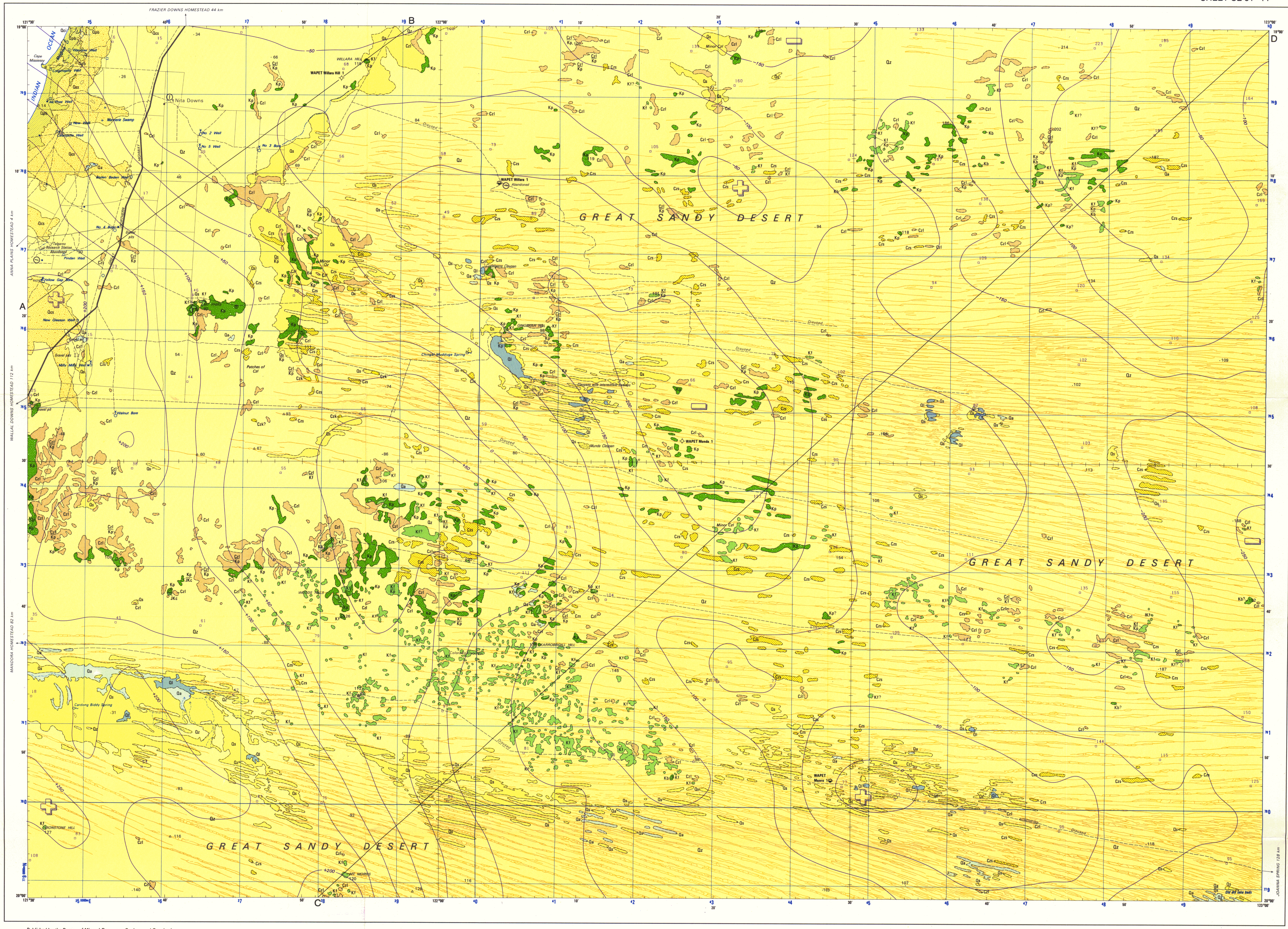
AUSTRALIA 1:250 000 GEOLOGICAL SERIES

MUNRO

WESTERN AUSTRALIA

SHEET SE 51–14



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LEGEND

Era	Age	Unit	Symbol	Description
CAINOZOIC	QUATERNARY		Qa	Sand, silt, clay; minor gravel: alluvial
			Ql	Clay, silt, sand; minor gypsum: lacustrine, claypans
			Qs	Sand, silt; minor gravel: mixed alluvial and aeolian
			Qz	Red sand, fine to medium; minor silt: aeolian
			Qcs	Clay, silt, sand; minor salt: supratidal mud flat deposits
		Bossut Formation	Qpb	Quartzose calcarenite, fine to coarse calcilutite; partly oolitic, cross-bedded; fossiliferous: shoreline beach-ridge
			Qci	Silty clay, black organic clay; minor salt: tidal flat and mangrove swamp
			Czk	Calcrete; minor chalcedony: evaporitic, pedogenic
			Czs	Sand, silt, ferruginous pisoliths; minor gravel, clay: pedogenic; gravel plains overlying Czl
			Czl	Laterite, pisolitic or massive: pedogenic
MESOZOIC	EARLY CRETACEOUS	Frezier Sandstone	Kf	Sandstone, fine to coarse, poorly sorted, feldspathic, poorly bedded, some relict cross-bedding; minor conglomerate: fluvial to deltaic, partly pedogenic
		Parda Formation	Kp	Mudstone; minor fine sandstone lenses; thin-bedded or massive: lagoonal?
		Broome Sandstone	Kb	Sandstone, fine to medium, well-sorted; mudstone in part; minor conglomerate; ripple-marked, cross-bedded; minor bioturbation; plant fossils: shallow water marine
	LATE JURASSIC TO EARLY CRETACEOUS ?	Callawa Formation	JKc	Sandstone, very fine to coarse; conglomerate; cross-bedded; minor siltstone; plant fossils: fluvial
