COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS.

RECORDS

RECORDS 1960 No. 47

BARAGWANATH ANTICLINE, PRELIMINARY REPORT OF GRAVITY SURVEY, VICTORIA 1958

by

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(**Plate Nos.** G39-69, G39-68, G39-70)

ABSTRACT.

A gravity survey carried out by the Bureau of Mineral Resources, Geology and Geophysics in the area of the Baragwanath Anticline, Gippsland, Victoria, early in 1958, is described.

The result of this and earlier work indicates that the Baragwanath Anticline is a relatively complex feature.

A zone of steep gravity gradients of east-west strike south of the Latrobe River is related to the Rosedale Fault.

On the southern limb of the Baragwanath Anticline the Won Wron Monocline is expressed by more widely spaced gravity contours. In the Coolun-Goolun Coalfield the contours of the top of the brown-coal seam follow the gravity anomaly contours closely.

Gravity data suggest the existence of a fault block tilting down to the south and bounded to the north by a major fault.

1. INTRODUCTION.

Gravity surveys have been conducted in the Latrobe Valley of Gippsland, Victoria, over a number of years in order to investigate the structure of brown coal measures (Thyer, 1944; Thyer and Williams, 1948; Neumann, 1951).

More recent detailed gravity work was carried out by the Bureau of Mineral Resources, Geology and Geophysics in the area southeast of Rosedale. This investigation was in response to a request by the State Electricity Commission of Victoria for the purpose of delineating more accurately Bouguer anomalies, which had been outlined by earlier, less detailed surveys.

The 1958 work described in this report covers a portion of the Baragwanath Anticline over an area extending six miles south of the Rosedale-Longford road and thirteen miles southeast of the township of Rosedale.

One hundred and thirty three gravity stations were pegged about a quarter of a mile apart along roads and tracks with linking traverses along lines cut through dense bush.

The Latrobe River Valley terminates the surveyed area to the north. South of this valley timbered slopes rise fairly steeply to higher elevations stretching from the Willung-Rosedale road eastwards to Holey Hill Trigonometrical Station, where the elevation is 717 feet. Further south is the narrow valley of Merriman's Creek which broadens to the southeast. To the southwest the surface rises steeply to more than twelve hundred feet a few miles northeast of Carrajung.

2. CONDUCT OF FIELD WORK.

A. Surveying.

Pegging, levelling and surveying of gravity station locations was arranged by the State Electricity Commission of Victoria, Brown Coal Investigation Branch, Traralgon. In preparing a topographic base for the gravity contour map (Plate 2) a gravity station plan was used, which had been supplied by the Brown Coal Investigation Branch.

B. Geophysical Work.

Gravity readings were taken in the field by R. Underwood, Geophysicist, assisted by one University vacation student, during the period from 8th. January to 2nd. February, 1958. Within this period gravity work was also conducted in the area south of Tyers township.

Many of the stations occupied could be reached by Landrover but much of the fieldwork had to be done by walking from station to station as the ground is swampy in places, heavily overgrown and difficult of access. Boundary fences are frequently interposed.

The aluminium tripod used with the gravity meter was placed directly on the ground. Trees were avoided as it was found that the beam of the meter would not settle for several minutes, probably due to the transmission of microseismic vibrations in the unconsolidated sediments. Much time was required for taking the readings. On a few occasions it was necessary to estimate the average null position of the beam rather than accurately determine it. Time drift of the instrument was controlled by reoccupation of base and sub-base stations at intervals of approximately one hour and by plotting of drift curves.

Worden type gravity meter number 61 was used throughout the survey. This instrument was evacuated to a few millimeters of mercury and calibrated between Kallista and Brenock Park gravity stations near Melbourne before and after the survey. An average sensitivity of 0.08896 milligals per scale division was determined.

The 1958 survey was tied to stations occupied during earlier surveys in the area.

3. DISCUSSION OF RESULTS.

The results of the survey are represented - as usual - in the form of a gravity contour plan, which is shown on Plate 2 of this report. The gravity picture shows significant features, dealt with below:-

(a) the overall Bouguer anomaly pattern is one of a broad but rather complex gravity "high", which is closed at the eastern end and contains several closed "highs" of minor magnitude referred to below.

