PHANEROZOIC

CAINOZOIC — QUATERNARY

Qlc | Qlb | Qls | Qaa | Qaas | Qac | Qao | Qaoc | Qaob

Qlc Lacustrine clay, silt, and sand in large, non-vegetated claypans
Qlb Lacustrine clay and silt with gilgai (crabhole) surface in claypans; generally vegetated
Qls Mixed lacustrine and eolian deposits; clay, silt, and sand
Qaa Alluvium; undivided clay, silt, and gravel in rivers and creeks
Qaas Unconsolidated sand, silt, and gravel in discrete channel beds
Qac Claypan deposits; generally on floodplains
Qao Overbank deposits; alluvial sand, silt, and clay on floodplains adjacent to main drainage channels
Qaoc Alluvial sand, silt, and clay; mixed floodplain deposits (Iao) characterized by numerous small claypans
Qaob Alluvial clay and silt deposits on floodplains with gilgai (crabhole) surface in areas of expansive clay

Qw | Qwg | Qc | Qcq | Qcp | Qrg | Qs | Qsf | Qsg

Qw Sheetwash deposits—silt, sand, and pebbles on distal fans; no defined drainage
Qwg Sheetwash sand and quartz pebbles overlying and derived from granitoid rocks
Qc Colluvium—sand, silt, and gravel on outwash fans; scree and talus; proximal mass-wasting deposits
Qcq Iuartz debris adjacent to large quartz veins
Qcp Colluvium and eluvium derived from weathered **PATERSON FORMATION**; scattered boulders, cobbles, and pebbles in clay and silt matrix
Qrg Iuartzofeldspathic eluvial sand, with quartz and rock fragments; overlying and derived from granitoid rocks
Qs Eolian sand—light to dark red sand in sheets, and longitudinal (seif) and chain dunes
Qsf Eolian sand with lag deposits; ironstone-pebble, rock-fragment, or quartz-pebble veneer; in sheets and between dunes
Qsg Mixed eolian and eluvial sand; red-brown quartz sand in sheets; overlying and derived from granitoid rock

Czos | Czoc | Czaa | Czag | Czak | Czaz | Czc | Czcf | Czcg | Czrf | Czrz | Czrk

Czos **OAKOVER FORMATION:** upper unit; vuggy, white to grey opaline silica, silicified carbonate, and minor calcareous sandstone
Czoc **OAKOVER FORMATION:** lower unit; blue, grey, and fawn limestone and calcareous sandstone
Czaa Consolidated alluvial clay, silt, and sand; dissected
Czag Consolidated alluvial gravel, sand, and silt; local carbonate cement; dissected
Czak Calcrete; massive, nodular, and cavernous limestone, variably silicified; dissected valley calcrete
Czaz Silicified and ferruginized channel deposits; cemented chert and banded iron-formation clasts in conglomerate; dissected stream channel deposits
Czc Colluvium—dissected consolidated clay, silt, and sand deposits; derived from adjacent outcrop
Czcf Consolidated ferruginous colluvium; recemented fragmented laterite, ironstone pebbles, clay, silt, and sand; dissected
Czcg Consolidated pebble, sand, and silt deposits; dissected scree and outwash fan deposits
Czrf Ferruginous duricrust; includes massive, pisolitic, and nodular laterite
Czrz Siliceous duricrust; includes silcrete
Czrk Calcrite; massive, nodular, and cavernous limestone; variably silicified; residual origin

MESOZOIC — JURASSIC–CRETACEOUS — CRETACEOUS

Kp — **PARDA FORMATION:** white, thin-bedded or massive mudstone and claystone, and minor lenses of fine-grained sandstone; macrofossils; shallow-marine deposits

JKc — **CALLAWA FORMATION:** very fine to coarse grained sandstone, ferruginous towards base; siltstone and conglomerate interbeds; plant and trace fossils; mainly fluvial deposits

WESTRALIAN SUPERBASIN

PALAEOZOIC — PERMIAN

Pa — **PATERSON FORMATION:** diamictite, mudstone, siltstone, and minor conglomerate; fluvioglacial deposits

CANNING BASIN

d | q | qgo

d Dolerite dyke, various ages
q Iuartz vein, various ages
qgo Gossanous quartz vein

PROTEROZOIC — NEOPROTEROZOIC

c. 800 Ma — Tarcunyah Group

ᴾUw | ᴾUws | ᴾUwd

ᴾUw **WAROONGUNYAH FORMATION:** interbedded dolomite, sandstone, siltstone, and shale
ᴾUws Fine- to medium-grained sandstone and siltstone
ᴾUwd Bedded to laminated dolomite and stromatolitic dolomite

Officer Basin

PALAEOPROTEROZOIC

ᴾT — **THROSSELL GROUP:** undivided sandstone, siltstone, dolomite, and limestone (subsurface only)

Yeneena Basin

PATERSON OROGEN

ARCHAEAN

ᴾcb — **PINJIAN CHERT BRECCIA:** chert breccia, and poorly bedded chert

c. 2561 Ma — Hamersley Group — AHc — **CARAWINE DOLOMITE:** massive to well-bedded, recrystallized dolomite and stromatolitic dolomite; minor chert

