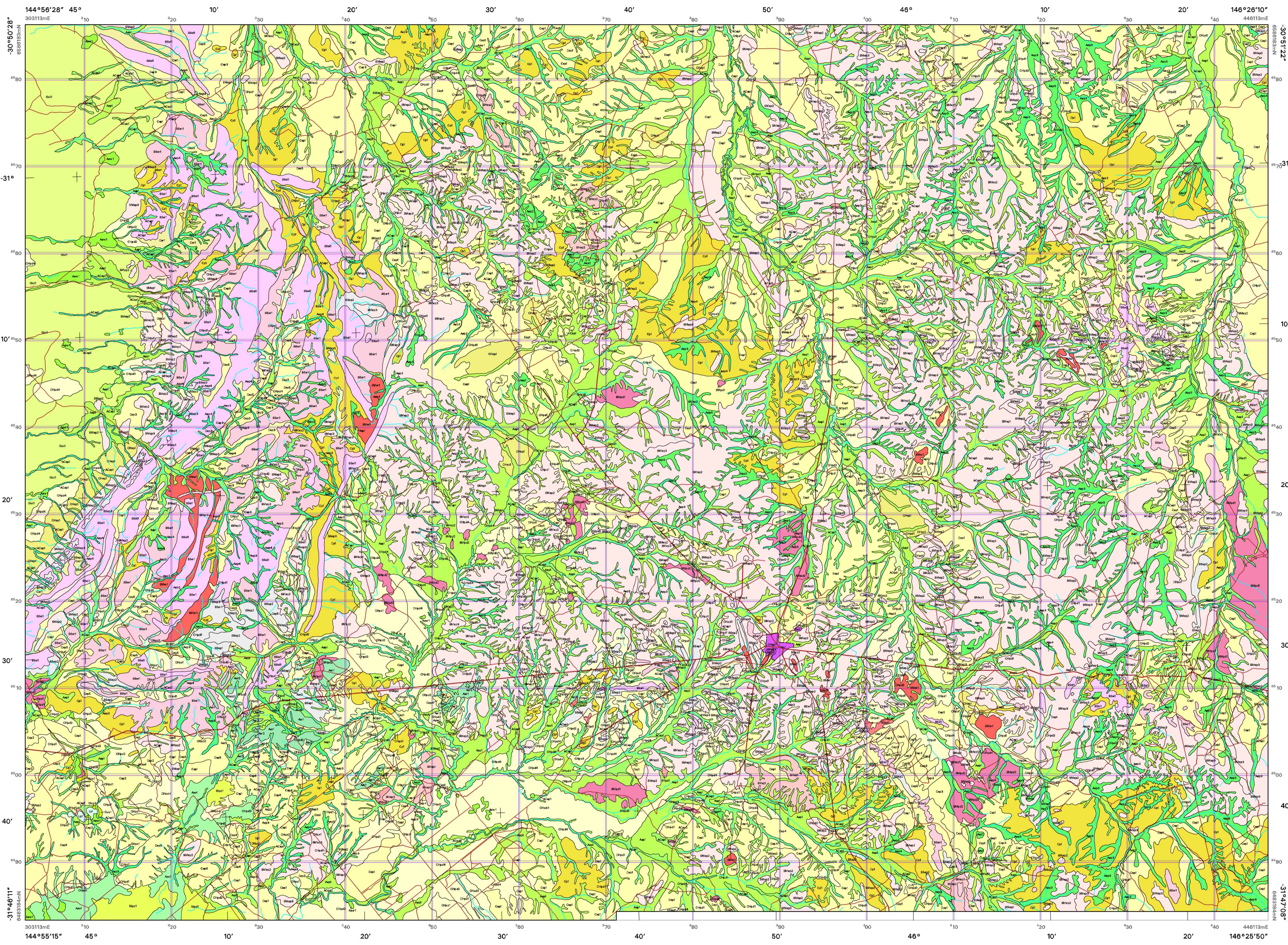


# COBAR SPECIAL

## NEW SOUTH WALES

AUSTRALIA 1:250 000 REGOLITH-LANDFORM SPECIAL

PARTS OF GEOLOGICAL SHEETS SH55-13, SH55-14, SH55-09 & SH55-10



### TRANSPORTED REGOLITH

#### Alluvial sediments

- Asp1** Fine sandy silt/clay on a broad alluvial plain. Occasional rounded quartz, magnetite psiloths or bedrock fragments. Commonly < 1 m depth to moderately weathered bedrock. Secondary carbonates may be present but is not common.
  - Asp2** Silts to gravels that overlie silicified bedrock on an erosional plain. Sediments commonly from low plateaus. Gravels are dominated by rounded quartzose lithologies and silicified sediment clasts and massive silicification and secondary carbonates are common.
  - Asp3** Silts to gravels of silicified sediments that overlie silicified bedrock on an erosional plain. Sediments from low plateaus adjacent to, or overlap by, ferruginous basalt. In situ silicified sediments overlie moderately weathered bedrock at moderate depth (< 5 m). A thin veneer of colluvial cover or lag is common.
  - Asp4** Angular to rounded silts to gravels in drainage depressions (tributaries) on an erosional plain (0-5 m relief). Mixed alluvial/colluvial deposits are dominated by sub-angular lithic fragments in a coarse sandy matrix. Channels commonly incised to bedrock.
  - Aao1** Angular to rounded silts to gravels in drainage depressions (tributaries) on an erosional plain (5-9 m relief). Mixed alluvial/colluvial deposits (< 1 m thick) are dominated by sub-angular lithic fragments in a coarse sandy matrix. Channels commonly incised to bedrock.
  - Aao2** Well rounded silts, and clays in a floodplain deposit on an alluvial plain. Sediments are dominated by quartzose lithologies, with minor rounded magnetite psiloths and bedrock lithologies in a sandy matrix.