(b) within this main gravity "high" are two parallel lobe-type features of higher gravity intensity south of Rosedale and north of Merriman's Creek valley with axes trending northeast.

Another closed "high" occurs at one and a half mile distance north of Holey Hill Trigonometrical Station. Yet another isolated "high" is immediately west of the South Gippsland Highway in the area southwest of Longford.

(c) A distinct zone of steep gravity gradients is expressed by relatively narrow spacing of the contours parallel to and south of the Latrobe River This zone extends westerly to a point a few miles west of Rosedale where after the contours bend to a south-westerly direction. The uniformity of this zone of steep gravity gradients is somewhat disturbed by a widening of the spacing between the contours and a southerly swing out of the lines at points approximately six and twelve miles respectively east of Rosedale.

(d) Immediately north of the zone of steep gradients referred to under (c) is an extensive gravity "low", which is broadening to the east and includes two separate closed "lows" one of them centering south of Rosedale township and the other one west of Longford.

(e) On the south-eastern limb of the main gravity "high" referred to under (a) the contours are more widely spaced and follow in general a north east trend. The values of the Bouguer anomalies are gradually decreasing in a south easterly direction over the south east portion of the contour plan (Plate 2).

4. INTERPRETATION OF RESULTS.

A. Rock Densities.

The information available on the densities of type-rocks, which occur in the area investigated are of basic value in connection with the interpretation of gravity anomalies.

The geology of the region is shown on Plate 1. It shows the area under review covered by rocks of Tertiary age. These beds include marine limestone, dolomite and marl of Lower Miocene age, overlying brown measures, which consist of coal seams, clays and sands of Eocene age (Anglesean Stage) Under the coal measures follow Jurassic arkose sandstones, mudstones and conglomerates (Thomas and Baragwanath, 1949-1951).

Mean densities of the above strata can be accepted to be of the following order:-

Formation.	Mean Density.
Marine tertiary	2.1 grammes/ccm
Brown coal measures	1.9 "
Jurassic beds	2.5 "

B. Interpretation Principles.

Under the conditions of local type anomalies gravity results may be assessed by using the following principles:-

"Relatively high anomalies indicate the presence of higher density rocks in outcrops or at shallow depth. Relatively low anomalies - on the other hand - indicate thickening in low density beds. Strong gravity gradients are indicative of faults or of steeply dipping monoclines with the gravity "high" representing the up-thrown side of the fault or a higher position of the beds in relation to the monocline".

C. Results of Interpretation.

Accepting these principles as relevant, the main gravity "high" referred to under (3a) can be interpreted as an expression of the Baragwanath Anticline, which has been earlier suggested from geology and topography and has been - in portions

at least - proved by drilling (Thomas and Baragwanath, 1949-1951).

The relatively complicated pattern of the gravity anomaly plan (Plate 2) indicates that, in detail, the structure of the Baragwanath Anticline can be expected to be rather complex.

The two parallel lobe-type anomalies of increased Bouguer values south of Rosedale and north of Merriman Creek suggest the existence of separate ridges or smaller anticlines, parallel to the axis of and superimposed on the main anticline. Doming of a local extent is likely in the coal beds which occur under the closed gravity "highs" southwest of Longford and north of Holey Hill Trigonometrical Station (3b).

The Rosedale Fault, as established by drilling south of Longford, coincides with the zone of steep gravity gradients, which has been determined immediately south of Longford on the gravity traverse along the South Gippsland Highway.

The displacement of the beds in relation to the main fault appears to be subject to variations as indicated by the irregularities in the gravity contours further west of Longford.

For instance the southerly swing-out of the lines, referred to under (3c), might be suggestive of certain disturbed or sunk-in areas, perpendicular to the main fault. These areas of local gravity disturbances, which are superimposed on the major anomaly, most likely also indicate variations in the development of the coal beds with the possibility of local thickening in the younger sediments.

D. Analysis of Cross-Sections.

Two typical cross-sections, which are represented on Plate 3, were chosen to analyse the results of earlier gravity work conducted by the Bureau in the Holey Plains and Coolun Goolun areas. The horizontal projection of these cross-sections is shown on Plate 1.

