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COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

RECORD No. 1966/189

MOUNT GARNET GRAVITY SURVEY FOR ALLUVIAL TIN,

QUEENSLAND 1962

by

J. HORVATH and J.J. HUSSIN

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SUMMARY

A gravity survey directed towards the search for possible tin-bearing deep leads was made in the alluvium covered area south of Mount Garnet, Queensland. The survey aimed in particular to investigate certain prospects that had been outlined on the theory that tin had been deposited in streams of a former west-flowing drainage system.

The gravity values appear to be affected by variations in the density of the bedrock formations. The values are relatively low over the Elizabeth Creek Granite, which is the source of the alluvial tin, and generally much higher over the denser Precambrian metasediments and Herbert River Granite. An extensive gravity 'high' occupying the eastern part of the survey area is attributed to bedrock composed of the latter rocks.

It was possible to trace several gravity 'lows' superimposed on the bedrock anomalies. The 'lows' are considered to be associated with old river valleys. However, these gravity features are due mainly to the profile of the unweathered bedrock and cannot be assumed to indicate accurately the positions of depressions on the weathered bedrock surface. Test drilling in the area has confirmed the gravity interpretation in a few places, but, in general, the drilling was too shallow to provide reliable bedrock depths for comparison. From the available drilling information it would appear that the gravity 'lows' indicate areas where the overburden is considerably deeper than the limit of dredging depth and that the tin values are not significant, and consequently that these areas are not good tin prospects.

The gravity results give no evidence to support the theory of a former drainage system flowing westwards, but show rather that the bedrock valleys trend south or south-south-east, that is, in the same general direction as the present drainage system.

A reconnaissance survey was also made in the Coolgarra area north of Mount Garnet to assist in geological mapping.

1. INTRODUCTION

In 1962 a gravity survey was made by the Bureau of Mineral Resources (BMR) for the purpose of locating possible tin-bearing deep leads in the heavily alluviated area south of Mount Garnet, Queensland.

In the Mount Garnet district, two dredges working Battle Creek and Smiths Creek (Plate 3) produced between 1000 and 1500 tons of cassiterite concentrates per year. Battle Creek is a south-flowing creek six miles east of Mount Garnet and Smiths Creek is a south-flowing creek seven miles west of Mount Garnet. Both creeks are tributaries of the Herbert River (Plate 3). They are deeply alluviated, and cassiterite is sporadically distributed through the alluvium, but is usually concentrated in layers of wash and gravel overlying the bedrock. From a study of the North Queensland tin province, Best (1962) suggested that the tin had been deposited when the streams were part of a west-flowing drainage system. A former stream called the Ancestral Tate River (ATR) was thought to have flowed westwards through the Mount Garnet Basin (Plate 3) to join the area of the present Tate River. The area about five miles south-west of Mount Garnet, here called the ATR prospect, was considered to be part of this old stream channel. The area of the present Wurruma Swamp (Plate 2), south-east of Mount Garnet, here called the Wurruma prospect, was thought to be an ancient channel of the Return Creek. The main objectives of the gravity survey were to investigate the area of Smiths Creek south of the area already dredged by Tableland Tin N.L. (Plate 3) and to investigate the ATR and Wurruma prospects. In addition, the gravity work included long traverses along the Northern Inland Highway and the Gunnewarra road and a reconnaissance survey in the Brownville - Coolgarra area north of Mount Garnet. A seismic refraction survey (Sedmik & Williams, in preparation) and test drilling were carried out by the BMR concurrently with the gravity survey.

The gravity programme was commenced on 30th April and completed on 3rd October 1962. The field party consisted of J.I. Hussin and J. P. Williams, geophysicists, and N. Ashmore, field assistant. The topographic surveying including precise levelling required for the gravity survey was carried out by a surveyor of Fuller, Little and Brown of Sydney under contract to the Department of the Interior, Canberra.

2. GEOLOGY

The geology and tin prospects of the Mount Garnet area are described by Best (1962) and Zimmerman, Yates, and Amos (1963).

The extensive, fairly flat areas south of the township, named the Mount Garnet Basin, is largely covered by Cainozoic sediments.

The main river of the Mount Garnet Basin is the Herbert River that flows south; Battle Creek, Return Creek, and Smiths Creek flowing mainly in a south-east direction are its main tributaries draining the basin. A sharp change in the direction of the Herbert River was interpretaed by Best (1962) as possibly resulting from river capture. He thought that the Herbert River originally may have flowed west into the Tate River system, and thence into the Gulf of Carpentaria.

Cainozoic basalt flows entered the Mount Garnet area from the Atherton tableland and extended mainly along the valley of the Herbert River to the west. The basalt flows also backed up into some of the tributaries and displaced some of the streams from their original courses. This displacement and possible drainage to the west was considered important for tin prospects in the Mount Garnet Basin as it offered the possibility of substantial amounts of stanniferous wash in the ancient stream channels. As the alluvial tin was concentrated in stream channels before the extrusion of the basalt the tin-bearing leads were considered to be on a quite different stream pattern from the present day drainage system. However, some of the tin might have been buried by the basalt flows.

As will be shown later, the geophysical survey did not confirm this theory but indicated that the pre-basalt channels followed approximately a north-south course similar to that of the present drainage system and that the damming by the basalt caused only minor diversions and displacements.

Bik (1963) regards the Mount Garnet Basin as having been filled in five cycles of alternating processes of erosion and sedimentation ranging in age from probably early Tertiary to Recent. The scarcity of basalt detritus and the little basalt found in drill holes in the surveyed area and the absence of magnetic anomalies indicate that basalt flows were rather thin and not extensive.

There appear to have been two periods of granitic intrusion, the earlier (of Carboniferous age) the Herbert River Granite, the later (probably of Permian age) the Elizabeth Creek Granite. The Herbert River Granite is grey, massive, medium-grained, and contains abundant ferromagnesian minerals. The composition is more that of a granodiorite than true granite. It also has a higher density than the Elizabeth Creek Granite. The Herbert River Granite is poorly exposed and forms gently undulating hills, whereas the Elizabeth Creek Granite is characterised by prominent rocky hills.

