

1963/165

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES
GEOLOGY AND GEOPHYSICS

RECORDS:

1963/165

NON-LENDING COPY

NOT TO BE REMOVED
FROM LIBRARY



011086

COMPILATION AND REVIEW OF THE GEOPHYSICS OF THE

BONAPARTE GULF BASIN

GRAVITY COMPILATION

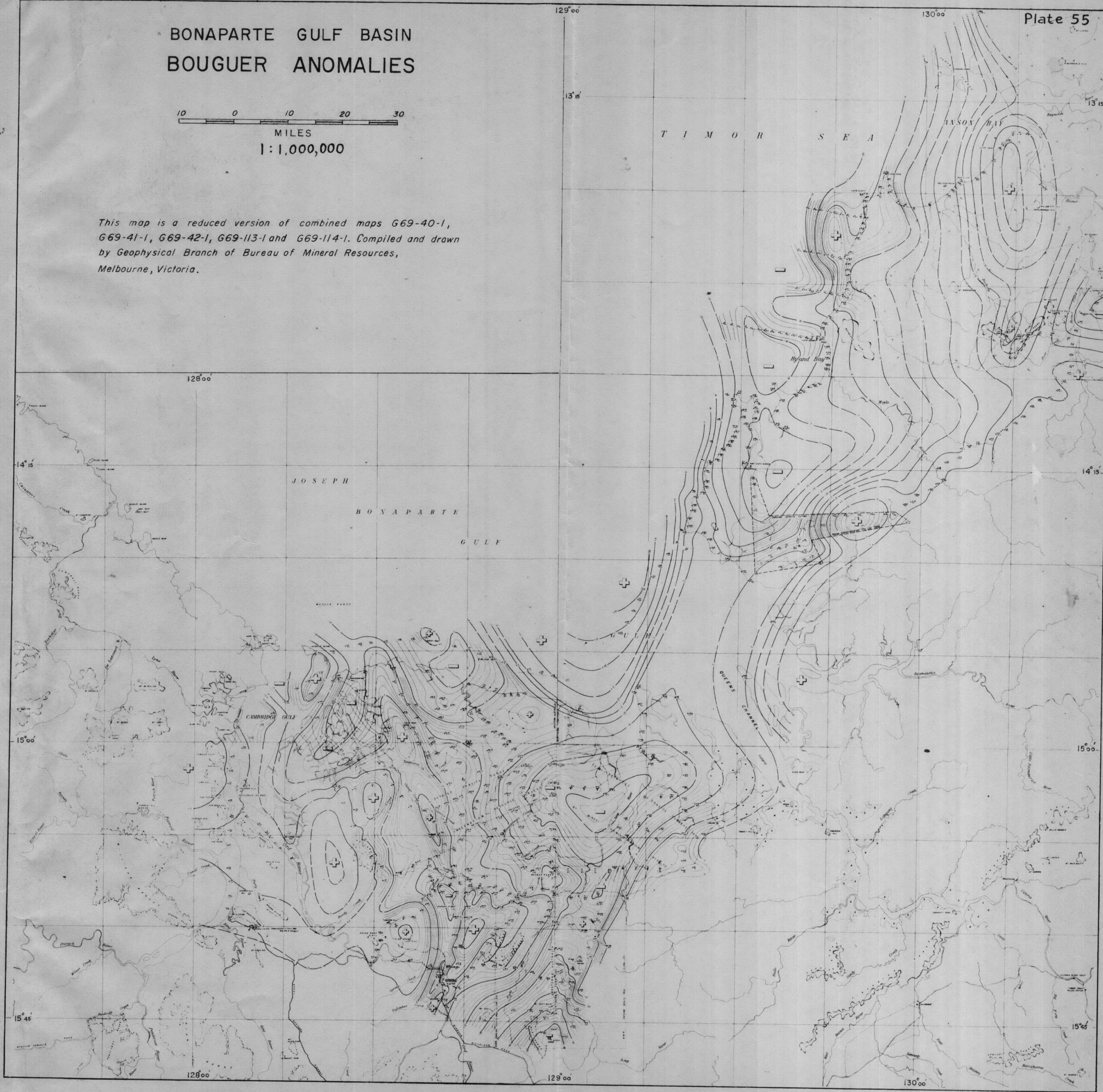
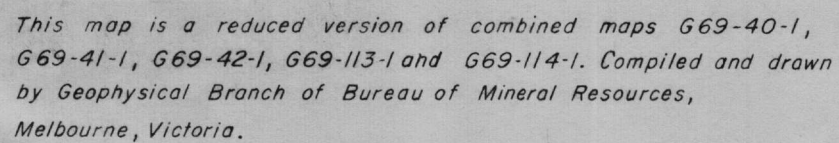
(Volume IV Part 3)

by

A. L. Bigg-Wither

PART 10
OF 11

The information contained in this report has been obtained by the Department of National Development, as part of the policy of the Commonwealth Government, to assist in the exploration and development of mineral resources. It may not be published in any form or used in a company prospectus without the permission in writing of the Director, Bureau of Mineral Resources, Geology and Geophysics.