One of the selected cross-sections runs mainly north along the South Gippsland Highway from Gifford to Longford and further northwest to bore Wurruk Wurruk No. 1, which is at approximately at two miles distance west of Sale. The other section runs mainly westerly from Bore Coolun Goolun No. 1 near the south Gippsland Highway. This section ends near Rosedale.

For the purpose of the analysis Bouguer anomaly curves are shown on Plate 3 superimposed on geological data obtained by drilling and known from outcrops. The probable mean densities, referred to on page 3 of the type formations, which occur in the selected cross sections, were used to compute from the available gravity data the probable depth to the basement, which consists of Jurassic rocks.

The anomaly curves of observed Bouguer values shown on Plate 3 are based on gravity data which were available at the time, when the analysis was made, from gravity surveys completed during the 1951 to 1952 period. Though the results of the more recent survey are not included, the 1958 data will not affect any substantial changes with regards the principle conclusions drawn from the earlier gravity results.

The interpretation of the gravity anomaly curve along the line from Giffard to Sale is complicated owing to the occurrence of marine Tertiary beds of somewhat higher density (2.1) and of unknown thickness overlying lower density (1.9) coal measures on the Won Wron Monocline which forms the southern limb of the Baragwanath Anticline (Edwards, 1942).

In principle the general decline in the Bouguer anomaly values to the south and southeast respectively suggests a thickening in the same direction of less dense sediments of Tertiary age on the Won Wron Monocline. For purposes of analysis the gravity effect of the marine Tertiary beds had to be distinguished from that of the coal measures and the gravity effect of the marine Tertiary had to be removed before the depth to the Jurassic basement could be computed.

A gradual thickening to the south of the marine Tertiary in connection with the general thickening of the Tertiary beds as a whole could be assumed, an estimated maximum thickness of the fossiliferous limestone beds of approximately 2000 feet in the area around Giffard appeared to be reasonably well based, considering the scarce information available at that time (1952) from bores.

In the year 1955 the drilling of the Darriman No. 1 bore by Frome Broken Hill Company confirmed the predicted total thickness of roughly 4200 feet of Tertiary beds, which had been derived from the analysis of the gravity data.

Approximately 1700 feet of marine Tertiary and younger beds were intersected in the Darriman No. 1 bore. This shows that in reality these beds were found by drilling to be somewhat thinner than the earlier estimated value, which appears in the sections Giffard to Sale on Plate 3.

Near the base of the Tertiary sequence volcanic beds of the Narracan Group were encountered by the Darriman bore. These beds consist of weathered and unweathered basalt and soft clayish material underlain by basal gravel. The existence of volcanic beds was not assumed as a geological possibility in connection with the analysis of the gravity data. As the greater portion of these beds appear to be relatively soft and porous their inclusion would not greatly alter the accepted mean density (1.9) of the continental Tertiary strata as a whole.

Along the northern end of the section Giffard to Sale the position of the Rosedale Fault has been determined by drilling in the area south of Longford between the Bores Glencoe No. 1 and No. 2. In the gravity curve a sharp drop in the Bouguer anomaly values is expressed at some distance further south between the locations of the bores Coolun Goolun No. 1 and Glencoe No. 1. This relatively strong gravity gradient might be interpreted as suggestive of some displacement in the Jurassic beds, not reached by drilling.

The gravity expression caused by the Rosedale fault between the bores Glencoe No. 1 and No. 2 is most likely obscured and overshadowed by a thickening of the higher density (2.1) marine beds north of the fault plain. If corrections are applied to the gravity curve for the purpose of accounting for the gravity effect caused by the thickening of the marine Tertiary a sharp drop would result in the gravity curve between the Glencoe No. 1 and No. 2 bores, as indicated on the northern portion of the cross-section from Giffard to Sale on Plate 3.

The Wurruk No. 1 bore west of Sale has been completed in beds of most likely Jurassic age at a total depth of 3214 feet. From the gravity data it can be assumed that the depth to the Jurassic basement immediately north of the Rosedale Fault near Longford might be somewhat larger. A maximum thickness of Tertiary beds within the range from 3800 to 4000 feet can be suggested under the area of lowest Bouguer anomalies and particularly under the closed gravity "low" which occurs on both sides of the Latrobe River west of Longford.