The Elizabeth Creek Granite is pink, massive, leucocratic granite with little mafic minerals and is unusually rich in silica. The intrusive character of the Elizabeth Creek Granite is shown by aplite dykes, hydrothermal alternation, and tin mineralization along fractures in the sediments. Greisenization occurs in many places in the Elizabeth Creek Granite and also near the granite contact.

Rhyolite, quartz feldspar porphyry, and aplite occur as dykes, and a large mass of undifferentiated acid volcanics covers the Coolgarra area.

The Precambrian and Silurian-Devonian sediments in contact with the granite show extensive signs of contact metamorphism such as calc silicate hornfels and metagreywacke. The roof pendants over the Elizabeth Creek Granite contain a number of tin lodes.

The alluvial tin originated mostly from lodes and greisenized areas in Elizabeth Creek Granite, or from rock formations intruded by the granite. The cassiterite occurs along zones of pneumatolytic alteration adjacent to faults and joints in lodes, as lenses and pipelike bodies with chlorite and quartz as gangue, as greisen lodes in the granite, or as massive greisenized bodies in roof zones of the granite.

As the alluvial tin has been derived mainly from erosion and denudation of the areas covered by Elizabeth Creek Granite, greisen, and roof pendant lodes, a study of the bedrock distribution is important in considering the likelihood of good tin prospects in the deep leads. Leads originating near to and south-east of Mount Garnet township, because of the lack of tin-bearing granite, are less likely to carry good tin values than the leads in the Smiths Creek area.

3. DESCRIPTION OF EQUIPMENT AND METHOD

The gravity meter used in the survey was a World-Wide No. 135. The scale value of the instrument was 0.11542 mgal per scale division.

The gravity observations were corrected for instrumental drift (which was controlled by returning to a base or sub-base station every hour), elevation (Bouguer correction), and latitude.

The gravity method was chosen as a reconnaissance tool to locate the approximate position of the deep leads under the very extensive Cainozoic cover. If alluvial cover and bedrock have uniform but different densities the bedrock topography can be deduced by the varying thickness of the overburden. The density difference between overburden and bedrock is usually about 0.4 to 0.5 g/cm^3, and deep leads are therefore indicated by gravity 'lows'.

4. WORK DONE AND RESULTS OBTAINED

The survey can be considered to consist of three areas: Smiths Creek, Return Creek/Wurruma, and Coolgarra.

In the Smiths Creek area (Plate 2) 612 gravity stations were observed at 100-ft intervals along traverses with a total length of about 12 miles. Most of these traverses are closely spaced and are just west of Smiths Creek. The northern limit of the area is about a half-mile south of the southernmost portion of Smiths Creek dredged course. The Bouguer anomalies in the Smiths Creek area are shown in Plates 4 and 5; selected profiles are shown in Plate 7.

In the Return Creek/Wurruma area (Plate 2) 1800 gravity stations were surveyed mainly at 200-ft intervals totalling 63 miles of gravity traverses. The Bouguer anomalies are shown in Plate 5.

The Coolgarra area (Plate 6) was investigated only on a regional scale, using half-mile intervals between observation points along roads. The 41 observed gravity stations covered 21 miles of gravity traverse. The elevations of these stations were determined by microbarometric levelling and are therefore less accurate than in the other two areas. No deep leads were expected in this area, which contains more outcrops than the other two areas. This area was included at the request of the Geological Branch of the BMR to assist in geological mapping. The Bouguer anomaly map is shown in Plate 6.

The elevation corrections for all three areas were calculated for a density of 2.2 g/cm^3.

5. INTERPRETATION OF RESULTS

In the search for deep leads using the gravity method, the effect sought is that due to the density difference between overburden and bedrock. Variations in the density of the overburden may exist but in general they can be neglected (except when basalt is included in the overburden) in comparison with the larger density difference between overburden and bedrock. This density difference was found on the average to be about 0.4 to 0.5 g/cm^3.

A number of samples of bedrock were collected for density determinations. The determinations were averaged and gave:

Elizabeth Creek Granite	2.63 g/cm^3 (3 samples)
Herbert River Granite	2.78 g/cm^3 (6 samples)
Silurian sediments (siltstone, greywacke)	2.75 g/cm^3 (3 samples)
Precambrian metamorphics (calc silicates, hornfels, metagreywacke)	2.82 g/cm^3 (4 samples)

These results show that anomalies could arise from variations in bedrock density, and in order to separate these from the anomalies due to variations in overburden thickness, it would be desirable to construct a 'bedrock gravity map'. The difference between the Bouguer anomaly map and the 'bedrock gravity map' should give a residual gravity map indicating variations in overburden thickness and hence the course of buried river channels. The construction of a 'bedrock gravity map' would be based on gravity values at points where bedrock is cropping out or where boreholes intersect bedrock and allow a correction for the known thickness of overburden to be applied. However, over the greater part of the area surveyed, very few bedrock gravity values were available. Although a large number of holes had been drilled, in Smiths Creek, Return Creek, and other areas, the information on the bedrock depths was not complete or reliable enough to permit determinations of corrections due to overburden thickness to be made. Hence it was found impracticable to construct the desired 'bedrock gravity map' for the area surveyed. However, by using the method described above, a residual gravity profile was obtained for a portion of one traverse, Traverse ATR1, in the Wurruma area, as discussed later in the report.

Smiths Creek area

Several gravity profiles in this area are shown in Plate 7, together with seismic profiles and drill sections for comparison. In general there is good agreement between the gravity profiles and the high velocity seismic refractor. The high velocity refractor agrees reasonably well with the bedrock as indicated by drilling on Traverses A and B, but on Traverse T the depth to bedrock obtained in the boreholes appears to be much less than the depth to the high velocity refractor. The comparison is, however, not very reliable as it is doubtful whether bedrock has been reached in some of the boreholes.

