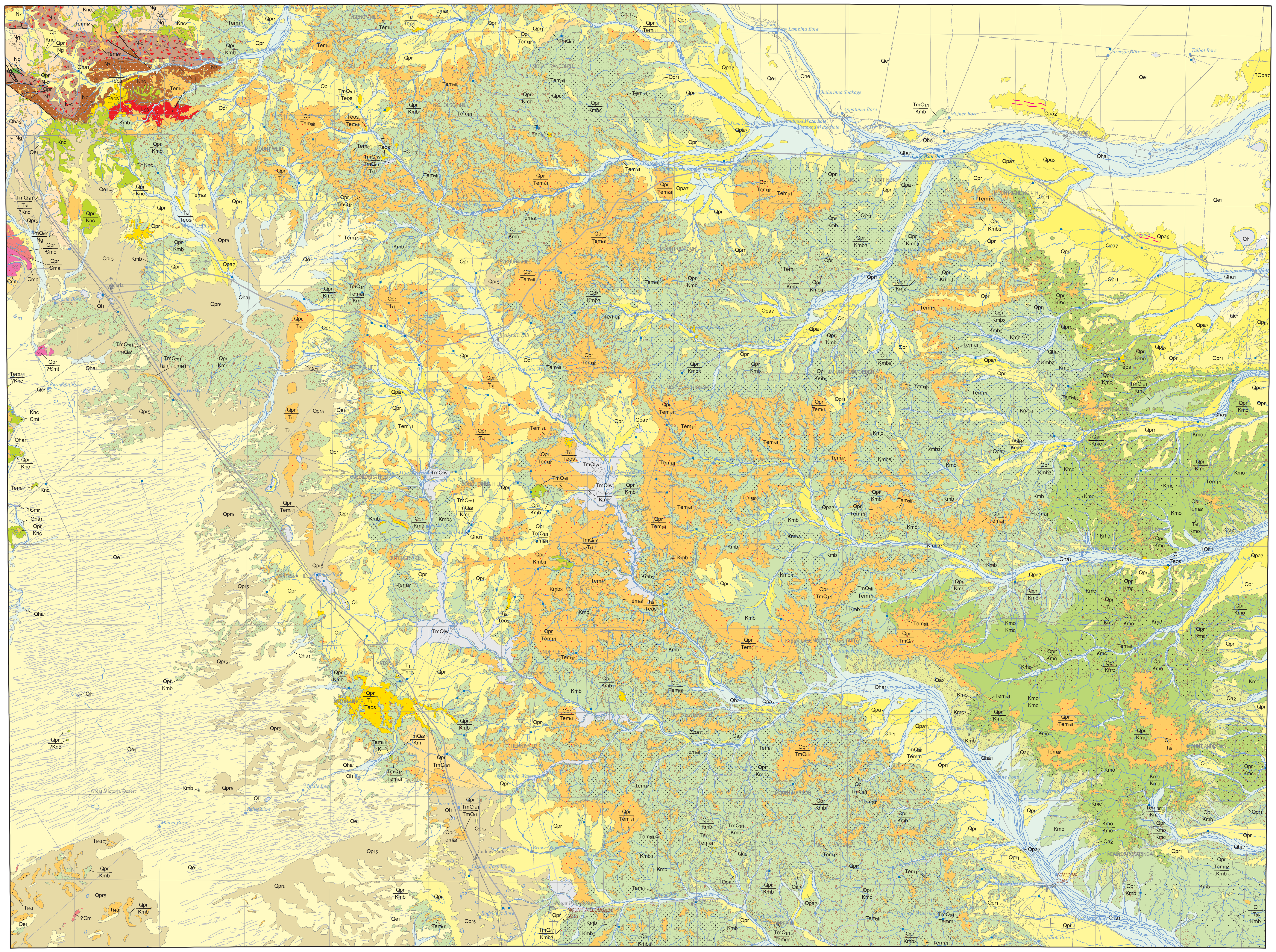
WINTINNA

GEOLOGICAL SURVEY OF SOUTH AUSTRALIA
DEPARTMENT FOR ENERGY AND MINING

AUSTRALIA 1:250 000

SA GEOLOGICAL ATLAS SERIES SHEET SG5314



REFERENCE

HOLOCENE

- Qha_1 — HOLOCENE ALLUVIAL/FLUVIAL UNIT 1: Present day Holocene alluvium; current bedload.
- Qha_2 — HOLOCENE ALLUVIAL/FLUVIAL UNIT 2: Holocene alluvium slightly older than present day alluvium (Qha1); commonly in terraces adjacent to main channel.
- Qha_8 — HOLOCENE ALLUVIAL/FLUVIAL UNIT 8: Holocene low angle slope deposits, gibber outwash.
- Qhe — HOLOCENE AEOLIAN SEDIMENTS: Undifferentiated Holocene aeolian sediments.
- Qhe_1 — HOLOCENE AEOLIAN UNIT 1: Holocene creek-bordering dunes. Based on Qhs on ABMINGA.
- Qhe_2 — HOLOCENE AEOLIAN UNIT 2: Holocene sand capping dunes in dunefields.

PLEISTOCENE-HOLOCENE

- Q — QUATERNARY ROCKS: Undifferentiated Quaternary rocks.
- Qa_2 — QUATERNARY ALLUVIAL/FLUVIAL UNIT 2: Quaternary high angle alluvial fan/talus sediments.
- Qe_1 — QUATERNARY AEOLIAN UNIT 1: Quaternary dunefield sands.
- Qe_3 — QUATERNARY AEOLIAN UNIT 3: Quaternary gypsiferous dunes/lunettes.
- Qe_9 — QUATERNARY AEOLIAN UNIT 9: Quaternary clay-pellet lunettes.
- Qes — SIMPSON SAND: Quartz sand, dune sand, aeolian, clay pans.
