COWAN

AUSTRALIA 1 : 100 000 GEOLOGICAL SERIES — **GEOLOGICAL SURVEY OF WESTERN AUSTRALIA** — **SHEET 3234**

121°30' 40' 50' 122°00' — 31°30' 40' 50' 32°00'

Widgiemooltha 1 km · Kambalda 40 km · Frank Pnd 2 km · Binneringie 10 km · Norseman 27 km · Eyre Highway 10 km

LAKE ZOT · NORTH LAKE EATON · SOUTH LAKE EATON · LAKE COWAN · DUNDAS MINERAL FIELD · POLAR BEAR PENINSULA · PENINSULA · KALGOORLIE — ESPERANCE HIGHWAY · BINNERINGIE ROAD · Redmans Hill · Higginsville Cu · Two Boys Fairplay · Cowan Nickel Project · Cowan Nickel Project Cu

CAINOZOIC

QUATERNARY

- Qo — Alluvium; clay, silt, sand and gravel in stream channels, flood plains and small fans on lake margins
- Czts / Cztd
  - Czts — Saline and gypsiferous evaporite interbedded with clay and sand in playa lakes
  - Cztd — Quartz sand and gypsum dune deposits adjacent to playa lakes
- Czc / Czl
  - Czc — Colluvium; gravel, sand and soil; includes laterite fragments
  - Czl — Laterite; mainly iron-rich and carbonate nodule types; silcrete and calcrete

TERTIARY

- Tes — **Eundynie Group:** sandstone, siltstone, mudstone, spongolite siltstone, calcareous sandstone, bioclastic calcarenite, bituminous siltstone; poorly indurated, laterized cap

PROTEROZOIC

- Edy — Mafic and ultramafic dykes, undeformed; Edyb — Binneringie Dyke
- q — Quartz vein
- Ag — Dykes: Ag, Agf, Agp, descriptions as below

Ag | Agf | Agh | Agi | Agn | Agp | Agw

- Ag — Granitoid rock
- Agf — Monzogranite porphyry and granodiorite porphyry
- Agh — Granitoid rock hornfelsed by the Binneringie Dyke
- Agi — Undulated monzogranite and granodiorite
- Agn — **PIONEER GRANITOID COMPLEX:** foliated porphyritic monzogranite and gneiss with pegmatite and quartz veins
- Agp — Pegmatite
- Agw — **WIDGIEMOOLTHA MONZOGRANITE:** foliated porphyritic monzogranite

An | Ang | Angp

- An — Quartzo-feldspathic gneiss
- Ang — Quartzo-feldspathic gneiss, augen gneiss, minor monzogranite
- Angp — Quartzo-feldspathic gneiss, deformed pegmatite veins, augen gneiss

FIFTY MILE TANK GNEISS

As | Asf | Asg | Ash | Ach | Asx

- As — Pelitic and psammitic metasedimentary rocks with metaconglomerate, chert and metamorphosed felsic volcaniclastic sedimentary rock
- Asf — Metamorphosed felsic volcaniclastic rock, mainly sedimentary
- Asg — Metamorphosed conglomerate and coarse sandstone; includes felsic volcaniclastic rock
- Ash — Slate and metamorphosed shale
- Ach — Chert
- Asx — Metamorphosed sedimentary rock breccia

Af | Aft

- Af — Metamorphosed felsic volcanic rock
- Aft — Metamorphosed dacite and rhyolite agglomerate and tuff

Afs

- Afs — Schist derived from dacitic and rhyolithic volcanic, sub-volcanic and volcaniclastic sedimentary rock

Ao | Aod | Aog | Aou

- Ao — Metamorphosed mafic and ultramafic intrusive rocks
- Aod — Metadolerite
- Aog — Metagabbro
- Aou — Metaperidotite and metapyroxenite

Ab | Abm

- Ab — Mafic schist, metabasalt, metadolerite and amphibolite
- Abm — Metamorphosed high-Mg basalt, with some pillows and variolitic textures

- Aku — Metakomatiite
- Au — Ultramafic schist

ARCHAEAN

Geological boundary

- accurate
- interpreted
- Fault inferred or concealed
- Shear zone
- Fold showing plunge
  - anticline
  - syncline
  - minor fold
- Bedding
  - inclined
  - vertical
  - horizontal
- Younging indicator
  - sedimentary
  - graded bedding
  - igneous pillows
  - differentiated intrusion
- Cleavage
  - inclined
  - vertical
  - strike coincident with bedding
  - with lineation
- Foliation, metamorphic
  - inclined
  - vertical
- Joint
  - inclined
  - vertical
- Airphoto lineament
  - concealed mafic dyke
  - lithological or structural trend
- Macrofossil locality

Mineral field boundary

- Highway with national route marker; bridge
- Formed road
- Track (many exploration and logging tracks not shown)
- Railway, with siding
- Railway, abandoned
- Fence
- Townsite gazetted, pop. less than 1000
- Microwave repeater station
- Horizontal control; major, minor
- Sand dune
- Contour line, 20 metre interval
- Watercourse ephemeral
- Pipeline
- Playa lake
- Dam
- Tank

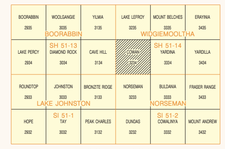
- Mining locality — EUNDYNIE
- Mine (gold unless otherwise indicated) — Killaloe
- Mine, abandoned
- Tailings retreatment plant
- Mineral occurrence
  - Copper — Cu
  - Nickel — Ni
- Pit
  - Gravel — Gr
  - Sand — Sd

Pioneer — HIGGINSVILLE

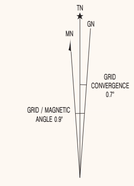
DIAGRAMMATIC SECTION A—B

A — KALGOORLIE — ESPERANCE HIGHWAY — LAKE ZOT — BINNERINGIE ROAD — B

SEA LEVEL · 2 km · 4 km



1:100000 maps shown in black
1:250000 maps shown in brown



True north, grid north and magnetic north are shown diagrammatically for the centre of the map. Magnetic north is correct for 1983 and moves westerly by approx. 0.1° in about seven years

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SCALE 1:100 000

1000 0 1 2 3 4 5 6 7 8 9 10 Metres — Kilometres

UNIVERSAL TRANSVERSE MERCATOR PROJECTION
Grid lines indicate 1000 metre interval of the Australian Map Grid Zone 51

Geology by: T.J. Griffin 1981–84

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COWAN

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