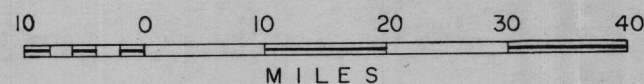


Bonaparte Gulf Basin

PRINCIPAL GRAVITY ANOMALIES

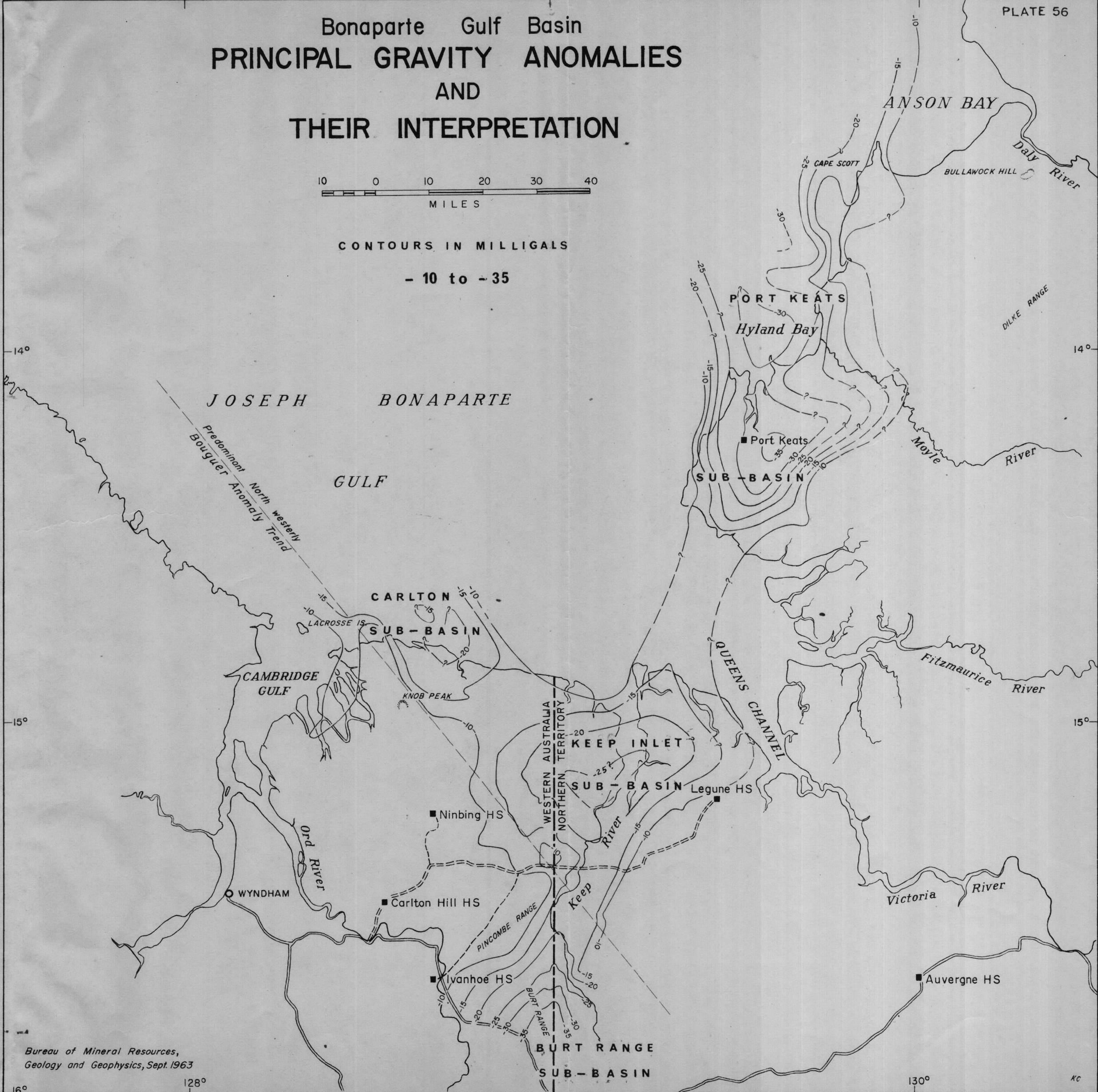
AND

THEIR INTERPRETATION



CONTOURS IN MILLIGALS

- 10 to - 35

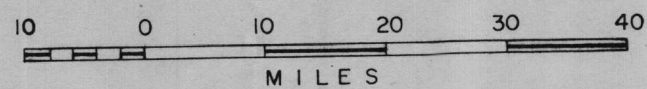


Bonaparte Gulf Basin

PRINCIPAL GRAVITY ANOMALIES

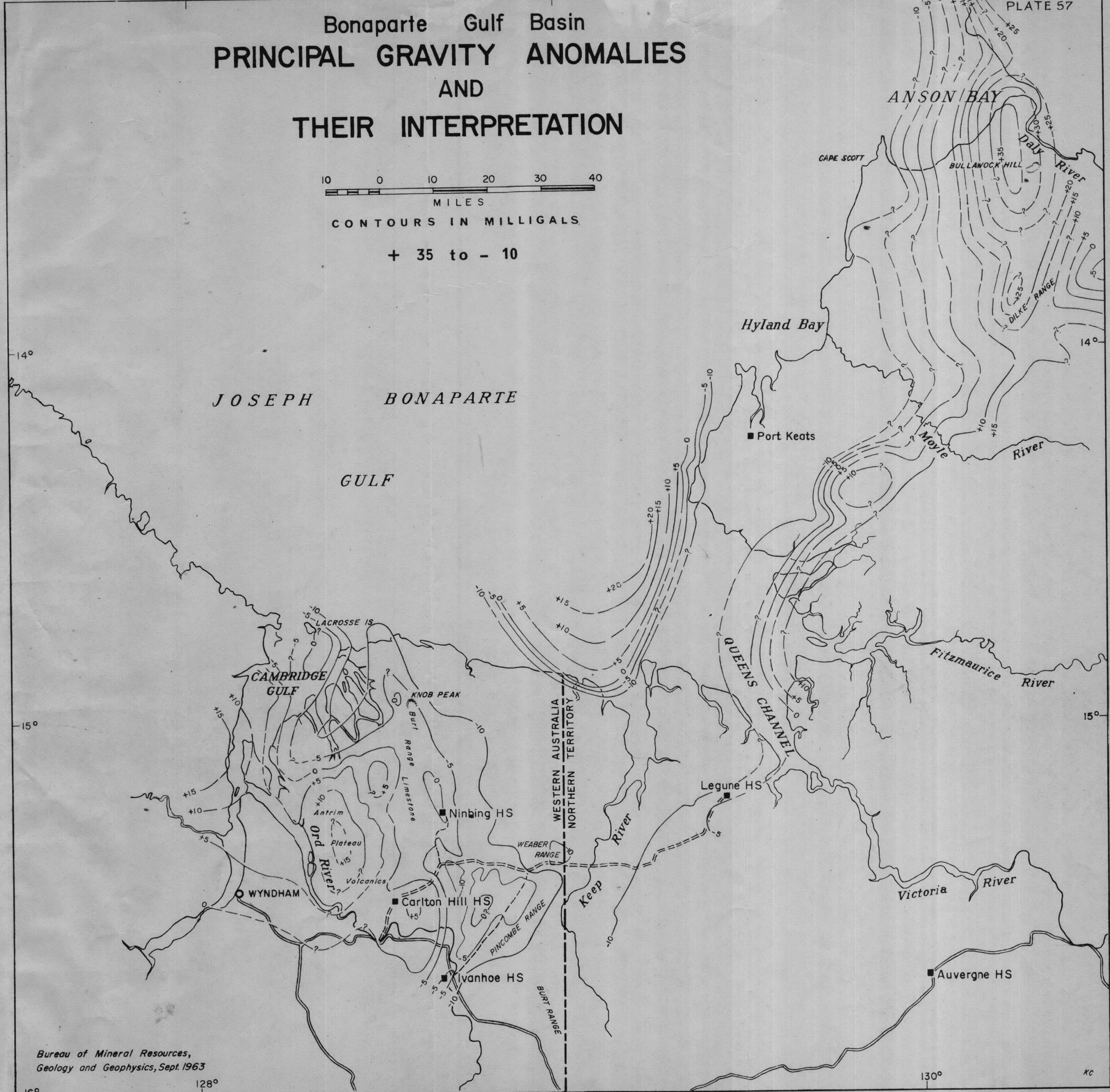
AND

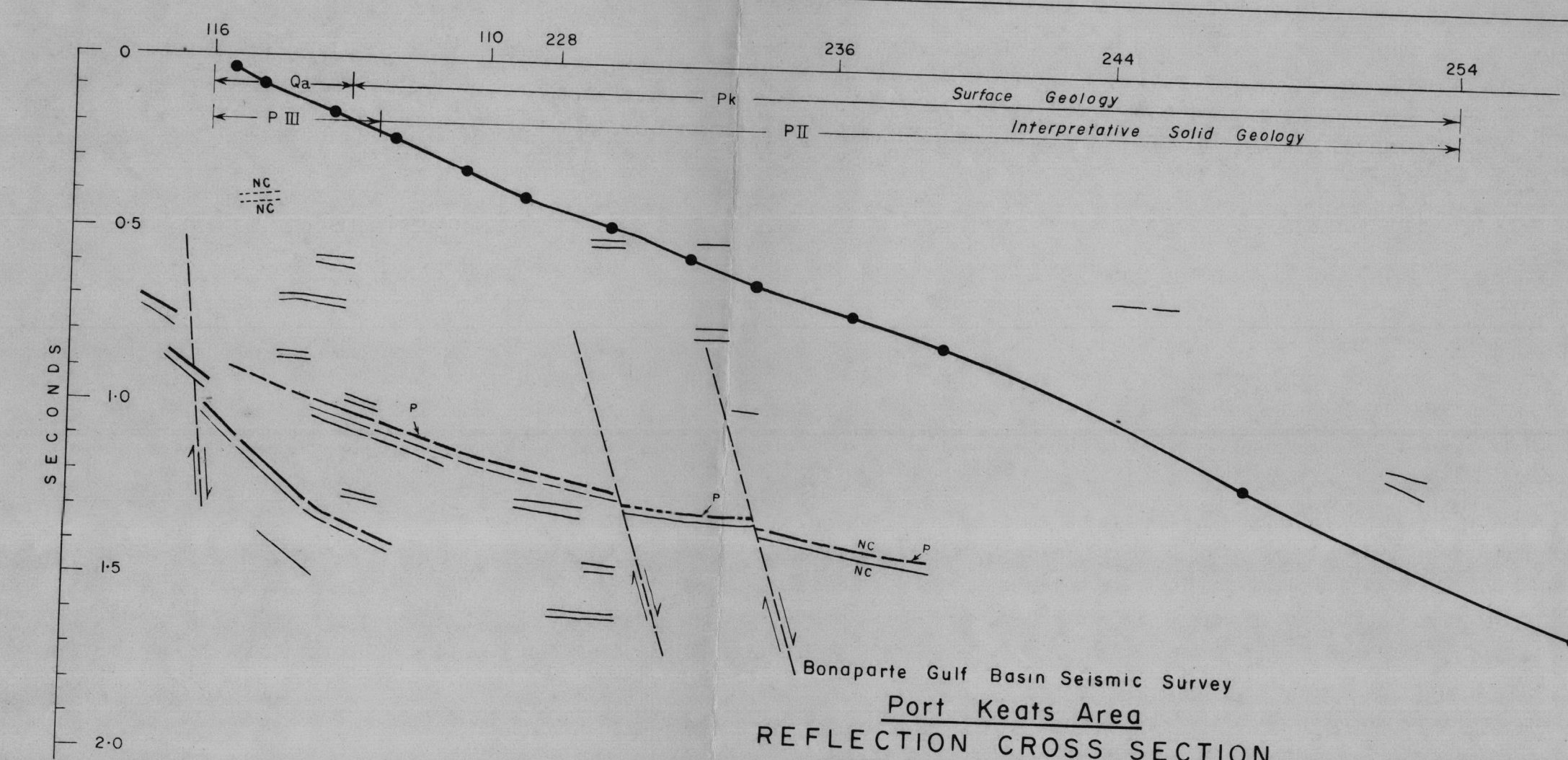
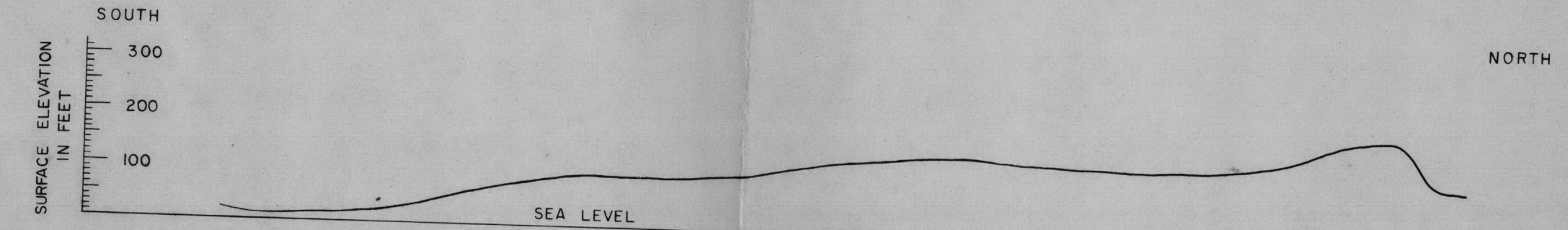