In the Smiths Creek area the gravity results appear to indicate the positions of bedrock depressions and are considered to be more reliable than in other parts of the Mount Garnet Basin. This is because the bedrock is more uniform, consisting only of Elizabeth Creek Granite, so that the variations in the Bouguer anomaly values can be attributed mainly to variations in the thickness of overburden.

The Bouguer anomaly contours in Plate 4 show two despressions separated by a ridge. The western depression is more distinct and probably represents an extension of the deep lead dredged further north. The ridge, which is mainly expressed on Traverse C, corresponds to an outcrop with greisen and some wolfram just south of the highway. The seismic results here (Plate 7) also show the bedrock to be close to the surface. The western depression appears to be joined by the eastern one at about Traverse V and to continue in a south-westerly direction through station 37, on Traverse U.

Traverses F, G, H, and J do not show any distinct depressions but show a rapid rise in gravity values to the south. This rise is too large to be caused by a decrease in overburden thickness and is probably caused by the contact of Elizabeth Creek Granite with Precambrian metamorphics or Herbert River Granite.

Traverses A and T, which were also surveyed with the seismic refraction method, coincided with two lines of holes drilled by Tableland Tin Dredging N.L. prior to the commencement of the geophysical survey. The bedrock profile on Traverse A as outlined by drilling was in general agreement with the geophysical results except at holes TTW 595 and 596. These were deepened at the request of the BMR and showed the bedrock to be much deeper than originally assumed and gave better agreement with the geophysical results. However, no significant tin values were found in the drilling along Traverses A and T. Although the gravity survey indicated favourable geological conditions for the continuation of the Smiths Creek deep lead, because of the absence of economic tin values, it was decided not to attempt to follow the lead further downstream. The results of the test drilling and the geophysical survey appeared to rule out the possibility of payable dredging channels in the Smiths Creek area immediately south of the highway. The Company therefore decided to discontinue dredging downstream and the dredge was turned in order to work the known deposits upstream.

Return Creek/Wurruma area

The Bouguer anomaly map (Plate 5) shows a pronounced gravity 'high' striking south from the highway near station 185 to Traverse MD1 and possibly to Traverse MD8. West of this 'high', towards Smiths Creek, the gravity contours assume a general south-westerly strike. The gravity values decrease from about 12 milligals at the maximum of the 'high' to 5 milligals or less in the Smiths Creek area, where geological evidence indicates that the bedrock consists of Elizabeth Creek Granite. The area of the gravity 'high' must be occupied by formations of higher density: the Precambrian meta-sediments or the Herbert River Granite.

Between stations 350 and 450 on Traverse ATR1, a few minor features suggest buried bedrock channels but, although no detailed investigation was made, such channels would be of little interest as tin prospects because of their relatively small intake areas.

The localized gravity 'high' centred about station 60 on Traverse ATR6 south-west of Mount Garnet township coincides with an extensive outcrop of the Silurian-Devonian Mount Garnet Formation consisting of greywacke, siltstone, and calcareous rocks. Relatively high gravity values extend over the adjacent outcrop of Precambrian metamorphics. From here, the general decrease in values to the east appears to be mainly a regional effect, as the Precambrian rocks continue in this direction as evidenced by the small outcrops near station 70 on Traverse ATR1 and near station 20 on the highway traverse.

In the Return Creek/Wurruma area, there are several gravity 'lows' that could be attributed to bedrock valleys. One can be traced from the highway southwards roughly following Traverse ATR3 and crossing the Gunnewarra Road near station 98. Another follows more or less the course of Return Creek and may indicate the extension of the dredged Return Creek deep lead. A third was observed on the Hill traverse between stations 20 and 25 and continues through the Wurruma Swamp to Traverse ATR1 at about station 126. There is also a gravity 'low', shown by the results of the highway traverse, that coincides with the Big Dinner Creek.

In the southern part of the area, within the Authority to Prospect of Mineral Deposits Pty Ltd, minor gravity 'lows' were observed at station 125 on the Gunnewarra Road, near station 0 on MD5, and near the western end of MD7. Traverses AA and AB show gravity 'lows' that appear to line up with those following Traverse ATR3 and Return Creek, and suggest that the two channels join at about station 40 on Traverse AB. However, Traverse AC did not show any definite gravity 'low'. The continuation of the channel might follow more closely the course of Return Creek east of Traverse AC.

During the course of the gravity survey a number of boreholes were drilled by the BMR along Traverse ATR1. Using the information on the depth to bedrock provided by these holes, a correction for the thickness of overburden was applied to the Bouguer anomaly profile to give a 'bedrock gravity profile' and this was used to obtain the residual gravity profile shown in Plate 8. The residual profile indicates a wide depression in the bedrock without any well defined channel. Boreholes MRW4 and MRW2 have probably not reached bedrock. The deepening of these holes would be required to test the validity of the gravity interpretation but would be difficult to justify on economic grounds, as none of the holes along ATR1 encountered significant tin values. The bedrock would probably be nearly 200 ft deep, which is beyond the capacity of the dredge. Furthermore, as Elizabeth Creek Granite is not expected to occur in the neighbourhood, the prospect of payable tin values being present is poor.

The bedrock depth of 162 ft recorded in borehole MRW 8 gives a 'bedrock gravity' value inconsistent with the results at the other boreholes, and it is very doubtful whether the bedrock is as deep as this. The Bouguer anomaly gravity profile suggests much shallower bedrock at MRW8, and indicates that a borehole further west at about station 176 would be better placed to test the bedrock channel, which appears to be a continuation of the Return Creek lead.

Coolgarra area

From the relatively few stations observed in this area it was possible to obtain only a regional gravity picture (Plate 6). The gravity 'high' immediately south-west of Mount Garnet township appears to continue north into the area of ryhodacites and other volcanics. The gravity values decrease steadily as the Elizabeth Creek Granite is approached, reaching negative values in the Coolgarra area. The gravity observations are too widely spaced to be useful for deep lead investigation.

