10.1071/PVv2016n184newsp22



# GA: update on geophysical survey progress from the Geological Surveys of Western Australia, South Australia, Northern Territory, Queensland and Victoria (information current on 9 September 2016)

Further information on these surveys is available from Murray Richardson at GA via email at Murray.Richardson@ga.gov.au or telephone on (02) 6249 9229.

## Table 1. Airborne magnetic and radiometric surveys

| Survey name | Client | Project management | Contractor | Start flying | Line km | Spacing AGL Dir | Area (km$^2$) | End flying | Final data to GA | Locality diagram (*Preview*) | GADDS release |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gawler – PACE area | GSSA | GA | TBA | TBA | 1 800 000 | 200 m 60 m NS or EW | 324 000 | TBA | TBA | 183: Aug 2016 p. 34 | The Quotation Request for the first tranche of surveys is in the final stages of preparation |
| Coonabarabran | GSNSW | GA | TBA | TBA | ~50 000 | 250 m 60 m EW | 11 000 | TBA | TBA | This issue (Figure 1) | The Quotation Request is in preparation by GA in collaboration with GSNSW |

*TBA, to be advised.*

## Table 2. Gravity surveys

| Survey name | Client | Project management | Contractor | Start survey | No. of stations | Station spacing (km) | Area (km$^2$) | End survey | Final data to GA | Locality diagram (*Preview*) | GADDS release |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Stavely | GSV | GA | TBA | TBA | Approx. 8000 in 9 separate areas | 500 m regular grid in 8 areas and 500 m station interval along one traverse | TBA | TBA | TBA | The proposed survey covers parts of the Horsham, Hamilton, Ballarat and Colac Standard 1:250 000 map sheets | TBA |
| Wiluna | GSWA | GA | Atlas Geophysics | Late July 2016 | Approx 17 000 in 2 separate areas | 2500 m regular grid | 103 000 | TBA | TBA | This issue (Figure 2) | The current survey covers the Nabberu, Wiluna and Sir Samuel Standard 1:250 000 map sheet areas. The survey was 53% complete on 3 September |
| East Kimberley Airborne Gravity Survey | GSWA | GA | TBA | Sep–Oct 2016 | 38 000 line km | 2500 m line spacing | 82 690 | TBA | TBA | This issue (Figure 3) | The proposed survey covers the Medusa Banks, Cambridge Gulf, Lissadell, Gordon Downs, Mount Ramsay and Lansdowne standard 1:250 000 map sheet areas |
| Daly Basin | NTGS | GA | Atlas Geophysics | 13 Jul 2016 | 2537 | Regular grid of 4, 2 and 1 km | 35 730 | 6 Aug 2016 | TBA | 182: Jun 2016 p. 22 | The proposed survey covers parts of the Cape Scott, Pine Creek, Port Keats, Fergusson River and Katherine Standard 1:250k map sheet areas |
| Coompana – PACE area | GSSA | GA | TBA | TBA | 15 362 | Regular grid of 2, 1 and 0.5 km | 100 000 | TBA | TBA | 183: Aug 2016 p. 34 | TBA |

*TBA, to be advised.*

## Table 3. AEM surveys

| Survey name | Client | Project management | Contractor | Start flying | Line km | Spacing AGL Dir | Area (km²) | End flying | Final data to GA | Locality diagram (*Preview*) | GADDS release |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Musgraves – PACE Area | GSSA | GA | CGG Aviation | 18 Aug 2016 | 8489 | 2 km; E–W lines | 16 371 | The survey was 45% complete to 8 Sep 2016 | TBA | 179: Dec 2015 p. 23 | The proposed survey covers parts of the Mann, Woodroffe, Birksgate and Lindsay Standard 1:250 000 map sheets |
| Musgraves – CSIRO Area | GSSA | GA | SkyTEM Australia | Mid Sep 2016 | 7182 | 2 km; E–W lines | 14 320 | The survey mobilised on 10 Sep 2016 | TBA | 179: Dec 2015 p. 23 | The proposed survey covers parts of the Woodroffe, Alberga, Lindsay and Everard Standard 1:250 000 map sheets |
| Isa Region | GSQ | GA | Geotech Airborne | 8 Aug 2016 | 15 692 | 2 km; E–W | 33 200 | The survey was 45% complete to 6 Sep 2016 | TBA | 182: Jun 2016 p. 23 | The survey covers the Dobbyn, Cloncurry, Julia Creek, Duchess, McKinlay, Boulia and Mackunda Standard 1:250 000 map sheets |