THEIR INTERPRETATION



CONTOURS IN MILLIGALS

+ 35 to - 10



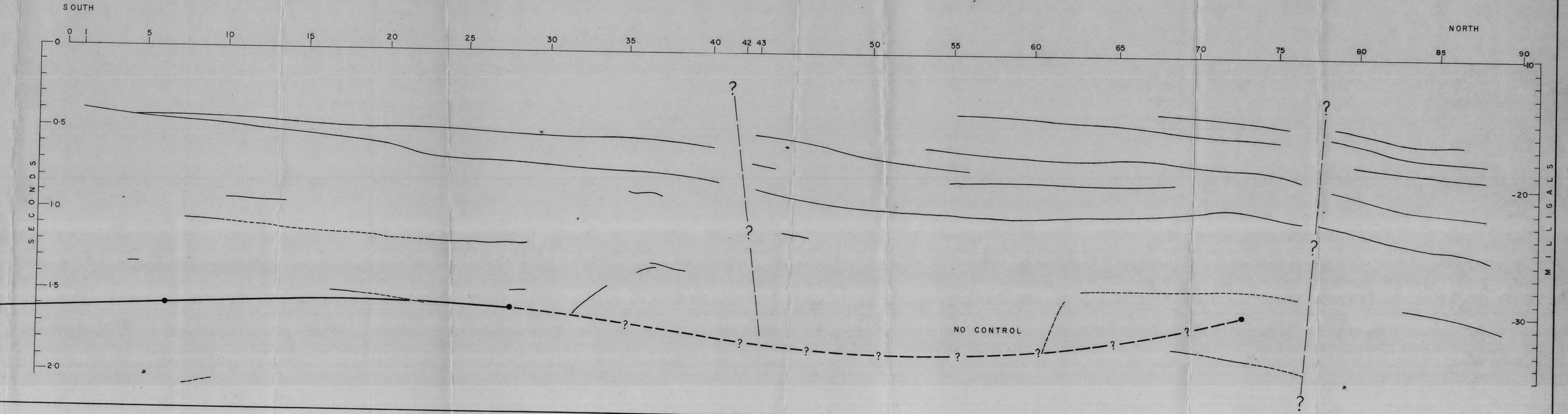


- REFERENCE**
- OBSERVED GRAVITY PROFILE
 - CALCULATED GRAVITY PROFILE
 - TRAVERSE WITH SHOT POINTS
 - SURFACE ELEVATION
 - GC GOOD CONTROL
 - FC FAIR CONTROL
 - PC POOR CONTROL
 - Qa QUATERNARY
 - PK PERMIAN PORT KEATS GROUP
 - P II PERMIAN FORMATION II
 - P III PERMIAN FORMATION III