6. CONCLUSIONS

In using the gravity method to search for possible tin-bearing deep leads in the Mount Garnet area, it was found that the accuracy of the results was affected by two factors:

(a) Deep and irregular weathering of the bedrock. The gravity results are mainly influenced by the boundary between weathered and unweathered bedrock. Where the weathering zone is thick, a depression in the unweathered bedrock cannot be assumed to coincide closely with a depression in the surface of the weathered bedrock. Consequently, in order to test a wide gravity 'low', it would be essential to place drill holes over the whole width of the 'low'.

(b) The bedrock includes different rock types with appreciable density differences which give rise to anomalies and which are superimposed on those due to variations in overburden thickness. Over most of the area surveyed there was insufficient control data to allow the effects of variations in bedrock density to be removed.

However, it is considered that many of the features evident in the Bouguer anomaly map are related to variations in overburden thickness and that gravity 'lows' which can be traced through a series of profiles indicate the approximate positions of former stream channels.

Five such channel systems have been outlined from the gravity results:

1. Western or main Smiths Creek lead.
2. Eastern Smiths Creek lead.
3. Channel following approximately Traverse ATR3.
4. Return Creek channel following approximately the present course of Return Creek.
5. Channel trending south-west in the Wurruma Swamp area.

The main Smiths Creek lead was confirmed by drilling but no significant tin values were found. Tableland Tin Dredging N.L. carried out test drilling along Traverse ATR3 between Traverses ATR4 and ATR1. Most of the holes did not intersect bedrock and because of this and the location of the traverse, the drilling has not tested the possibility of a bedrock channel inferred from the gravity 'low'. A large number of holes were also drilled on the west side of Return Creek from just north of Traverse ATR4 to Traverse AA. These were mainly taken to the limit of dredging depth and have not provided information on bedrock depths suitable for comparison with the gravity interpretation.

A series of holes was drilled by the BMR along Traverse ATR1 to test the area near the Wurruma Swamp. The maximum bedrock depth indicated was at station 128, confirming the bedrock depression indicated by the gravity 'low' near this point. No significant tin values were encountered in these holes.

The gravity results give no evidence to support the theory of a former drainage system flowing westwards to join the present Tate River. The gravity results on Traverse ATR3, which was sited at right angles to the postulated course of the Ancient Tate River, and on neighbouring traverses, indicate the absence of any drainage channels following a westerly course. The bedrock valleys are shown to trend south or south-south-east, that is, in the same general direction as the present drainage system. A bedrock valley is indicated in the Wurruma Swamp area but the trend of the contours show that it is not the former course of Return Creek.

The gravity results show a broad correlation with the nature of the bedrock. The Elizabeth Creek Granite, which is favourable for primary tin deposits, occurs near Smiths Creek and Big Dinner Creek, where the gravity values are relatively low. The intervening area of higher gravity values corresponds to bedrock of Precambrian metasediments, Silurian sediments, and Herbert River Granite. It is unlikely that tributaries or scree from slopes added tin to the wash and gravel of leads running through this area, and these leads cannot therefore be regarded as very good tin prospects.

7. REFERENCES

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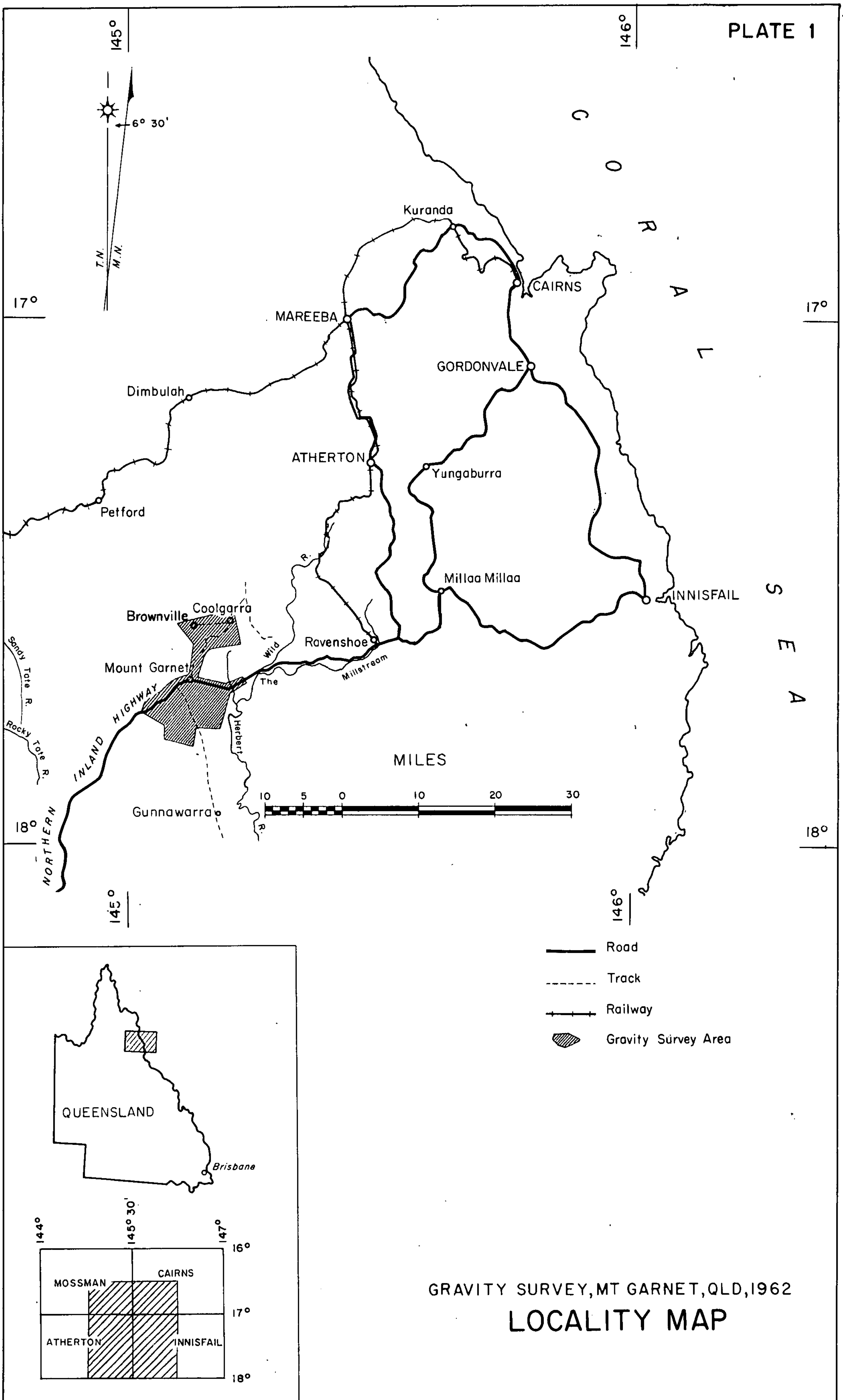
BIK, M. J.	1963	A geomorphological assessment of the Mount Garnet alluvial tin prospects. CSIRO Report (unpublished).
SEDMIK, E. C., and WILLIAMS, J. P.		Mount Garnet seismic refraction surveys for alluvial tin, North Queensland 1962. Bur. Min. Resour. Aust. Rec. (in preparation).
ZIMMERMAN, D. O., YATES, K. R., and AMOS, B. J.	1963	The geology and mineral deposits of the Mount Garnet area, North Queensland. Bur. Min. Resour. Aust. 1963/77.