Along the cross-section Rosedale to Coolun Goolun undulations in the anomaly curve indicate local gravity disturbances referred to above under (3b), which in the area of the Baragwanath Anticline are most likely related to local doming and warping in the younger beds and possible tectonic displacements in the basement. These local features have not been completely investigated as yet and require additional gravity coverage as recommended below on pages 7 and 8.

The depth to the Jurassic basement north of the main fault in the area south of Rosedale is estimated to be somewhat smaller than it is in the section through Longford further east. As little or no Tertiary marine strata of higher density (2 1) is present in the section through Rosedale, the density contrast between the Tertiary beds and the underlying Jurassic might be somewhat larger suggesting a smaller thickness in the Tertiary sediments. For this reason the maximum thickness of the Tertiary beds south of Rosedale and immediately north of the main fault might not exceed 2500 feet.

In the area south of the Rosedale Fault, south of Longford, and mainly following the southern limb of the isolated gravity "high" referred to under (3b), which occurs in this particular area, the Coolun Goolun Coalfield has been investigated by drilling an appreciable number of bores in the exploration for coal. The locations of these bores are shown on Plate 2 superimposed on the gravity station plan. It is of interest to note at this stage that the contours drawn on the surface of the brown coal seam as established by drilling follow the trend of gravity contours relatively closely. A detailed report on the gravity results obtained in the area of the Coolun Goolun Coalfield must be postponed until the completion of the additional gravity work, which is suggested below on pages 7 and 8.

5. CONCLUSIONS.

Summing up the overall results obtained from the interpretation of the gravity data presented by the contour plan (Plate 2) and derived from the analysis of gravity curves along two sections across the Baragwanath Anticline (Plate 3), it appears that the surveyed area forms part of a faulted block, which is bounded along its northern margin by a major fault - the Rosedale Fault - and is tilting down to the southeast.

In detail the Baragwanath Anticline, according to its gravity expression, is most likely a complex feature of "ups" and "downs" formed by local warping faulting and doming of the Tertiary beds, which might be caused primarily by fault displacements in the Jurassic beds. These detailed structure features are superimposed on the major fault block.

An interesting fact brought out by the gravity work is that on the western side of the area the course of Merriman's Creek follows the anomaly pattern in a north-easterly direction up to a point south of Rosedale where after it cuts abruptly across the anomaly pattern taking an easterly course.

The valley cut out by the creek is steep sided suggesting that it is a young feature. In contrast to this there is a broad valley feature continuing on from the point where the present course of the creek changes direction.

These facts suggest the possibility that the creek originally continued on through this broad valley to the present course of the Latrobe River and only changed its course, when during Tertiary movements, the major fault block, which essentially forms the Baragwanath Anticline, was raised and tilted into its present position.

6. RECOMMENDATIONS.

Because of insufficient station density it has been necessary in many places to extrapolate the contours of the gravity map (plate 2) rather than base these lines on accurate interpolation between stations placed at a reasonable short distance. Question marks have been used to indicate the degree of reliability over certain sections of the anomaly plan.

More detailed gravity data would be required particularly in the vicinity of the following localities, which are recommended for the inclusion in future investigations :-

(a) West of Honey Suckle Hill Trigonometrical Station, a northern extension of the north running traverse 58-94 to 58-99 to determine more accurately the gravity anomaly in relation to the Rosedale Fault. Immediately northeast of Honey Suckle Hill to establish more completely the southerly swing out of the gravity contours. A west running traverse to fill in the gap between Stations 58-99 and stations 58-70 or 58-71.

(b) North of gravity stations Nos. 1433 and 1434 to determine the amount of closure on the isolated gravity "high" near the eastern end of the Baragwanath anticline southwest of Longford. South of Longford to investigate the zone of steep gravity gradients due to the suggested major fault and to establishing more accurately its position; step faulting possibly occurs in this particular area.

(c) In the southwest portion of the area shown on plan (plate 2) on the two lobe-like gravity "highs" which occur south of Rosedale and north of Merriman's Creek. There are at present wide gaps between the existing gravity stations, which are on widely dispersed traverses. These "highs " are most likely more irregular than shown on plate 2 and the amount of the maximum closure and the position of the highest anomaly value still remain to be established accurately.

