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**THE MINING INDUSTRY AND MINERAL
POTENTIAL OF FORESTED AREAS WITHIN
THE SOUTH-EAST QUEENSLAND
BIOGEOGRAPHIC REGION**



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THE MINING INDUSTRY AND MINERAL POTENTIAL OF FORESTED AREAS WITHIN THE SOUTH-EAST QUEENSLAND BIOGEOGRAPHIC REGION

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This report has been prepared for the Queensland Department of Mines and Energy as part of a Comprehensive Regional Assessment of forest values for a Regional Forest Agreement for the South-east Queensland Biogeographic Region.

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Cover Photograph: Mount Rawdon gold prospect, Mount Perry district.
(Photo courtesy of Placer Exploration Pty Ltd.)

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SUMMARY

This report describes the economic significance of mining and exploration, and the potential for mine development arising from exploration, in forested areas within the Southeast Queensland Biogeographic Region. The Region is defined by its assemblage of vegetation and habitat types, and extends along the southeast Queensland coast from Coolangatta to north of Bundaberg, and inland for about 200 km. The Region has a total area of about 70 000 square kilometres, and about half of the Region is forested.

The economic significance and growth potential of construction materials, including brick clays, are described in a companion report by J E Siemon and K H Holmes.

The Queensland Government received a direct income of \$6.262 million from mining and exploration in the forested areas in the 1994-95 year. Constituent parts of this income are royalty - \$5.683M, mining lease rent - \$0.394M, and rent of exploration titles - \$0.185M. Total employment at mining leases in the forested areas in 1994-95 was 603 people, of whom 586 were at operating mines. It is estimated that 41 persons were employed in exploration in the forested areas, thus total employment industry-wide in forested areas was 644 persons. These figures do not include the downstream multiplier effects. Expenditure on exploration in the forested areas in 1994-95, in 82 exploration permits of total area 6276 square kilometres, was about \$4 million.

Sales of mine produce from 19 mining centres within forested areas in the 1994-95 year yielded \$190.6 million, of which the five larger operations provided a total of \$187 million. These were the Tarong coal, North Stradbroke Island rutile-zircon-ilmenite, North Stradbroke Island silica sand, Manumbar gold and Mount Biggenden magnetite enterprises. Mining in cleared land within the Region is concentrated at the West Moreton coal field, the Gympie gold mine, Kingaroy kaolin workings and the Flinders dolomite operation, with 1994-95 production valued at about \$192.5 million. There are more operating mines in the forested area than in the cleared parts of the Region, but the value of the output from the two land types is about the same.

For the past five years production in the forested areas, from the Tarong coal, North Stradbroke Island heavy mineral and Mount Biggenden magnetite mines has been at a steady rate, and there was an average growth of 16% in the production of North Stradbroke Island silica sand. The Manumbar gold mine began operations in early 1995, and is expected to produce about 20 000 oz of gold, valued at about \$10 million, in the 1995-96 year.

The principal operations in cleared land are also growing. Production from the West Moreton coal mines is expected to increase at an average of 10% per year, to meet the demand for steaming coal in Asia. Operations at Gympie will grow as the mine reaches full development.

It is anticipated that there could be six new mining operations (Agnes Water-Middle Island-Hummock Hill Island heavy minerals, Ban Ban zinc, Goondicum ilmenite, Mount Rawdon gold, Norton gold and Spring Mountain coal) developed at known deposits in the forested parts of the Region in the next ten years. The developments with the larger economic impact are expected to be at Agnes Water-Middle Island-Hummock Hill Island, Goondicum, Mount Rawdon and Spring Mountain.

The Mount Rawdon gold resource is about 15 kilometres southeast of Mount Perry. It is a volcanogenic gold deposit, with a resource of 22 million tonnes of ore at an average grade of 1.2 g/t gold and 4 g/t silver. Mine feasibility is currently being appraised, assuming a production rate of 2 million tonnes of ore per year, to yield about 70 000 oz of gold per year, for an annual gross income of about \$35 million. The mine would require a workforce of about 100, drawn from the local labour

force as far as possible, and housed in the township of Mount Perry or nearby. This development would have a major financial impact on Perry Shire, which had an estimated resident population of 404 in mid-1994.