PLATE 1



GRAVITY SURVEY, MT GARNET, QLD, 1962

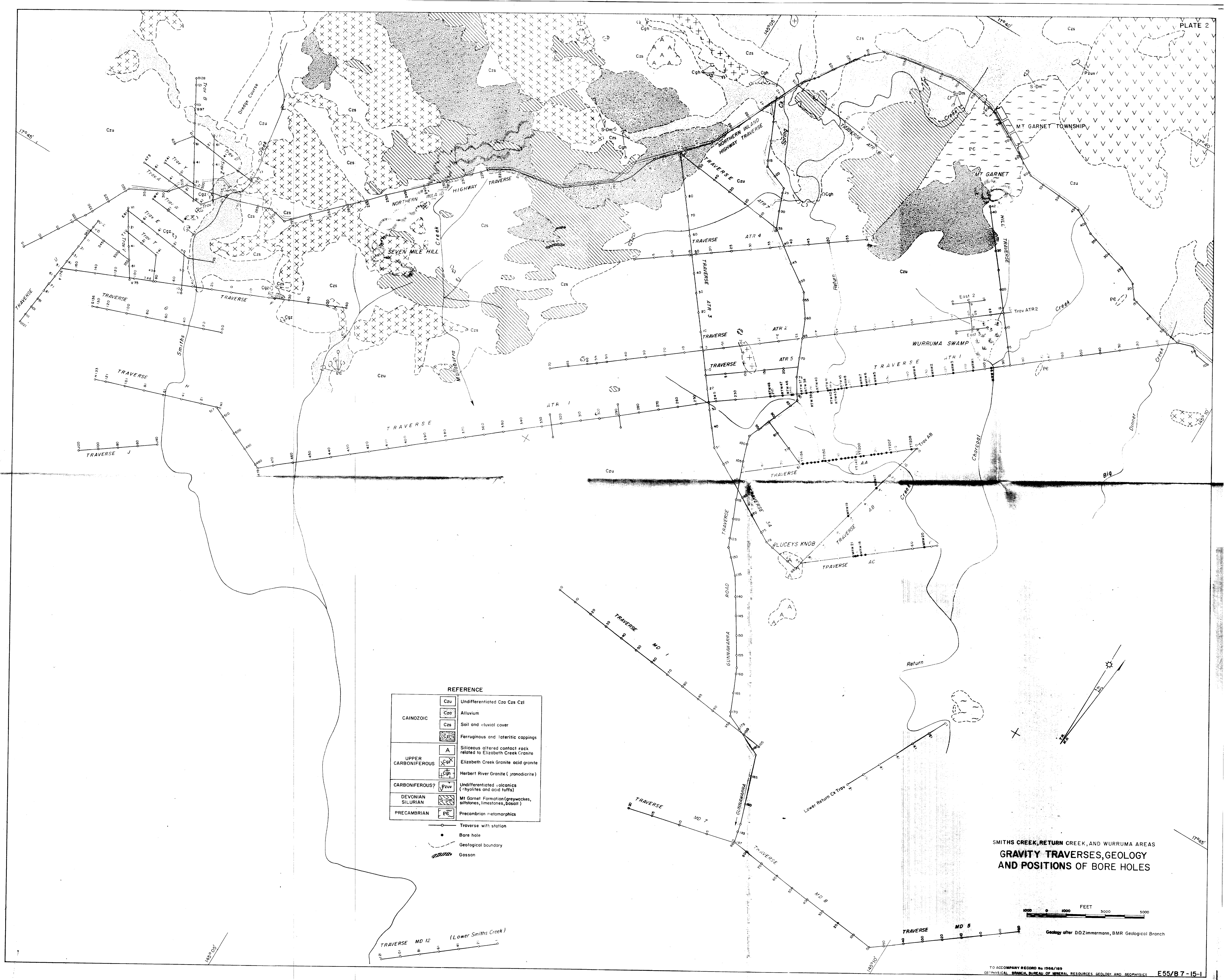
LOCALITY MAP

TO ACCOMPANY RECORD No. 1966/189

Geophysical Branch, Bureau of Mineral Resources, Geology and Geophysics

E55/B7-12

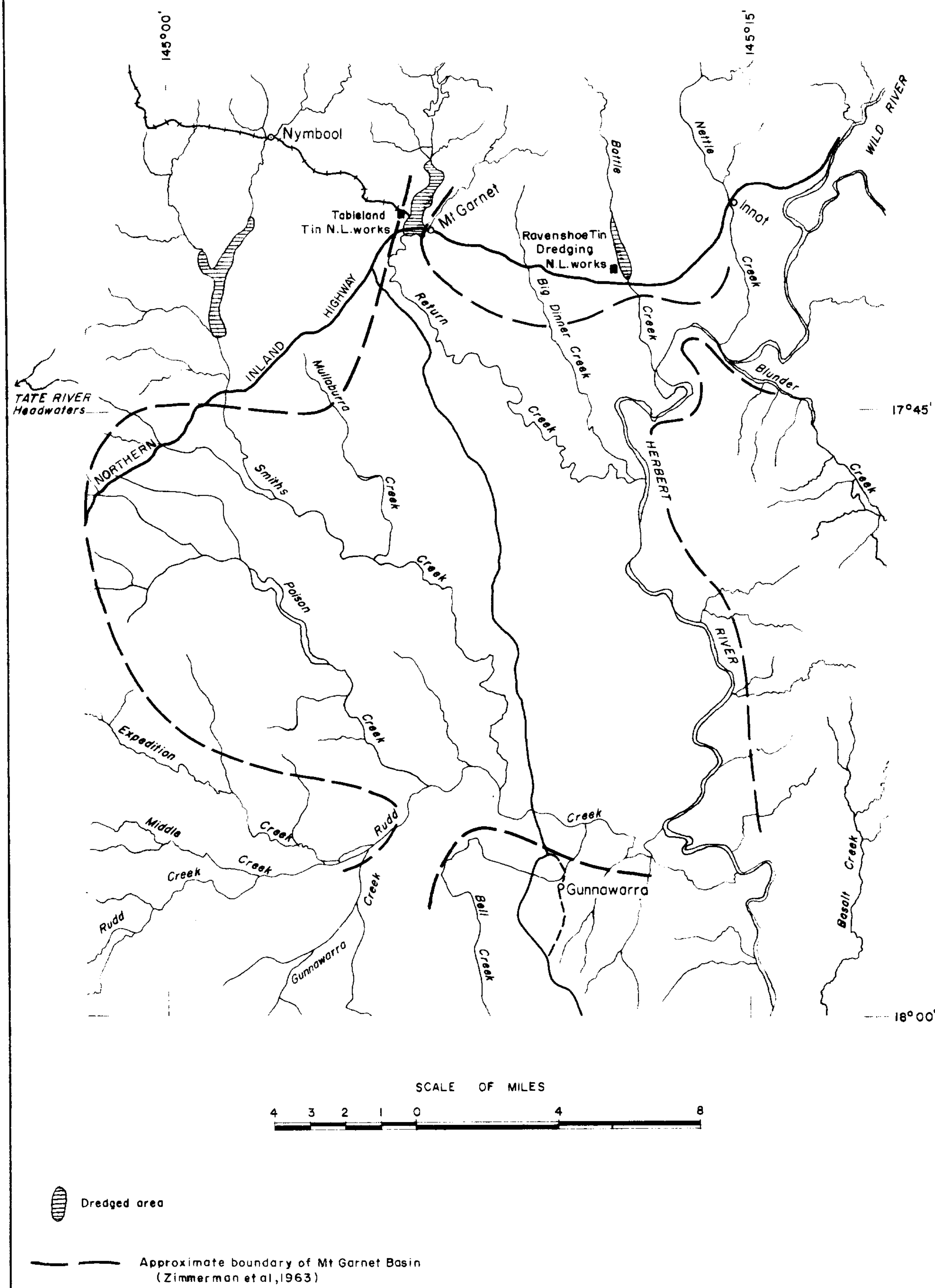