(d) In the southeastern section of the surveyed area in the vicinity around Holey Hill Trigonometrical Station; in particular to delineate the eastern end of the southern lobe-type anomaly referred to under (3b). It is also necessary to establish more precisely the trend and the spacing of the gravity contours between Holey Hill and Merriman's Creek valley and in the area further east from the locality of the limestone quarry easterly towards the South Gippsland Highway.

It can be estimated that a total number of approximately one hundred and fifty to two hundred new gravity stations would be required.

Final selection of survey lines and gravity station positions must be subject to an inspection of the areas concerned to assess local conditions; the availability of bush tracks and fire breaks would be important for the arrangement of survey traverses.

7. REFERENCES.

Neumann, F.J.G., 1951 — Analysis of Gravity Survey of the Yallourn-Morwell-Traralgon Area, Victoria. Australian Bureau of Mineral Resources, Geology and Geophysics, Records 1951, No. 10.

Baragwanath, W., 1949 and Thomas, D.E., 1951 — Geology of the Brown Coals of Victoria. Victorian Mining and Geological Journal. Vol. 3 No. 1 and Vol. 4 No. 1 to No. 3 Melbourne 1949, 1950 and 1951.

Thyer, R.F. and Williams, L.W., 1948 — Gravity Survey of Brown Coal Deposits Morwell, Victoria, January-February 1948, Australian Bureau of Mineral Resources, Geology and Geophysics - Records ~~1949~~ 1948, No. 81.

Thyer, R.F., 1944 — Preliminary Geophysical Survey Morwell Brown Coal Field, Victoria. Australian Department of Supply and Shipping, Mineral Resources Survey Branch - Report No. 1944/41.

Edwards, A.B., 1942 — A Dome-like Structure in the Jurassic Rocks of South Gippsland. Proceedings Royal Society Victoria Volume 54 (N.S.) Part II, Melbourne, 1942.

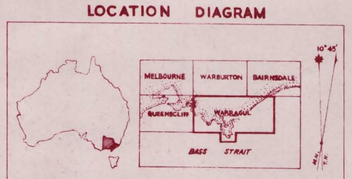
AUSTRALIA 1:253,440

WARRAGUL
VICTORIA

PLATE I
J 55/10-11 ZONE 7

DROUIN
G93-27 MOE
G93-28 ROSEDALE
G93-29 SALE
G93-30 STOCKYARD
G93-24 MIRBOO NTH
G93-23 CARRAJUNG
G93-45 ALBERTON
G93-46 FOSTER
C93-26 STRADBROKE
KORUMBURRA
WONTHAGGI
LIPTRAP
YANAKIE
CORNER INLET
WILSONS PROMONTORY
Cape Patterson
Cape Liptrap
Inverloch
Wonthaggi
Korumburra
Leongatha
Nyora
Bena
Tynong
Longwarry
Drouin
Warragul
Rokeby
Buln Buln
Bayles
Catani
Yanathan
Monomaith
Jumbunna
Yarragon
Trafalgar
Thorpdale
Mirboo North
Boolarra
Morwell
Yallourn
Mde
Traralgon
Glengarry
Toongabbie
Cowwar
Rosedale
Flynns Ck
Carrajung
Strzelecki Ranges
Mirboo 259.3
Beech Hill 1880
Mt Best 1126.4
Toora
Welshpool
Fish Creek
Tarwin Meadows
Meeniyan
Tarwin
Mt Singapore 477
Sandy Pt
WARATAH BAY
Kilmany
Sale
Montgomery
Longford
Giffard
Darriman
Darriman No 1 Bore
Yarram
Alberton
Port Albert
Woodside No 1 Bore
Woodside No 2 Bore
ST MARGARETS
SUNDAY I.
SNAKE ISLAND
LITTLE SNAKE
RABBIT I.
LAKE WELLINGTON
LAKE VICTORIA
LAKE NINETY MILE
REEVE BEACH
BASS STRAIT
Fault
"SECTION B – B'"
COOLUN GOOLUN No 1
WURRUK WURRUK No 1
GRAVITY SURVEY (1958)
ROSEDALE HOLEY PLAINS AREA
G 39 – 68
STRADBROKE No 1
MONKEY CREEK
SECTION
GIPPSLAND HIGHWAY
MERRIMAN'S CREEK
LATROBE RIVER
THOMSON RIVER
AVON RIVER
MACALISTER RIVER
TARWIN RIVER
BUNYIP RIVER
LANG LANG RIVER
WESTERN PORT BAY
SALT LAKE
PENINSULA STATION

