



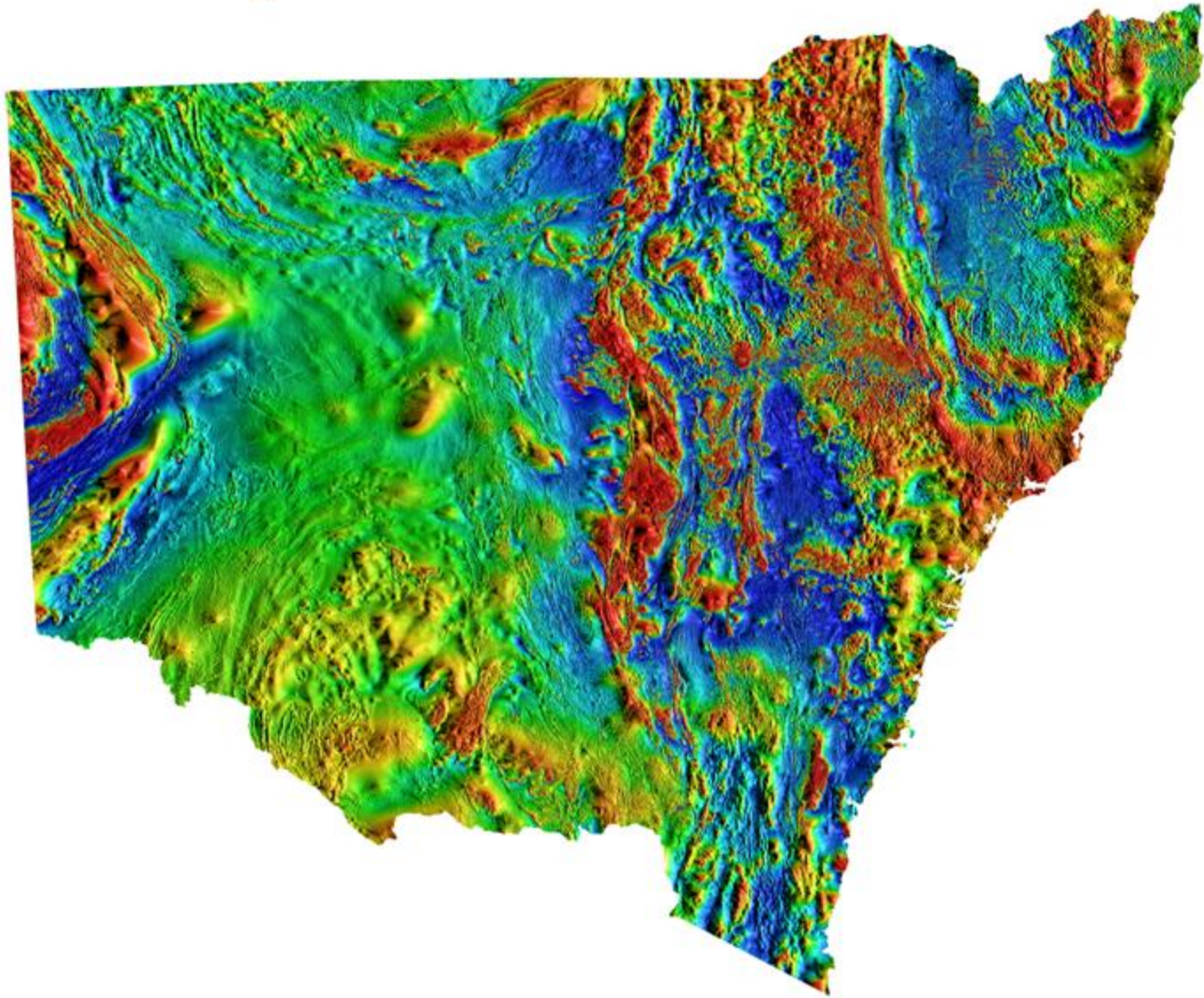
Industry &
Investment

new
frontiers
new south wales

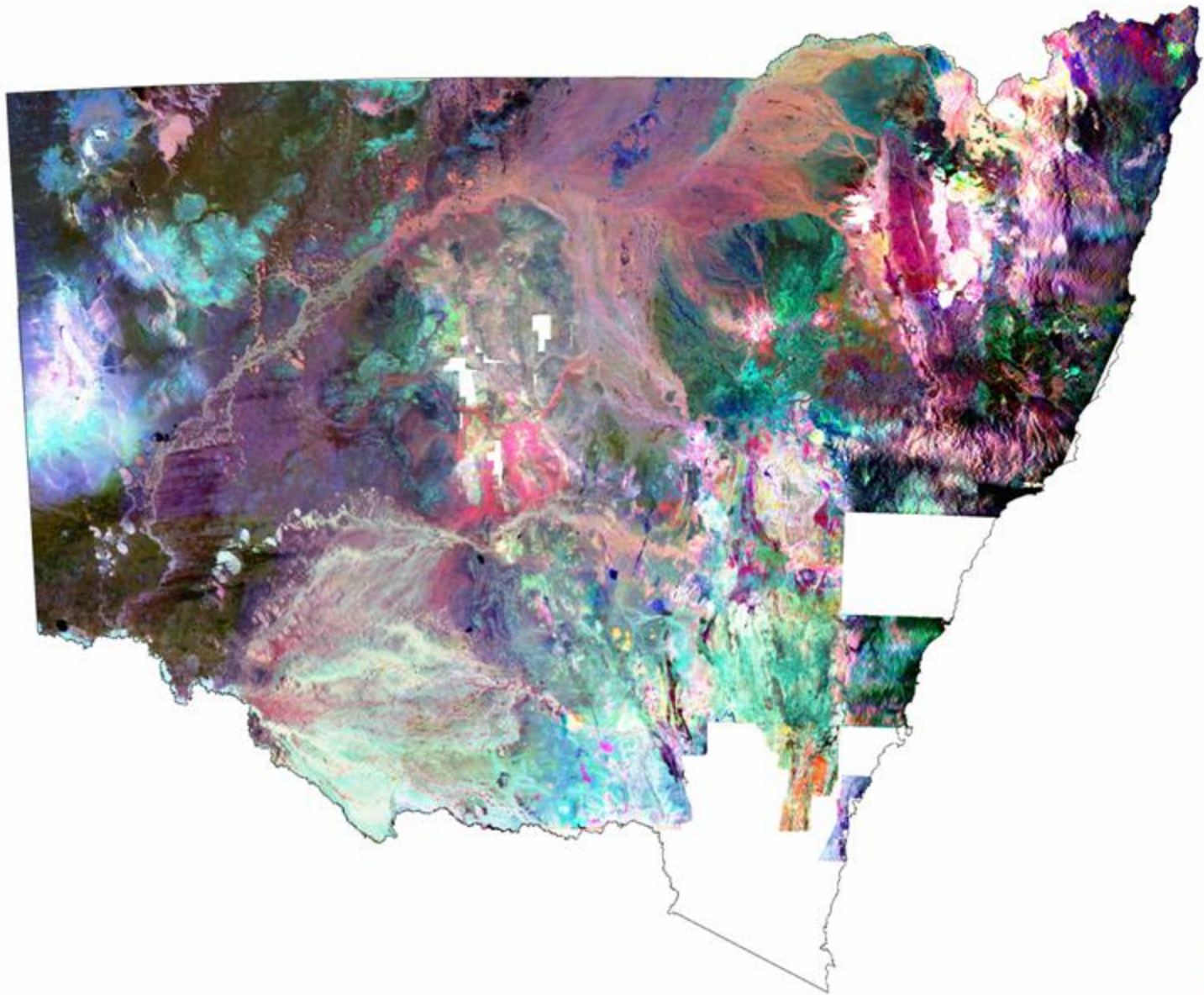
Geophysics – a versatile method to explore geodiversity

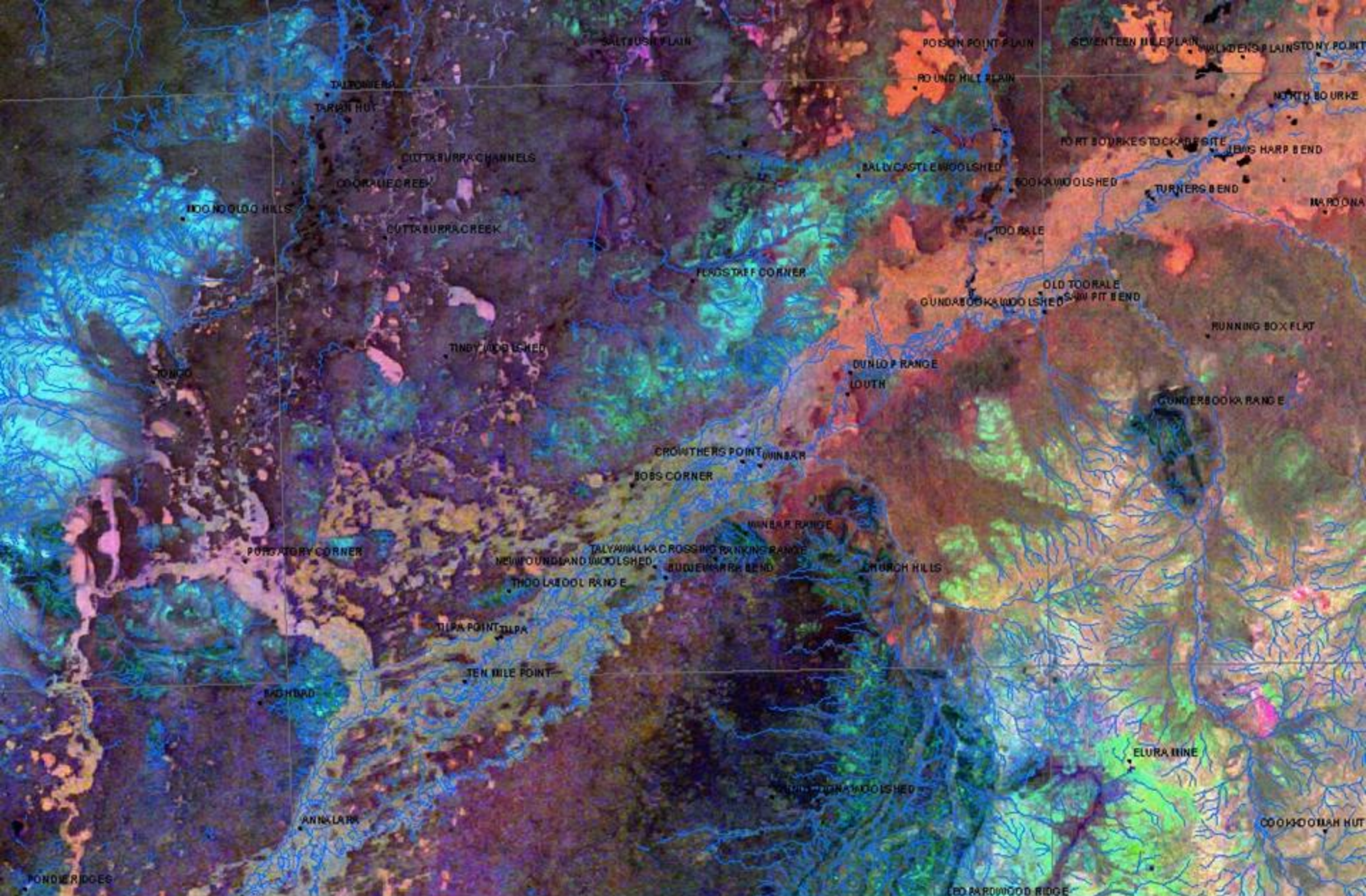
David Robson
Chief Geophysicist
Geological Survey of NSW

