

## 4d Hydraulic interconnection between the GAB and basement units

### 4d.1 Hydrogeological basement units in contact with the base of the Great Artesian Basin

<b>Abstract</b>	<p>Polygons representing a regional interpretation of basement stratigraphic units as hydrostratigraphic units, in contact with the base of the Jurassic-Cretaceous sequence of the GAB. To be used in conjunction with dataset 'Base Great Artesian Basin hydrogeological units in contact with basement' (Geoscience Australia dataset, 2013, Catalogue # 75911) to represent areas of potential hydraulic interconnection between the Great Artesian Basin and basement units.</p> <p>Data is available in Shapefile format</p> <p>This GIS data set was produced for the Great Artesian Basin Water Resource Assessment and used in :</p> <ol style="list-style-type: none"> <li>1. Figure 5.8 of Ransley TR and Smerdon BD (Eds) (2012) Hydrostratigraphy, hydrogeology and system conceptualisation of the Great Artesian Basin. A technical report to the Australian Government from the CSIRO Great Artesian Basin Water Resource Assessment. CSIRO Water for a Healthy Country Flagship, Australia.</li> <li>2. Figure 5.12 of Smerdon BD, Welsh WD and Ransley TR (Eds) (2012) Water resource assessment for the Carpentaria region. A report to the Australian Government from the CSIRO Great Artesian Basin Water Resource Assessment. CSIRO Water for a Healthy Country Flagship, Australia, plus Figure 7 in the corresponding summary report.</li> <li>3. Figure 5.4 of Smerdon BD and Ransley TR (Eds) (2012) Water resource assessment for the Central Eromanga region. A report to the Australian Government from the CSIRO Great Artesian Basin Water Resource Assessment. CSIRO Water for a Healthy Country Flagship, Australia, plus Figure 7 in the corresponding summary report.</li> <li>4. Figure 5.7 of Smerdon BD and Ransley TR (Eds) (2012) Water resource assessment for the Surat region. A report to the Australian Government from the CSIRO Great Artesian Basin Water Resource Assessment. CSIRO Water for a Healthy Country Flagship, Australia, plus Figure 10 in the corresponding summary report.</li> <li>5. Figure 5.4 of Smerdon BD, Welsh WD and Ransley TR (Eds) (2012) Water resource assessment for the Western Eromanga region. A report to the Australian Government from the CSIRO Great Artesian Basin Water Resource Assessment. CSIRO Water for a Healthy Country Flagship, Australia, plus Figure 8 in the corresponding summary report.</li> <li>6. Figure 3.6 of Smerdon BD, Ransley TR, Radke BM and Kellett JR (2012) Water resource assessment for the Great Artesian Basin. A report to the Australian Government from the CSIRO Great Artesian Basin Water Resource Assessment. CSIRO Water for a Healthy Country Flagship, Australia, plus Figure 4 in the corresponding summary report.</li> </ol> <p>This dataset and associated metadata can be obtained from <a href="http://www.ga.gov.au">www.ga.gov.au</a>, using catalogue number 75910.</p>
<b>Lineage</b>	<p>This dataset is a regional interpretation based on drill-hole lithological data to assign hydrogeological character of basement units. It is used in conjunction with the dataset 'Base Great Artesian Basin hydrogeological units in contact with</p>

	<p>basement' (Geoscience Australia dataset, 2013, Catalogue # 75911) to identify potential hydraulic interconnection between the Great Artesian Basin and basement units.</p> <p>SOURCES:</p> <p>Cotton TB, Scardigno MF and Hibburt JE (Eds) (2006) The petroleum geology of South Australia. Volume 2: Eromanga Basin. Second edition. South Australian Department of Primary Industries and Resources, South Australia.</p> <p>Geological Survey of Queensland (2010). "Queensland Petroleum Exploration Data (QPED) database." Retrieved 25 September 2011, from &lt;<a href="http://mines.industry.qld.gov.au/geoscience/geoscience-wireline-log-data.htm">http://mines.industry.qld.gov.au/geoscience/geoscience-wireline-log-data.htm</a>&gt;.</p> <p>Habermehl, M. A. (2001). Wire-line logged waterbores in the Great Artesian Basin, Australia - digital data of logs and waterbore data acquired by AGSO. Australian Geological Survey Organisation Bulletin 245. Canberra, Bureau of Rural Sciences: ix, 98 p.</p> <p>McConachie BA, Dunster JN, Wellman P, Denaro TJ, Pain CF, Habermehl MA and Draper JJ 1997 - Chapter 9; Carpentaria lowlands and gulf of Carpentaria regions. In: Bain JHC and Draper JJ (Eds) North Queensland Geology. AGSO Bulletin 240. Queensland department of Mines and Energy Australia, 365-397. Plate 9.5</p> <p>O'Brien, P. E. (2011). The eastern edge of the Great Artesian Basin: relationships between the Surat and Clarence-Moreton basins. Internal report. Canberra, Geoscience Australia.</p> <p>PIRSA (2007). Petroleum and geothermal in South Australia. 19th Edition (DVD). Adelaide, Primary Industries and Resources South Australia, Division of Minerals and Energy Resources</p> <p>Smart, J., K. G. Grimes, Douth HF, Pinchin, J et al. (1980). The Mesozoic Carpentaria Basin and the Cainozoic Karumba Basin, north Queensland. Bulletin 202. Canberra, Bureau of Mineral Resources, Geology and Geophysics.</p> <p>METHODS:</p> <p>Stratigraphic point control was provided by borehole lithostratigraphic picks from QPED (Geological Survey of Queensland, 2010), PIRSA (2007), GABLOG (Habermehl 2001), as well as lithostratigraphic picks for the Clarence-Moreton Basin by Phil O'Brien (2011). Where there was a paucity of well data available, the interpreted lithostratigraphy was taken from the following sources:</p> <ul style="list-style-type: none"> <li>• Carpentaria Basin offshore: McConachie et al. (1997)</li> <li>• Carpentaria Basin onshore: Mapping by Smart et al. (1980).</li> <li>• Coonamble Embayment: 1:250 000 scale geological map series (Geoscience Australia 2010) for eastern margin; Kellett pers. comm. for the western margin</li> <li>• Poolowanna Trough: Cotton et al., (2006)</li> </ul> <p>Hand drawn transparency interpretations were scanned. Scanned images were rectified within ArcGIS and vectorised into linework using the ArcScan toolset. Polygons were then generated from the vectorised linework and were attributed</p>
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	with a code name within the field "Hydro_code". This field was used to symbolise the dataset.
<b>Extent</b>	WEST 131.8002 ; EAST 153.1844 NORTH -7.93180 ; SOUTH -33.0987
<b>Scale</b>	1:6 000 000