- Ql_1 — QUATERNARY LACUSTRINE/PLAYA UNIT 1: Quaternary playa sediments.
- Qr — QUATERNARY REGOLITH/COLLUVIAL SEDIMENTS: Undifferentiated Quaternary colluvial/regolith sediments.
- Qr_1 — QUATERNARY REGOLITH/COLLUVIAL UNIT 1: Quaternary gibber-mantled colluvium. Based on Q on MURLOOCOPPIE.

PLEISTOCENE

- Qpa_1 — PLEISTOCENE ALLUVIAL/FLUVIAL UNIT 1: Pleistocene fluvial sediments: red-brown clayey sand of terrace deposits. Example: Qc1 on CHOWILLA.
- Qpa_2 — PLEISTOCENE ALLUVIAL/FLUVIAL UNIT 2: Pleistocene gypcreted/carbonate-cemented gravel. Based on Qpt on WARRINA, CURDIMURKA.
- Qpa_7 — PLEISTOCENE ALLUVIAL/FLUVIAL UNIT 7: Pleistocene floodplain deposits: clay, sand, silt, gravel. Based on Qpf, ABMINGA, COOBER PEDY.
- Qpr — PLEISTOCENE REGOLITH/COLLUVIAL SEDIMENTS: Undifferentiated Pleistocene colluvial/regolith sediments.
- Qpr_1 — PLEISTOCENE REGOLITH/COLLUVIAL UNIT 1: Pleistocene calcreted colluvium.
- Qpr_5 — PLEISTOCENE REGOLITH/COLLUVIAL UNIT 5: Pleistocene red sand with maghemite gravel veneer, typically mulga-covered.
- Qpr_6 — PLEISTOCENE REGOLITH/COLLUVIAL UNIT 6: Pleistocene ironstone gravel spreads on alluvium and colluvium. Based on blue dot overprint within Qa on CURDIMURKA, Q2 on KINGOONYA.
- Qp\gy — PLEISTOCENE GYPCRETE: Undifferentiated Pleistocene gypcrete.

