, 2 - Tararan vent, 3 - Gin Gin Basalt vent (suspected), 4 - Kolan Falls vent, 5 - Stony Range vent, 6 - Pinnacle vent, 7 - Tirroan vent

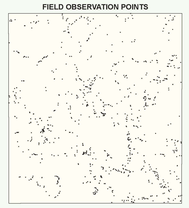
Isotopic age in millions of years
K-Ar - potassium-argon method
U-Pb - (ZHIRIMP) method
a - amorphibolite, b - biotite, h - hornblende, m - muscovite, dol - detrital age, mets - metamorphic age
w - whole rock

K-Ar(1) dates from Ellis, P. & Whitaker, W., 1976: Geology of the Bundaberg 1:250 000 sheet area, GSQ Report No 90
U-Pb(1) dates from Black, L. et al, 2005: Preliminary Proterozoic-argon ages in eastern Australia, GSA Journal 9 (1)
K-Ar(3) dates from Robertson, A.D., 1992: The Bundaberg Volcanic Province, UQ (PhD Thesis)
U-Pb(1) dates from Black, L. et al, 2005: GA OZCRON database
U-Pb(2) dates from Carson, C.J., von Gnielinski, F.E. & Buttifant, R.J., 2006, Queensland Geological Record 2006/1
K-Ar(4) dates from this map
** Site on Mount Perry sheet area
*** Site on Bundaberg sheet area

TOPOGRAPHICAL AND CULTURAL FEATURES

- Highway
- Secondary road
- Minor road
- Vehicle track
- Escarpment
- Railway; siding
- Transmission line
- Homestead
- Building

FIELD OBSERVATION POINTS



ROSEDALE

SHEET 9248
FIRST EDITION OCTOBER 2008

Copies of this map may be obtained from the Department of Mines and Energy, Brisbane

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