  - Aaw1** Well rounded silts, and clays in an alluvial swamps, lagoon or depression. Silicified and deeply weathered bedrock occurs at depth.
  - Aer1** Well rounded to sub-angular gravels dominated by quartzose lithologies in a sandy clay matrix forming low erosional rises (0-15 m relief). Gravels are indurated by ferruginous or siliceous cements and secondary carbonates are common. Commonly covered by a thin veneer of lag. Moderately weathered siliceous bedrock is common at depth.
  - Aer2** Well rounded silts to gravels on erosional rises (15-30 m relief) typically forming plateaus. Gravels are dominated by quartzose lithologies (oligarhithic vein quartz, grey-black metamorphic quartz) and by lesser amounts of sandstones, conglomerates, quartzites, mudstones, chert and silicified sediment clasts. Commonly indurated by siliceous and occasionally secondary carbonate minerals. Deposits are commonly 5 m + thick.
- Channel deposits**
- CAc1** Silt/sand, massive red earth/lunetas +/- gravels in channel deposits on an alluvial plain. Gravels are dominated by magnetite psiloths, with minor rounded quartz, silicified sediments and bedrock fragments. Moderately to slightly weathered bedrock at 2 m depth.
  - CAc2** Clays to gravels in alluvial deposits on an alluvial plain. Gravels are dominated by rounded ferruginous psiloths containing magnetite, with minor rounded quartz and sub-angular to rounded bedrock clasts in a clayey sand matrix. Deposits are elevated (1-2 m) relative to modern drainage. Secondary carbonate and/or mottling is common. Moderately weathered bedrock may occur at generally < 1 m depth.
- Overbank deposits**
- AOp1** Well rounded silts and sands on a depositional plain. Deposits include overbank and valley fill sediments and sediments in minor paleochannels. Small lagoons, cut-off meander and/or lunetas may be present within 0.5 m elevation of the modern drainage.