Magnetic Data - NSW

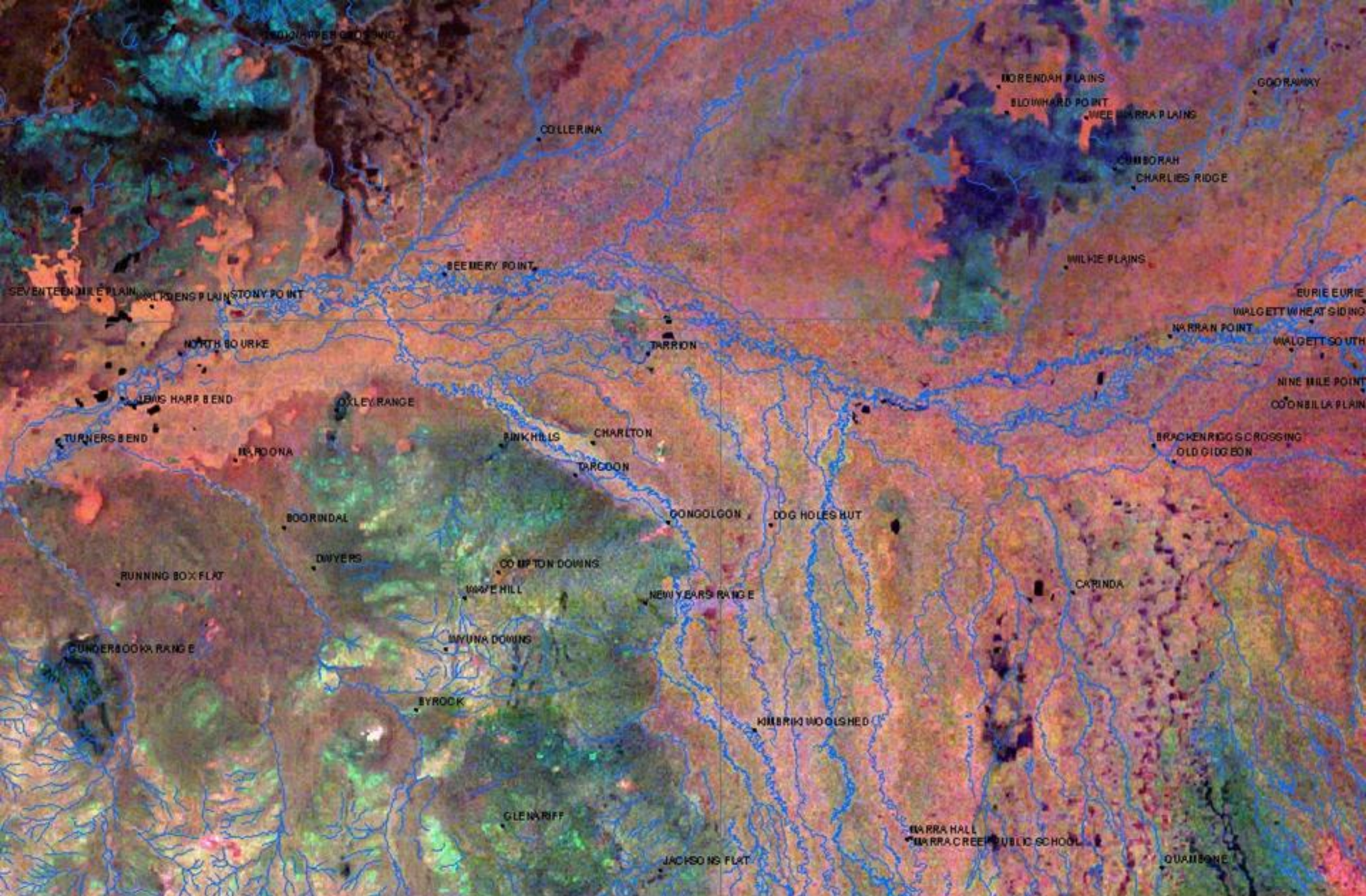


Gamma-ray Data - NSW

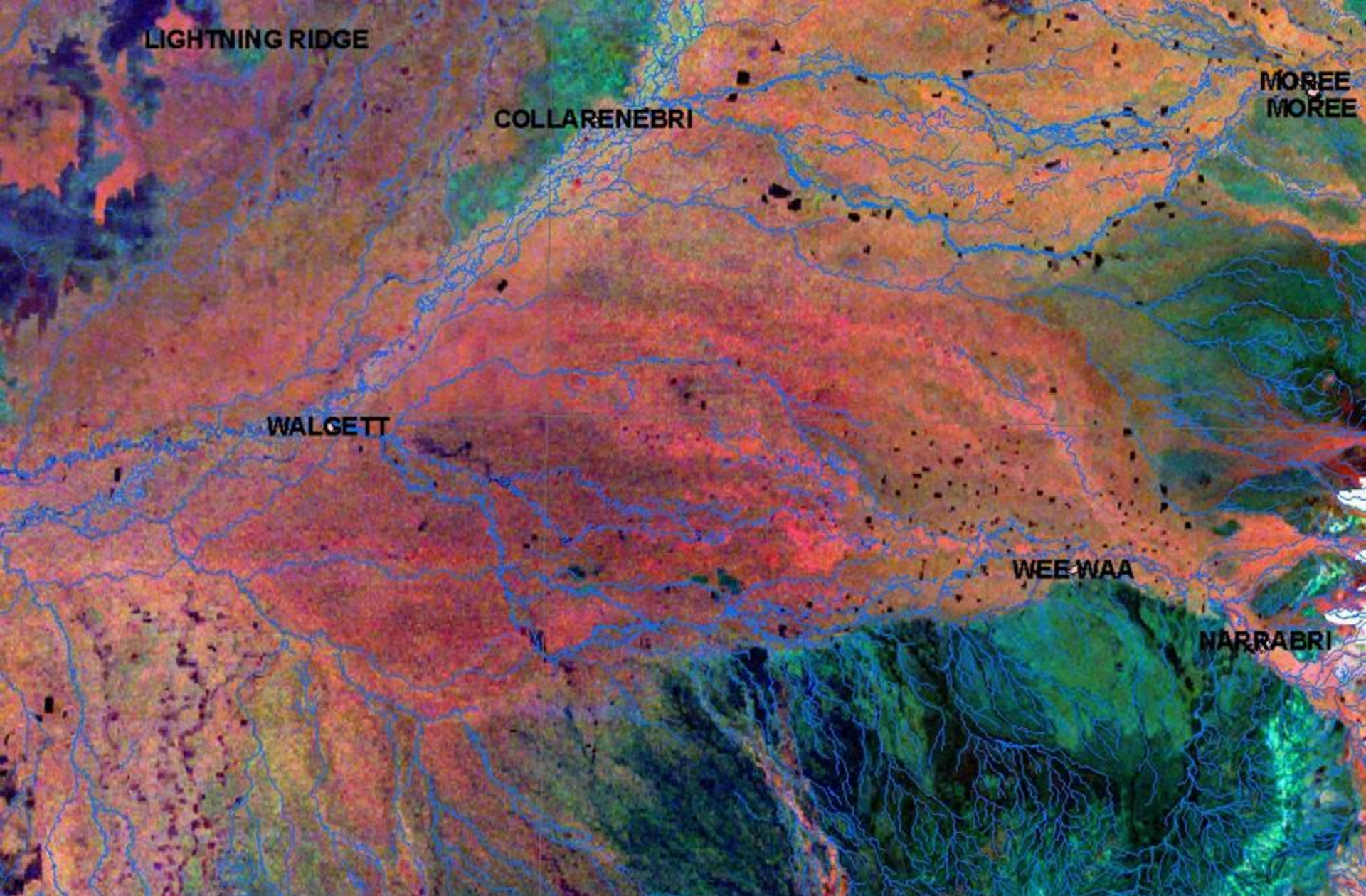




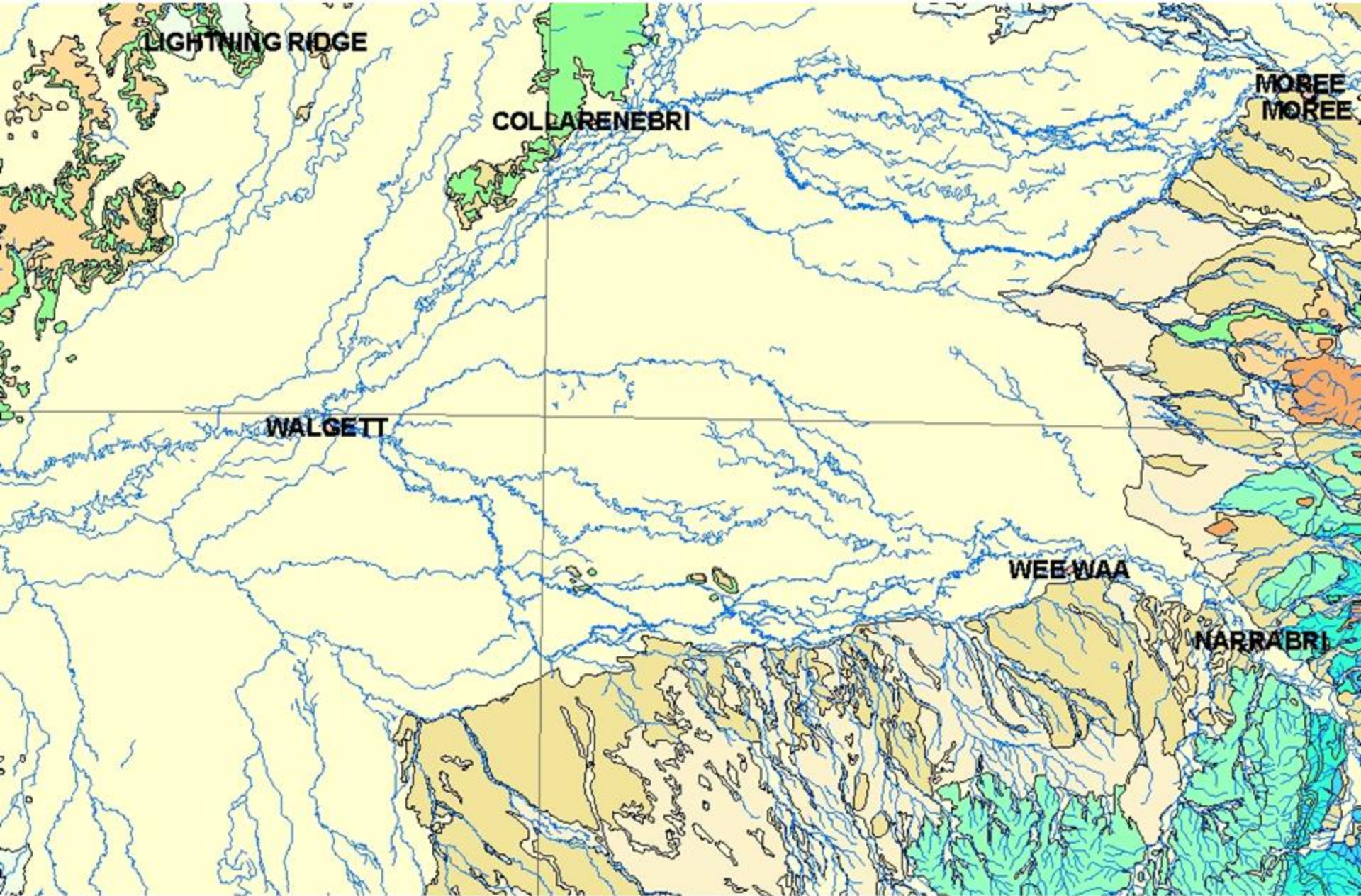
NSW Gamma-ray data; K=red; Th=green; U=blue