MIOCENE-PLEISTOCENE

- TmQlw — MOUNT WILLOUGHBY LIMESTONE: Limestone, micritic, cream, pale brown and pink, often with chalcedonic cap, patchy, blocky or nodular texture, lacustrine-evaporitic. Palaeochannel fill.
- $TmQ\backslash re_1$ — MIOCENE-PLEISTOCENE REGOLITH UNIT 1: Regolith, red, loamy, sandy or gritty matrix, friable to variably lithified and silicified, thin chalcedony veins. Upper part with ferruginous pisoliths, lower part with clasts of underlying porcellanite, silcrete or quartz. WINTINNA 1:250 000.
- $TmQ\backslash si_1$ — MIOCENE-PLEISTOCENE SILCRETE UNIT 1: Regionally younger silcrete; approx Late Miocene-Pleistocene.

EOCENE-MIOCENE

- Temm — MIRACKINA CONGLOMERATE: Conglomerate with silcrete clasts, medium to coarse-grained sandstone, Fluvial. Fine-grained sand in siltstone and shale near top.
- $Tem\backslash fe_1$ — EOCENE-MIOCENE FERRICRETE UNIT 1: Eocene to Miocene ferruginisation approx coeval with Tem\si1. Based on Tfe1 on TARCOOLA.
- $Tem\backslash si_1$ — EOCENE-MIOCENE SILCRETE UNIT 1: Regionally older silcrete; approx Late Eocene-Mid Miocene.

EOCENE-OLIGOCENE

- Teos — MOUNT SARAH SANDSTONE: Sandstone, cross bedded, siltstone and basal conglomerate, crossbedded. Channel facies.

TERTIARY

- $T\backslash fe_3$ — TERTIARY FERRICRETE UNIT 3: Tertiary ferricrete duricrust of the Carnadinna Surface; developed on Mesozoic and Palaeozoic units.
- T\si — TERTIARY SILCRETE: Undifferentiated Tertiary silcrete.

CRETACEOUS

- K — CRETACEOUS ROCKS: Undifferentiated Cretaceous rocks.
- Km — MARREE SUBGROUP: Shale, dark grey, bioturbated, fossiliferous; sandstone, fine to very fine grained, calcareous, clayey.
- Kmo — OODNADATTA FORMATION: Claystone and siltstone, interbedded; with fine-grained sandstone, calcareous and ferruginous concretions; limestone with celestite and barite veins.
- Kmc — COORIKIANA SANDSTONE: Sandstone, very fine to fine-grained, calcareous, clayey; sandy siltstone; minor siltstone.
- Kmb — BULLDOG SHALE: Mudstone, grey, bioturbated, fossiliferous and shaly; minor silt to very fine-grained sandstone intervals.
- Kmb_3 — BULLDOG SHALE UNIT 3: Sandstone, fine to very fine-grained, thin planar bedding, small-scale cross-bedding, hummocky cross-stratification, bioturbation; sandstone and grit, coarse, feldspathic, megarippled, thin beds.
- K-c — CADNA-OWIE FORMATION: Sandstone, fine-grained, with coarse-grained sandstone beds, and pale grey siltstone, minor conglomerate.

JURASSIC-CRETACEOUS

- JK-a — ALGEBUCKINA SANDSTONE: Sandstone, fine to coarse-grained, with granule and pebble layers, and shale intraclasts. Cross-bedded.