#### Colluvial sediments

- Cp1** Sands to boulders on low knolls and colluvial slopes on a plain (5-9 m relief). Sheetwash deposits are dominated by angular bedrock clasts and rounded silicified sediments with some staining by iron minerals, over shallow slightly to moderately weathered (sometimes silicified) bedrock. Minor tributaries are common.
- Cep1** Clays to gravels on an erosional plain (up to 5 m relief). Materials consist of mixed angular lithic clasts (commonly ferrolithic, silicified sediments and minor magnetite psiloths) in a silty loam matrix. Secondary carbonates are common. Dominant erosional processes are sheetflow and deflation. Deposits overlie moderately weathered bedrock at shallow depth (0-1 m).
- Cep2** Clays to gravels on an erosional plain (up to 5 m relief). Materials consist of angular lithic fragments with minor rounded quartz and silicified clasts within a silty loam matrix. Gilgai is commonly developed. Secondary carbonate is commonly present in soils.
- Cep3** Clays to gravels of dominantly lithic lag with minor rounded sediments and/or basalt lag on an erosional plain (< 5 m relief). Includes fen deposits (commonly cemented) and secondary carbonates that overlie moderately to deeply weathered bedrock at < 1 m depth.
- Cep4** Well rounded silts, sands and gravels dominated by quartzose lithologies and/or silicified sediments on an erosional plain (5-9 m relief). Gravels consist of vein quartz, metamorphic quartz and silicified sediments with minor sandstones, quartzite and conglomerate pebbles to boulders. Deposits typically overlie shallow (< 1 m depth) moderately to deeply weathered (mottled) bedrock. Secondary carbonate is common.
- Cep5** Clays to gravels of angular lithic fragments and occasional rounded quartz and/or silicified sediment clasts on an erosional plain (5-9 m relief). Deposits typically overlie shallow (< 1 m depth) moderately to deeply weathered (mottled) bedrock. Secondary carbonate is common.
- Cep6** Clays to gravels on an erosional plain (5-9 m relief). Colluvial gravels are dominantly composed of silicified sediments over in situ silicified sediments. Gilgai and/or secondary carbonates are common.
- Cer1** Sub-angular to angular ferruginous and siliceous lithic fragments with less common well rounded quartz gravels on erosional rises (15-30 m relief). Colluvial material grain size decreases downslope. Bedrock crops out, or is at < 1 m depth. Some tributaries are developed.

#### Sheetflow deposits

- CHp1** Sheetflow deposit dominated by silts, sands and clays with minor gravels on low angle colluvial/alluvial slopes on a depositional plain. Gravel percentage increases as material coarsens upslope. Coarse materials consist of angular lithic fragments, rounded magnetite psiloths and minor rounded quartz pebbles. Minor channels are developed and secondary carbonates may be present but is not common. Deposits overlie typically shallow (0-1 m depth) moderately to deeply weathered bedrock.
- CHp2** Sheetflow deposit dominated by silty loam with minor gravels on low angle colluvial/alluvial slopes on a depositional plain. Gravel percentage increases as material coarsens upslope. Gravels consist of a mixture of lithic and quartzose lithologies and typically overlie moderately weathered shallow bedrock (0-2 m depth). Channel development is minimal.
- CHp3** Sheetflow deposit dominated by silty loam and quartzose gravels on low angle colluvial slopes on a depositional plain. Gravels consist of well rounded quartzose clasts with minor silicified sediment, chert and ferrolithic fragments.
- CHp4** Sheetflow deposit dominated by silty loam on broad low angle colluvial slopes and depositional plains. Gilgai and/or secondary carbonates are locally common with an absence of coarse lithic lag. In some cases minor alluvial tracts are developed.
- CHp5** Sheetflow deposit dominated by angular lithic lag and/or rounded quartz and magnetite psiloth gravel clasts on low angle colluvial slopes on an erosional plain. Dominant erosional processes are sheetwash and deflation leaving coarse lag. Deposits overlie shallow bedrock (0-1 m depth).

#### Aeolian sediments

- Isu1** Well rounded silts to fine sands forming isolated dunes on a depositional plain. Commonly occur as source bordering dunes associated with floodout/distributary deposits (Aao1) or adjacent to major dunefields.
- Isu2** Well rounded silts to fine sands forming dunes and swales in a longitudinal dune field. Distribution is common west and south of the Cobar block.
- Isu3** Well rounded silts to fine sands in lunetas on a depositional plain. Common on the southeastern margin of lakes. Partially truncated and buried paleosols are preserved. Cementation by secondary carbonate minerals is common.