NSW Gamma-ray data; K=red; Th=green; U=blue



NSW Gamma-ray data; K=red; Th=green; U=blue

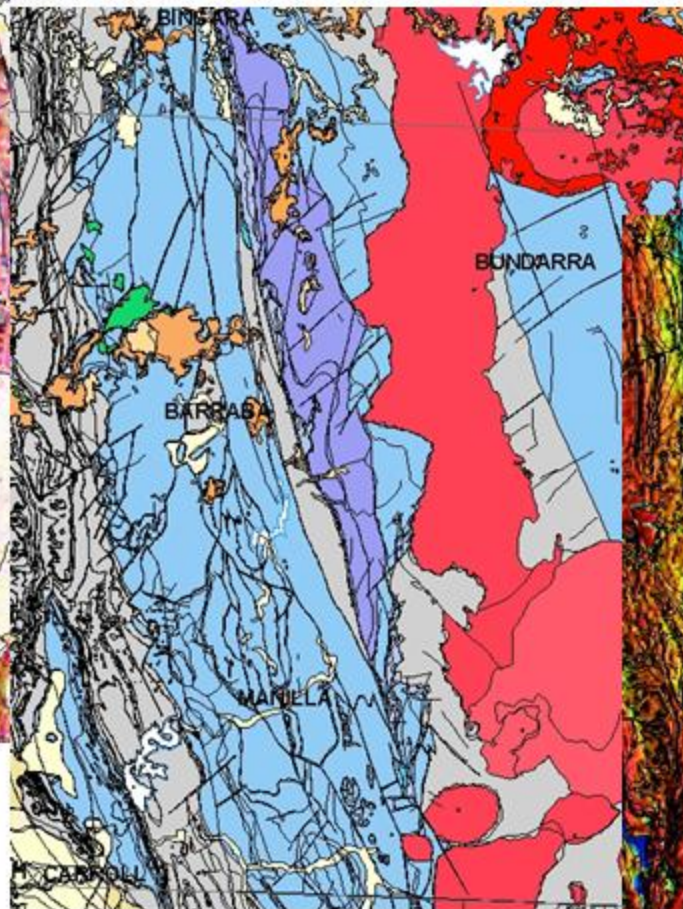


NSW Geology

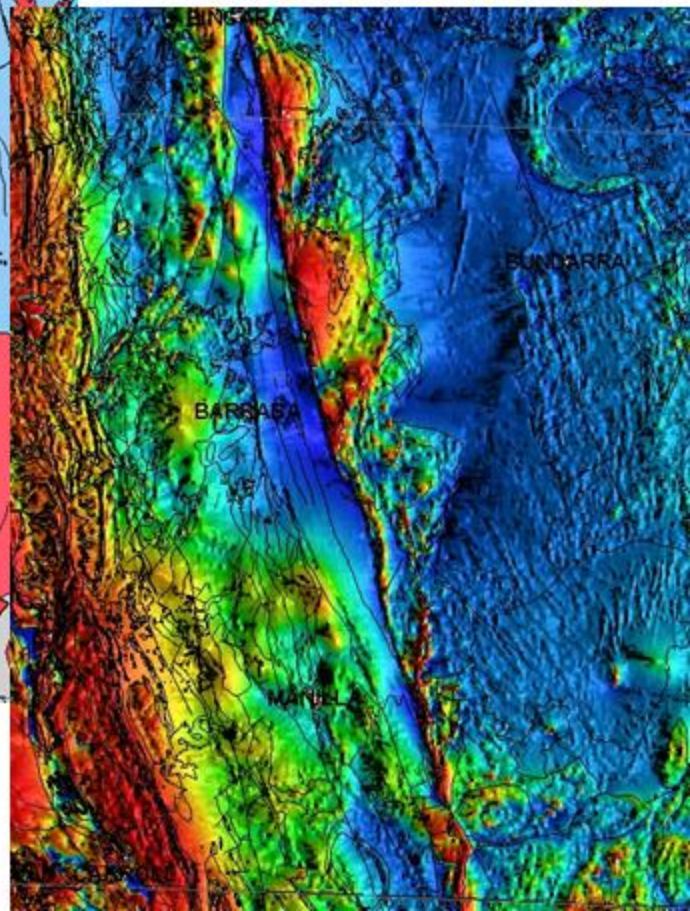
Gamma-ray

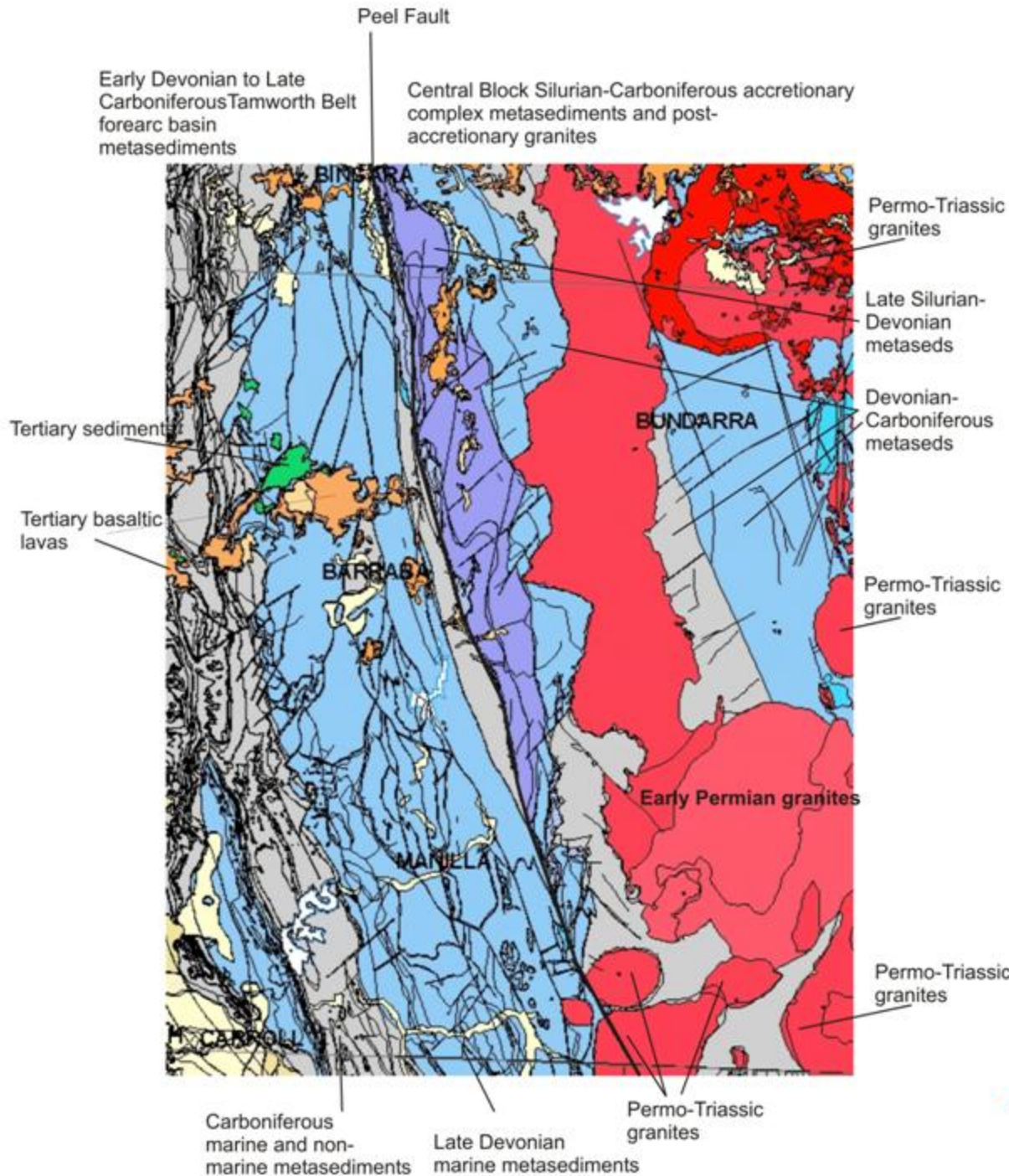


Geology



Magnetics





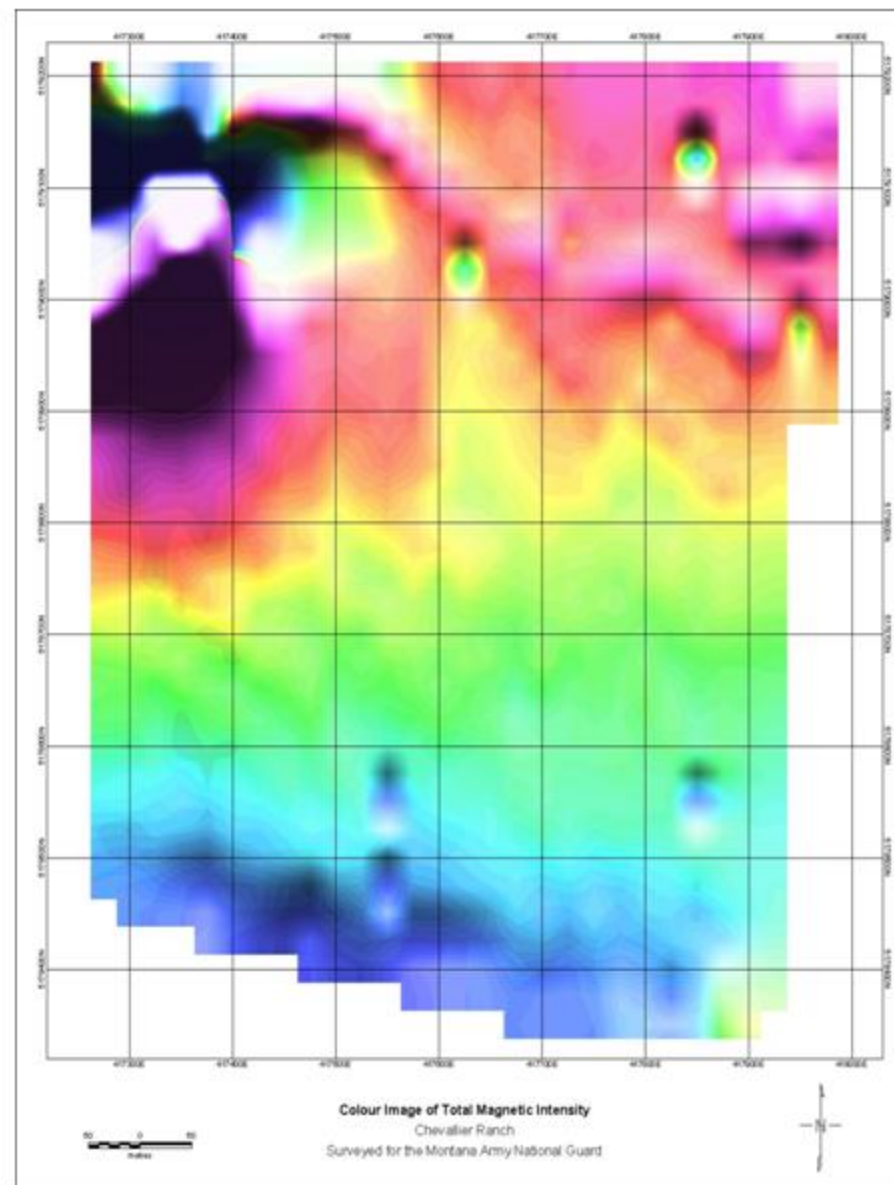
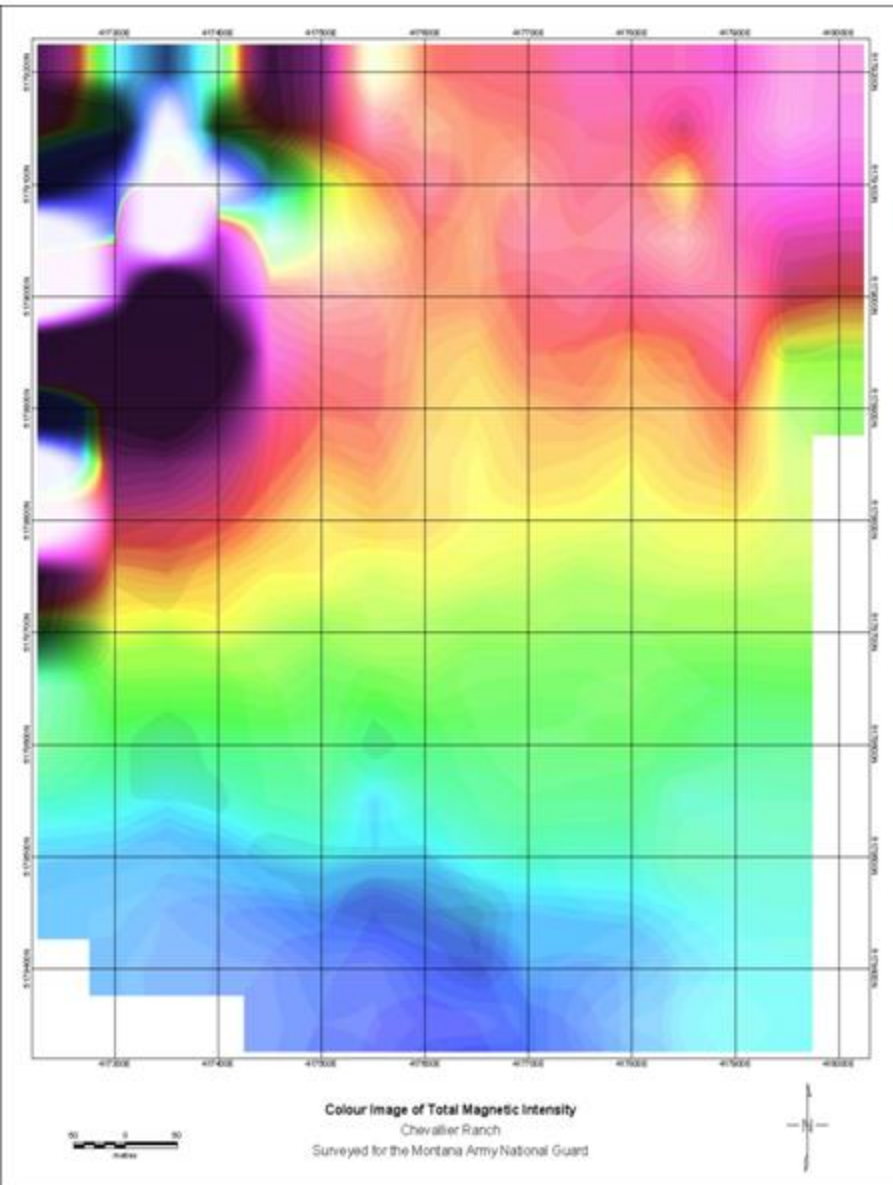
Other applications of geophysics