LOCATION DIAGRAM



REFERENCE TO AUSTRALIAN 4-MILE MILITARY MAP SERIES

LEGEND

- Tertiary, Reef of siliceous Limestone
- " Terrestrial Sediments
- " Basalt
- Jurassic
- Lower Devonian / Silurian
- Ordovician
- Granite

GRAVITY SURVEY, BARAGWANATH ANTICLINE AREA
GIPPSLAND, VICTORIA

GEOLOGY AND MAJOR TECTONICS

SCALE IN MILES

LEGEND

- 351 Altitude in Feet
- First Class Road
- Second " "
- Third " "
- Railway
- Exploration Bore
- Definite Fault or Monocline
- Indefinite " " "
- Anticline
- Local Gravity Anomaly
- Gravity Station - Regional Gravity Survey 1955

MAP DATA

PROJECTION: Transverse Mercator, Australian Series.

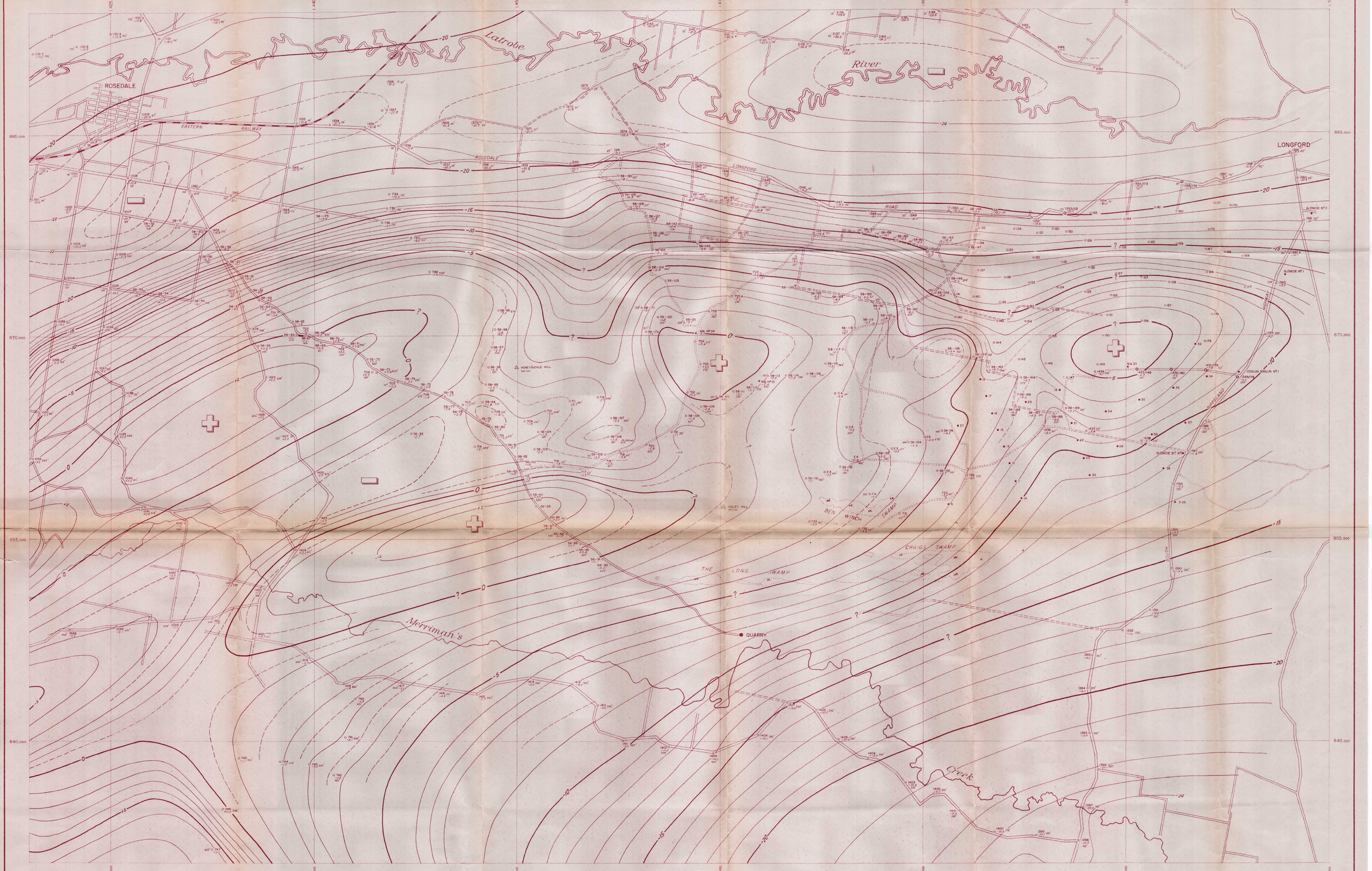
DETAIL: Planimetry from Royal Australian Survey Corps Warragul 4 miles to 1 inch map.

