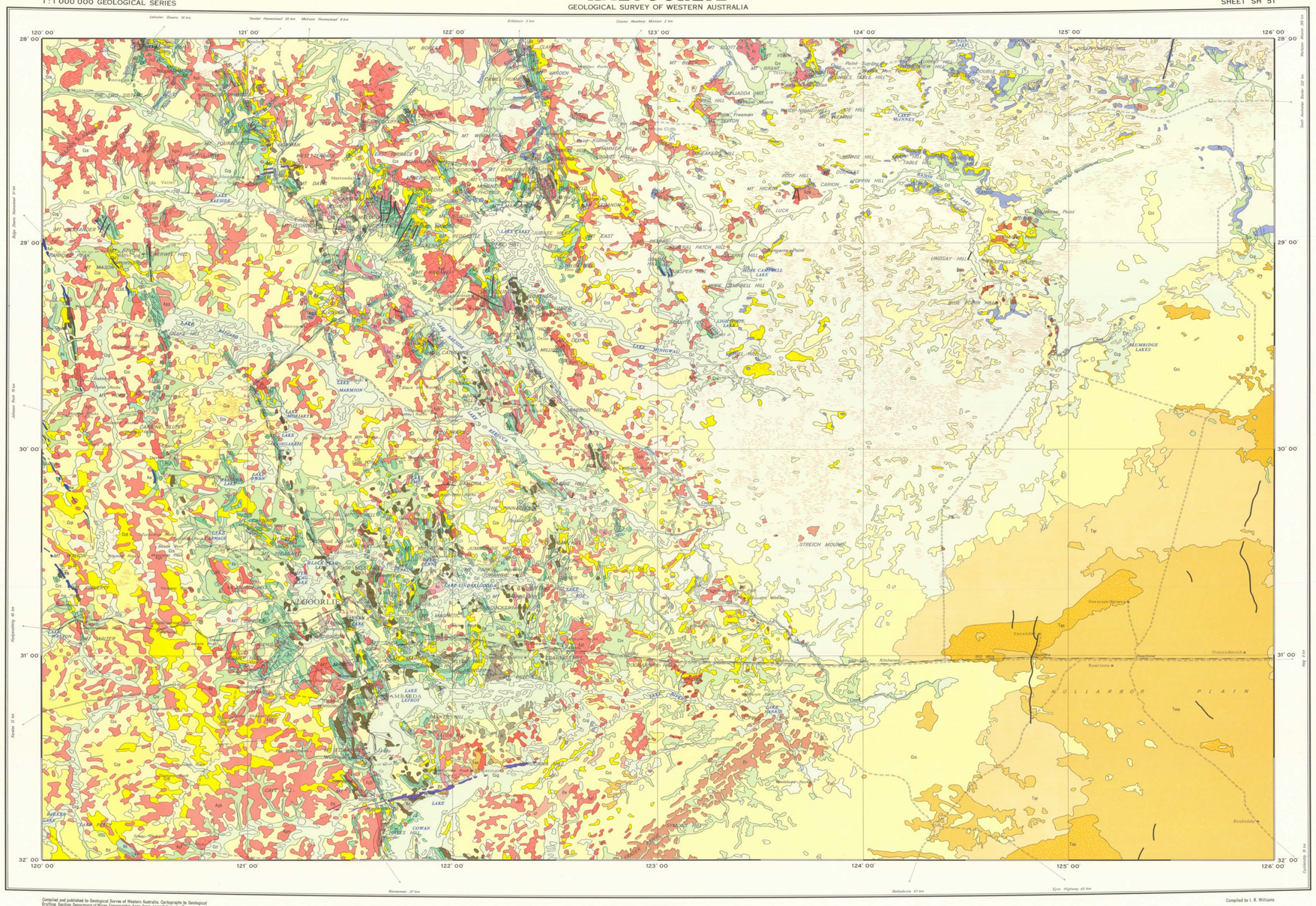
1 : 1 000 000 GEOLOGICAL SERIES

KALGOORLIE

GEOLOGICAL SURVEY OF WESTERN AUSTRALIA

SHEET SH 51



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Copies of this map may be obtained from the Geological Survey of Western Australia, in Perth.