- Environmental - chemical, UST's etc.
- Ordnance - hand grenades to bombs
- Geological - dykes, changes in geology
- Construction - site characteristics
- Civil Engineering - material properties
- Mine Engineering - position of structures
- Forensic / Criminal - grave sites, buried items
- Archaeological - buried historical items
- Treasure Hunting - land and marine

Ground Magnetic Data

50m SAMPLE

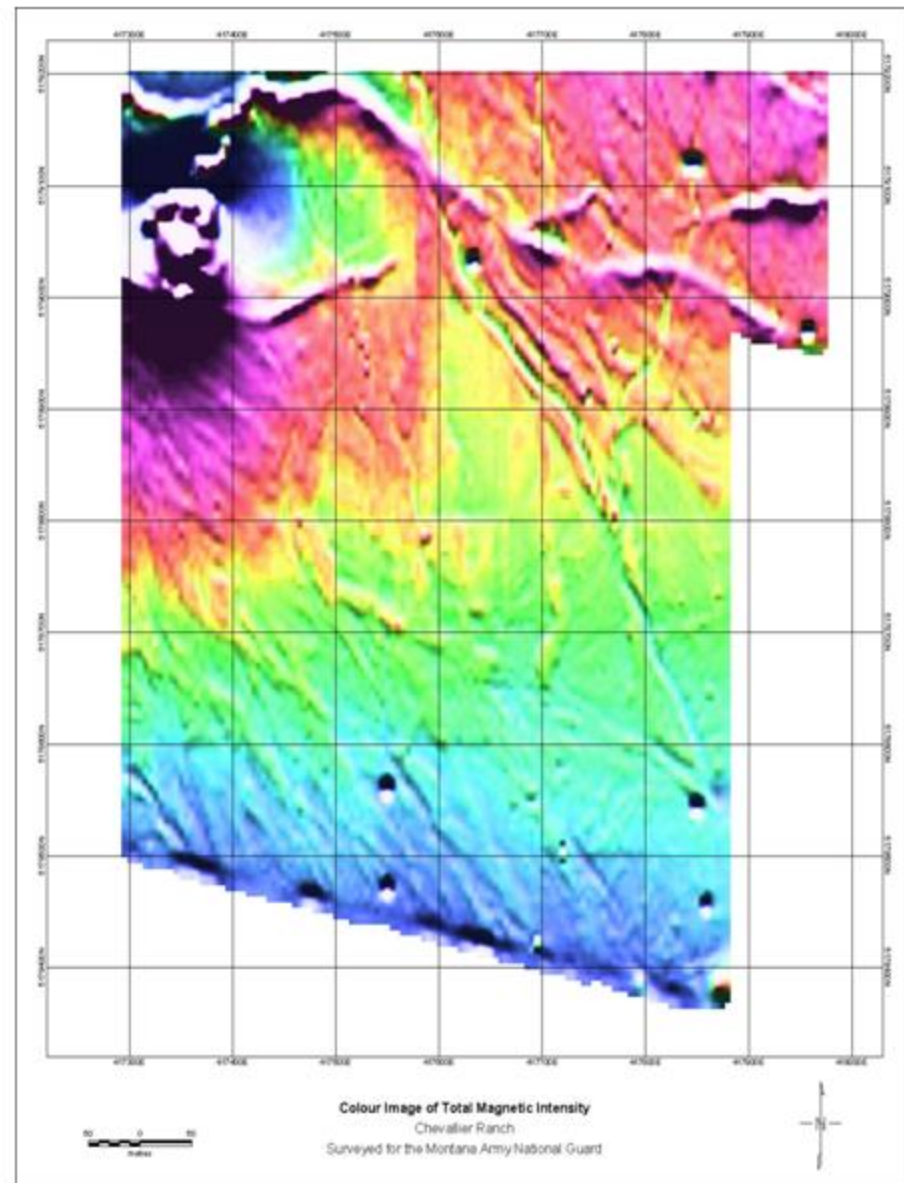
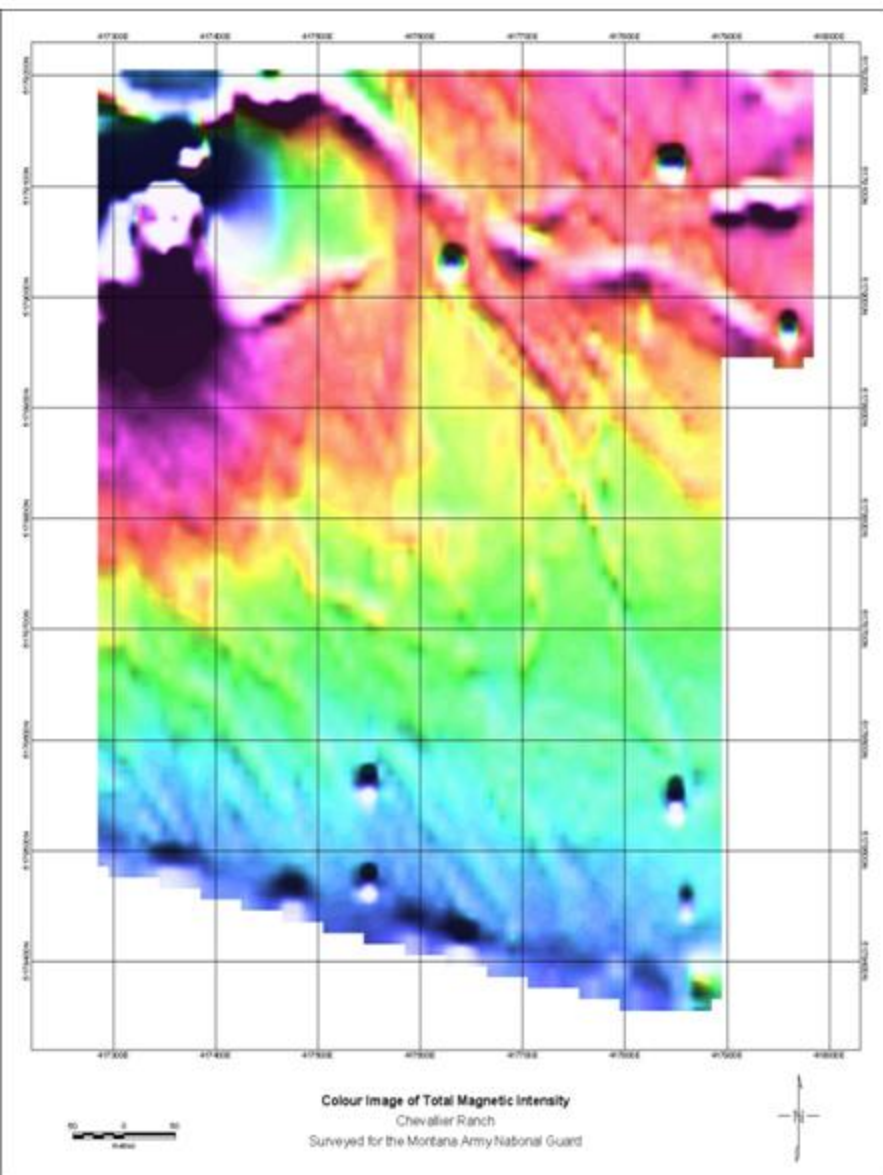
25m SAMPLE



