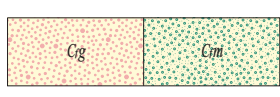


QUATERNARY

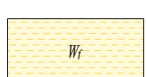
CENOZOIC



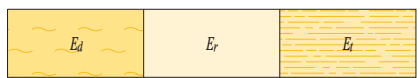
**Alluvial unit**  
*Au* Superficial channel



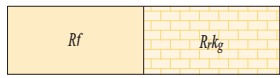
**Colluvial units**  
*Cg* Colluvium; dominantly quartzfeldspathic materials  
*Cm* Colluvium; dominantly ferromagnesian materials



**Sheetwash unit**  
*Wf* Sheetwash fan; very gently inclined landform (<1° slope); extremely low relief



**Eolian units**  
*Ed* Eolian dune field  
*Er* Eolian sandplain  
*Et* Eolian veneer over alluvium and/or colluvium

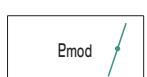


**Residual units**  
*Rf* Residual or relict ferruginous materials; ferruginous and ferruginized saprolite; ferruginous duricrust; also includes transported material, cemented or uncemented ferruginous gravel  
*Rkg* Groundwater calcrete; locally forms low mounds; nodular to massive; commonly with alternating layers of carbonate and chalcodony

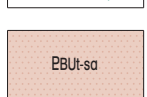
**Petermann Orogeny (570–530 Ma<sup>1</sup>)**



*Eod* Dolerite dyke, sill or plug; fine- to medium-grained dolerite and gabbro



*Emod* Metadolerite and dolerite of various ages; typically ophiitic to subophiitic textured; locally with garnet coronas around pyroxene; interpreted from aeromagnetic data where dashed



**TOWNSEND QUARTZITE and LEFROY FORMATION:** laminated to very thickly bedded, well-sorted, medium- to coarse-grained quartz arenite and feldspathic arenite; minor conglomerate and shale beds; medium- to large-scale cross-bedding

**Giles Event (1085–1040 Ma<sup>1,2,3</sup>)**



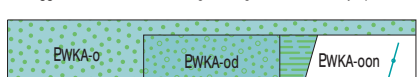
*PBE-xs-f* Undivided; sandstone, siltstone, and felsic volcanic and volcanoclastic rocks; minor mafic volcanic rocks



*EPG-xf-s* Undivided; felsic volcanic and volcanoclastic rocks, sandstone, siltstone and mudstone; minor mafic volcanic rocks (section only)  
*EPG-frm* Rhyolitic and trachydacitic volcanic sandstone and siltstone; contains flammie; ignimbrite and rheognimbrite  
*EPG-frw* Aphyric rhyolite and trachydacite; spherulitic, perlitic or massive; locally weakly porphyritic  
*EPG-xfr-ge* Rhyolite and trachydacite intruded by and included in quartz syenite and syenogranite



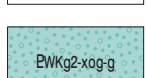
*EWK-ge* Fine- to medium-grained quartz syenite; contains K-feldspar phenocrysts up to 5 cm; locally with rapakivi texture  
*EWK-gfl* Medium-grained, leucocratic, alkali feldspar granite with pervasive granophyric texture  
*EWK-gflh* Medium-grained, leucocratic, alkali feldspar granite with hornblende clusters and pervasive granophyric texture  
*EWK-grl* Fine- to medium-grained, porphyritic to seriate-textured syenogranite; leucocratic but typically contains mafic xenoliths; locally abundant K-feldspar phenocrysts up to 1 cm; rare rapakivi texture  
*EWK-gga* Massive, fine-grained granodiorite; locally epidatized



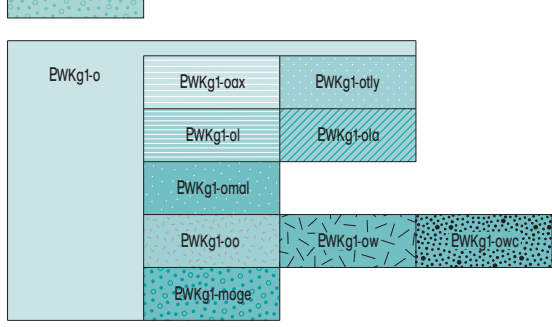
*EWKA-o* **ALCURRA DOLERITE:** dykes, sills or plugs mainly of dolerite but also of olivine gabbro, olivine norite, ferrornorite, and ferrodorite  
*EWKA-od* Fine- to medium-grained plagioclase-phyric gabbro; ophiitic texture; locally with plagioclase phenocrysts and glomerophenocrysts to 2 cm  
*EWKA-oon* Olivine-rich gabbro; typically with up to 15% olivine; contains accessory biotite; massive to weakly flow banded



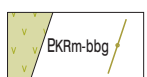
**SMOKE HILL VOLCANICS:** porphyritic rhyolite and lesser dacite as lavas and subvolcanic sills and cryptodomes; includes up to 10% subhedral to euhedral microcline phenocrysts up to 6 mm; locally laminated, flow banded, amygdaloidal or spherulitic