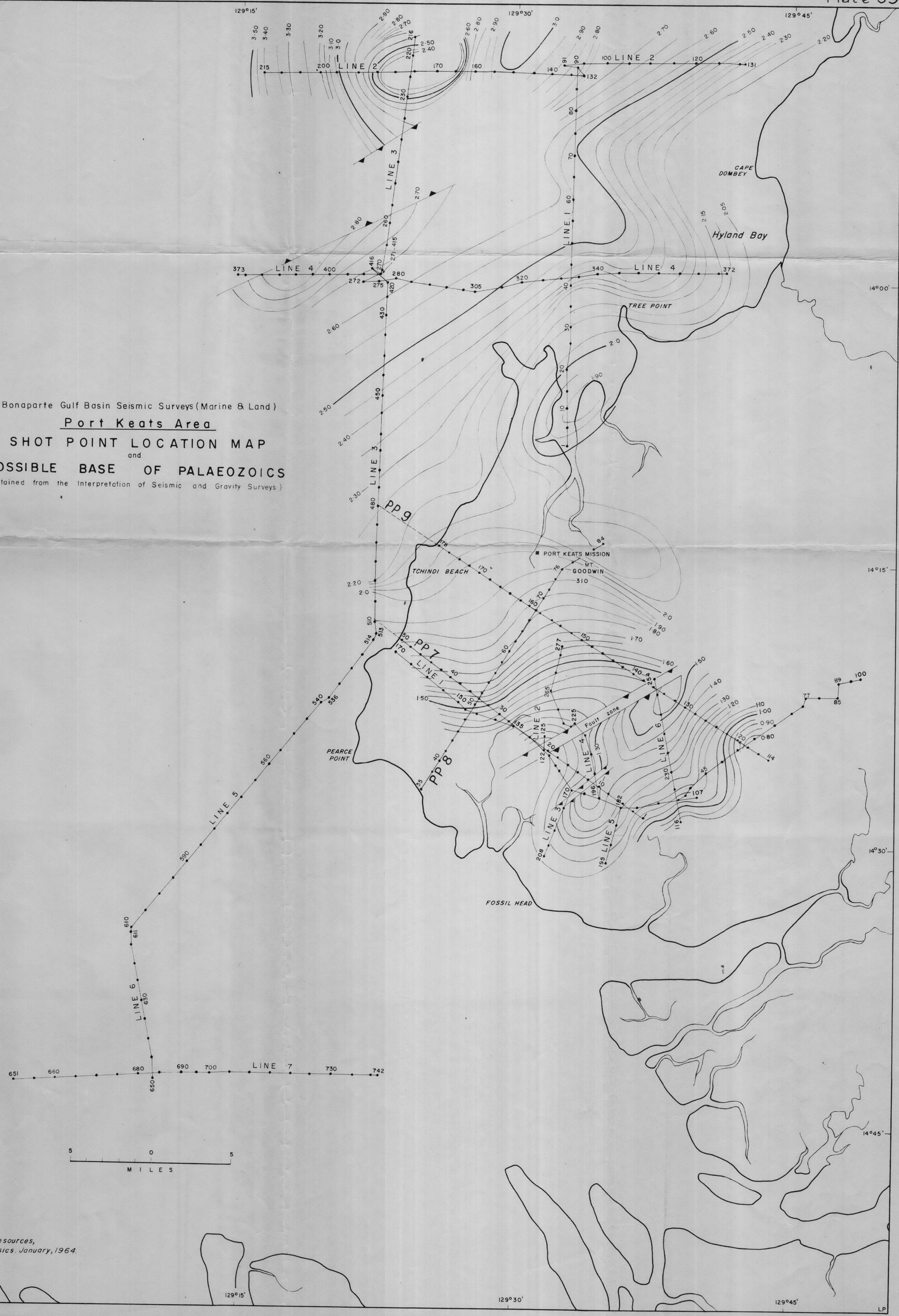
Bonaparte Gulf Basin Seismic Survey
Port Keats Area
REFLECTION CROSS SECTION
LINE 6, SHOT POINTS 116-254
WITH OBSERVED GRAVITY PROFILES

Bureau of Mineral Resources,
Geology and Geophysics, September, 1963

Bonaparte Gulf Basin Marine Seismic Survey
Port Keats Area
REFLECTION CROSS SECTION
LINE 1 SHOT POINTS 0-90
WITH OBSERVED AND CALCULATED GRAVITY PROFILES

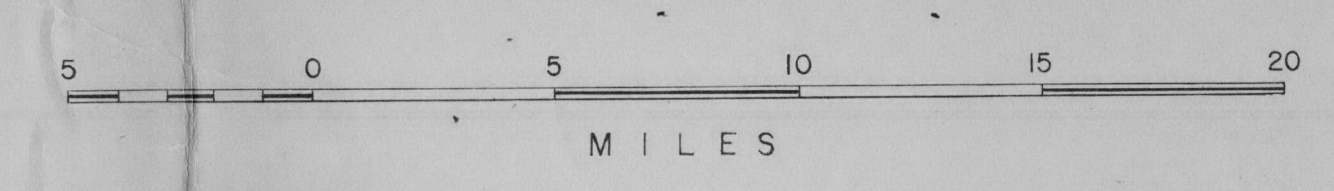


Bonaparte Gulf Basin Seismic Surveys (Marine & Land)
Port Keats Area
SHOT POINT LOCATION MAP
and
POSSIBLE BASE OF PALAEOZOICS
(Obtained from the Interpretation of Seismic and Gravity Surveys)



BONAPARTE GULF BASIN

TOTAL AEROMAGNETIC INTENSITIES



- | | | | | | |
|--|---------------------|--|-----------------------------|--|-----------------------------------|
| | Built-up area | | River or creek | | Magnetic contours |
| | Homestead | | Hill feature | | Magnetic low |
| | Highway | | Swamp | | Contour/Flight-line intersections |
| | Secondary road | | Mine | | |
| | Minor road or track | | Aerodrome or landing ground | | |

This map was compiled from an Airborne survey of the Bonaparte Gulf sedimentary basin, carried out by the Bureau of Mineral Resources in 1958. Individual 1/250 000 sheets are available from the Geophysical Branch, Melbourne.

The total magnetic intensity was recorded by an airborne magnetometer in a D.C. aircraft flown at an altitude of 1500 feet above sea level. The data have been corrected for a regional gradient of 10.5 gammas per mile in a direction south.

Elevation control by Department of Interior.

Projection Transverse Mercator, Australia Series, Zones 3 and 4
Control and detail after National Mapping 1960 provisional 4-mile planimetric map.

- | | |
|--|-----------------------------------|
| | Geological boundary |
| | Cambrian volcanics |
| | Approximate graben boundary |
| | Probable edge of Palaeozoic basin |
| | Approximate limits of survey |
| | Spot depths |
| | +2,770' |

Bureau of Mineral Resources, Geology and Geophysics, June, 1963.