*TBA, to be advised.*

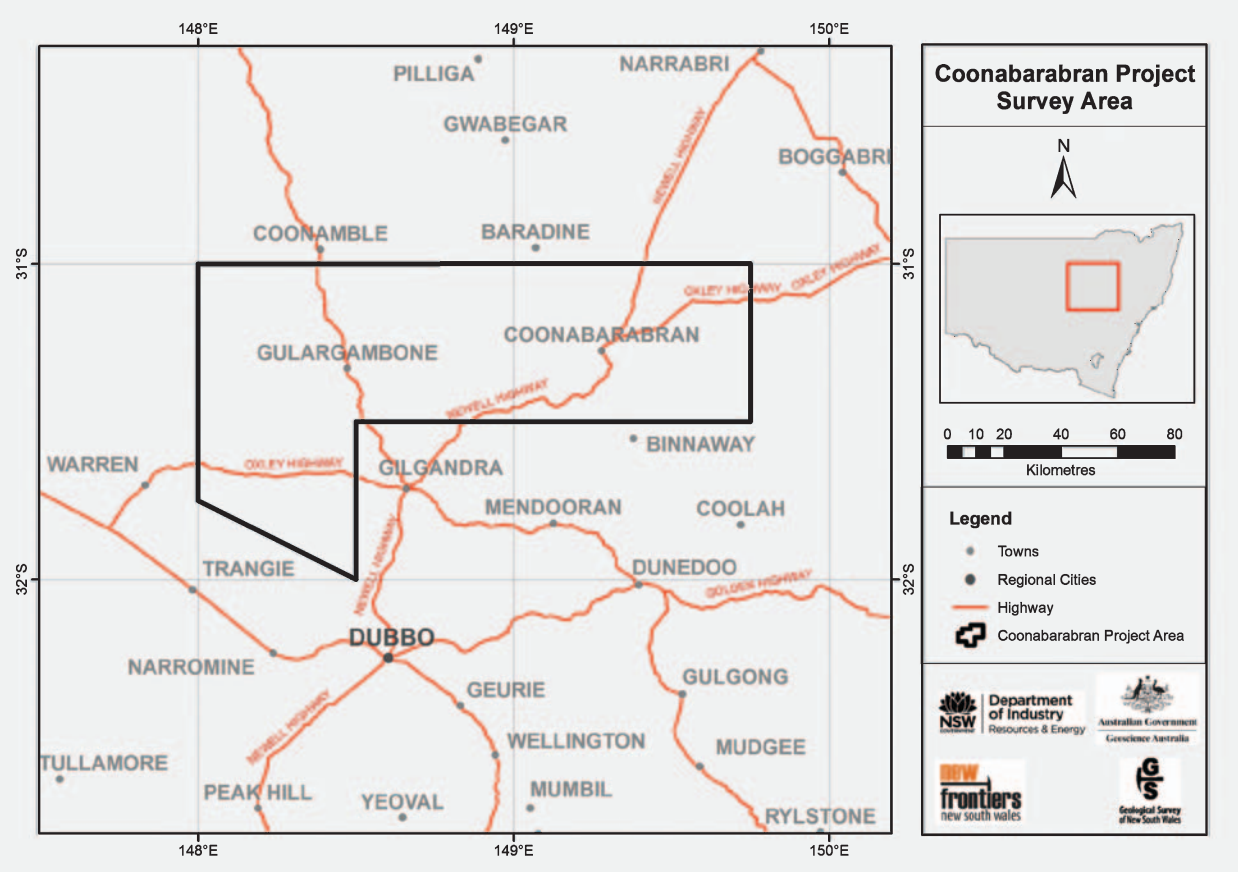


**Figure 1.** *Proposed Coonabarabran airborne magnetic-radiometric survey.*

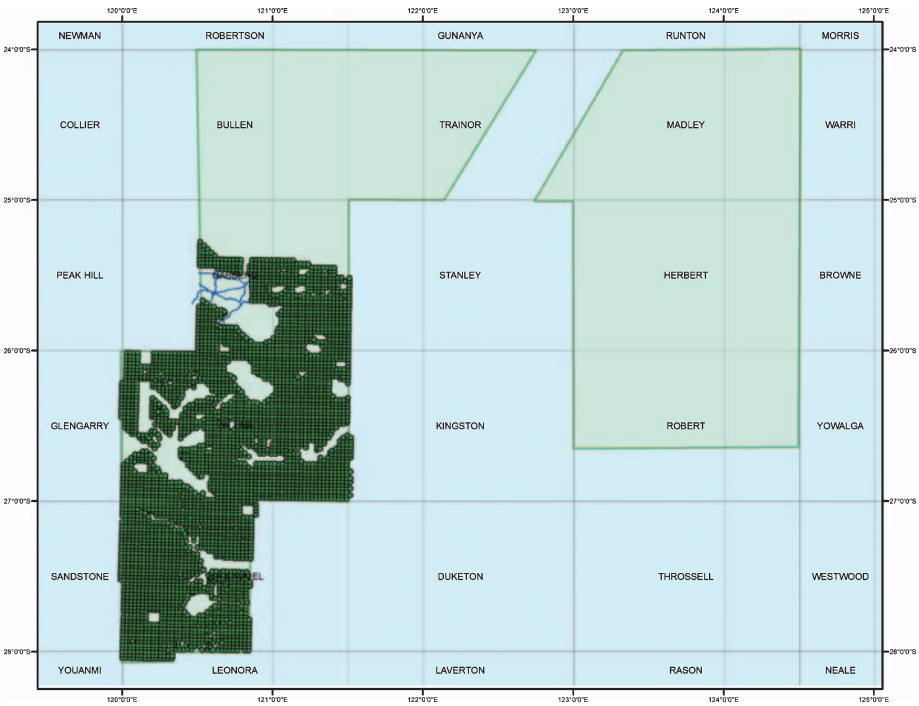


**Figure 2.** *Wiluna gravity survey.*

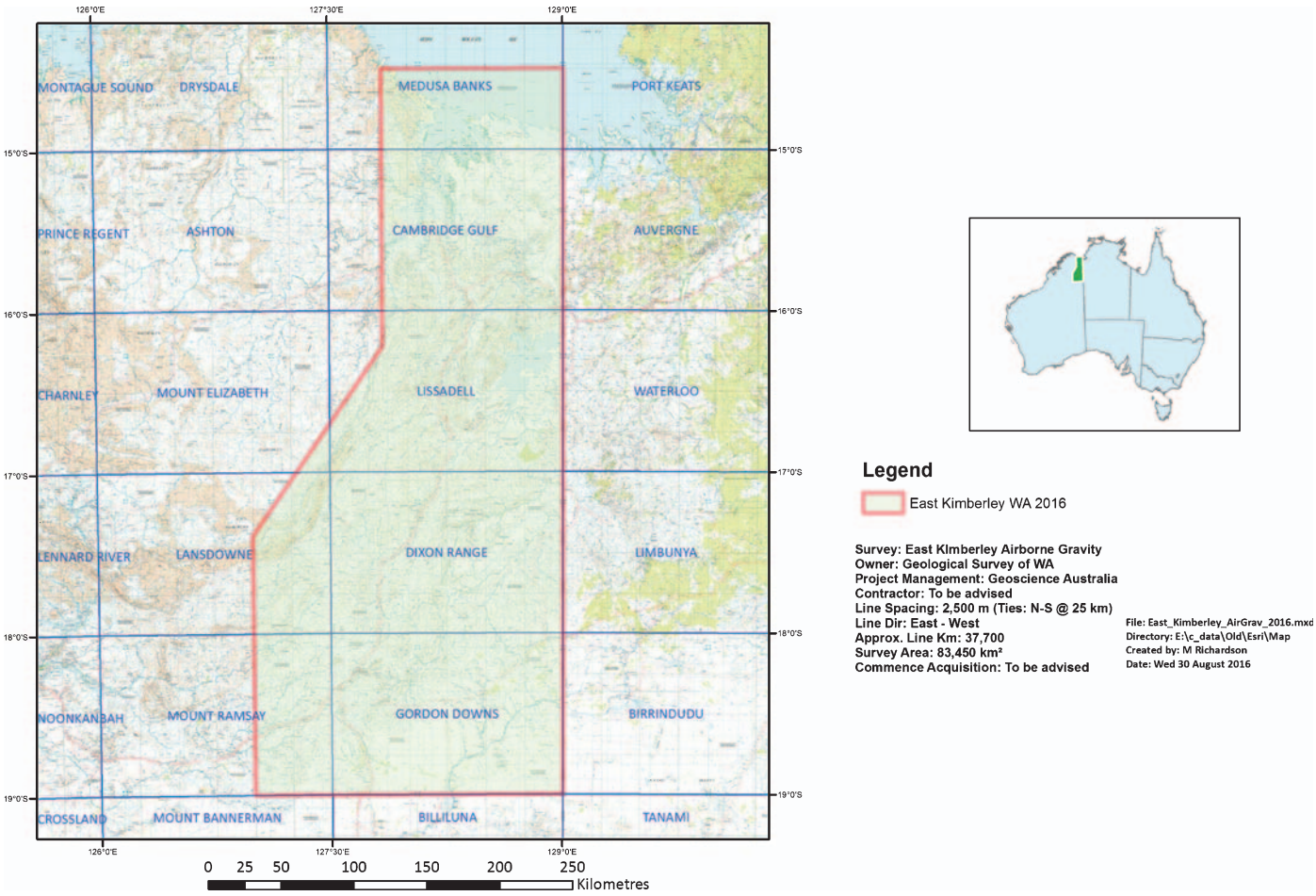


**Figure 3.** *Proposed east Kimberley airborne gravity survey.*

# Mineral Resources Tasmania: new $1.4 million Geoscience Initiative Programme

In the most recent State Budget, a four-year, $1.4 million Geoscience Initiative Programme was assigned to Mineral Resources