#### Lacustrine sediments

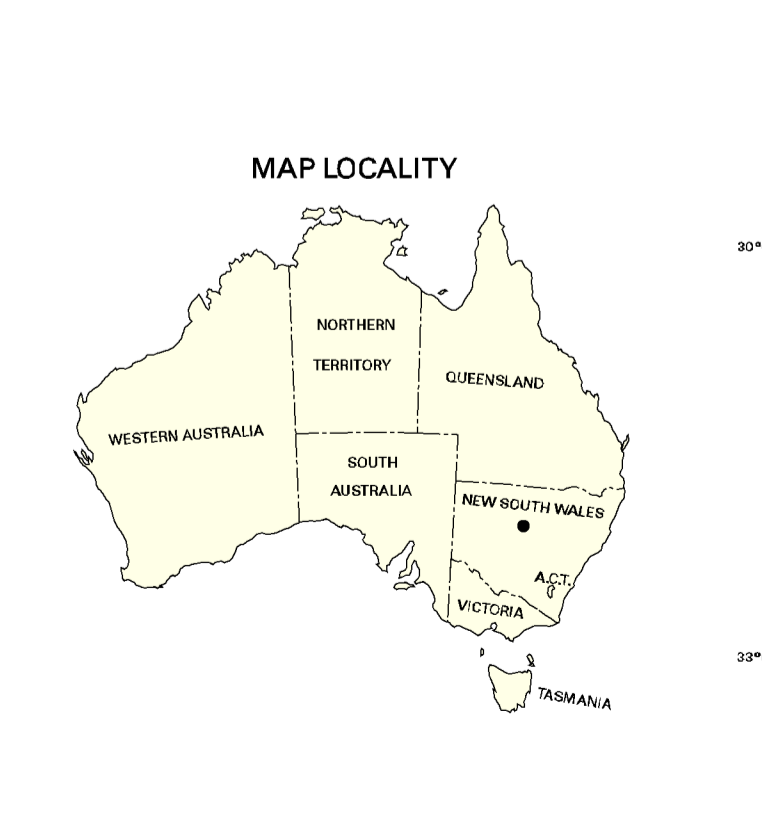
- Ls1** Clays to fine silts on a lacustrine plain.

### IN SITU REGOLITH

- #### Weathered bedrock
- Very highly weathered bedrock**
- SHp1** Very highly weathered bedrock on a depositional plain. Ferruginous clays are characteristic. Up to several metres of alluvial +/- colluvial sediment with minor aeolian deposits may overlie bedrock. Silicified boulders are common within the overlying transported sediment. Gypsum is commonly precipitated.
- Highly weathered bedrock**
- SHep1** Moderately to highly weathered bedrock with mottled and/or pallid zones on an erosional plain. Surface lags, where present, are < 20 cm thickness and dominated by angular ferrolithic clasts in a loam matrix. Secondary carbonate is common.
  - SHep2** Moderately to highly weathered bedrock forming a series of pods on an erosional plain. Bedrock has varying degrees of cementation by ferruginous minerals. Primary bedrock fabrics are preserved. A discontinuous veneer of ferrolithic to lithic lag with occasional rounded quartz pebbles may be present.
- Moderately weathered bedrock**
- SMd1** Moderately weathered bedrock as subtop to outcrop on a depositional plain. Up to 0.5 m thick colluvial/alluvial material dominated by angular lithic lag may overlie bedrock. Colluvial/alluvial material may include silty loam and magnetite psiloths in soils +/- rounded quartzose pebbles, with some fine sand and/or siltstone. Gypsum is common.
  - SMd2** Moderately weathered bedrock on a depositional plain. May have thin alluvial/colluvial cover of clays to silts +/- rounded quartzose gravels. Laminar, nodular and rhizomorphic secondary carbonate is common within the upper 1 m.
  - SMep1** Moderately weathered bedrock on an erosional plain. May have minor (< 0.5 m thick) colluvial cover. Secondary carbonate is common.
  - SMep2** Moderately weathered bedrock on an erosional plain, typically as a series of undulating landforms up to 5 m relief. May have minor lag/colluvial cover (< 0.5 m thick) dominated by angular lithic fragments or rounded quartzose gravels. Secondary carbonates and ferruginous cementation is common, with less common siliceous induration.
  - SMep3** Moderately weathered bedrock on an erosional plain (5-9 m relief). May have thin veneer of angular lithic to ferrolithic fragments and/or quartz pebbles and magnetite psiloths. Bedrock is commonly indurated by secondary carbonates +/- ferruginous and/or siliceous cements.
  - SMep4** Moderately weathered leucite lava on an erosional plain (5-9 m relief). Quartzose sediments (indurated by ferruginous and/or siliceous cements) may be preserved below the flow.
  - SMer1** Moderately weathered bedrock on erosional rises. Minor discontinuous aeolian and sheetflow cover (< 20 cm thick).
  - SMer2** Moderately weathered leucite lava on an erosional rise. Quartzose gravels (indurated by ferruginous and/or siliceous cement) may be preserved below the flow. The cover rises consist of colluvium of dominantly quartzose gravels that overlie weathered bedrock.
  - SMe1** Moderately weathered leucite lava on a low hill. Quartzose gravels (indurated by ferruginous and/or siliceous cement) may be preserved below parts of the flow.
- Slightly weathered bedrock**
- SSp1** Slightly weathered bedrock on a depositional plain. Commonly covered by a thin veneer of sediment with an aeolian contribution.
  - SSep1** Slightly weathered bedrock on an erosional plain (up to 5 m relief). Minor discontinuous lag of angular mixed lithic fragments. Secondary carbonate is common.
  - SSep2** Slightly weathered bedrock on an erosional plain (5-9 m relief). May have a thin (< 0.5 m thick) discontinuous angular mixed lithic lag cover. Bedrock shows some degree of silicification.
  - SSep3** Slightly weathered bedrock on an erosional plain, occurring as plateaus on low hills. Minimal (< 5 cm thick) lag of angular siliceous bedrock. Bedrock may have siliceous induration, with ferruginous coatings on surface and joint planes.
  - SSer1** Slightly weathered bedrock on an erosional rise. Varying degrees of induration by siliceous and/or ferruginous cements.
  - SSel1** Slightly weathered bedrock on low hills. May have minor discontinuous aeolian and/or colluvial cover of lithic composition. May have secondary induration by siliceous, ferruginous or calcareous materials.