The Agnes Water-Middle Island-Hummock Hill Island heavy mineral resource is contained in mining and exploration titles south of the township of Seventeen Seventy, and north of the township along the coast and on Middle and Hummock Hill islands. The titles contain the largest unworked resource of heavy minerals (ilmenite, rutile and zircon) on the Queensland coast which is not alienated by other land uses. Mine development here is dependent on world market demand and thus product price, and on the cost of provision of infrastructure. Such development would have some economic impact in Miriam Vale Shire.

Development of the Spring Mountain coal resource, southeast of Ipswich, is expected to proceed by underground mining at a rate up to 2 Mt/year. Although the development is in a forested area, underground mining is expected to have little effect on surface conditions.

The other major planned development in forested land is at the Goondicum ilmenite resource, which is about 30 kilometres east of Monto. Production of ilmenite from alluvial and eluvial deposits is planned to begin at 85 000 tonnes valued at \$8.5 million in 1996-97, and to reach 450 000 tonnes of ilmenite worth \$45 million in 2001-02. The development would cause some economic impact on Monto Shire.

Within the cleared part of the zone, it is anticipated that the Acland coal resource, about 15 kilometres north of Oakey, will be developed in the medium term. The Walloon coal here has a high ash content, which can not be significantly reduced by washing, and hence this coal is not acceptable for export. It is very suitable for a coalfield-based power station, as at Swanbank, Tarong and Callide, to meet demand for electricity in the Region.

The average cost of discovery of a mineral deposit in the Region is estimated to be \$16 million for a gold deposit, and \$200 million for a deposit of base metals. The history of exploration in the Region shows that exploration effort (in terms of the number of Exploration Permits held) has increased substantially over the past 30 years. Assuming that three-quarters of the \$4 million of annual exploration expenditure in forested areas is currently directed at the search for gold deposits, it is likely that a gold deposit will be found every five years.

A study of the number of times a unit area had been held in an Exploration Permit produced a map showing areas of the most intense exploration interest. There are two large zones of high exploration interest, which are northwesterly trending areas along the mountainous spine of the Region which are roughly two-thirds forested.

A mineral occurrence database was compiled for the Region, using the detailed information from Queensland Geological Records where available. For sheet areas in which mineral occurrence data had not been formally compiled, a new but less comprehensive collection was produced from Geological Survey and Company exploration reports. The database contains information on 1784 mineral occurrences, and the positions of these were plotted on five maps at scale 1 : 250 000. With the exception of a few isolated and very small occurrences, all the occurrences of coal, gold, industrial minerals (bentonite, diatomite, dolomite, graphite, kaolin, limestone, magnetite, perlite, and of silica and foundry sand), metals (copper, lead, mercury and zinc) and oil shale have been studied and allocated to a genetic class.

This classification system allowed the identification of zones of mineral potential, which enclose known occurrences of similar origin and the area favourable for the discovery of further resources of

the same type. The zones are shown on the five mineral occurrence maps, with the zones for each commodity ranked by the letters A, B, C etc in order of economic importance. The probability of further deposits occurring in a zone was defined as either 'likely' or 'possible'. The shape of the zones, and the number of zones, is expected to change as exploration and regional mapping provide further information on ore occurrence.

The zones containing gold deposits arising from volcanic processes are considered to have the greatest potential to contain a large ore deposit. Five such zones occur within the northerly trending main area of high exploration interest. Some of the zones are completely timbered, and some are nearly all cleared; overall about two-thirds of the volcanogenic gold zones is forested. A discovery of a deposit of this class is expected to have a major impact on its vicinity and on the economy of the State, similar to the impact of development of the Mount Rawdon deposit.