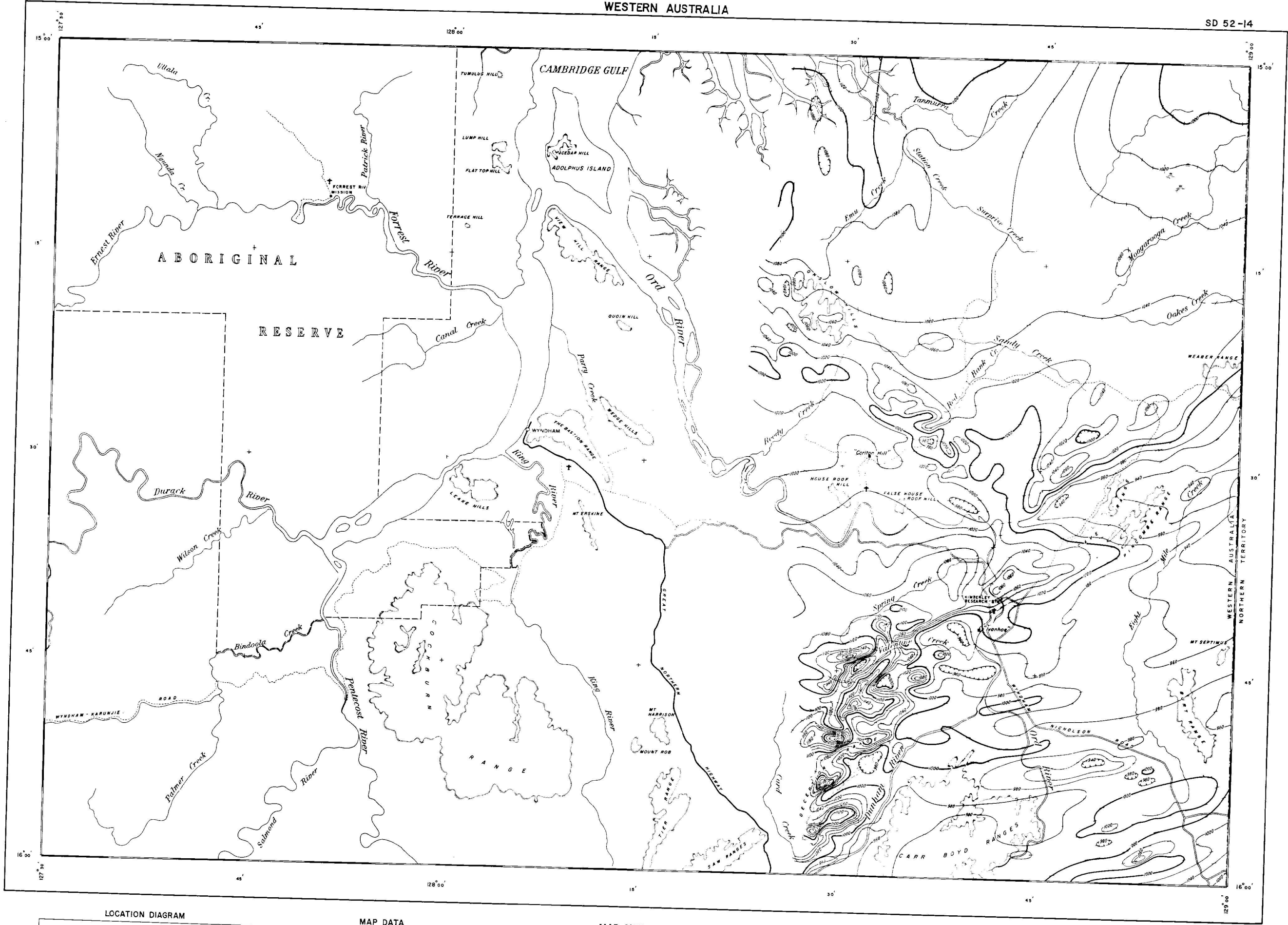




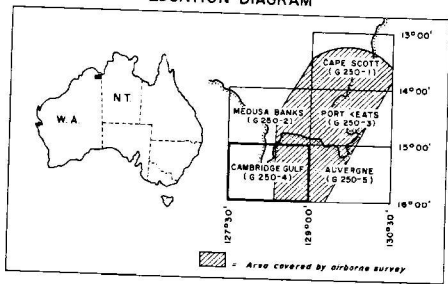
AUSTRALIA 1: 500,000

CAMBRIDGE GULF WESTERN AUSTRALIA

SD 52-14



LOCATION DIAGRAM



DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS
COMPILED AND DRAWN IN THE GEOPHYSICAL BRANCH, MELBOURNE

MAP DATA

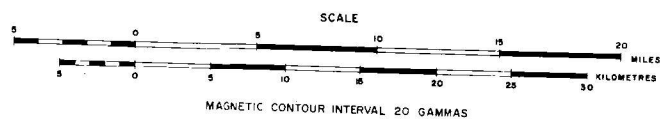
PROJECTION:
Transverse Mercator, Australia Series.

CONTROL & DETAIL:
Planimetric detail based on Royal Australian Survey Corps 1:250,000 Topographic Series map of the same name.

RELIABILITY:
Planimetric detail: Accurate
Flight lines: Accuracy is generally within 100 yards.

MAP SHOWING

TOTAL MAGNETIC INTENSITY MEASURED BY AIRBORNE MAGNETOMETER



LEGEND

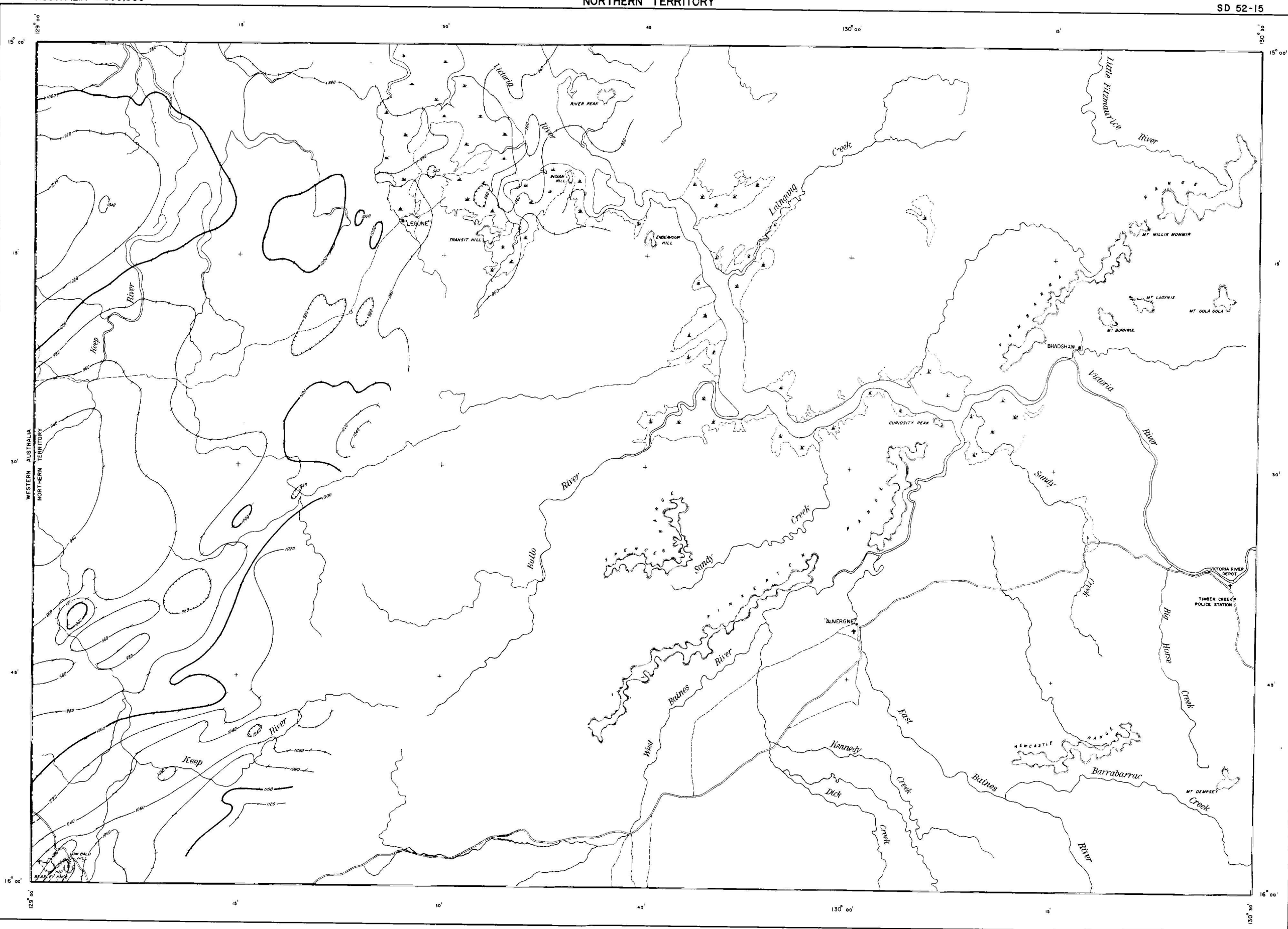
- | TOPOGRAPHICAL DATA | MAGNETIC DATA |
|-------------------------------|-------------------------------------|
| — River or Creek | — Magnetic contours |
| — Highway or Main road | — Magnetic "Low" |
| — Secondary road | — Contour/Flight-line intersections |
| — Road or Track | |
| ○ Named place | |
| ■ Homestead | |
| ▲ Hill feature | |
| — Swamp | |
| ✕ Mine | |
| ✕ Aerodrome or Landing ground | |