		Jarlemai Siltstone	JKr	Mudstone, sandy, glauconitic, fossiliferous: marine
	LATE JURASSIC	Alexander Formation	Ja	Sandstone, fine to medium; interbedded mudstone, bioturbated, fossiliferous: marine
	EARLY? TO LATE JURASSIC	Wallal Sandstone	Jl	Sandstone; minor siltstone, conglomerate; palynomorphs: continental to shallow marine
PALAEOZOIC	EARLY PERMIAN	Noonkanbah Formation	Pn	Mudstone, calcareous, micaceous; fine sandstone, limestone interbeds; fossiliferous: marine
		Poole Sandstone	Pp	Sandstone, very fine to fine; interbedded mudstone; thin-bedded; clay pellet lenses: shallow water marine
		Grant Group	Pg	Sandstone, fine to coarse; mudstone; minor conglomerate: glacial marine
	LATE ORDOVICIAN? TO EARLY DEVONIAN	Carribuddy Formation	Sc	Dolomite, dolomitic siltstone, shale, halite, anhydrite; minor sandstone: mainly non-marine
	MIDDLE ORDOVICIAN	Nita Formation	On	Dolomite, limestone; minor shale: marine
		Goldwyer Formation	Oo	Shale, black, fossiliferous, calcareous, pyritic, interbedded limestone, dolomite; minor siltstone lenses: marine
	EARLY ORDOVICIAN	Willara Formation	Ow	Limestone, dolomitic, fossiliferous; interbedded shale and siltstone: marine
		Nambeet Formation	Ot	Shale, grey to green, interbedded limestone, dolomite and fine sandstone: marine
PRECAMBRIAN			p€	Igneous, metamorphic, and sedimentary rocks

Units from Pn to p€: section and rock relationship diagram only

Geological boundary

Fault - (from seismic data)

Where location of boundaries, folds, and faults is approximate, line is broken; where inferred, queried; where concealed boundaries and folds are dotted, faults are shown by short dashes