Ground Magnetic Data

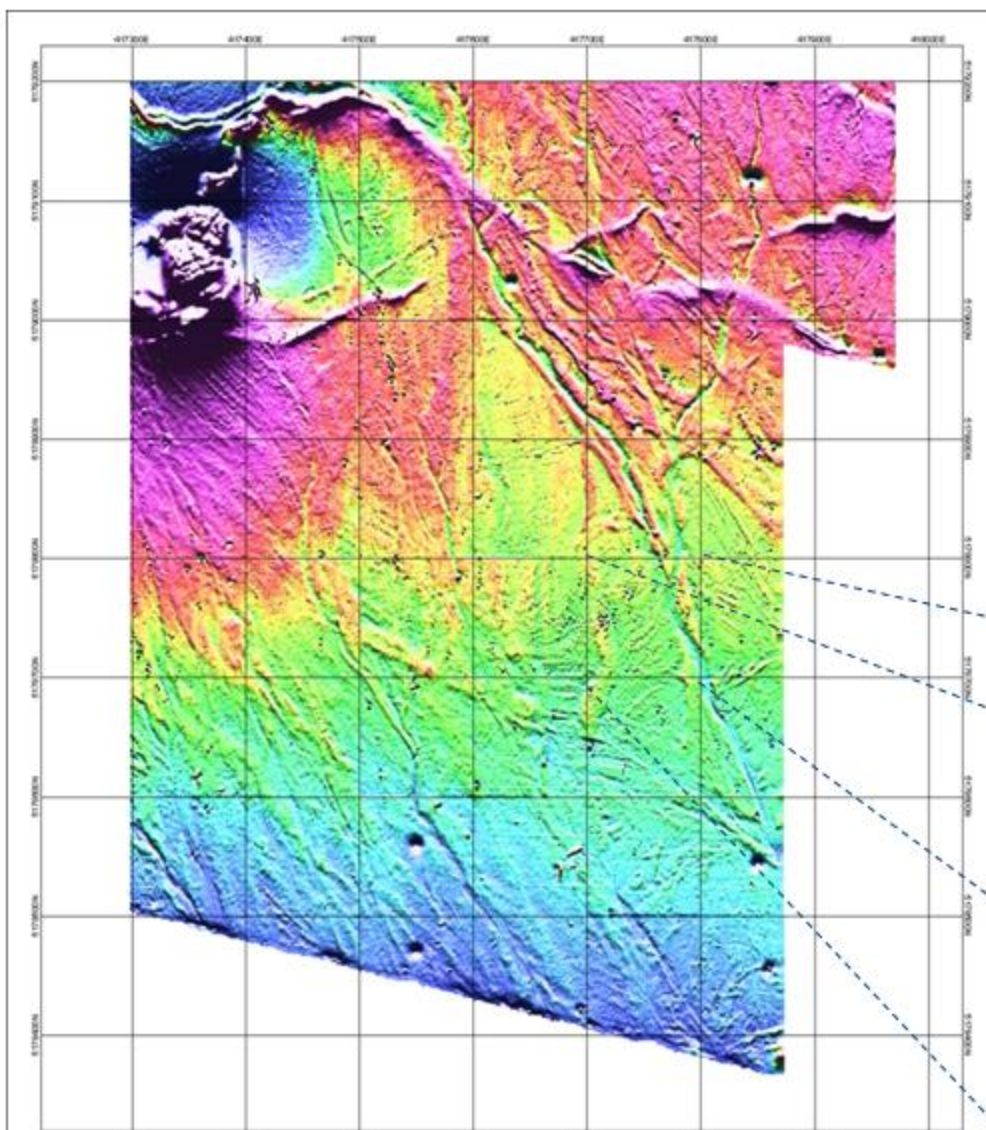
10m SAMPLE

5m SAMPLE

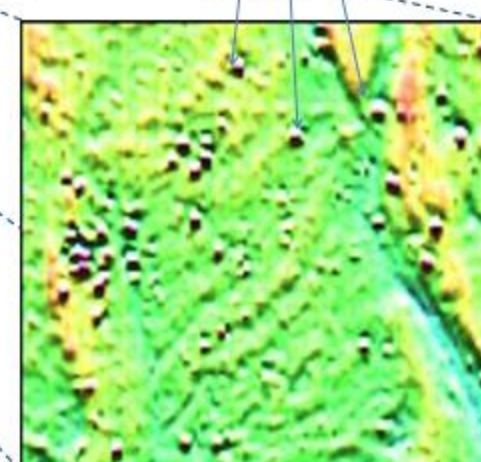
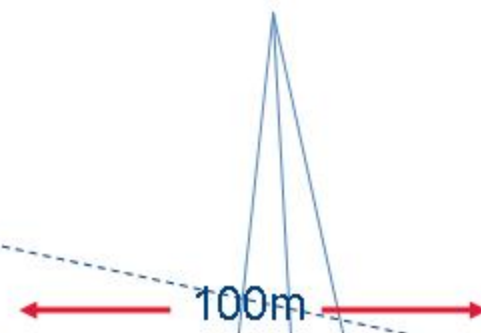