CAMBRIAN

- Em — MARLA GROUP: Sandstone; limestone; evaporites.
- Emt — TRAINOR HILL SANDSTONE: Sandstone, well-sorted, kaolinitic, feldspathic, calcareous, white, grey, red-brown; siltstone and claystone, micaceous, red-brown; pebbly horizons.
- Emp — APAMURRA FORMATION: Siltstone, calcareous; sandstone, fine-grained; minor limestone and crossbedded sandstone.
- Empj — MOUNT JOHNS CONGLOMERATE MEMBER: Conglomerate, poorly sorted, red-brown; cross-bedded feldspathic sandstone.
- Ema — ARCOEILLINNA SANDSTONE: Sandstone, red-brown, very fine to medium-grained, moderately well sorted and immature. Interbedded with claystone and siltstone. Also minor pebbly horizons. Clasts of claystone.
- Emo — OBSERVATORY HILL FORMATION: Siltstone and claystone, micacaeous, calcareous and dolomitic in part; minor sandstone; limestone and dolomite. Minor chert.
- Emr — RELIEF SANDSTONE: Sandstone, planar crossbedded, fine- to medium-grained, aeolian; sandstone with mud drapes, mud-chip intraclasts, scoured, fluviatile.

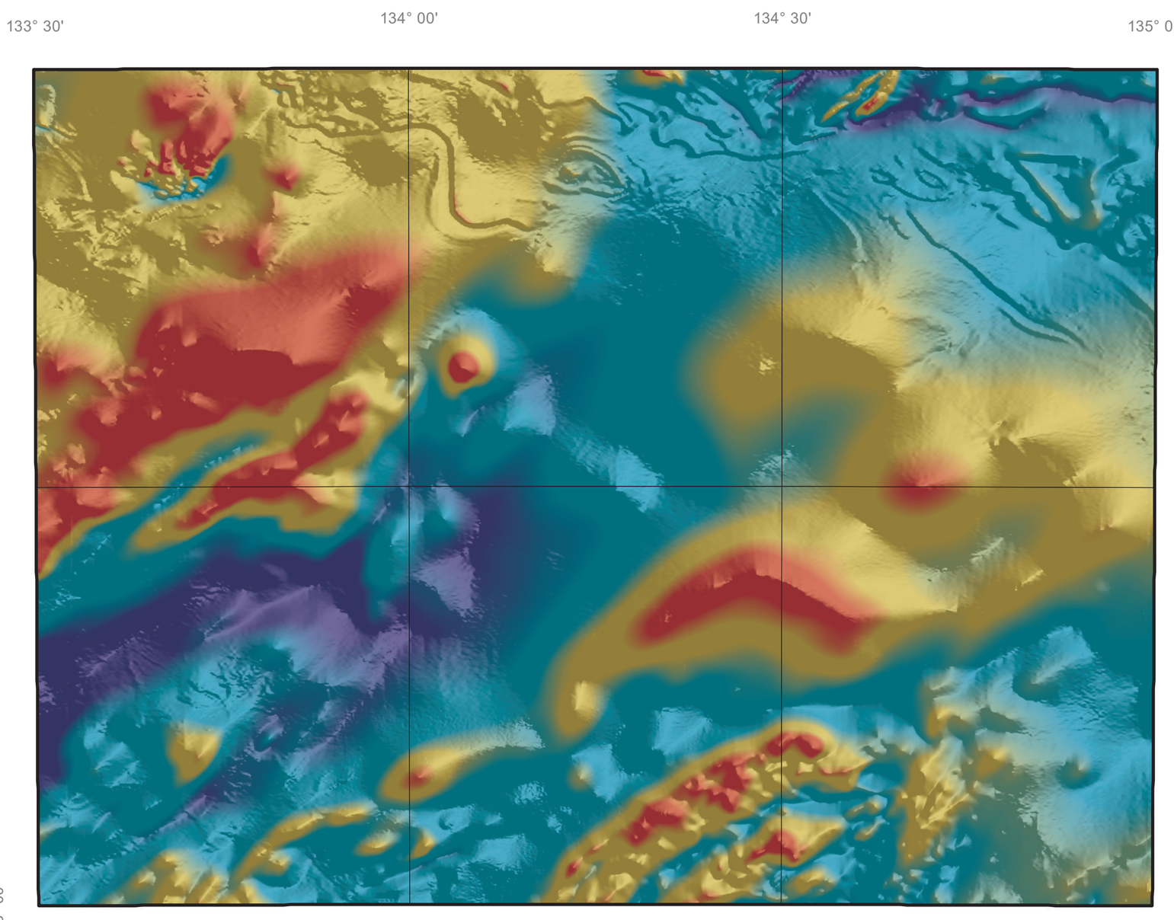
NEOPROTEROZOIC

- N — NEOPROTEROZOIC ROCKS: Undifferentiated Neoproterozoic rocks.