Strike and dip of strata

Trend-line, airphoto interpretation

Macrofossil locality

Palynomorph locality

Petroleum exploration well, dry, abandoned

Petroleum exploration well with show of oil and gas

Bore, Well

Windpump

Water storage

Spring

Swamp

Ancient drainage

Intermittent drainage

Sand dunes

Cliff

Claypan

Highway

Vehicle track

Landing ground

Nita Downs Homestead

Building

Yard

Fence

Trigonometrical station

·46 Elevation in metres

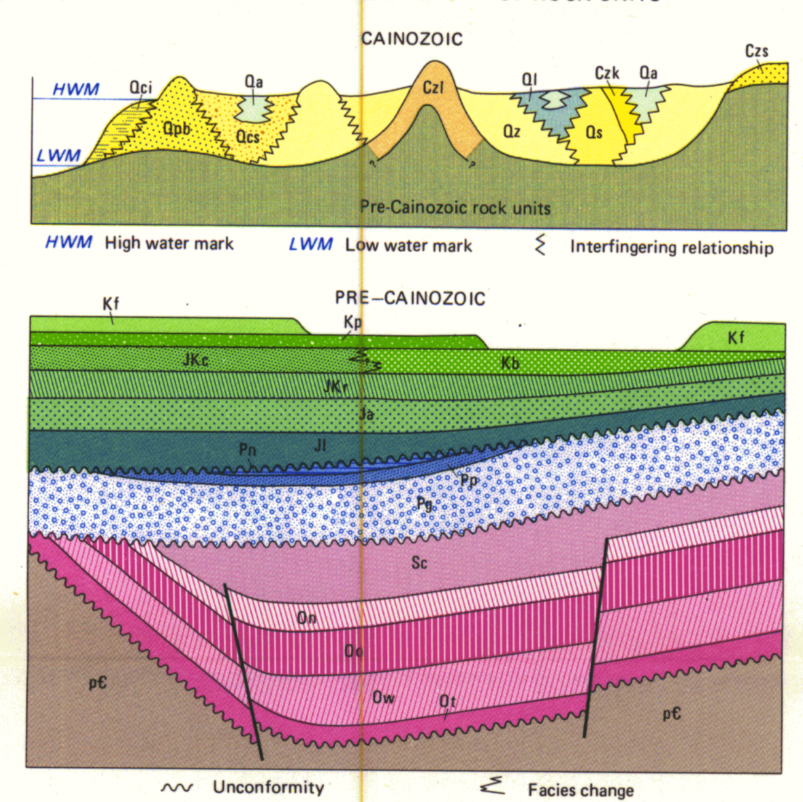
182 Selected gravity station with elevation in metres

+200 Bouguer gravity anomaly (micrometres sec^{-2}), computer-plotter produced

Gravity anomaly — relative high

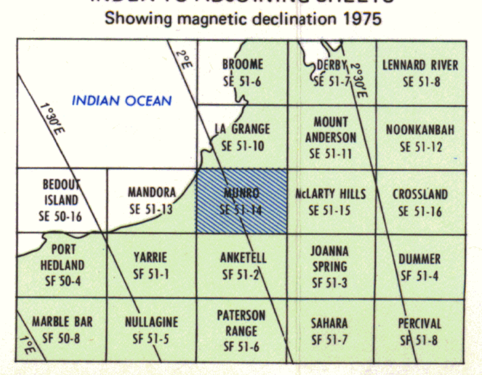
Gravity anomaly — relative low

DIAGRAMMATIC RELATIONSHIP OF ROCK UNITS



INDEX TO ADJOINING SHEETS

Showing magnetic declination 1975



UNIVERSAL GRID REFERENCE

GRID ZONE DESIGNATION: 51K

100,000 METRE SQUARE IDENTIFICATION

UU VU UT VT

IGNORE the SMALLER figures of any grid number; these are for finding the full co-ordinates. Use ONLY the LARGER figures of the grid number; example: 350000mE

TO GIVE A STANDARD REFERENCE ON THIS SHEET TO NEAREST 1000 METRES

SAMPLE POINT: · MT MORRIS

1. Read letters identifying 100 000 metre square in which the point lies: UT
2. Locate first VERTICAL grid line to LEFT of point and read LARGE figure labelling the line either in the top or bottom margin, or on the line itself: 8
3. Estimate tenths from grid line to point: 4
4. Locate first HORIZONTAL grid line BELOW point and read LARGE figure labelling the line in either the left or right margin, or on the line itself: 9
5. Estimate tenths from grid line to point: 1

