

## GSNSW largest geophysical acquisition campaign

Astrid Carlton Senior Geophysicist

November 2022





### Contents

Introduction	3
Far-western NSW	5
Central-west NSW	7
Central NSW	11
East-coast	13



Pseudocolour isostatic gravity image.



### \$5 M for large geophysical surveys to support:





Pre-competitive data for exploration

Critical Minerals and High-Tech Metals Strategy Future Ready Regions (FFR). We are searching for deep groundwater to use as emergency water in times of drought Mineral Exploration Collaborative Research Centre (MinEx CRC) – improving exploration in areas under cover.



### New geophysical data



#### New data over a sixth of the state!

Survey	Size
Airborne magnetic and radiometric (AMR)	11,500 km2
Airborne electromagnetic (AEM)	38,500 km2
Airborne gravity	106,200 km2
Seismic	320 km
Reprocessed seismic data	330 km



Geophysical acquisition

### Far-western NSW







### Bancannia AEM

- Collaboration with Geoscience Australia (GA) for Exploring for the Future 2
- Northeast of Broken Hill over southern end of Bancannia Trough
- 2.5 km line spacing
- Supports Future Ready Regions
- Acquisition complete.



Geophysical acquisition

### Central-west NSW







### Yathong AEM

- Collaboration with GA
- Southwest of Cobar over eastern edge of Yathong-Ivanhoe Trough
- 2.5 km line spacing
- Devonian sedimentary sequences potential deep aquifers
- Supports Future Ready Regions.





### Yathong AMR

- Collaboration with GA
- Southwest of Cobar
- 200 m line spacing
- Devonian sedimentary sequences potential deep aquifers
- Supports Future Ready Regions.



### **Cobar-Yathong Seismic Survey**

#### Cobar-Yathong seismic

- ~320 km long deep crustal reflection seismic and ground gravity surveys
- Define the basement architecture of the Cobar Basin, Yathong–Ivanhoe Trough, and the dip of Rookery and Thule faults

#### Supports:

- Critical minerals exploration
- MinEx CRC and
- Future Ready Regions

Reprocessing of existing seismic data.





Geophysical acquisition

### **Central NSW**





#### NSW GOVERNMENT

### Forbes-Dubbo AEM

Collaboration with Geoscience Australia Airborne electromagnetic survey (AEM) 2.5 km line spacing

Supports:

- Critical minerals strategy
- MinEx CRC
- Future Ready Regions.



Geophysical acquisition

### East coast





# REAL PROPERTY OF CONTRACT OF CONTRACT.

### New England gravity

- Airborne gravity survey flown in collaboration with the NSW Department of Customer Service
- Existing ground gravity coverage has 11 km station spacing
- Improve coverage to 1.25 km line-spacing
- Supports critical minerals strategy.

#### **MinView**



### All data will be accessible through MinView in 2023



## Thank you for listening

GSNSW largest geophysical acquisition campaign