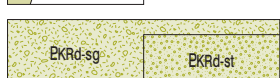
*EWK2-xog-g* Gabbro; ophiitic to subophiitic texture; variably mixed and mingled with leucogranite; locally foliated and mylonitic



*EWK1-o* Mafic intrusive rock; massive or weakly layered; locally mingled with leucogranite; undivided  
*EWK1-oax* Medium-grained anorthosite to leucogabbroanorthosite  
*EWK1-oty* Coarse-grained leucotroctolite; layered; cumulate texture with glomeroporphyritic olivine commonly enclosed in orthopyroxene  
*EWK1-ol* Medium-grained, leucocratic olivine gabbro; locally with lesser troctolite, gabbro, olivine gabbro, and olivine norite; locally with cm- to m-scale layers and lenses of fine-grained leucocratic olivine gabbro  
*EWK1-ola* Fine-grained, locally well-layered leucocratic olivine gabbro; locally developed granoblastic texture induced by subsequent mafic magma injections  
*EWK1-omal* Fine-grained, even-textured leucogabbro; forms sills, dykes, and xenoliths  
*EWK1-oo* Fine- to medium-grained olivine gabbro; massive to weakly foliated; locally shows cm-scale mineralogical banding  
*EWK1-ow* Coarse-grained, massive to foliated norite  
*EWK1-owc* Medium- to coarse-grained norite and lesser gabbro  
*EWK1-moge* Fine- to medium-grained metagabbro and metagabbro; well-developed granoblastic texture caused by later mafic magma injections; locally interlayered with leucocratic olivine gabbro, olivine gabbro, and olivine norite

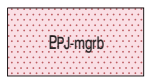


**MUMAWARRAWARRA BASALT:** vesicular and amygdaloidal basalt, basaltic andesite, and andesite; locally plagioclase porphyritic; epidatized

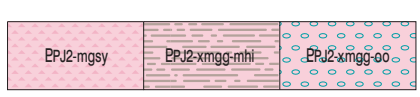


*EKRD-sg* **MACDOUGALL FORMATION:** quartz-pebble conglomerate and sandstone  
*EKRD-st* Medium- to coarse-grained sandstone; locally pebble beds and rare quartz-pebble conglomerate

**Musgrave Orogeny (1220–1150 Ma<sup>4</sup>)**



*PPJ-mgrb* Weakly to strongly foliated, fine- to medium-grained biotite–hornblende metasyenogranite; typically seriate textured but locally contains microcline phenocrysts up to 3 cm; locally abundant xenoliths of felsic gneiss

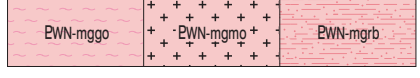


**Late Pitjantjatjara Supersuite (1190–1150 Ma)**  
*PPJ2-mgsy* Mylonitic and blastomylonitic, seriate to porphyritic metagranitic rock  
*PPJ2-xmng-mhi* Metagranodiorite with intercalations or inclusions of diatextitic pelitic gneiss  
*PPJ2-xmng-oo* Metagranodiorite intercalated with, intruded by, and included in olivine gabbro



*EWM-mhig* Metatextitic gneiss comprising cm- to m-thick layers of garnet–orthopyroxene–biotite(–cordierite–hercynite–hornblende) pelite and psammite with rare quartzite, feldspathic psammite, and calc-silicate layers  
*EWM-mhni* Pelitic and psammitic gneiss; banded and interlayered; includes garnet–sillimanite–cordierite–hercynite gneiss, quartz–feldspar–garnet–hypersthene gneiss, and quartz–plagioclase–hypersthene–biotite gneiss  
*EWM-mlig* Diatextitic, coarse-grained garnet–orthopyroxene–biotite(–cordierite) pelite; leucocratic; rounded garnet porphyroblasts up to 2 cm; migmatitic textures range from stromatic to nebulitic to raft migmatite  
*EWM-mtni* Strongly migmatitic quartzfeldspathic granulitic paragneiss; includes diatextite  
*EWM-mrog* Medium-grained orthopyroxene–plagioclase–garnet–quartz acid to intermediate granulite gneiss; laminated to banded and interlayered with leucogranite veins on a cm- to m-scale; typically metatextitic  
*EWM-xmhi-mg* Metatextitic to diatextitic psammitic and pelitic gneiss, intruded by and included in metagranodiorite and metamonzogranite; locally mylonitic

**Mount West Orogeny (1345–1293 Ma<sup>5</sup>)**



*EWN-mggo* Hypersthene–biotite granodiorite to monzogranite; enderbite to charnockite; moderately foliated to gneissic and locally weakly migmatitic; typically feldspar porphyritic and mesocratic  
*EWN-mgmo* Hypersthene–biotite(–clinopyroxene–brown hornblende) charnockitic monzogranite to granodiorite; moderately foliated and locally metatextitic; typically seriate texture but locally with microcline phenocrysts up to 3 cm (section only)  
*EWN-mgrb* Weakly to strongly foliated biotite metasyenogranite; <5% mafic minerals; typically with abundant microcline; locally gneissic and contains abundant veins and sheets of schlieric leucogranite

OFFICER BASIN

BENTLEY BASIN

BENTLEY BASIN

BENTLEY BASIN

MUSGRAVE PROVINCE