SAMPLE REFERENCE: UT8491

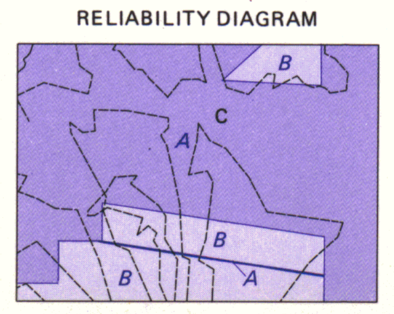
If reporting beyond 18° in any direction, prefix Grid Zone Designation, as: 51KUT8491

SCALE 1:250 000

5 0 5 10 15 20 25 Kilometres

BLUE NUMBERED LINES ARE 10 000 METRE INTERVALS OF THE AUSTRALIAN MAP GRID, ZONE 51 TRANSVERSE MERCATOR PROJECTION

RELIABILITY DIAGRAM



Geology C General reconnaissance: few traverses, mainly airphoto interpretation

Helicopter traverse

Gravity A Detailed survey

B Reconnaissance

Geology 1977 by R.R. Towner, D.L. Gibson BMR; R.W.A. Crowe GSWA
Compiled 1978 by R.R. Towner, D.G. Walton
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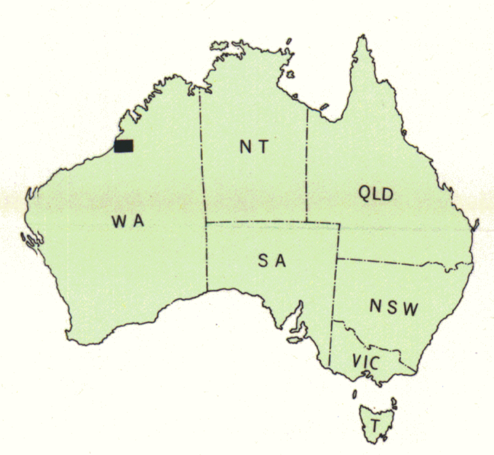
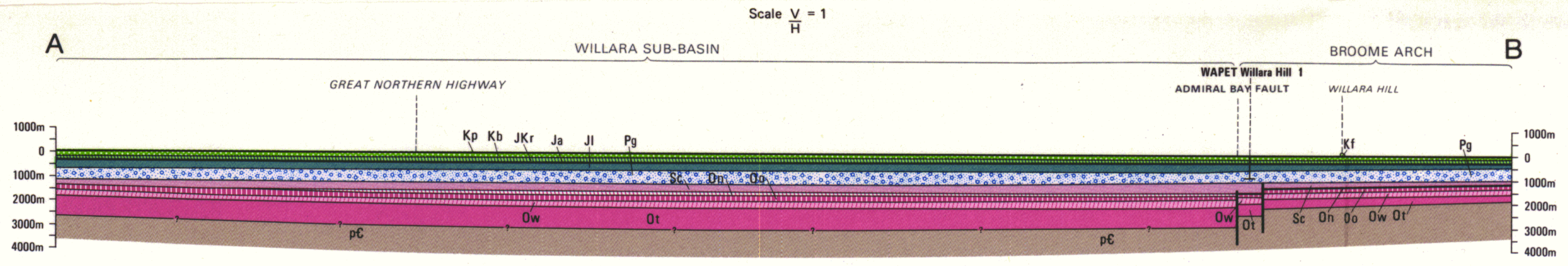
Printed by Valentine Graphics, Melbourne, Australia