- Ng — UNGOOLYA GROUP: Mudstone, siltstone, limestone, calcareous siltstone, sandstone, dolomite, conglomerate.
- N-r — RODDA BEDS: Siltstone, grey-green, khaki, calcareous and dolomitic; limestone and dolomite, grey, fine-grained, as slumped blocks; sandstone and grit, felspathic or calcareous.
- Nq — LAKE MAURICE GROUP: Conglomerate; siltstone, mudstone; sandstone, shale.
- N-w — WANTAPELLA VOLCANICS: Basalt, altered, amygdaloidal, tholeiitic; with minor lithic and gritty sandstone interbeds.
- N-c — CHAMBERS BLUFF TILLITE: Diamictite, gritty siltstone, pale brown and green; sandstone and quartzite, white, feldspathic, interbeds.
- N_7 — NEOPROTEROZOIC UNIT 7: Shale, siltstone and f.g. sandstone, grey, white, yellow-brown, green, purple, partly gritty; prominent quartzite bands, partly feldspathic, white, purple-brown-grey; basal pebble conglomerate.

PALAEOPROTEROZOIC

- L_{28} — PALAEOPROTEROZOIC UNIT 28: Gneiss, granitic, quartz-K feldspar+/-biotite+/-muscovite, partly mylonitised and retrogressed; granite dykes, medium-grained, pink, moderately deformed. Sheared and weathered. Age of gneiss protolith 1740+/-31 Ma (Pb-Pb). Yoolperlunna Inlier.