SYMBOLS

- Geological boundary
- Fault
- Top of unit: facing derived from igneous and sedimentary bodies
- Major road with national route marker
- Minor road
- Railway (4'8½") with station or siding
- Townsite — Zoutfontein
- Locality — KALGOORLIE
- Homestead — Verligen
- Airfield — Edjudina
- Sand dune
- Mining Centre — SCOTIA
- Battery, smelting or treatment plant
- Watercourse, intermittent
- Mine
- Mineral occurrence
  - Copper — Cu
  - Feldspar — Fs
  - Gold — Au
  - Nickel — Ni
  - Salt — Na

MAIN TECTONIC UNITS

HON. A. MENSAROS, M.L.A.
MINISTER FOR MINES
J. H. LORD, DIRECTOR, GEOLOGICAL SURVEY

SCALE 1:1 000 000

20 0 20 40 60 80 100 120 KILOMETRES

LAMBERT CONFORMAL CONIC PROJECTION
STANDARD PARALLELS 28° 40' and 31° 20'

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Compiled by I. R. Williams

DECLINATION DIAGRAM AND INDEX TO 1:1 000 000 SHEETS

The lines indicate magnetic declination. With a nearly declination is east and eastwards; dotted lines indicate declination is west and westwards. Approx declination is value and correction must be subtracted from compass bearing to give true bearing.