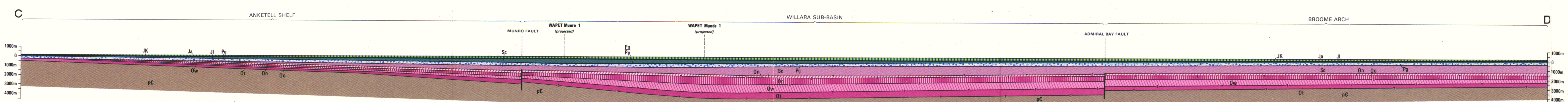


SCHEMATIC SECTIONS

Cainozoic sediments omitted

Scale $\frac{V}{H} = 1$

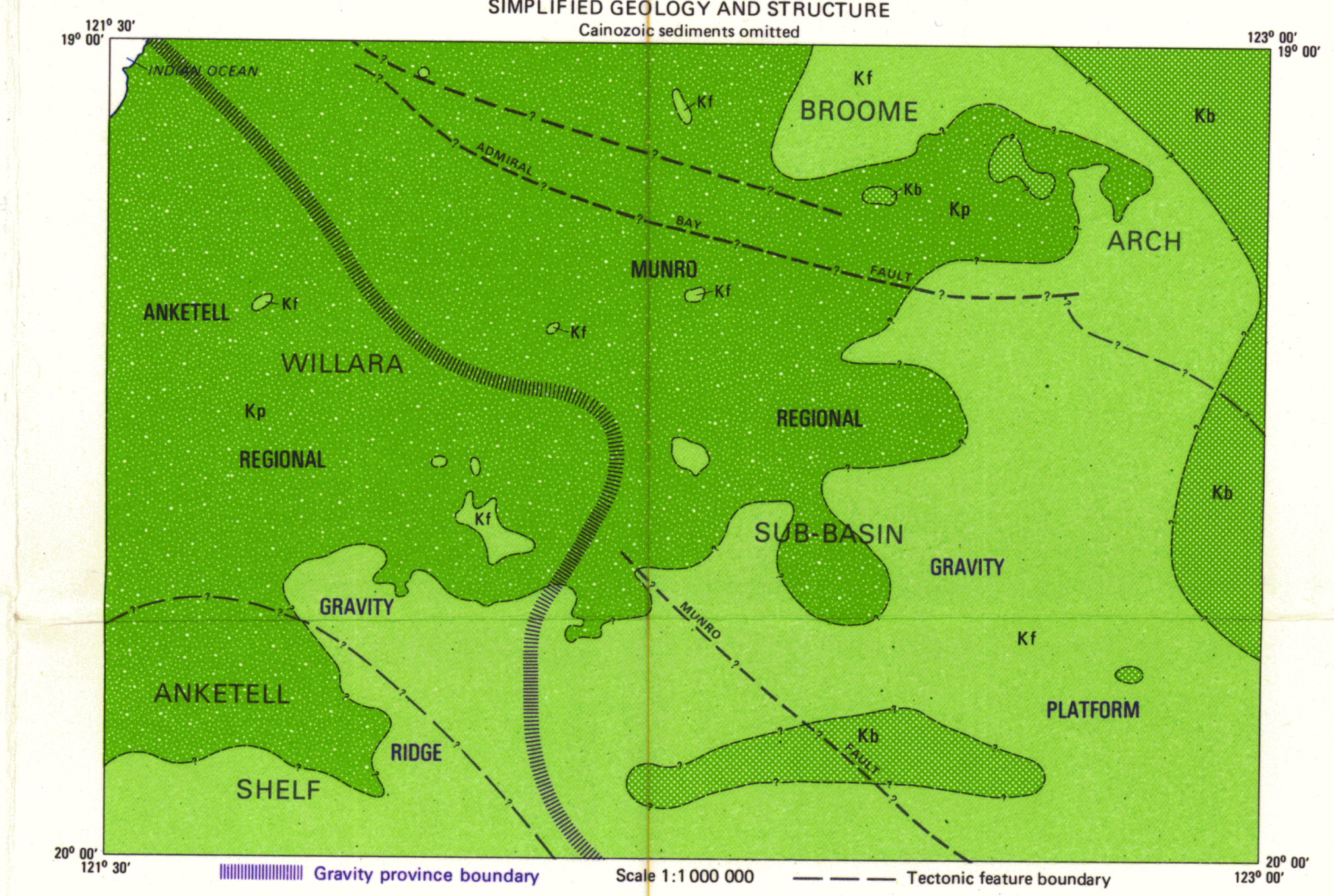




JK Undivided Kf, Kp, Kb, JKc, JKr

SIMPLIFIED GEOLOGY AND STRUCTURE

Cainozoic sediments omitted



Gravity province boundary

Scale 1:1 000 000

Tectonic feature boundary

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