There are many structure-controlled vein gold deposits and a few skarn gold deposits in the Region. These deposits are usually small, each containing less than 10 000 oz of gold. The discovery and development of an individual deposit of this type is expected to have little economic impact on its surroundings. The vein deposits usually occur in clusters, but are rarely as numerous as at the Gympie field. However, development of a Gympie-sized group of vein deposits would have a major economic impact, as in Gympie in the past.

The zones with potential for a porphyry copper or molybdenum deposits are considered to have the highest economic significance of the metalliferous zones, due to their typically large ore body size and amenability to open pit mining. Nineteen zones of mineral potential were identified for this deposit type, of which 14 are in forested areas. Discovery of a porphyry-type deposit of viable size and grade is expected to have a major economic impact on its vicinity. However, as the statistical cost of discovery of a metalliferous deposit is estimated to be \$200 million, and annual expenditure on the search for metalliferous deposits in the forested areas of the Region is thought to be about \$1 million, discoveries are expected to be very infrequent.

The other types of metalliferous deposits have low to medium tonnage potential. This factor, the high cost of an exploration success, and the small number of zones of potential, suggest that discovery and development of a non-porphyry metalliferous deposit is unlikely.

Exploration for heavy mineral deposits in the coastal plain is limited by close settlement and environmental constraints. Considering the small area available for exploration, it is unlikely that further resources will be found.

Development of new industrial mineral mines is probable, to meet local demand, which is generally small. Thus the new operations are expected to be small-scale, with little economic impact. The two oil shale basins in the Region contain large resources, but are not expected to be developed in the near future as more attractive deposits are available.

TERMS OF REFERENCE

This report describes the extent and value of mine production and exploration (for all minerals other than petroleum and construction materials) within forested areas in the Southeast Queensland Biogeographic Region. It addresses the following questions :

1. What is the value of production from current mining operations in forested areas?
2. What direct income does the State receive from mining and exploration activities in the forested areas?
3. How many people are employed in mining and exploration?
4. What is the annual level of exploration expenditure?
5. How does the level of mining and exploration activity in forested areas compare with activity in non-forested areas?
6. What trends in mining and exploration activity, and in economic significance, can be identified?
7. Which areas have likely or possible potential for the discovery of mineral deposits?

These questions are briefly addressed in the SUMMARY at the beginning, and at length in the body of the report. Illustrations show the boundaries of the region and the forested areas, sites of current mining operations, areas held under exploration title, sites of known mineral deposits, and boundaries of the zones of mineral potential.

INTRODUCTION

This report is an appraisal of the economic value and likely growth of the mining industry in forested areas within the Southeast Queensland Biogeographic Region. The Region is defined by a particular assemblage of vegetation and habitat types. Its boundary was provided by the staff of the Resource Management Institute of the Department of Natural Resources. The Region, of total area of about 70 000 square kilometres, includes the southern Queensland coastal plain and ranges that extend along the coast from the New South Wales border to Rodds Bay, over a distance of about 530 km, and inland for an average width of about 200 km. It is generally referred to as 'the Region', and its location, the borders of the maps and the principal mine sites are shown in Figure 1.

For the purpose of this study 'mining' encompasses the extraction of all materials from the earth's crust with the exception of petroleum and construction materials (including brick clays and dimension stone). The economic value of mining within the Region is discussed in Part 1. Trends in mine production and exploration, and some predictions of mine growth and exploration results are provided in Part 2. The process of identification of zones with potential to contain mineral deposits, which are expected to be the targets for mineral exploration, is outlined in Part 3, and the individual zones are described in Part 4. The shape and number of zones of mineral potential will change as further information is provided by regional geological and geophysical mapping, and by exploration by the industry.