TOTAL MAGNETIC INTENSITY IMAGE



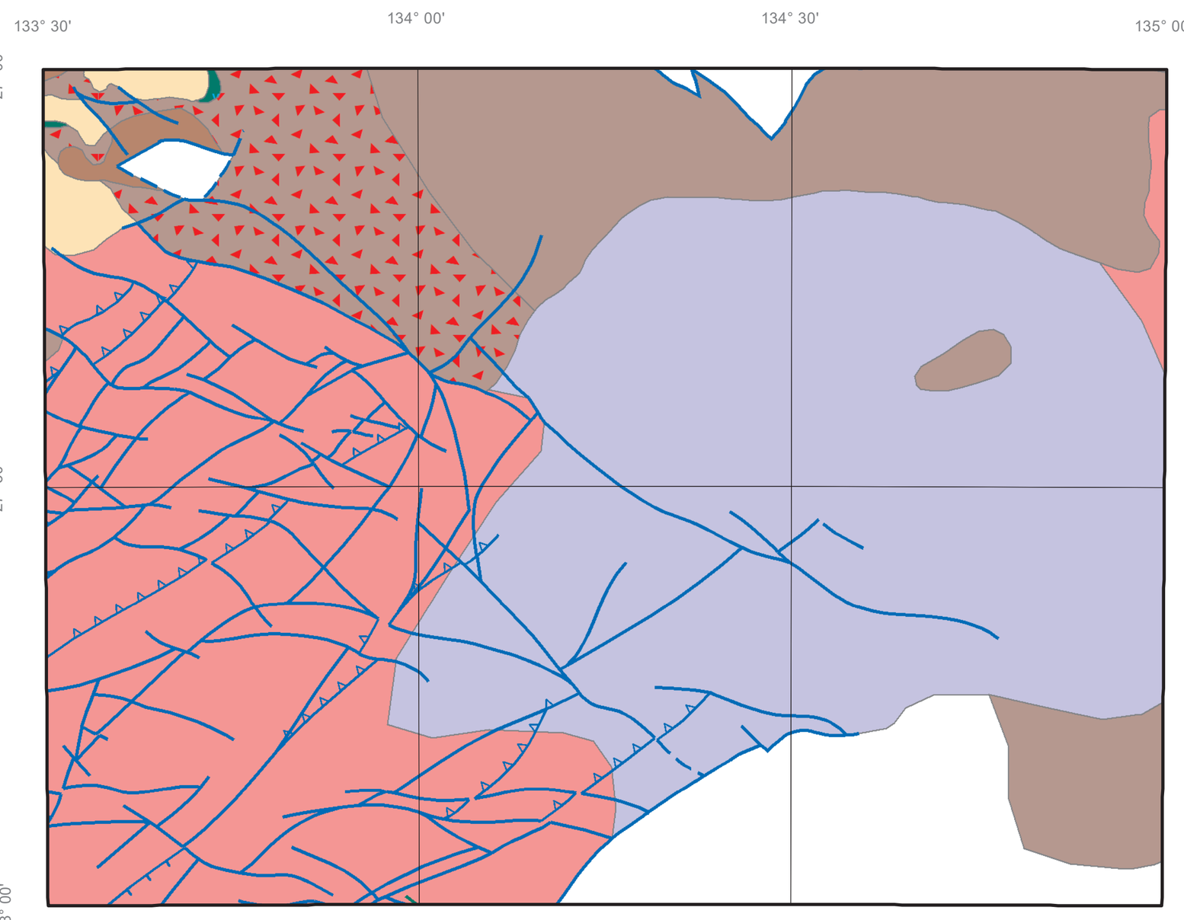
SCALE 1:1000000

The Total Magnetic Intensity Image has been compiled using aeromagnetic data from the Department for Energy and Mining, South Australia. Aeromagnetic data have been merged, gridded and image processed by the Geological Survey of South Australia.

nTesla: -623.657 – 1122.392 (-435.293, 19.444, 474.182)

A two standard deviation contrast stretch has been applied to the raster image above.

SOLID GEOLOGY INTERPRETATION



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Modified from Interpreted Crystalline Basement Geology Of The Gawler Craton (Fairclough et al. 2003) Interpreted Solid Geology Of The Curnamona Province (Burtt and Betts, 2003), Musgrave Block, Central Australia: regional geology from interpretation of aeromagnetic data (Rankin and Newton, 2002), Solid Geology South Australia (Cowley, 2006).

Solid Geology

- Em5 — Marla Group Unit 5
- Em4 — Marla Group Unit 4
- N — Neoproterozoic rocks
- N2 — Neoproterozoic unit 2
- N-w — Wantapella Volcanics
- N-c — Chambers Bluff Tillite
- N3 — Neoproterozoic unit 3
- N-g — Gairdner Dolerite

Solid Geology - Linear Structure

- Fault position accurate
- Fault position approximate
- Fault normal ticks on younger rocks
- Fault reverse triangles upthrown side

SCALE 1:250,000

KILOMETRES 5 0 5 10 15 20 25 KILOMETRES

Topographic detail based on TOPO-250K GEODATA (source scale 1:250 000) supplied by Geoscience Australia - National Mapping Division, ACT. The relationship between this data and DEM data is not guaranteed.

Computer generated from SA_GEOLOGY database (Digital data available upon request)
Current version 2018.Digital

Product of Spatial Information Services.
Published by, and with the authority of, the Department for Energy and Mining SA.

Grey numbered lines indicate the 10000 metre Map Grid
Transverse Mercator Projection, Geocentric Datum Australia, 2020.

The lake boundaries displayed on this map may have been derived from geological interpretation and may not match lakes interpreted by topographic mapping authorities. Not all structures are represented on this particular map.