EXPLANATORY NOTES

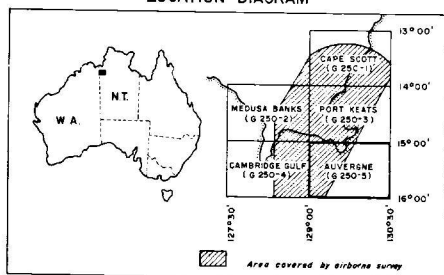
This map was compiled from an airborne survey of the Bonaparte Gulf sedimentary basin carried out by the Bureau of Mineral Resources in 1956. The object of the survey was to delineate magnetic anomalies indicating the depth and principal structural features of the basin.

The total magnetic intensity was recorded by an airborne magnetometer in a DC3 aircraft flown at an altitude of 1500 feet above sea level. The height of the aircraft was controlled through a radio altimeter. A Shoran navigation system was used to control a flight line spacing of one mile. The lines were flown in a series of arcs about selected ground control beacons.

The data have been corrected for a regional gradient of 10.5 gammas per mile in a direction south.



LOCATION DIAGRAM



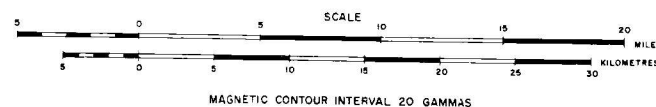
MAP DATA

PROJECTION :
Transverse Mercator, Australia Series

CONTROL & DETAIL :
Planimetric detail based on Division of National Mapping's 4-mile Topographic Series map of the same name.

RELIABILITY :
Planimetric detail: Accurate.
Flight lines: Accuracy is generally within 100 yards.

MAP SHOWING

TOTAL MAGNETIC INTENSITY
MEASURED BY AIRBORNE MAGNETOMETER

LEGEND

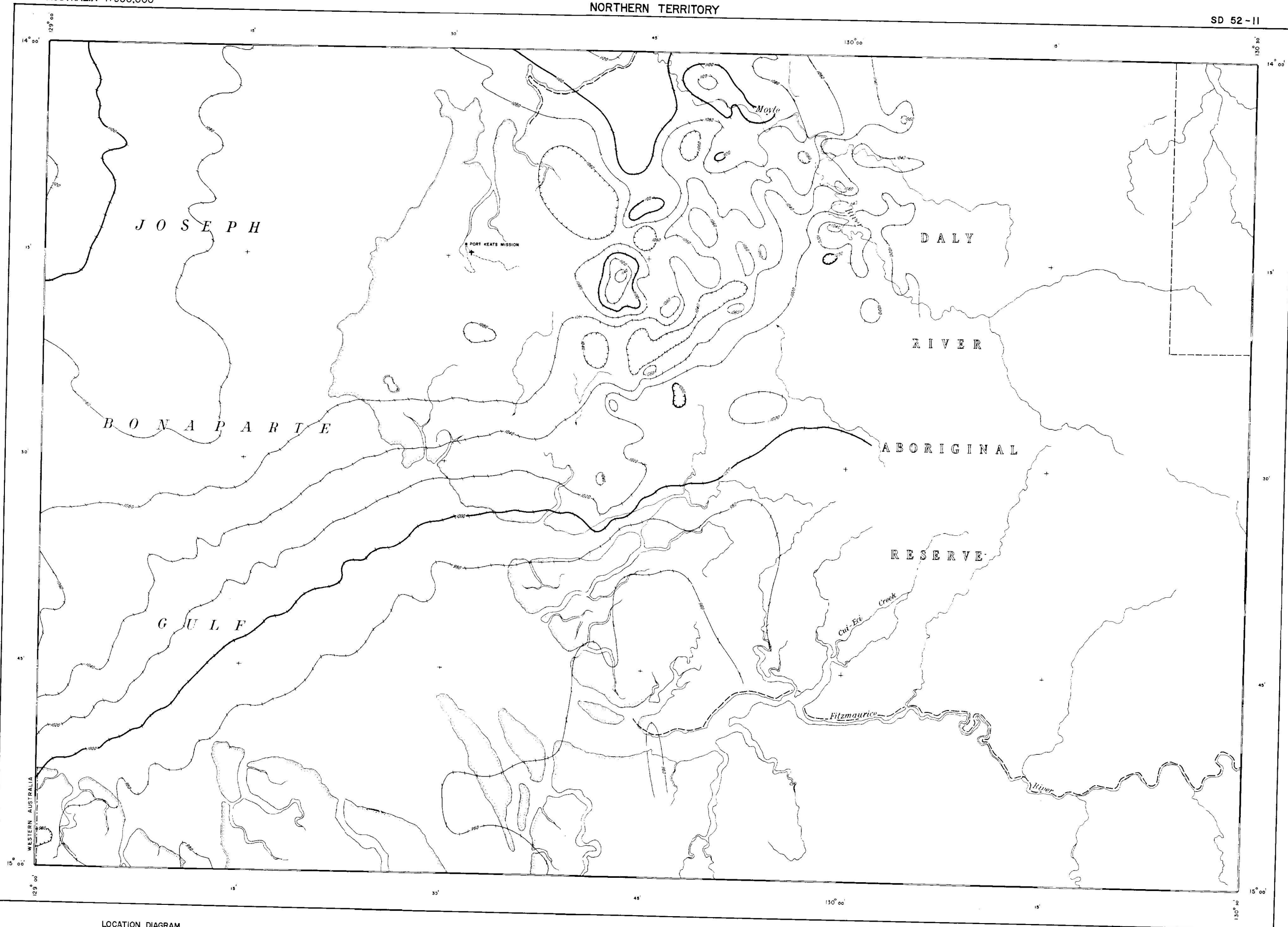
- | TOPOGRAPHICAL DATA | MAGNETIC DATA |
|-----------------------------|-------------------------------------|
| River or Creek | Magnetic contour |
| Highway Main road | Magnetic "Low" |
| Secondary road | Contour / Flight-line intersections |
| Road or Track | |
| Named place | |
| Homestead | |
| Hill feature | |
| Swamp | |
| Mine | |
| Aerodrome or Landing ground | |

EXPLANATORY NOTES

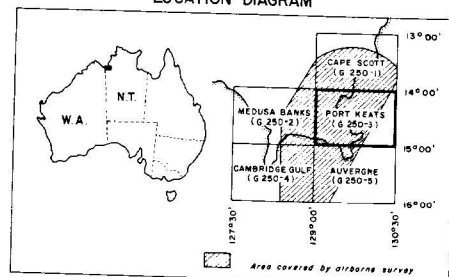
This map was compiled from an airborne survey of the Bonaparte Gulf sedimentary basin carried out by the Bureau of Mineral Resources in 1958. The object of the survey was to delineate magnetic anomalies indicating the depth and principal structural features of the basin.