Tasmania, designed to improve Tasmania's capability to attract investment in mineral exploration and development. A portion of this funding will result in a significant addition to modern pre-competitive airborne geophysical survey coverage in Tasmania, which is substantially incomplete (see Figure 1). The new data is likely to retain the same 200 m line spacing and nominal 80 m terrain clearance that characterises almost all of Tasmania's extant regional surveys. Further details will appear in the next edition of *Preview*.

AusLAMP magnetotelluric data acquisition, co-sponsored by Mineral Resources Tasmania, is now being completed, with the final instrument deployments and retrievals currently under way. QC and processing of the data obtained through the AusLAMP array and the two traverses at approximately 2 km station spacing undertaken as part of Thomas Ostersen's MRT-sponsored PhD research at the University of Tasmania (described in the April 2016 issue of *Preview*) is now proceeding.

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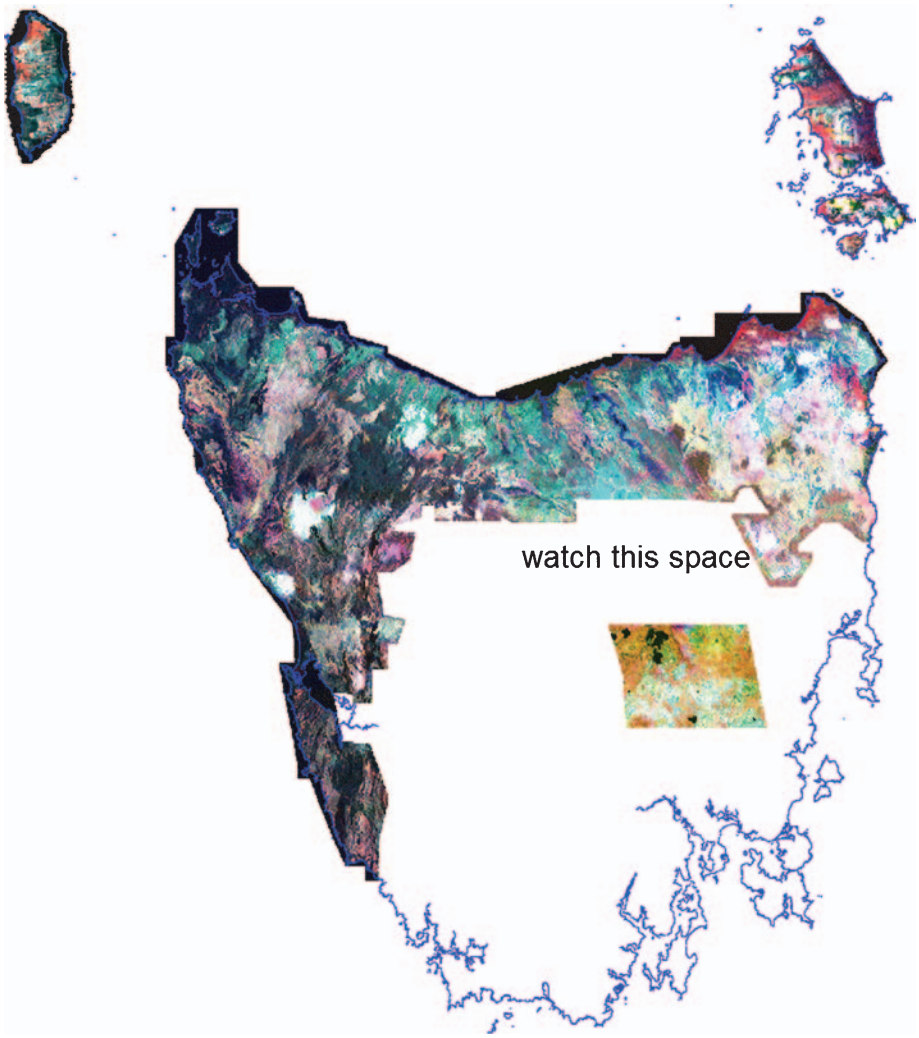