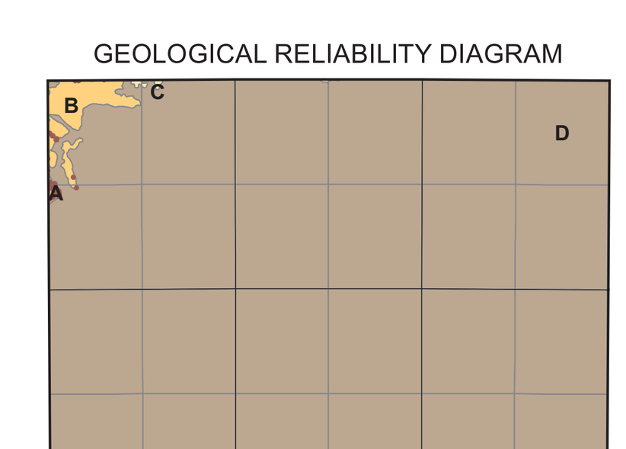
Mapping and Compilation by P.A. Rogers, B.Sc.(Hons), and P.J. Freeman, B.A.,B.Sc.(Hons) WithGeological Survey SA contributions by M.J. Sheard, B.App.Sc., N.F. Alley, Ph.D., G.W. Krieg, B.Sc.(Hons), A. I. Rowett, Ph.D., W.M. Cowley, B.Sc.(Hons), W.V. Preiss, Ph.D., A.J. Parker, Ph.D., and L.R. Rankin, B.Sc.(Hons)

R.C. Cobcroft, Director, Geological Survey of South Australia.

Geological boundaries displayed on this map have been Derived from geological interpretation and are not intended to be used for navigational purposes.

Copies of this map can be obtained from the Department for Energy and Mining SA, Adelaide.
2020

GEOLOGICAL RELIABILITY DIAGRAM



Wintinna sheet published 2015 — SCALE 1:2000000

Geological Field Observations

A: Detailed ground traverses
B: Image interpretation with limited ground traverses
C: Image interpretation with potentially some minor ground traverses
D: Image interpretation only

INDEX TO 1:100 000 SHEETS

Marla 5643	Welbourn 5743	Todmorden 5843
Ouldburra 5642	Wintinna 5742	Arckaringa 5842

INDEX TO ADJOINING 1: 250 000 SHEETS

Magnetic Declination 2000
(Annual variation +1.4 minutes)

ALBERGA	ABMINGA	DALHOUSIE
EVERARD	WINTINNA	OODNADATTA
GILES	MURLOOCOPPIE	WARRINA

DIGITAL EDITION
SUBJECT TO AMENDMENT
See published printed map for further information

GEOLOGICAL BOUNDARY

- FLOOD PLAIN
- GEOLOGICAL BOUNDARY POSITION ACCURATE
- GEOLOGICAL BOUNDARY POSITION APPROXIMATE

MINING

- DEPOSIT - NO MINING

HYDROGRAPHIC AND GEOMORPHIC FEATURES

- LAKE
- INTERMITTENT LAKE
- MAJOR WATERCOURSE
- MINOR WATERCOURSE
- FLOODPLAIN
- SWAMP
- WATERHOLE
- BORE
- WATER TANK
- SAND RIDGE

CULTURAL FEATURES

- PRINCIPAL ROAD
- SECONDARY ROAD
- MINOR ROADS
- VEHICULAR TRACKS
- OPERATIONAL RAILWAY
- FENCE
- IDENTIFIED POINT
- BUILDING
- YARDS
- LANDING GROUND

COMMODITIES

- COAL — Coal
- LMST — Limestone

LINEAR STRUCTURES

- ESCARPMENT
- FAULT POSITION ACCURATE
- FAULT POSITION APPROXIMATE
- PALAEOCHANNEL TRACE
- TREND-LINE

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Department for Energy and Mining

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