MT. GARNET, QLD, 1962



SMITHS CREEK, RETURN CREEK, AND WURRUMA AREAS

GRAVITY TRAVERSES, GEOLOGY AND POSITIONS OF BORE HOLES

PLATE 3



DREDGED AREAS AT MT GARNET

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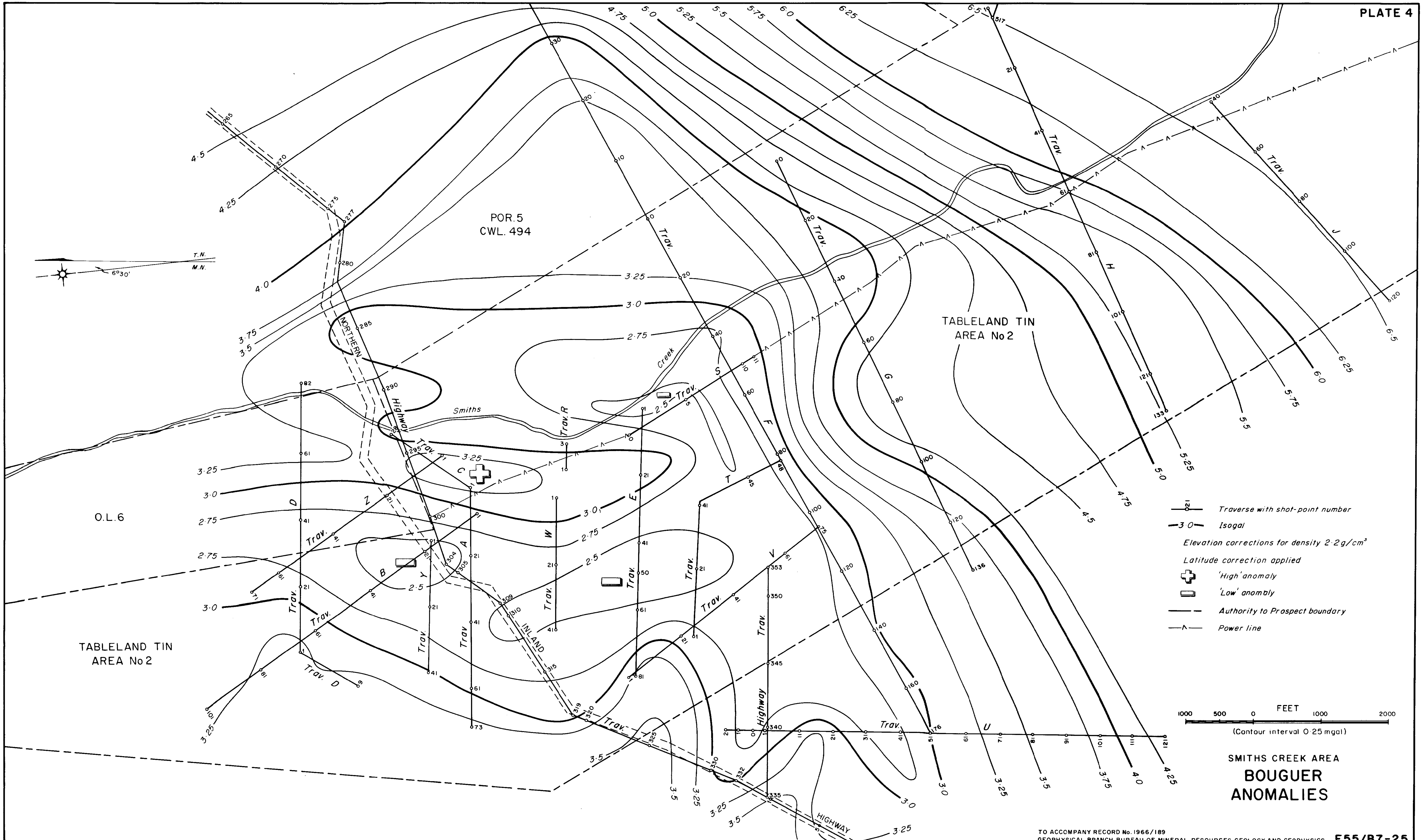
MT GARNET, QLD, 1962