Ad — Medium- to coarse-grained dolerite sills and dykes; weakly metamorphosed

Mount Bruce Supergroup — Fortescue Group

AF — **FORTESCUE GROUP:** undivided (subsurface only)

c. 2687 Ma — AFj — **JEERINAH FORMATION:** mixed sedimentary rocks; shale, siltstone, sandstone, and local microbanded chert; minor accretionary lapilli

AFji — **Isabella Member:** fine-grained, massive rhyolite; quartz or carbonate amygdales; possible intrusion

AFjv — **Baramine Volcanic Member:** coarse- to fine-grained mafic tuff, with local accretionary lapilli; thin basalt and andesitic basalt flows

AFmk — **Kuruna Member:** bedded lapilli, vitric, crystal, and lithic tuff, tuffaceous siltstone, and fine-grained tuffaceous sandstone

c. 2717 Ma — AFm — **MADDINA FORMATION:** massive, vesicular, and amygdaloidal basalt and andesite, with silicified flowtops

AFt — **TUMBIANA FORMATION:** carbonate rock, and tuffaceous shale, siltstone, and sandstone, and minor pisolitic tuff (section and simplified geology only)

AFtc — **Meentheena Carbonate Member:** banded dark-grey siliceous dolomite, limestone, stromatolitic dolomite, and tuffaceous shale and siltstone

AFtt — **Mingah Tuff Member:** pisolitic tuff, and tuffaceous siltstone and sandstone; minor basalt and thin carbonate units

AFk | AFkc

AFk **KYLENA FORMATION:** massive, vesicular, and amygdaloidal basalt and andesite
AFkc Grey carbonate rock; local silicified microbial lamination and stromatolites

AFh | AFhu | AFha | AFhb | AFhc | AFhi | Aph | AgG | AgGy

AFh **HARDEY FORMATION:** sandstone, commonly feldspathic, locally tuffaceous, siltstone, shale, conglomerate, and wacke (section only)
AFhu Tuffaceous sandstone, siltstone and shale, accretionary lapilli, and felsic tuff, and minor feldspathic sandstone, pebbly sandstone, and conglomerate; thin carbonate units
AFha Feldspathic sandstone, medium- to very coarse-grained, and pebbly sandstone and conglomerate; minor fine-grained sandstone and siltstone
c. 2756 Ma — AFhb **Bamboo Creek Member:** massive and flow-banded felsic porphyry, porphyry breccia, and bedded tuffaceous rocks, and quartz–feldspar and feldspar porphyry
AFhc Polymictic, matrix-supported cobble to boulder conglomerate, sandstone, siltstone, and wacke
AFhi **Koongaling Volcanic Member:** porphyritic and fine-grained felsic lava (section only)
c. 2758 Ma — Aph Iuartz–feldspar porphyry; spherulitic textured; in dykes
AgG **GREGORY GRANITIC COMPLEX:** syenogranite and porphyritic syenogranite; metamorphosed (section only)
AgGy Granophyre; foliated (section only)

c. 2767 Ma — AFr | AFrk

AFr **MOUNT ROE BASALT:** massive, porphyritic, vesicular, and amygdaloidal basalt; some pillow basalt
AFrk Laminated dark-grey siliceous limestone and dolomite

Hamersley Basin

Ape | Apff

Ape Rhyolite, spherulitic-textured felsite; in dykes
Apff Fluorite-bearing quartz porphyry; in dykes and small intrusions

Pilbara Supergroup — Gorge Creek Group

AG — **GORGE CREEK GROUP:** undivided very fine to coarse grained sandstone, ferruginous towards base; siltstone and conglomerate interbeds; trace fossils; mainly fluvial deposits (section and simplified geology only)

AGu — **CUNDALINE FORMATION:** weathered brown, grey-green shale, siltstone, lithic wacke, sandstone, and pebble conglomerate; local polymictic, matrix-supported conglomerate; metamorphosed

AGn — **NIMINGARRA IRON FORMATION:** banded iron-formation, jaspilite, banded and ferruginous chert, and black carbonaceous shale; metamorphosed

AgW | AgWt | AgWp | AgWc | AgWm | AgWx

c. 3655–3240 Ma — AgW **WARRAWAGINE GRANITOID COMPLEX:** metamorphosed, medium- to coarse-grained monzogranite, syenogranite, granodiorite, and tonalite; massive, seriate, and porphyritic varieties; foliated to gneissic (section and simplified geology only)
c. 3242 Ma — AgWt Grey-white, medium- to coarse-grained tonalite and granodiorite; hornblende bearing
c. 3303 Ma — AgWp Seriate and porphyritic, pink-grey, medium- to coarse-grained monzogranite and granodiorite
c. 3313 Ma — AgWc Pink-grey to cream, medium- to coarse-grained monzogranite, syenogranite, and granodiorite; metamorphosed
AgWm Mixed granitoid rock; fine- to coarse-grained, well foliated to gneissic; minor banded granitoid gneiss (*c.* 3410–3655 Ma)
AgWx Mafic and ultramafic xenoliths in foliated to gneissic granitoid rock

Pilbara Supergroup

Aba | Auc | Aus | Aut

Aba Hornblende–plagioclase schist; after basalt and dolerite
Auc Carbonate–tremolite–chlorite–talc schist
Aus Serpentinite after peridotite
Aut Tremolite–serpentine–chlorite(–talc) schist

PILBARA CRATON