0.25m sampling

Ground Magnetic Data



UXO
76mm Projectiles



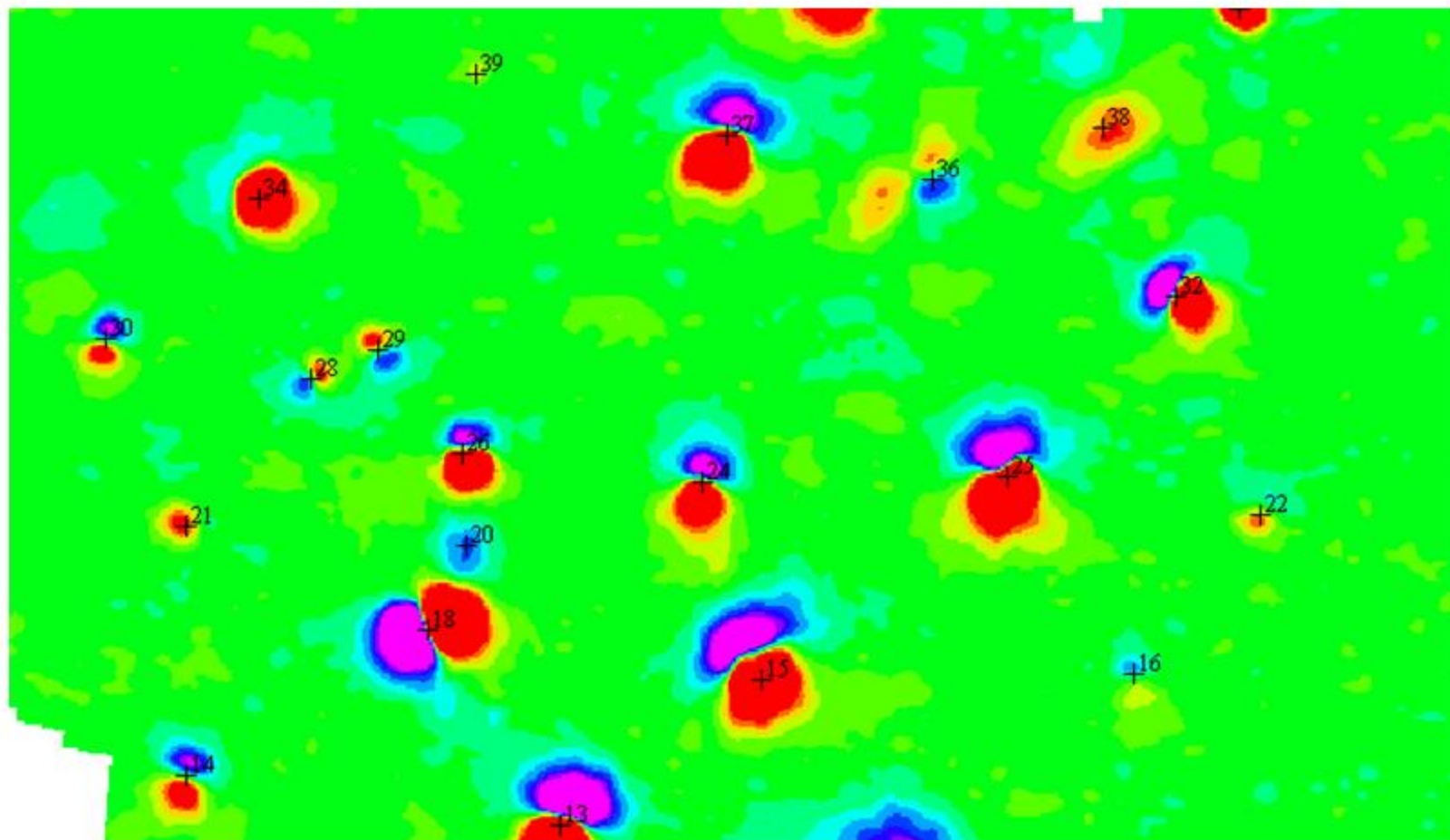
Ordnance Detection



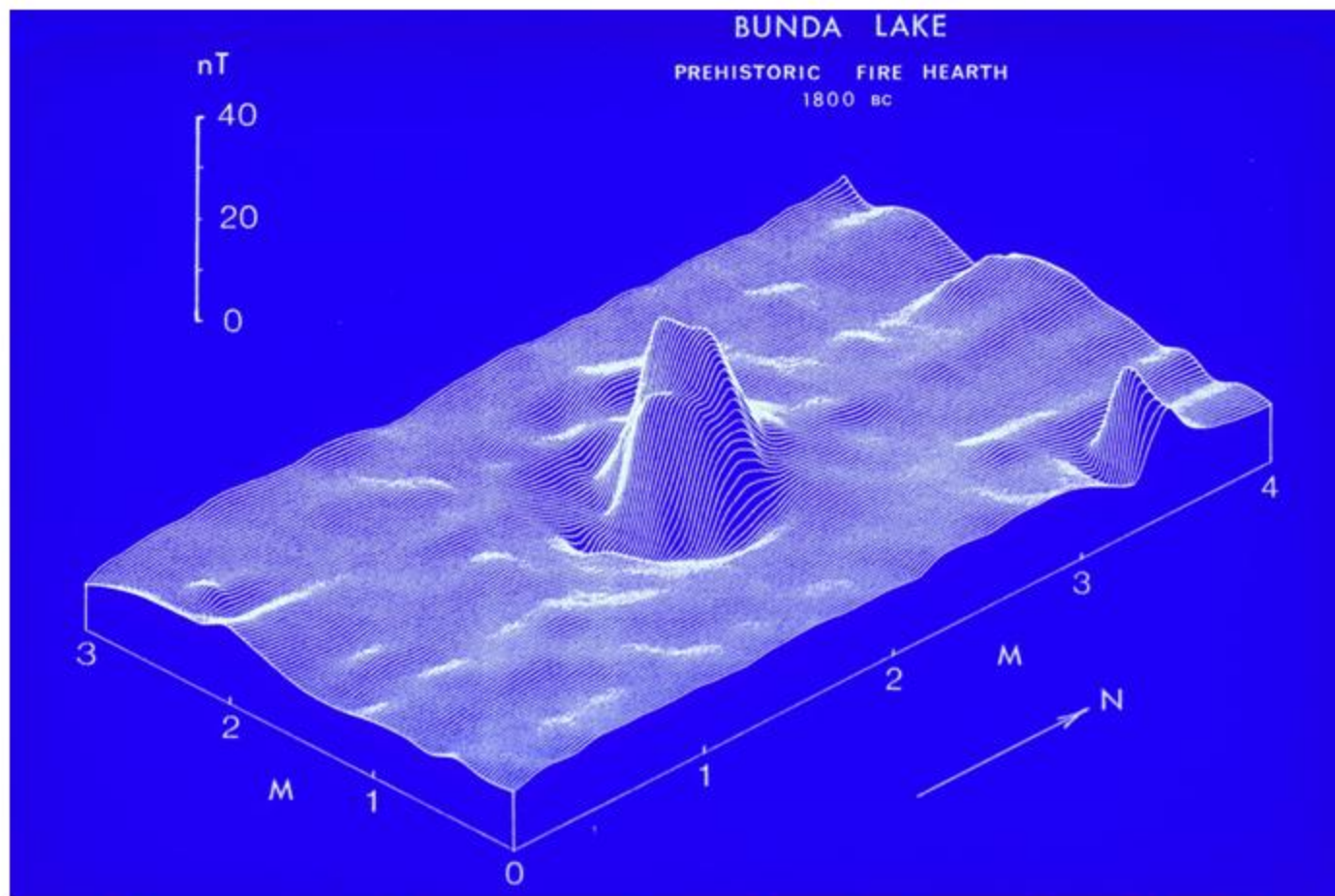
20 1 2005

Ordnance Detection

Ground magnetic data at 1m sampling

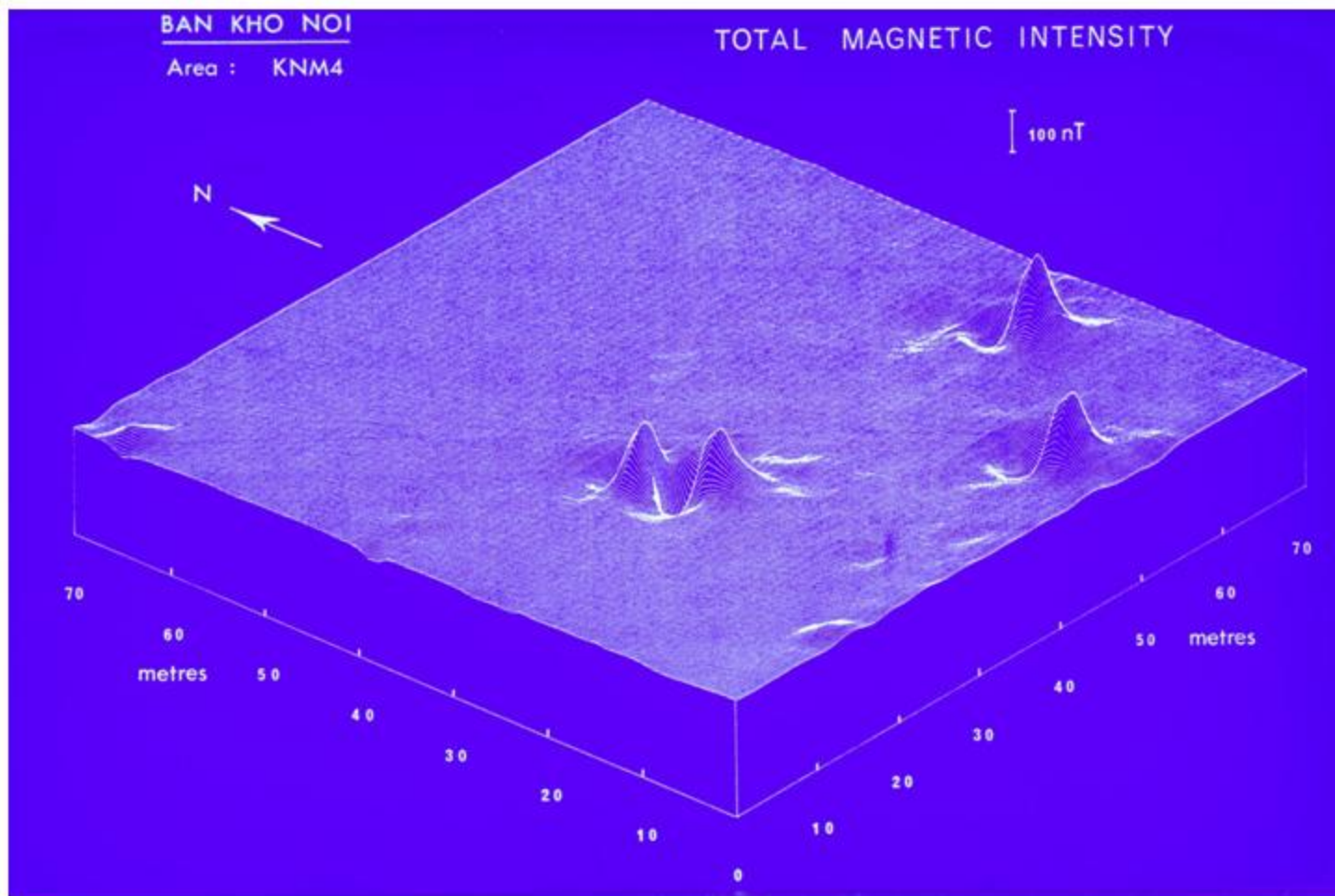


PREHISTORIC CAMPFIRE



Magnetic detection of an Australian aboriginal campfire hearth 3800 years old (hearth 29,000 years also detected).

THAI ARCHAEOLOGY

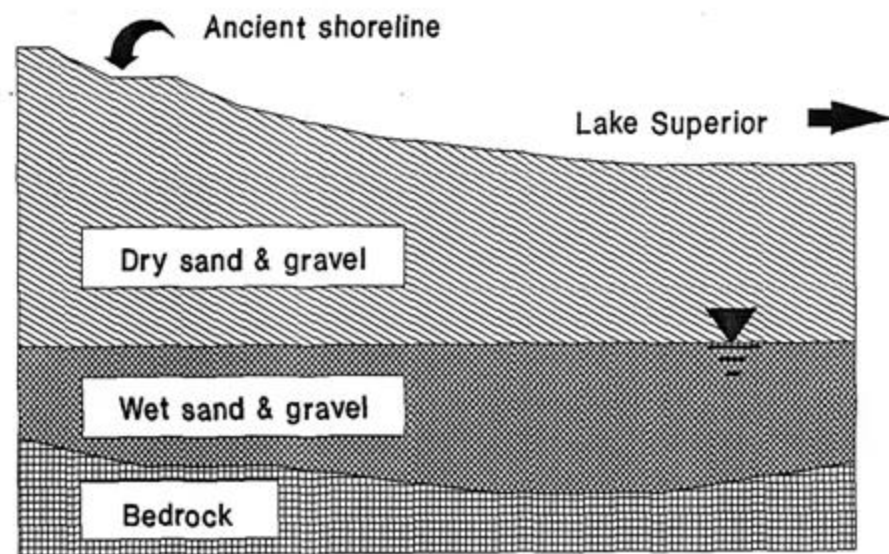
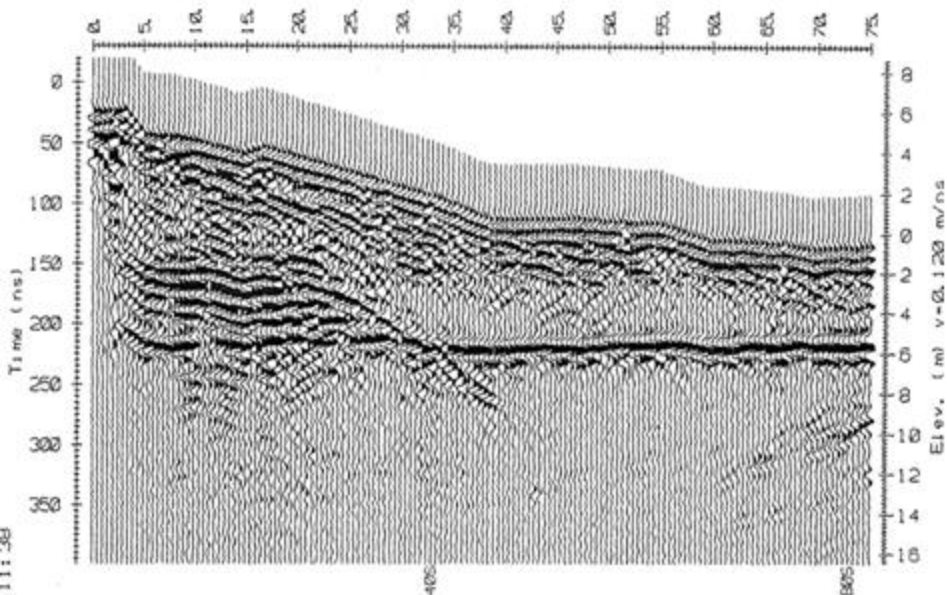


Magnetic detection of Thai ceramic kilns
900 years old

THAI KILNS EXCAVATED



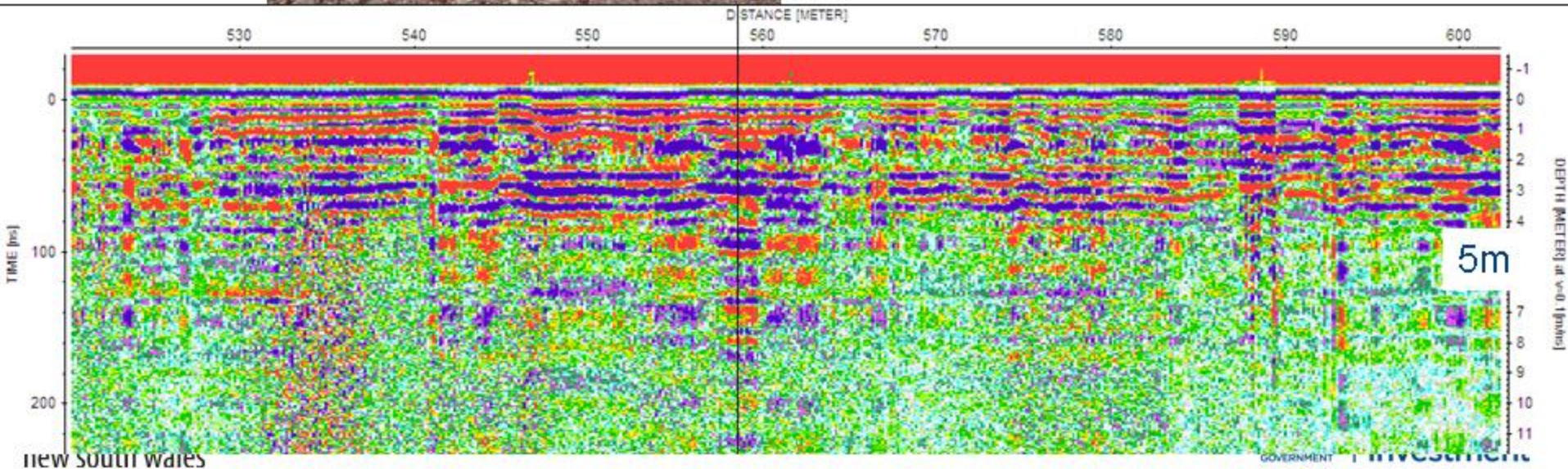
Excavation of Thai ceramic kilns
900 years old

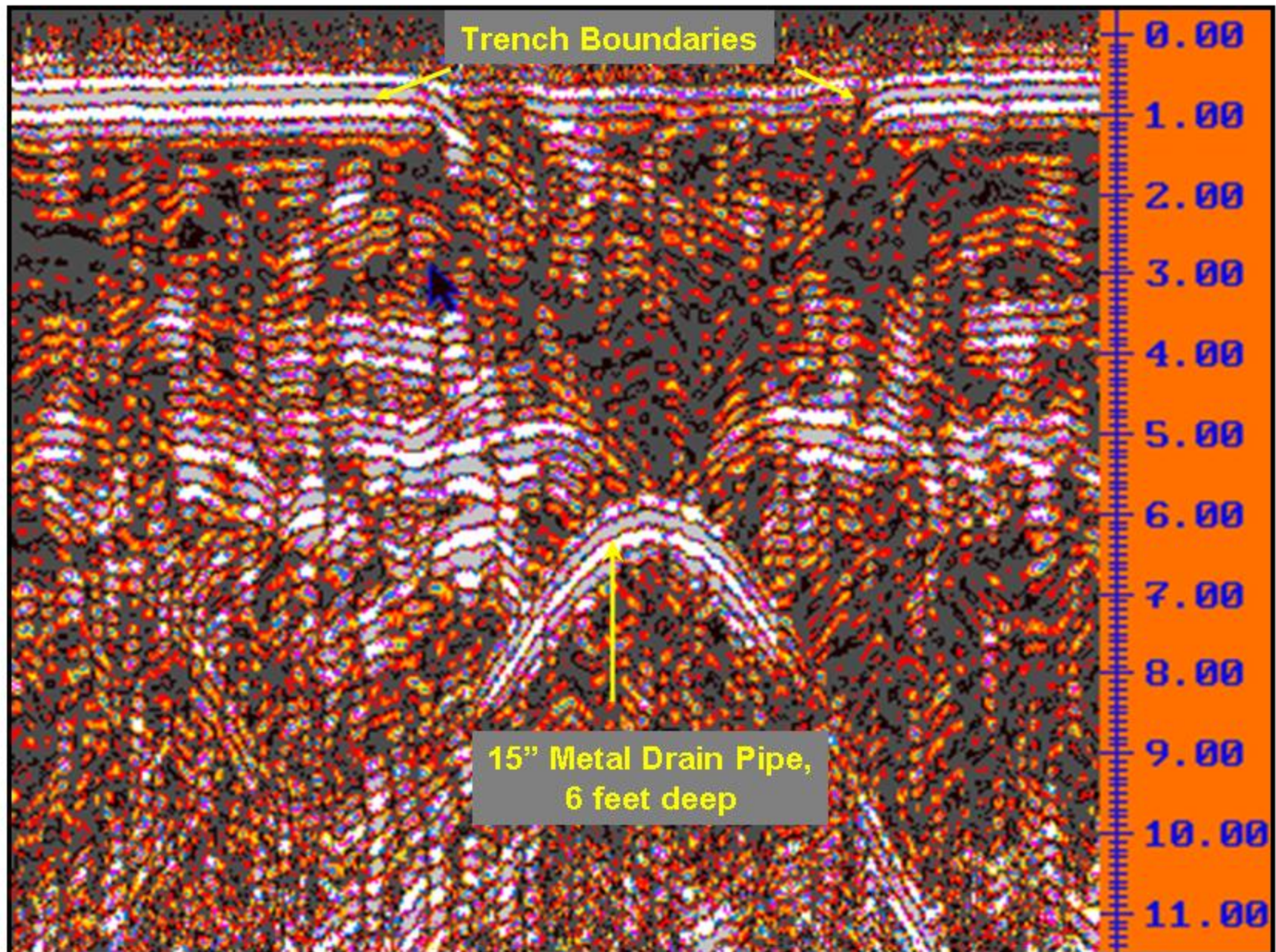


Ground Penetrating Radar (GPR) image shows stratigraphy of recent shoreline deposits strong water-table reflector at major change in relative permittivity signal could be scaled differently to image the bedrock section recorded in travel time (ns), converted to depth via velocity of 0.12 m/ns. after Annan, A.P. 1991