PLATE 4



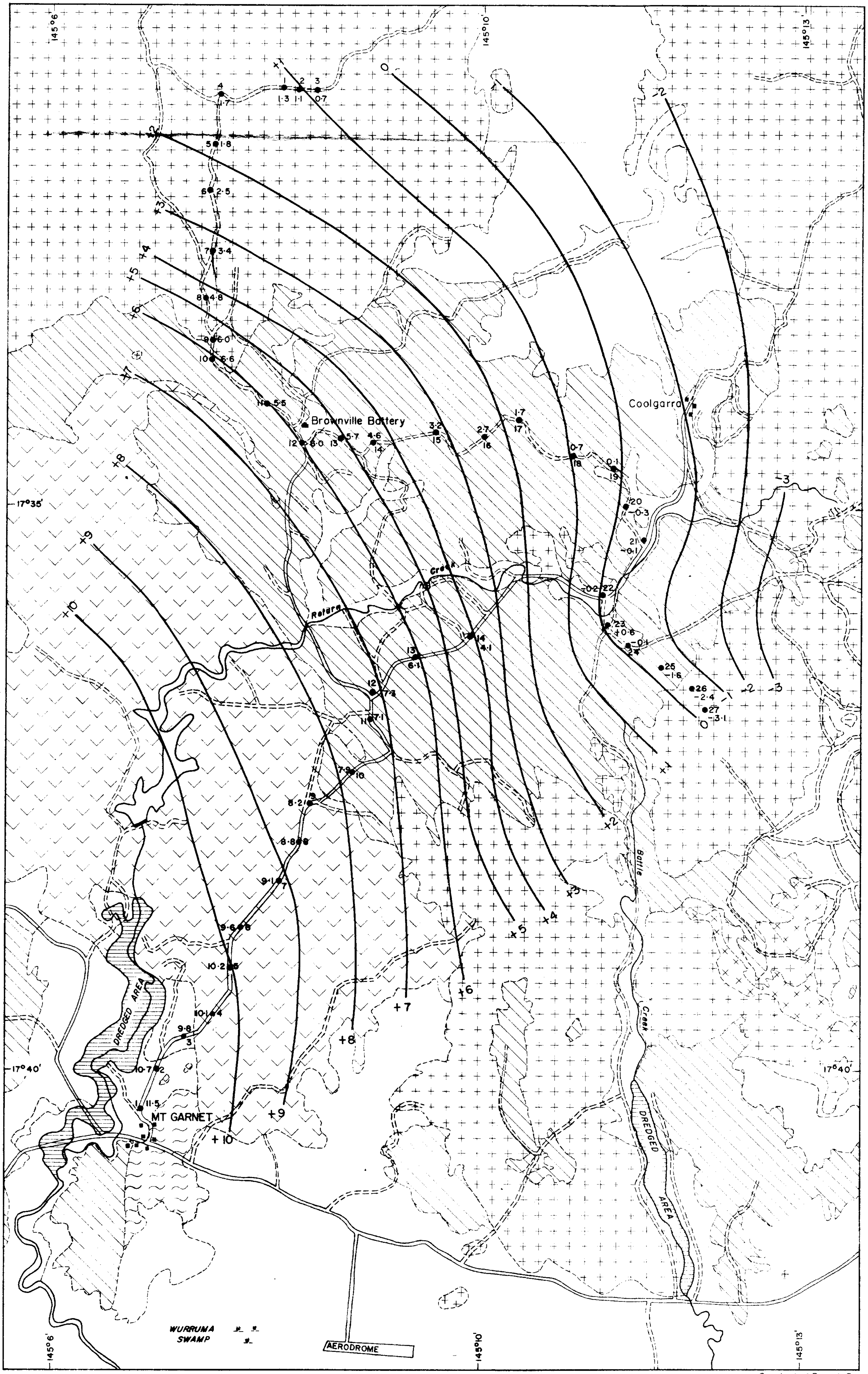
SMITHS CREEK AREA
BOUGUER
ANOMALIES

TO ACCOMPANY RECORD No. 1966/189
GEOPHYSICAL BRANCH, BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