Geology from geological map of Victoria by Department of Mines Victoria 1955 and geological and topographical plan of part of South Gippsland by H. HERMAN 1952.

Geophysical (gravity and seismic) information on structural features by BMR surveys 1948-1958.

DROUIN Royal Australian Survey Corps 1 mile to 1 inch map. G93-46 FOSTER Previously published B.M.R. Bouguer anomaly 1 mile to 1 inch map.

GEOPHYSICAL BRANCH, BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS G39-69
To accompany Records 1960, No 47



LOCATION

REFERENCE TO AUSTRALIAN NATIONAL 4 MILE MAP SERIES

DECEMBER 1959

MAP DATA

CONTROL: STATE ELECTRICITY COMMISSION OF VICTORIA FIELD SURVEYS.

DETAIL: PLANIMETRY FROM S.E.C. OF VIC. DRAWING Nº B.C.I. 5-5-9
GEOPHYSICAL DATA FROM B.M.R. SURVEY.
GRID — S.E.C. ARBITRARY DATUM 1:10,000 FEET SQUARES)

RELIABILITY: PLANIMETRIC — ACCURATE
GEOPHYSICAL — DETAILED GRAVITY

DETAILED GRAVITY SURVEY (1958)
ROSEDALE - HOLEY PLAINS AREA, GIPPSLAND, VIC.
BOUGUER ANOMALIES

SCALE IN MILES

½ 0 ½ 1 1½ 2 2½

CONTOUR INTERVAL 1 MILLIGAL

LEGEND

TOPOGRAPHY

- RAILWAY
- ROAD
- WATERCOURSE
- TOWNSHIP
- EXPLORATION BORE
- BM BENCH MARK
- TRIG. STATION

GRAVITY

- B.M.R. STATION
- -22.1 RELATIVE BOUGUER ANOMALY (MILLIGALS)
- 205' ELEVATION
- -5 ISOGALS
- HIGH ANOMALY
- LOW ANOMALY

EXPLANATION

RELATIVE BOUGUER ANOMALIES ARE BASED ON THE OBSERVED GRAVITY VALUE OF 980.061·2 MILLIGALS AT B.M.R. PENDULUM STATION Nº 2, YARRAM, VIC.

FOR THE CALCULATION OF BOUGUER ANOMALIES 1·9 GR./CCM. HAS BEEN ADOPTED AS AN AVERAGE ROCK DENSITY.

TO CONVERT TO BOUGUER ANOMALIES RELATIVE TO THEORETICAL VALUES ON INTERNATIONAL ELLIPSOID (DENSITY = 2·67) SUBTRACT FROM VALUES SHOWN: (1·5 + 0·01 h) MILLIGAL, WHERE "h" IS THE STATION ALTITUDE IN FEET ABOVE S.L.