The 'forested areas' of the region were identified from 1 : 250 000 scale maps prepared by the Forest Assessment Section of the Resource Management Institute, that showed areas of forest interpreted from Landsat TM satellite imagery, using bands 2, 3, 4 & 5, on scenes flown on 15.10.1991. Boundaries were drawn to separate areas predominantly under forest from those predominantly cleared. Thus the 'forested areas' include some interspersed cleared land and vice versa, but a finer discrimination is not required for this study. Vegetation in forested areas may be closed forest, eucalypt forest, woodland or heath, in various stages of disturbance, but the forest structure is still essentially present. Plantations of introduced species were excluded from the forested areas.

The total forested area within the Region was estimated for this appraisal by the counting squares method, and found to be about 35 000 square kilometres, ie the region is about half timbered and half cleared. The position of the forested areas is shown on the five large maps, on 1 : 250 000 scale, supplied with this report.

The appraisal was carried out in order to provide information which would be one of many inputs to the identification of areas of natural, indigenous forest which may be preserved under a form of reserve tenure. It was carried out under a contractual arrangement with the Department of Mines and Energy, between February and June of 1996. The project was supervised by Mr W. F. Willmott, and guided by Mr. L. C. Cranfield and Dr C. G. Murray of that Department. Their assistance with this project is gratefully acknowledged.

PART 1: THE SIGNIFICANCE OF EXISTING MINING OPERATIONS

VALUE OF MINE PRODUCTION

There are 147 mining leases of total area 230 square kilometres within the 35 000 square kilometres of forested land within the Region, which represent 0.65% of the forest areas. The lease number, area, owner's name, principal commodity, and number of employees are listed in Appendix 1. Individual production in the 1994-95 year, value of this production, and royalty and rents paid to the State have been recorded but remain confidential for commercial reasons.

The total 1994-95 production from the 19 mine sites in forested areas was valued at \$190.6 million. The sites of the seven major mining operations (those with production of value +\$1 million per year) are shown on Figure 1. All producing sites in forested areas are shown on the accompanying 1:250 000 scale maps. Details of these operations are abstracted from Appendix 1 and presented in Table 1.

DIRECT STATE INCOME

The Queensland Government receives income from mining operations as a royalty calculated as part of the value of mine production, and by payments for rent of Mining Leases. Direct income is also obtained from exploration as rent for Exploration Permits for coal (EPC) or minerals (EPM), and for Mineral Development Licences.

The direct income from mining (royalty + rent) in the forested areas for the 1995 calendar year as recorded by the Royalty Section of the Department of Mines and Energy was \$6.077 million.

In February 1996 there were 79 Exploration Permits Minerals, 3 Exploration Permits Coal, and 14 Mineral Development Licences wholly or partly within the forested areas (Appendix 2). The total rent paid for the parts of these titles in forested areas was \$184 990.

Thus direct payments to the State comprised \$6.077 million from mining operations, plus \$0.185 million from exploration title rents, for a total of \$6.262 million.