E55/B7-25

Mt Garnet, Queensland, 1962


PLATE 5
MT GARNET TOWNSHIP
MT GARNET
SEVEN MILE HILL
WURRUMA SWAMP
LUCEYS KNOB
Northern Inland Highway
Hughenden
TRAVERSE ATR 4
TRAVERSE ATR 2
TRAVERSE 5
TRAVERSE ATR 1
TRAVERSE AA
TRAVERSE AB
TRAVERSE AC
TRAVERSE 3A
TRAVERSE G
TRAVERSE J
TRAVERSE MD 1
TRAVERSE MD7
TRAVERSE MD8
TRAVERSE MD5
TRAVERSE MD 12 (Lower Smiths Creek)
LOWER RETURN CREEK TRAVERSE
TABLELAND TIN AUTHORITY TO PROSPECT
MINERAL DEPOSITS AUTHORITY TO PROSPECT
Smiths Creek
Return Creek
Charcoal Creek
Big Dinner Creek
FEET
2000 1000 0 2000 4000 6000
Gravity contours in milligals
Contour interval 0·25 mgal
Elevation corrections computed using a density of 2·2 g/cm³
Latitude correction applied
SMITHS CREEK, RETURN CREEK, AND WURRUMA AREAS
BOUGUER ANOMALIES
Geophysical Branch, Bureau of Mineral Resources, Geology and Geophysics E55/B7-29
TO ACCOMPANY RECORD No. 1966/189



CARBONIFEROUS

- Alluvium, eluvium, laterite
- Medium-grained biotite granite (ELIZABETH CREEK GRANITE)
- Fine-grained greisen and greisenized granite (ELIZABETH CREEK GRANITE)
- Rhyodacite, tuffs, rhyolite

SILURIAN

- Greywacke siltstone, chert, basalt, limestone

PRECAMBRIAN

- Mica schist, quartzite

LEGEND

- Geological boundaries
- Road
- Vehicle track
- Stream
- Isogal (1 mgal interval)
- ●14 Gravity station
- -1·6 Bouguer anomaly

SCALE IN MILES

1 0 1 2 3

COOLGARRA AREA

GRAVITY STATIONS, GEOLOGY, AND BOUGUER ANOMALIES

Geology based on B.M.R. Record 1963/77; "The Geology and Mineral Deposits of the Mt Garnet Area, North Queensland" by D.O. Zimmerman, K.R. Yates, and B.J. Amos.

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E55/B7-28

PLATE 7

SMITHS CREEK AREA

GRAVITY PROFILES, SEISMIC CROSS-SECTIONS AND DRILL SECTIONS

FEET

HORIZONTAL 500 0 500 1000 1500

VERTICAL 100 0 100 200 300

Bouguer values determined for density 2·2 g/cm³

Geophysical Branch, Bureau of Mineral Resources, Geology and Geophysics.

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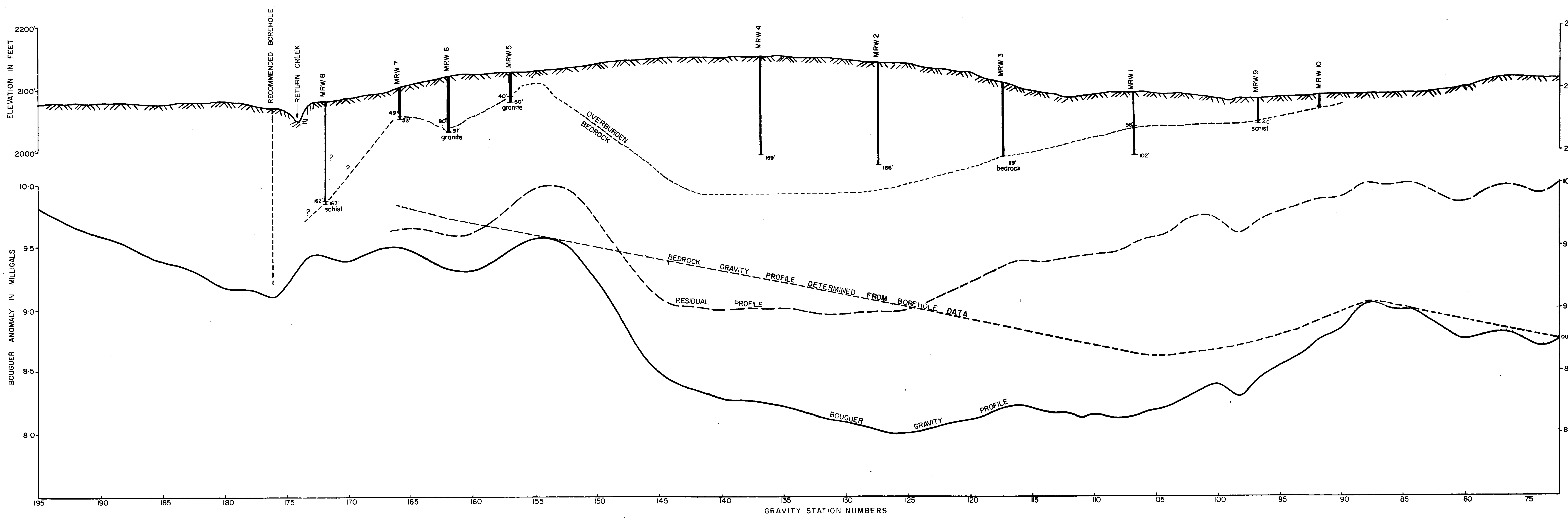

Bouguer values determined using a density of 2·2 g/cm³

Bore hole data from J. Best, Geological Branch, BMR

SCALES
HORIZONTAL 500 0 500 1000 1500 FEET
VERTICAL 100 0 100 200 300

WURRUMA PROSPECT
TRAVERSE ATR1

RESIDUAL GRAVITY PROFILE AND BORE HOLE SECTION

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E55/B7–26