

MANN GEOLOGICAL SURVEY OF SOUTH AUSTRALIA DEPARTMENT FOR ENERGY AND MINING

Fault reverse triangles upthrown side

Davies	Mann	Hanging Knoll
4745	4845	4945
Moulden	Harcus	Tietkens
4744	4844	4944



65000

RΕ	FΕ	RE	Ν	СE

HOLOCENE

Qha	HOLOCENE ALLUVIAL/FLUVIAL SEDIMENTS: Undifferentiated Holocene alluvial/fluvial sediments.
Qha ₅	HOLOCENE ALLUVIAL/FLUVIAL UNIT 5: Holocene alluvial plain sediments.
Qhe	HOLOCENE AEOLIAN SEDIMENTS: Undifferentiated Holocene aeolian sediments.
Qhl ₃	HOLOCENE LACUSTRINE/PLAYA UNIT 3: Holocene claypan and lagoonal sediments.
PLEISTOC	ENE
Qpe ₁₂	PLEISTOCENE AEOLIAN UNIT 12: Pleistocene aeolian/alluvial calcareous silt, sand and gravel, partly cemented and calcreted. Based on Qpa, Mann 1-mile.
Qpr ₅	PLEISTOCENE REGOLITH/COLLUVIAL UNIT 5: Pleistocene red sand with maghemite gravel veneer, typically mulga-covered.
Qp\ca	PLEISTOCENE CALCRETE: Undifferentiated Pleistocene calcrete.
MIOCENE	PLEISTOCENE
TmQIm	MANGATITJA FORMATION: Limestone to dolostone, micritic, cream, fossiliferous, often with chalcedonic cap, lacustrine. Sandy clay to sandstone, red-brown, calcareous, gritty; granule conglomerate, kaolinitic, arkosic; clay, mottled red and green, alluvial. Palaeochannel fill.
TERTIARY	
. T\fe	TERTIARY FERRICRETE: Undifferentiated Tertiary ferricrete.
T∖fe _i	TERTIARY FERRICRETE UNIT 1: Tertiary ochre, goethitic, nickeliferous in part, developed on ultrabasic rocks. Based on T with red dots on MANN.
T∖si ₁	TERTIARY SILCRETE UNIT 1: Tertiary jasper, ferruginous chalcedony, formed in ultrabasic rocks. Based on T with black dots on MANN.
MESOPRO	ITEROZOIC
M ₂₃	MESOPROTEROZOIC UNIT 23: Undifferentiated doleritic/gabbroic dykes of the Musgrave Block.
Mg ₁	GILES COMPLEX UNIT 1: Ultrabasic rocks: pyroxenite, picrite. Based on purple unit on WOODROFFE.
Mg ₂	GILES COMPLEX UNIT 2: Basic rocks: norite, gabbro, anorthosite, troctolite; norite dykes. Based on pale mauve units on WOODROFFE.
Mg ₃	GILES COMPLEX UNIT 3: Anorthosite. Based on plum-coloured unit on MANN and dark red unit on Davies 1-mile.
Mg ₄	GILES COMPLEX UNIT 4: Serpentinite. Based on dark pink unit with white dots on Davies 1-mile.
Mg ₅	GILES COMPLEX UNIT 5: Pyroxenite. Based on dark pink unit with black dots on Davies 1-mile.
Mg ₆	GILES COMPLEX UNIT 6: Picrite, troctolite, olivine gabbro, peridotite. Based on dark pink unit on Davies 1-mile.
Mg ₇	GILES COMPLEX UNIT 7: Coarse-grained, anorthositic contact zone with metasediments. Based on pale pink unit with black bars on Davies 1-mile.
+ + + + Mp + + + +	PITJANTJATJARA SUPERSUITE: Alkali granite to diorite, primarily quartz monzonite, with orthopyroxene, clinopyroxene, hornblende or biotite, commonly porphyritic, foliated to massive. A to I-type, ~1220-1120 Ma, syn- and post-Musgravian Orogeny.
Mp ₄	PITJANTJATJARA SUPERSUITE UNIT 4: Hypersthene adamellite (charnockite). Based on red unit on WOODROFFE and Davies 1-mile (MANN).
PALAEO-N	IESOPROTEROZOIC
LMbw	WATARU GNEISS: Gneiss, granitic, medium-grained, with hornblende, biotite and lesser orthopyroxene and clinopyroxene. Amphibolite to oranulite facies.
LMb	BIRKSGATE COMPLEX: Gneiss, quartzofeldspathic; orthogneiss, felsic to ultramafic; paragneiss, pelitic to calcic: iron formation. Granulite to amphibolite facies. Protolith ages ~1680–1550 Ma.
LMb ₃	BIRKSGATE COMPLEX UNIT 3: Basic granulite.
ĽMb ₄	BIRKSGATE COMPLEX UNIT 4: Altered granulite and gneissic granulite.
LMb ₅	BIRKSGATE COMPLEX UNIT 5: Intermediate granulite; feldspar-pyroxene granulite, garnet-rich in part.
۰LMb ₆	BIRKSGATE COMPLEX UNIT 6: Quartzite, sillimanite+magnetite quartzite, minor sillimanite+garnet metapelite.
· · LMb ₇ · ·	BIRKSGATE COMPLEX UNIT 7: Plagioclase-pyroxene-garnet granulite, dark-coloured.
LMb ₈	BIRKSGATE COMPLEX UNIT 8: Quartz-plagioclase-pyroxene-garnet granulite.
LMb _g	BIRKSGATE COMPLEX UNIT 9: Quartz-K-feldspar-plagioclase-hypersthene-garnet granulite.
	BIRKSGATE COMPLEX UNIT 10: Marble, coarse, calcsilicate.
LMb	BIRKSGATE COMPLEX UNIT 11: Garnet-quartz-microperthite quartzite.
LMb ₁₂	BIRKSGATE COMPLEX UNIT 12: Quartzite, quartz-microperthite.
MISCELLA	NEOUS
mt	MAGNETITE: Magnetite, undifferentiated.
my ₂	MYLONITE UNIT 2: Shear zones, mylonite, cataclasite of Musgrave Block.
pg.	PEGMATITE UNIT 1: Allanite pegmatite. Based on light red unit on MANN.