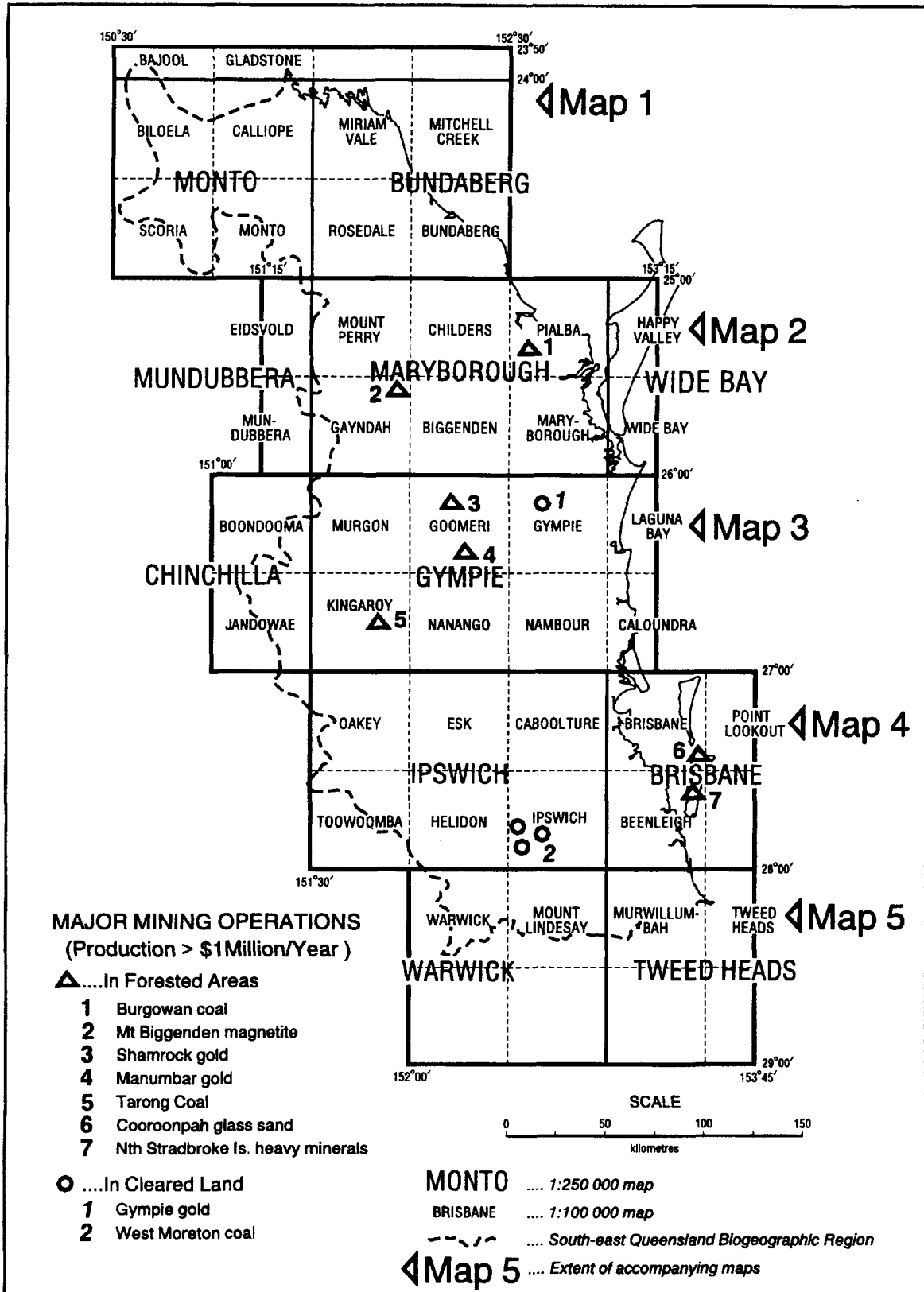


Figure 1: Boundary of the Region, standard map sheet areas and sites of major mining operations.