#### OTHER

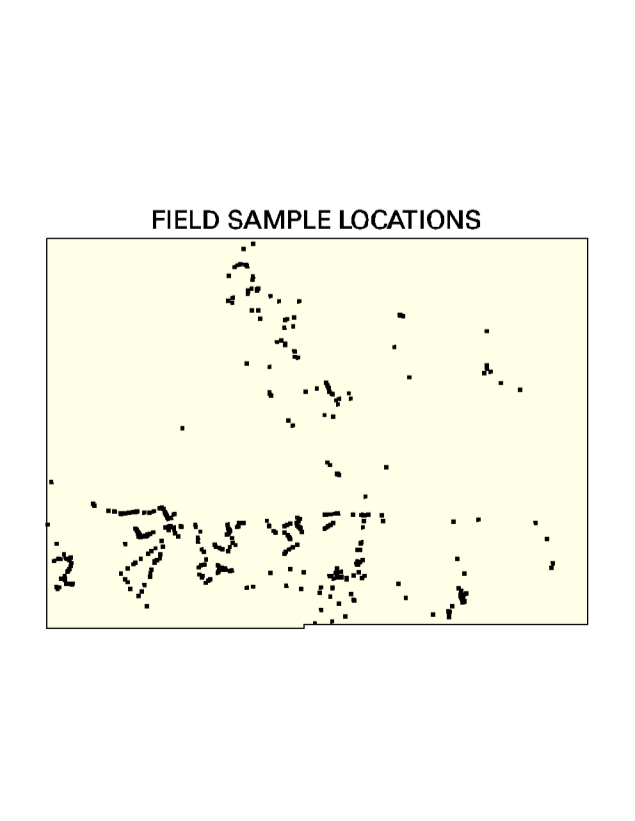
- Fill** Man made structures including built up areas (townships), mine sites and/or reservoirs. Regolith is highly variable.
- Fm1** Man made structures including built up areas (townships), mine sites and/or reservoirs. Regolith is highly variable.



**INDEX TO ADJOINING SHEETS**  
showing 1:250 000 sheets

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Compiled by M.J. Sory (CRCLME/IC) 2002.  
Cartography and GIS by M.J. Sory (CRCLME/IC), K. Foster (CRCLME/IC) and B. Caples (GA). Acknowledgement also to P. Urean (CRCLME/IC) and the Geospatial Applications and Visualization Unit, Geoscience Australia.  
It is recommended that this map be referred to as:  
Sory, M.J. 2002. Cobar Special 1:250 000 Regolith-Landform Map. Co-operative Research Centre for Landscape Evolution and Mineral Exploration (CRCLME), Perth/Cobar.  
The regolith-landform polygons on this map are based on interpretation of 1:82,000 panoramic aerial photography and extensive field mapping. It is the intention of this map to identify and characterise surface morphological and processes in a prospective area relatively void of exposed bedrock.  
Copies of this map may be obtained from:  
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CRCLME is an incorporated joint venture between CSIRO Exploration & Mining and Leve & Water. The Australian National University, Curtin University of Technology, University of Adelaide, University of Cobar, Geoscience Australia, Bureau of Rural Sciences, Primary Industries and Resources SA, NSW Department of Mineral Resources, and Minerals Council of Australia, established and supported under the Australian Government's Cooperative Research Centres Program.



- LINE LEGEND**
- Regolith-landform unit boundary
  - Man made structures (towns, reservoirs, etc.)
  - Watercourse
  - Main road
  - Minor road