The total magnetic intensity was recorded by an airborne magnetometer in a DC-3 aircraft flown at an altitude of 1500 feet above sea level. The height of the aircraft was controlled through a radio altimeter. A Stereonavigation system was used to control a flight line spacing of one mile. The lines were flown in a series of arcs about selected ground control beacons.

The data have been corrected for a regional gradient of 10.5 gammas per mile in a direction south.



LOCATION DIAGRAM



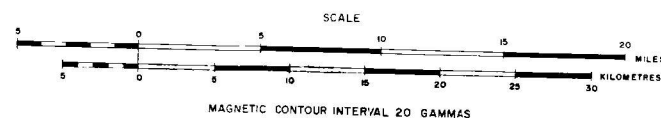
MAP DATA

PROJECTION:
Transverse Mercator, Australia Series.

CONTROL & DETAIL:
Planimetric detail based on Division of National Mapping's 4-mile Topographic Series map of the same name.

RELIABILITY:
Planimetric detail: Accurate.
Flight lines: Accuracy is generally within 100 yards.

MAP SHOWING

TOTAL MAGNETIC INTENSITY
MEASURED BY AIRBORNE MAGNETOMETER

LEGEND

TOPOGRAPHICAL DATA

- River or Creek
- Highway or Main road
- Secondary road
- Road or Track
- Named place
- Homestead
- Hill feature
- Swamp
- Mine
- Aerodrome or Landing ground

MAGNETIC DATA

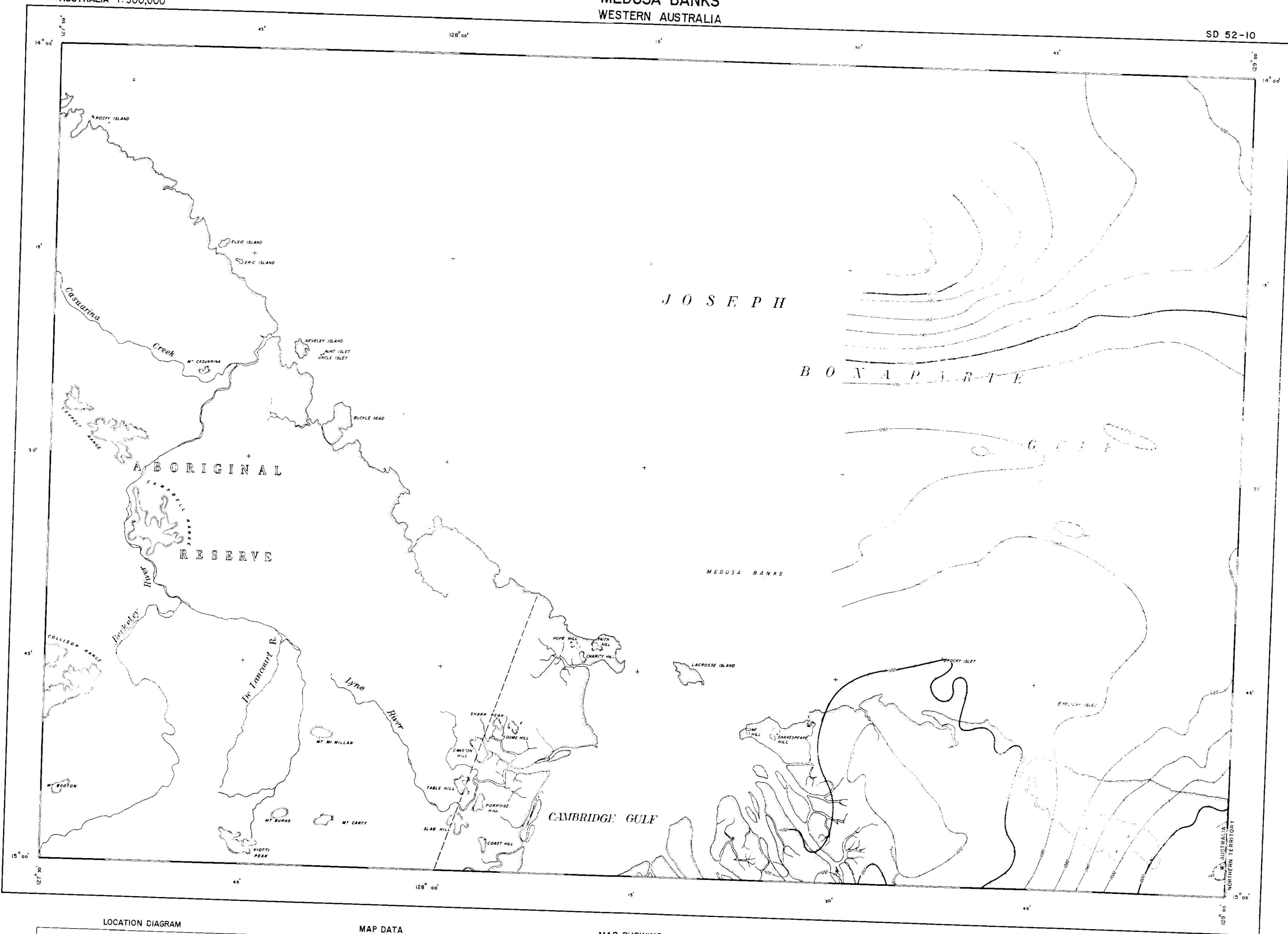
- Magnetic contours
- Magnetic "Low"
- Contour/Flight-line intersections

EXPLANATORY NOTES

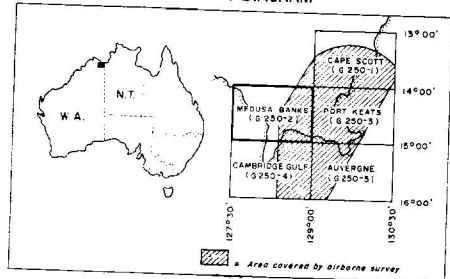
This map was compiled from an airborne survey of the Bonaparte Gulf sedimentary basin carried out by the Bureau of Mineral Resources in 1958. The object of the survey was to delineate magnetic anomalies indicating the depth and principal structural features of the basin.

The total magnetic intensity was recorded by an airborne magnetometer in a DC3 aircraft flown at an altitude of 1500 feet above sea level. The height of the aircraft was controlled through a radio altimeter. A Shoran navigation system was used to control a flight line spacing of one mile. The lines were flown in a series of arcs about selected ground control beacons.

The data have been corrected for a regional gradient of 10.5 gammas per mile in a direction south.



LOCATION DIAGRAM



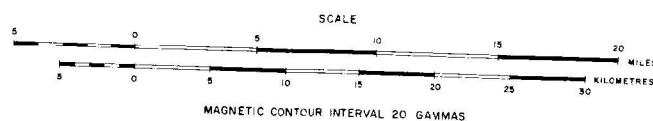
MAP DATA

PROJECTION:
Transverse Mercator, Australia Series.

CONTROL & DETAIL:
Planimetric detail based on Royal Australian Survey Corps 1:250,000 Topographic Series map of the same name.