TABLE 1: SUMMARY OF MINES IN FORESTED AREAS IN 1994-95

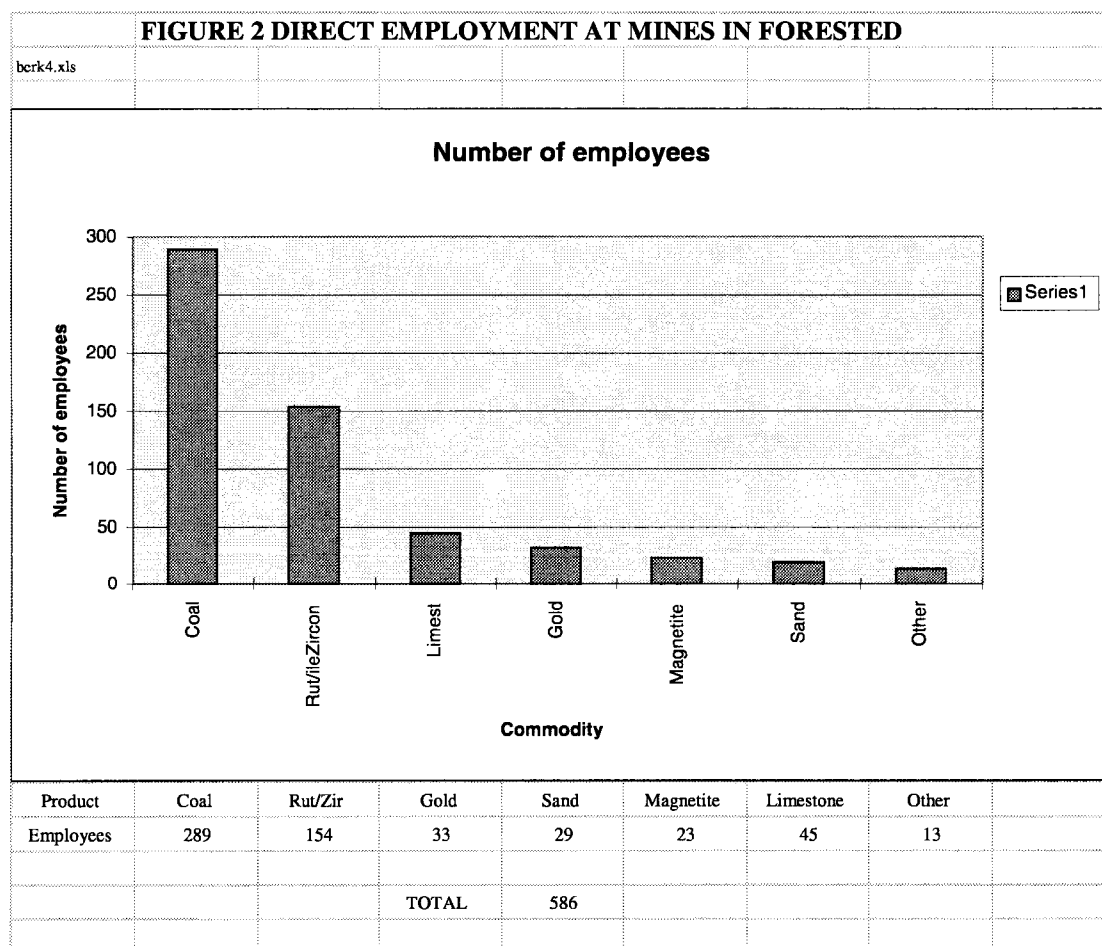
COMMODITY	Leased Area (ha)	Lease Rent (\$/yr)	Name/Location	Mine Owner	Commodity Produced	Employees	Production	Value (\$)	Royalty (\$)
COAL	263.2	2754	Burgowan	Burgowan Collieries PL	coal	19	Confid.	Confid.	Confid.
	4267	42670	'Meandu', Tarong	Pacific Coal PL	coal	270	Confid.	Confid.	Confid.
RUT/ZIRCON	11 866.8	210 042	Nth Stradbroke Is	Stradbroke Rutile PL	Rut Zir Im Mz	154	Confid.	Confid.	Confid.
MAGNETITE	142.7	4477	Mount Biggenden	Commercial Minerals Ltd	magnetite, Bi Co	23	Confid.	Confid.	Confid.
LIMESTONE	11	216	Moffatdale	South Burnett Lime PL	limestone	40	Confid.	Confid.	Confid.
	3.8	98	Marule Lime	K. D. Scarlett	limestone	5	Confid.	Confid.	Confid.
GOLD	107.9	2606	Shamrock	Waraluck Mining PL	Au Ag As Cu Pb	20	Confid.	Confid.	Confid.
	195.7	6448	Manumbar	CRA Exp/Cornwall Res.	Au Ag Cu	11	Confid.	Confid.	Confid.
	1.6	20	Hell Hole Creek	J. S. Deane	Au	2	Confid.	Confid.	Confid.
SAND	247.9	5704	Cooroonpah	ACI Operations PL	glass sand	13	Confid.	Confid.	Confid.
	98	1757	Coonarr Creek	(3 companies)	foundry sand	6	Confid.	Confid.	Confid.
	88	880	Iveragh	Qld Cement & Lime	silica sand	4	Confid.	Confid.	Confid.
	157.3	5198	Bribie/Beachmere	(2 companies)	foundry sand	6	Confid.	Confid.	Confid.
BENTONITE	8	191	Yarraman	P C P Douglass PL	bentonite	8	Confid.	Confid.	Confid.
PERLITE	77	770	Numinbah Mine	Aust. Perlite PL	perlite	3	Confid.	Confid.	Confid.
GEMSTONES	2.5	69	Brigooda	L. W. Koy	garn, sapph, zirc	2	Confid.	Confid.	Confid.
TOTAL	17 538	283 990	19			576		190 612 082	5 683 296