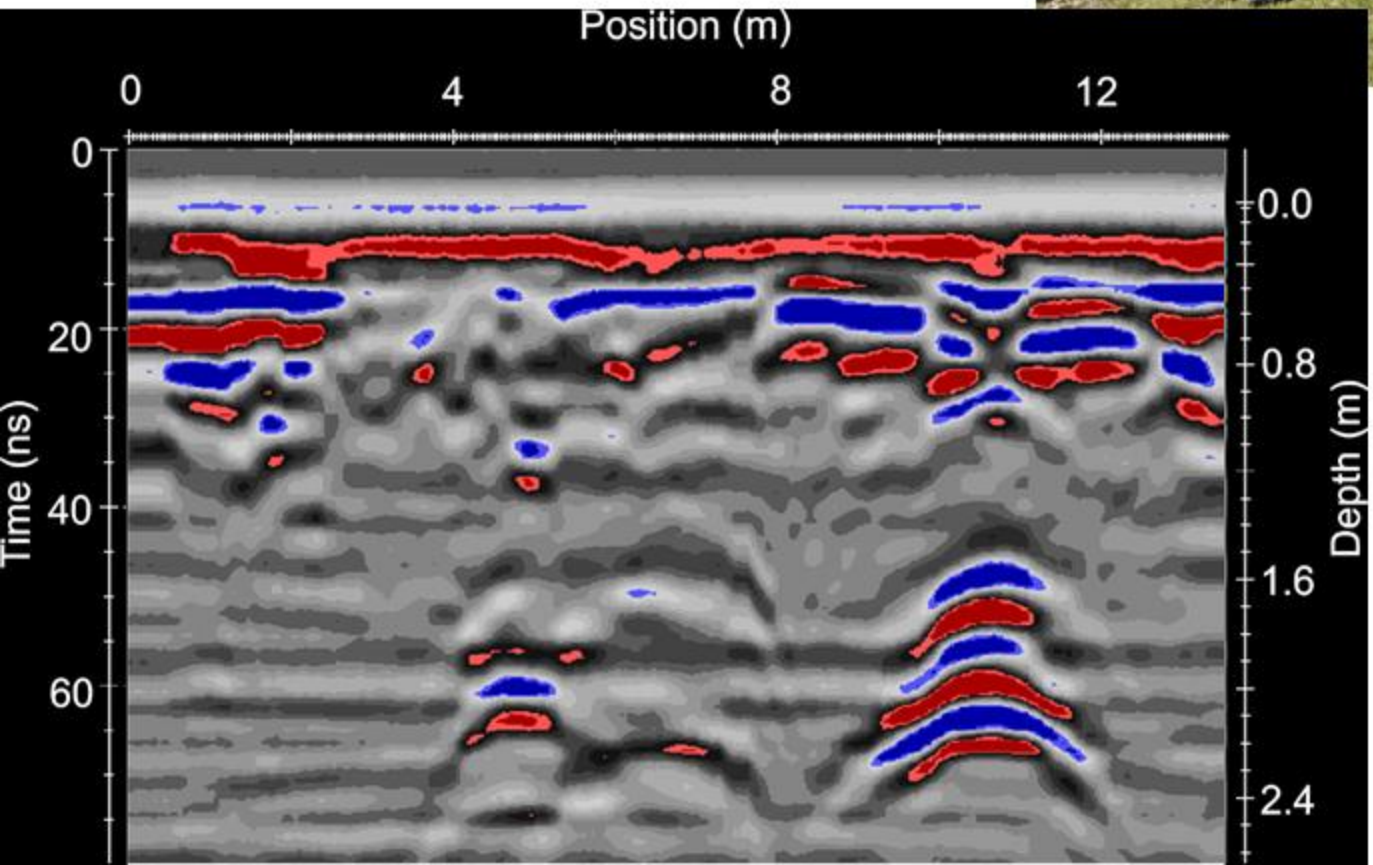
Lightning Ridge 25MHz Ground Penetrating Radar





Ground Penetrating Radar (GPR)