RELIABILITY:
Planimetric detail: Accurate.
Flight lines: Accuracy is generally within 100 yards.

MAP SHOWING

TOTAL MAGNETIC INTENSITY
MEASURED BY AIRBORNE MAGNETOMETER

LEGEND

TOPOGRAPHICAL DATA

- River or Creek
- Highway or Main road
- Secondary road
- Road or Track
- Named place
- Homestead
- Hill feature
- Swamp
- Mine
- Aerodrome or Landing ground

MAGNETIC DATA

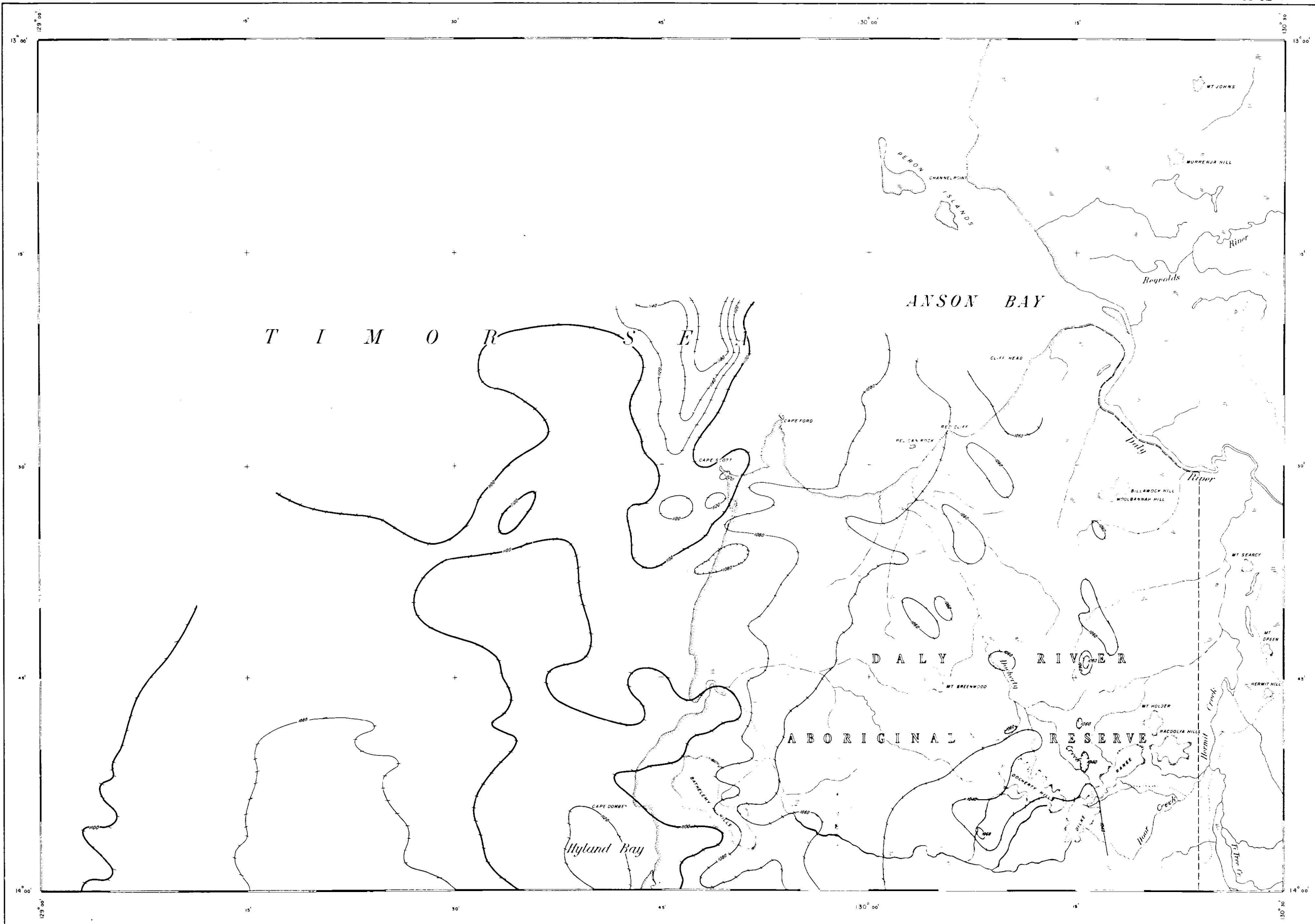
- Magnetic contours
- Magnetic "Low"
- Contour/Flight-line intersections

EXPLANATORY NOTES

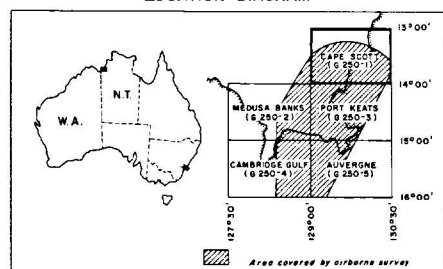
This map was compiled from an airborne survey of the Bonaparte Gulf sedimentary basin carried out by the Bureau of Mineral Resources in 1958. The object of the survey was to delineate magnetic anomalies indicating the depth and principal structural features of the basin.

The total magnetic intensity was recorded by an airborne magnetometer in a DC-3 aircraft flown at an altitude of 1500 feet above sea level. The height of the aircraft was controlled through a radio altimeter. A Sparan navigation system was used to control a flight line spacing of one mile. The lines were flown in a series of arcs about selected ground control beacons.

The data have been corrected for a regional gradient of 10.5 gammas per mile in a direction south.



LOCATION DIAGRAM



DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES GEOLOGY AND GEOPHYSICS
COMPILED AND DRAWN IN THE GEOPHYSICAL BRANCH, MELBOURNE

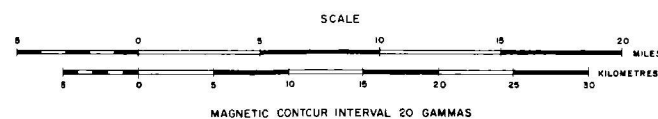
MAP DATA

PROJECTION
Transverse Mercator, Australia
Series.

CONTROL & DETAIL:
Planimetric detail based on Division
of National Mappings 4-mile Topo-
graphic Series map of the same name.

RELIABILITY:
Planimetric detail: Accurate.
Flight lines: Accuracy is generally
within 100 yards.

MAP SHOWING

TOTAL MAGNETIC INTENSITY
MEASURED BY AIRBORNE MAGNETOMETER

LEGEND

TOPOGRAPHICAL DATA

- River or Creek
- Highway or Main road
- Secondary road
- Road or Track
- Named place
- Homestead
- Hill feature
- Swamp
- ✱ Mine
- † Aerodrome or Landing ground

MAGNETIC DATA

- Magnetic contours
- Magnetic "Low"
- Contour/Flight-line intersections

EXPLANATORY NOTES

This map was compiled from an airborne survey of the Bonaparte Gulf sedimentary basin carried out by the Bureau of Mineral Resources in 1958. The object of the survey was to delineate magnetic anomalies indicating the depth and principal structural features of the basin.

The total magnetic intensity was recorded by an airborne magnetometer in a DC3 aircraft flown at an altitude of 1500 feet above sea level. The height of the aircraft was controlled through a radio altimeter. A Shoran navigation system was used to control a flight line spacing of one mile. The lines were flown in a series of arcs about selected ground control beacons.

The data have been corrected for a regional gradient of 10.5 gammas per mile in a direction south.