GEOPHYSICAL BRANCH, BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS G 39 – 68
To accompany Records 1960, No 41

PLATE 3

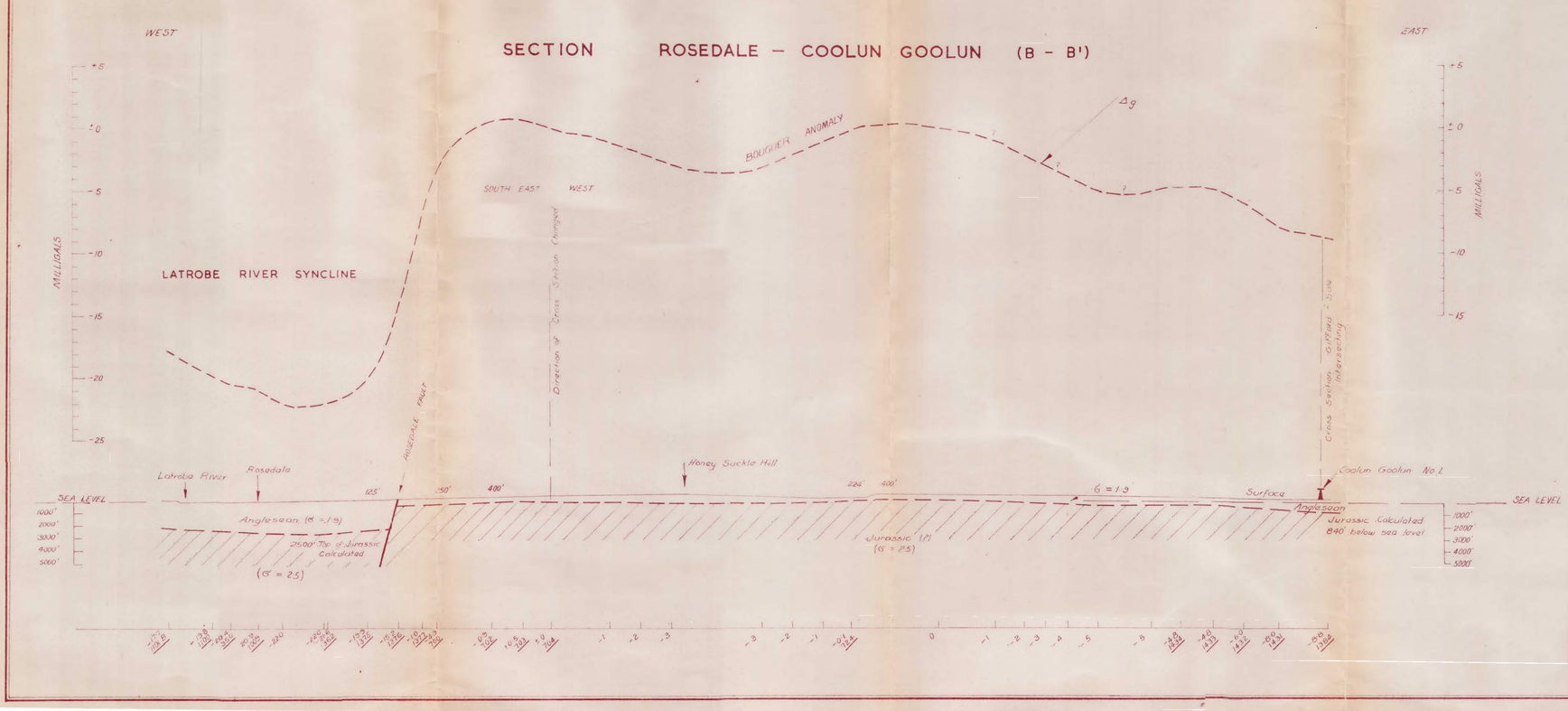
SECTION GIFFARD — SALE (A - A')

Note

Gravity Anomalies as observed on gravity stations shown thus -3.6 / 18.14

Interpolated gravity anomalies shown thus: -34.0

SECTION ROSEDALE — COOLUN GOOLUN (B - B')



GRAVITY SURVEY

BARAGWANATH ANTICLINE AREA

GIPPSLAND, VICTORIA

GEOLOGICAL AND GRAVITATIONAL CORRELATION OF CROSS SECTIONS

SCALES

1 0 1 2 3 4 5 MILES

10,000 0 10,000 20,000 FEET

Geophysicist G. Narmour Date 8-11-1952

MINOR AMENDMENTS - JAN. 1960

GEOPHYSICAL BRANCH, BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS. G 39-70

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