KALGOORLIE
SHEET SH 51

FIRST EDITION 1976

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REFERENCE

Era	Period	Unit	Symbol	Description
CAINOZOIC			Cpl	Clay, silt, sand, gypsum, halite, lacustrine deposits in playa lakes
			Czg	Silt, sand, gravel, kopi (gypsum and clay) deposits; mixed eolian and alluvial deposits marginal to playa lakes; lunette dunes; saline valley fill; contains numerous small salt lakes and claypans
			Czs	Red to grey quartz sand, minor sands silt, eolian deposits in longitudinal dunes and sheets includes reworked sandplain on duricrust surface
			Czv	Clay, silt, sand, gravel, calcrete; alluvial deposits in major drainage lines; valley fill
			Czc	Clay, loam, silt, sand, ironstone and quartz pebble veneer, contains sheet and nodular kunkar at shallow depth; residual and colluvial deposits on low slope and undulating surface
			Czp	Yellow to white sand, silty sand; sandplain deposits, overlies duricrusted surface
			Czd	Laterite, ferricrete, silcrete, ironstone nodules and gravel in yellow sand; duricrust
			Ter	Residual clay and kankar; clay containing sheet and nodular kankar with oolitic texture
			Tpc	Recrystallised limestone; microcrystalline limestone, formed by recrystallisation of Nullarbor Limestone
	TERTIARY — MIDDLE MIOCENE	Plumridge Beds	Tmp	Fine-grained sandstone, siltstone, claystone, minor conglomerate
		Colville Sandstone	Tmc	Sandstone, siltstone, claystone, minor calcarenite
		Nullarbor Limestone	Tmn	Foraminiferal calcarenite
	TERTIARY — UPPER EOCENE	Toolinna Limestone	Tet	Well sorted bryozoan calcarenite
		Eudynie Group	Tye	Limestone, dolomite, spongolite
MESOZOIC	LOWER CRETACEOUS		Kl	Glauconitic sandstone, siltstone, claystone; conglomeratic sandstone with large-scale cross-bedding
PALAEOZOIC	LOWER PERMIAN	Paterson Formation	Pc	Poorly sorted sandstone, conglomerate, siltstone, claystone, tillite, rare varves, fluviatile, lacustrine, glacio-lacustrine and glacigene deposits
		Wanna Beds	Pw	Fine-grained, well-sorted quartzarenite, some very large cross-bedding; minor claystone
PROTEROZOIC			Ec	Dolomite, limestone partly stromatolitic, minor quartzite (Neale Junction Area), meta-orthoquartzite (Condeelee Area)
	≈1620ma	Woodline Beds	Ew	Quartzite shale, phyllite, thin basal conglomerate
	1660ma to <1000ma		Eg	Granitic and allied intrusive rocks; composition range from tonalite to granite, even-grained to porphyritic; fine to coarse-grained
			Ed	Metamorphosed homogeneous dolerite, norite, gabbro; minor hybrid rocks; layered intrusions, garnetiferous gabbro, hornblendite
	≈1328ma	Fraser Complex	Ef	Predominately basic granulite bands, and granulite gabbro, flaser gneiss microgranite, acid pegmatite
			Efgn	Gneiss, variable, augen gneiss, derived from mixed parentage
			Eu	Ultramafic intrusive rocks; serpentinite, peroxenite, tremolite-chlorite assemblages
	<1660ma	Mt. Andrew Migmatite	Em	Migmatite; mixed metamorphic and igneous rocks; ranging from nebulitic to strongly banded types; incorporating remobilised Archaean basement
			Emn	Migmatite of uncertain age
		Transition Zone	Etz	Granitic rocks of uncertain age
	2064ma		Ec	Carbonatite
	2420ma–1960ma		Ed	Mafic dyke suite; quartz dolerite, gabbro, norite, peroxenite, granophyre peridotite
				Quartz veins; breccia, in fault zones; joints
ARCHAEAN	>2700ma–2400ma		Ags	Quartz syenite, syenite
			Agp	Granite, adamellite; porphyritic texture
			Agg	Granite, adamellite, granodiorite; even grained, biotite bearing
			Agd	Granodiorite, tonalite, quartz diorite; even grained, biotite, hornblende bearing
			Agpg	Strongly foliated granitic rocks; sheared; marginal to major plutons; gneissic granite
			Agm	Migmatite, gneiss, ranging from nebulitic to strongly banded varieties
			Ag	Quartz-mica-garnet-andalusite-kyanite-sillimanite assemblages; schistose, derived from clastic and pyroclastic rocks
			Am	Amphibolite, pyroxene hornfels, plagioclase-hornblende-garnet diopside assemblages; derived mainly from course-grained mafic igneous rocks
			Ah	Basic hornfels, fine-grained amphibolite; derived mainly from fine-grained mafic igneous rocks
	>2600ma		Ac	Polymictic conglomerate, minor sandstone, arkosic sandstone and greywacke
				Bedded shale, siltstone, sandstone, minor conglomerate lenses
			Al	Well-bedded greywacke, siltstone, shale
			Aq	Chert, jaspilite, ferruginous quartzite, quartzite, minor banded iron formation
			Aw	Banded iron formation, jaspilite, minor chert
			Au	Mixed clastic and volcanoclastic rocks in a mafic igneous assemblage mudstone, greywacke, black shale, minor chert, aquagene tuff, hyaloclastite breccia
			Av	Mixed clastic and volcanoclastic rocks in a felsic igneous assemblage, tuffaceous shale, siltstone, sandstone, oligomictic conglomerate
			Ap	?Pyroclastic rocks, quartz-feldspar-mica-chloritoid-assemblages, structureless to schistose
			Ax	Pyroclastic rocks; tuff, breccia, agglomerate
			Ar	Felsic intrusive rocks; rhyolite, rhyodacite, dacite quartz feldspar porphyry; fine-grained to porphyritic; acid to intermediate composition
			Ai	Felsic extrusive rocks, rhyolite, rhyodacite, dacite; fine-grained to porphyritic, acid to intermediate composition
			Ai	Intermediate extrusive rocks; andesite; porphyritic to amygdaloidal texture
			Ad	Mafic intrusive rocks; homogeneous dolerite, gabbro; basic composition, medium to coarse-grained
			Al	Layered mafic-ultramafic bodies; composition range through peridotite, harzburgite, orthopyroxenite, norite, gabbro, granophyre
			Ab	Mafic extrusive rocks; tholeiitic basalt; fine-grained, basic composition
			Ar	Ultramafic extrusive rocks, "high Mg basalts", tremolite-chlorite-plagioclase assemblages; schistose
			Au	Ultramafic extrusive and intrusive rocks; serpentinite, serpentinised peridotite talc-carbonate
				"Spinifex" texture, flow tops, indicative of extrusive origin

Regional Metamorphism - Lower Greenschist to Upper Amphibolite Facies.