**Figure 1.** *Current radiometric survey data compilation for Tasmania.*

# Geological Survey of South Australia: update on survey programmes

The Geological Survey of South Australia (GSSA) has had a busy couple of months. Much of their activity has been focused on the ASEG-PESA-AIG conference held in Adelaide in August 2016. Six presentations were delivered by GSSA staff, and a busy booth kept the 712 delegates informed of activities in SA.

We've been heavily involved with the design of the Gawler Craton Airborne Survey: re-flying the magnetics, radiometrics and DTM of the Gawler Province at 200 m line spacing. This survey will be undertaken in three phases, and will be the largest survey of this type ever conducted. As well as providing the exploration industry with world class exploration data the programme is expected to create jobs and support local businesses over the next few years.

The GSSA has also been putting the finishing touches on a gravity programme in the far west of the state over the Coompana anomaly. This survey is designed as an aid to explorers and to help guide drilling activities in the region.

Prior to the drilling programme (and after the gravity survey) we are also planning a microgravity survey to delineate underground cavities that would pose a risk to the drilling in the area. This survey will be undertaken with a new CG5-HT gravity meter. The high-temperature instrument is especially suited to Australian conditions.

The next statewide gravity image is under construction and we are anticipating a release in late 2016. The new image is been constructed through a supervised variable density algorithm constructed by Laszlo Katona. For all the details please see the extended abstract in the ASEG-PESA-AIG conference proceedings.

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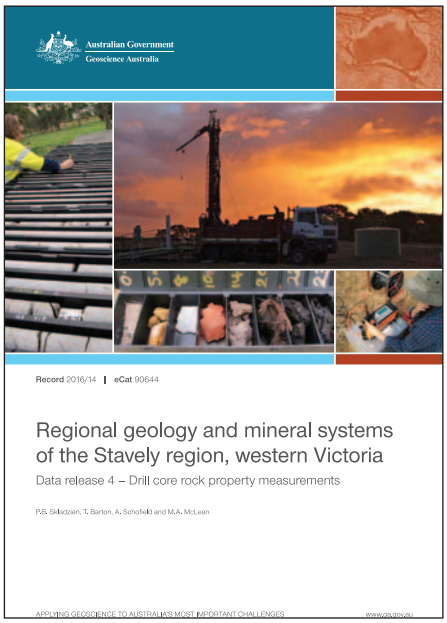
# Geological Survey of Victoria: Stavely Project update




A study of the regional geology and mineral systems of the Stavely region, western Victoria (the Stavely Project) continues to provide pre-competitive fundamental geoscience data to support the UNCOVER Initiative. Geoscience Australia and the Geological Survey of Victoria have collaborated to provide the fourth data release in a planned series of releases 'Regional geology and mineral systems of the Stavely region, western Victoria: Data release 4 – Drill core rock property measurements'. The report and accompanying data is now available from the Geoscience Australia website (http://www.ga.gov.au/metadata-gateway/metadata/record/90644).

This release provides the data and describes the methodology used to measure various rock properties (petrophysics) of the diamond core tails from thirteen of the fourteen Stavely Project stratigraphic drill holes. The scanning of core was undertaken by AuScope at their Australian Geophysical Observation System laboratory at Melbourne University. The data comprises measurements of density, magnetic susceptibility, P-wave velocity, resistivity and natural gamma for various rock types of the cover units and the Cambrian basement stratigraphy, and provides a valuable resource for constraining geophysical modelling, inversion and interpretation.

More information on the Stavely Project, including previous releases, can be accessed from Geoscience Australia's Stavely Project page (http://www.ga.gov.au/scientific-topics/minerals/unlocking-resource-potential/stavely-project) and from the Victorian Government (http://www.energyandresources.vic.gov.au/earth-resources/geology-of-victoria/gsv-projects/the-stavely-project).

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