Define unmarked graves



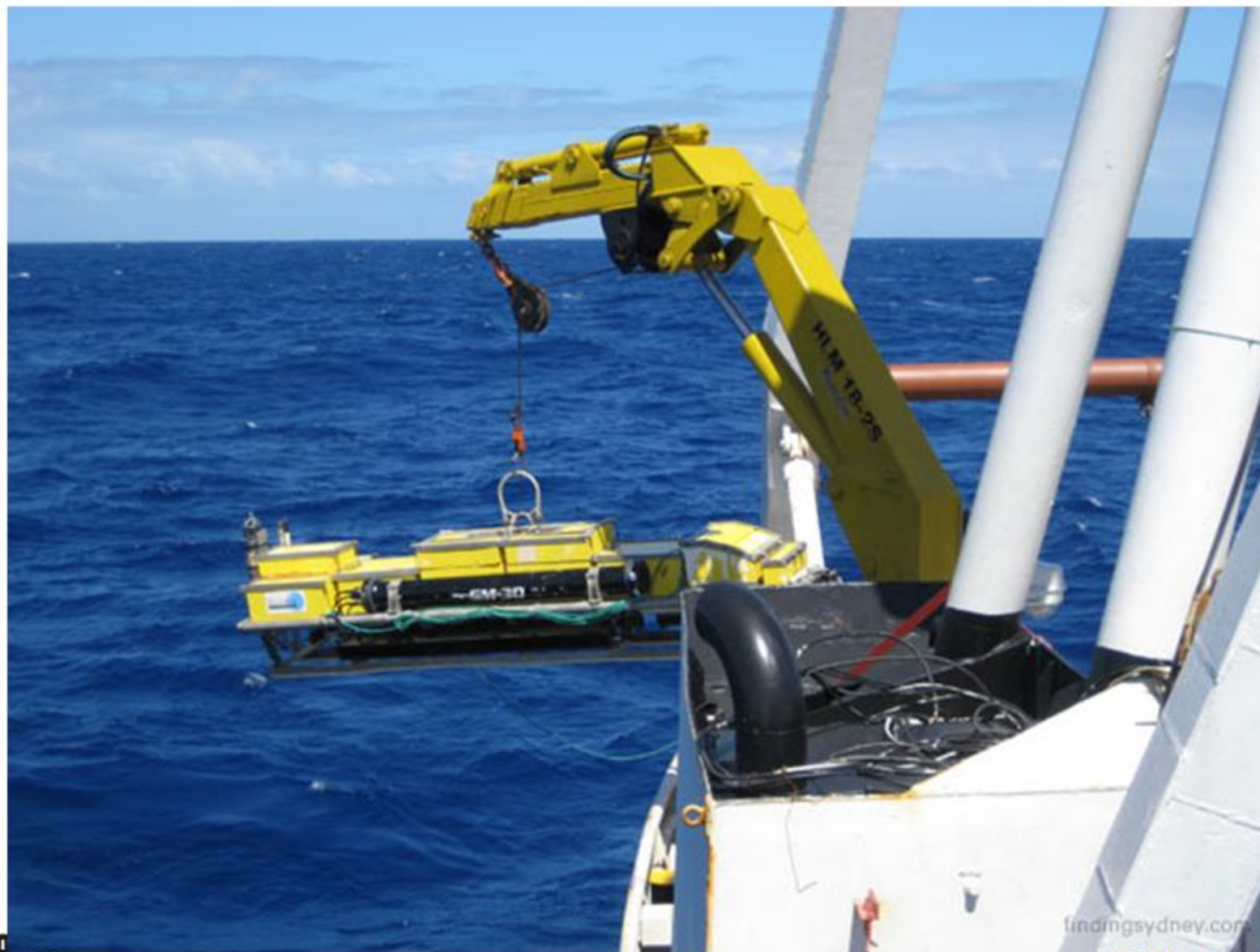
HMAS Sydney

Solving Australia's most enduring maritime tragedy



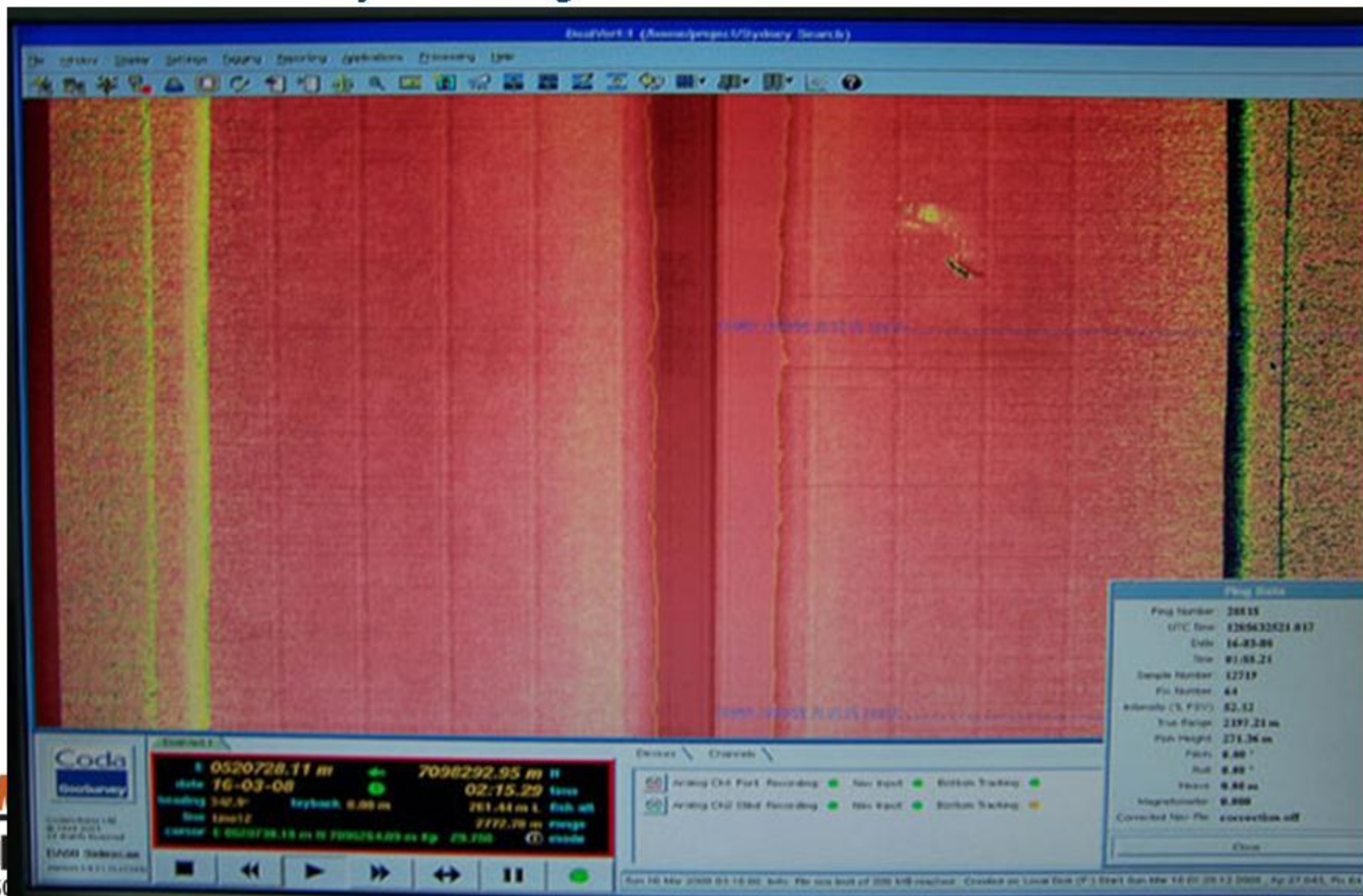
findingsydney.com

SM30 sonar towfish inboard

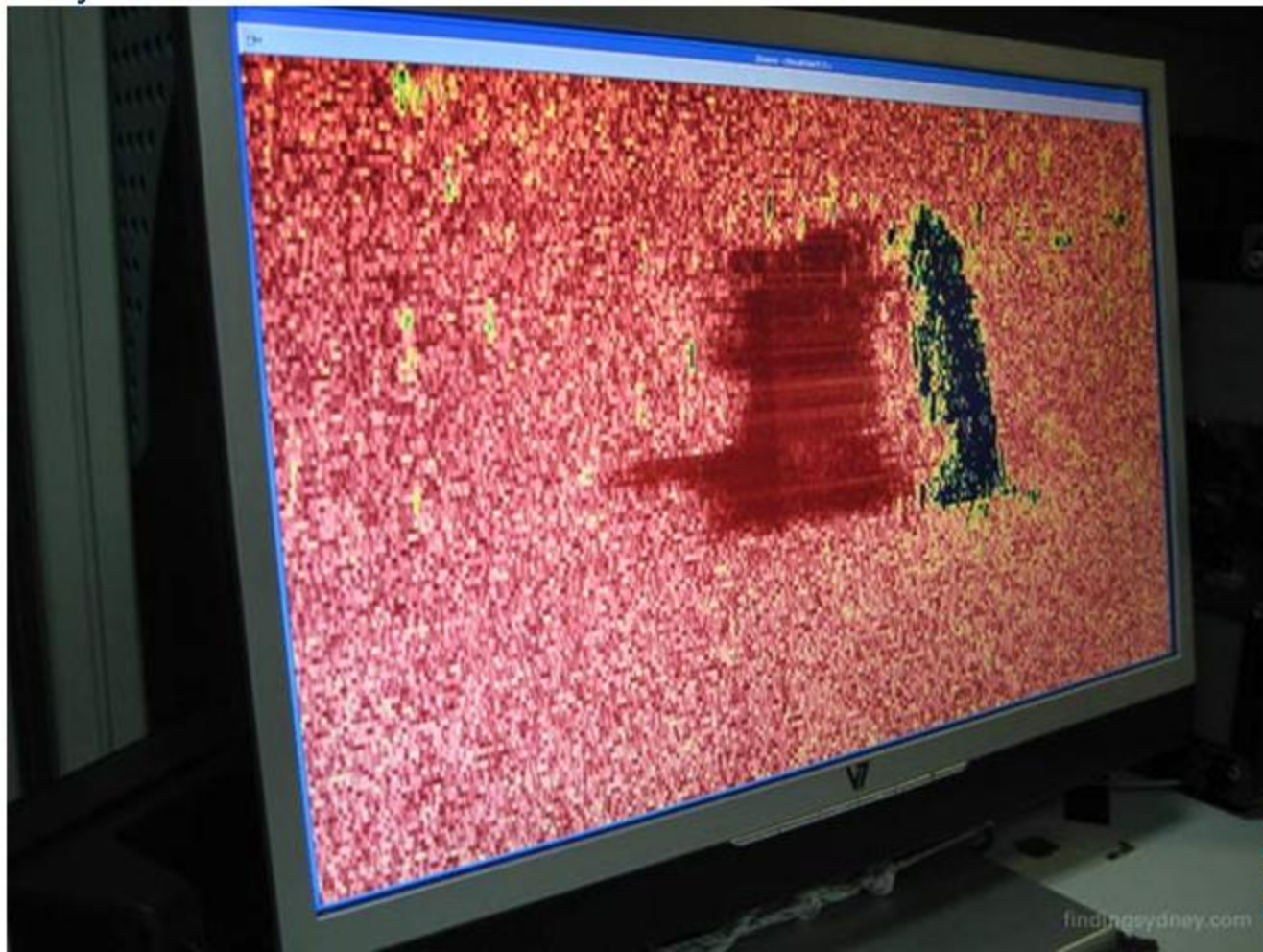


findingsydney.com

The wreck of Sydney as revealed for the first time in this wide swathe (6km) sonar image. The wreck is clearly visible on the starboard (right) channel adjacent to a well defined debris field. The height of the wreck above the seabed is causing the dark acoustic shadow just to the right of the wreck



Sydney Hull: This sonar image is a magnification of just the main hull from the third sonar track. The acoustic shadow to the left of the hull is used to help identify structures that have height. The tallest shadow could be being caused by Sydney's superstructure. Careful analysis and measurements of the hull length suggest that while the hull is sitting upright on the seabed and is largely intact, a portion of the bow could well have broken away and that this event was the trigger that finally caused Sydney to sink



The front of the gun housing of “X” turret, credited by the Germans with inflicting the mortal blow on Kormoran.





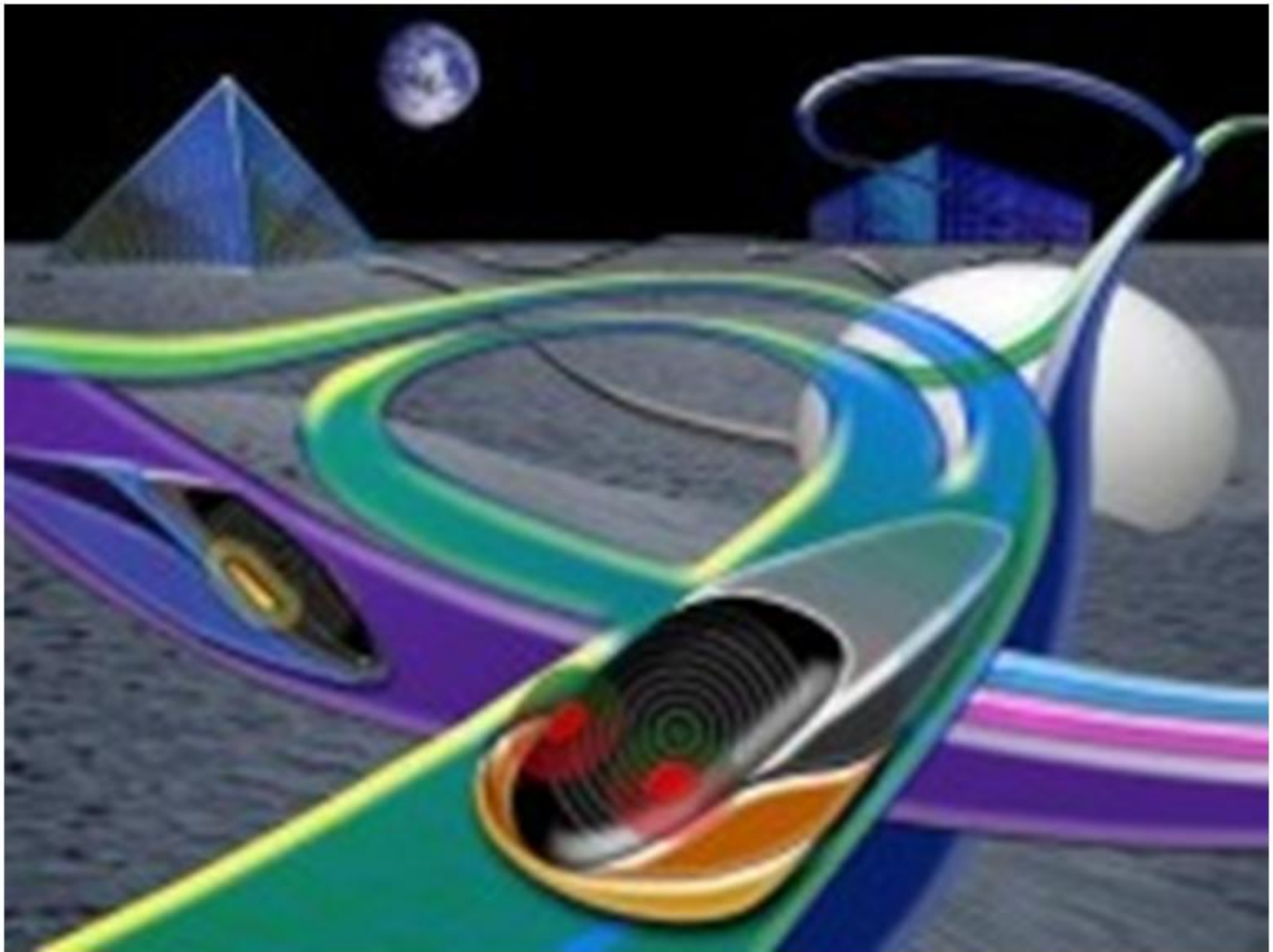
Visit? Hong Kong Disneyland











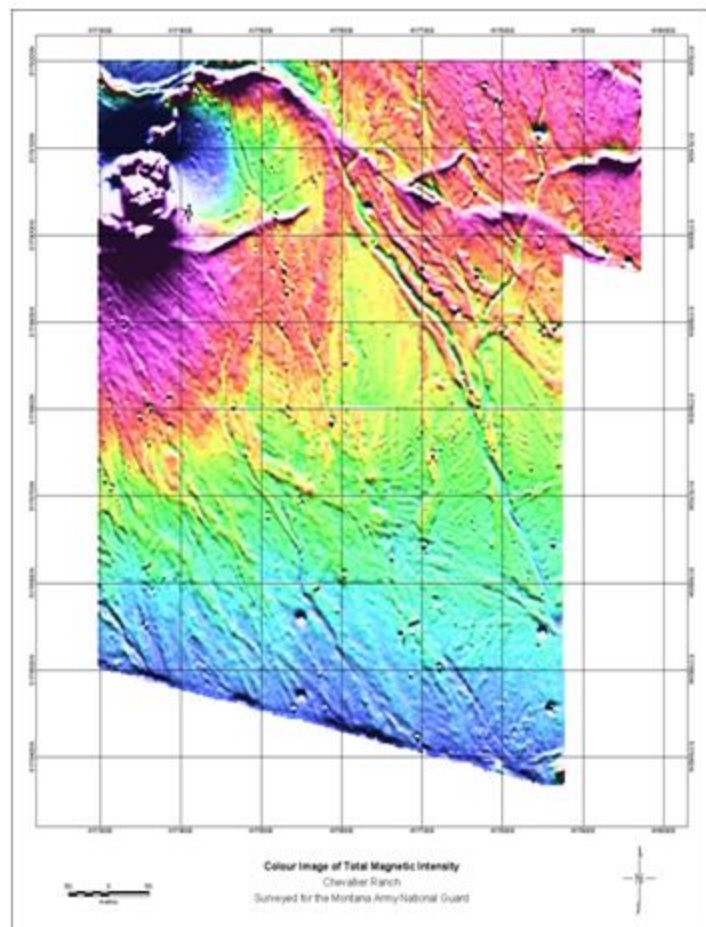
Planned expressway on the Moon

Acknowledgements

- Alpha Geoscience
- John Stanley
- Finding Sydney Foundation
- NASA



2.5m SAMPLE



1.0m SAMPLE