GEOLOGICAL BOUNDARY CLAYPAN GEOLOGICAL BO

CLAYPAN	DEPOSIT - NO MINING
GEOLOGICAL BOUNDARY INFERRED	
GEOLOGICAL BOUNDARY POSITION ACCURATE	
GEOLOGICAL BOUNDARY POSITION APPROXIMATE	HYDROGRAPHIC AND GEOMO
	MINOR WATERCOURSE
	WATERHOLE
	BORE
	WATER TANK
LINEAR STRUCTURES	SAND RIDGE
ESCARPMENT	
FAULT POSITION ACCURATE	
	STRUCTURAL FEA
FOLIATION TREND METAMORPHIC	
SHEAR ZONE	ORIGINALLY HORIZONTAL SEDIMENTARY BEDDING
TREND OF VOLCANIC LAYERING	COMPOSITIONAL LAYERING
TREND-LINE	
	ORIGINALLY HORIZONTAL SEDIMENTARY BEDDING - VERTICAL
	ORIGINALLY HORIZONTAL SEDIMENTARY BEDDING - VERTICAL LINEAR STRUCTURAL ELEMENT

CULTURAL FEATURES

LANDING GROUND

FAULT DISPLACED RELATIVE HORIZONTAL - RIGHT, LEFT	<u> </u>
MINOR ROADS	
VEHICULAR TRACKS	
IDENTIFIED POINT	•

HYDROGRAPHIC AND GEOMORPHIC FE	ATURES
INTERMITTENT LAKE	\sim
MINOR WATERCOURSE	
WATERHOLE	
BORE	
WATER TANK	
SAND RIDGE	
STRUCTURAL FEATURES ORIGINALLY HORIZONTAL SEDIMENTARY BEDDING	
STRUCTURAL FEATURES ORIGINALLY HORIZONTAL SEDIMENTARY BEDDING COMPOSITIONAL LAYERING	÷.
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MINING

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COMMODITIES Cobalt Co Fe Iron Nickel Ni OCR Ochre