EMPLOYMENT

The royalty returns show that there were 603 persons employed on Mining Leases in forested areas (Appendix 1), of which 586 were employed at operating mines. The distribution of employment at the operating mines is shown in Figure 2 below.

Figures for employment in exploration in the Region are not so readily available. Exploration companies are not required to provide statistics on the number of persons employed, but this can be estimated from the level of expenditure. The total expenditure commitment for exploration titles in forested areas for the 1995-96 year was \$4.148 million, and assuming that every \$100 000 represents a person's annual income, it is estimated that 41 persons are employed in exploration.

Thus the total direct employment in mining and exploration activities in forested areas is (603 + 41) or 644 persons. These figures do not take into account the multiplier effect of employment in primary production, by which the employment of each person in mining generates several other positions in other industries.



EXPLORATION EXPENDITURE

Information on actual expenditure on exploration titles is provided to the Department of Mines and Energy, but is not readily available for the current year. Instead, the expenditure commitment - the sum an explorer must spend to retain an exploration title - has been collated for the exploration titles in forested areas. The total commitment for the parts of the 79 Exploration Permits Minerals and the 3 Exploration Permits Coal within areas of forested land, for the 1995-96 year, is \$4 148 300.

It is not possible to identify the proportion of this commitment which is spent locally, or in Queensland. Exploration is technology rather than labour intensive, and considerable sums are paid to aerial survey and assay companies, and to geoscientists, based in cities remote from the site of the exploration operations. Some funds are expended locally, for accommodation, fuel and labour costs. It is considered likely that less than 50% of the exploration expenditure is paid to local businesses and persons.

COMPARISON OF OPERATIONS IN FORESTED AND UNFORESTED AREAS

Exploration

As at February 1996 the Exploration Permits within the Region, contained a total area of 11 054 square kilometres. All or parts of 82 of these titles, of area 6276 square kilometres, were in forested parts of the Region. The extent of Exploration Permits and Mineral Development Licences in July 1996, (which may be somewhat different because of the volatility of these tenures) is shown in Figures 3A, 3B, 3C. The area covered by the Exploration Permits does not indicate any particular bias towards exploring in either forested or cleared land.

Mining

The forested parts of the Region contain mining operations at 19 centres, which produced coal, rutile-zircon-ilmenite, gold, sand, magnetite and other industrial minerals to a total value of \$190.6 million in the 1994-95 year.

The cleared parts of the Region contain the coal mines of the West Moreton (Ipswich to Amberley) district, the recently opened gold mine at Gympie, the Kingaroy kaolin workings and the Flinders dolomite operation. Production of coal for the 1994-95 year was dominated by the Ebenezer, Jeebropilly, and Wattle Glen Extended mines, with a combined output of about 3.8 Mt of saleable coal. The other six mines in this district produced a total of about 500 000 t of coal. Total 1994-95 production from the West Moreton district was 4.3 Mt of saleable coal, worth \$187 million. Gold production at Gympie was about 10 000 oz for 1994-95, valued at \$5 million. The total value of production from mines in cleared areas was about \$192.5 million.

The value of mine production from the forested and unforested areas is about the same. However, the production from the forested areas was obtained from 19 centres, compared with four centres in the cleared land. It appears that mining operations are far more diverse in areas of forested land.

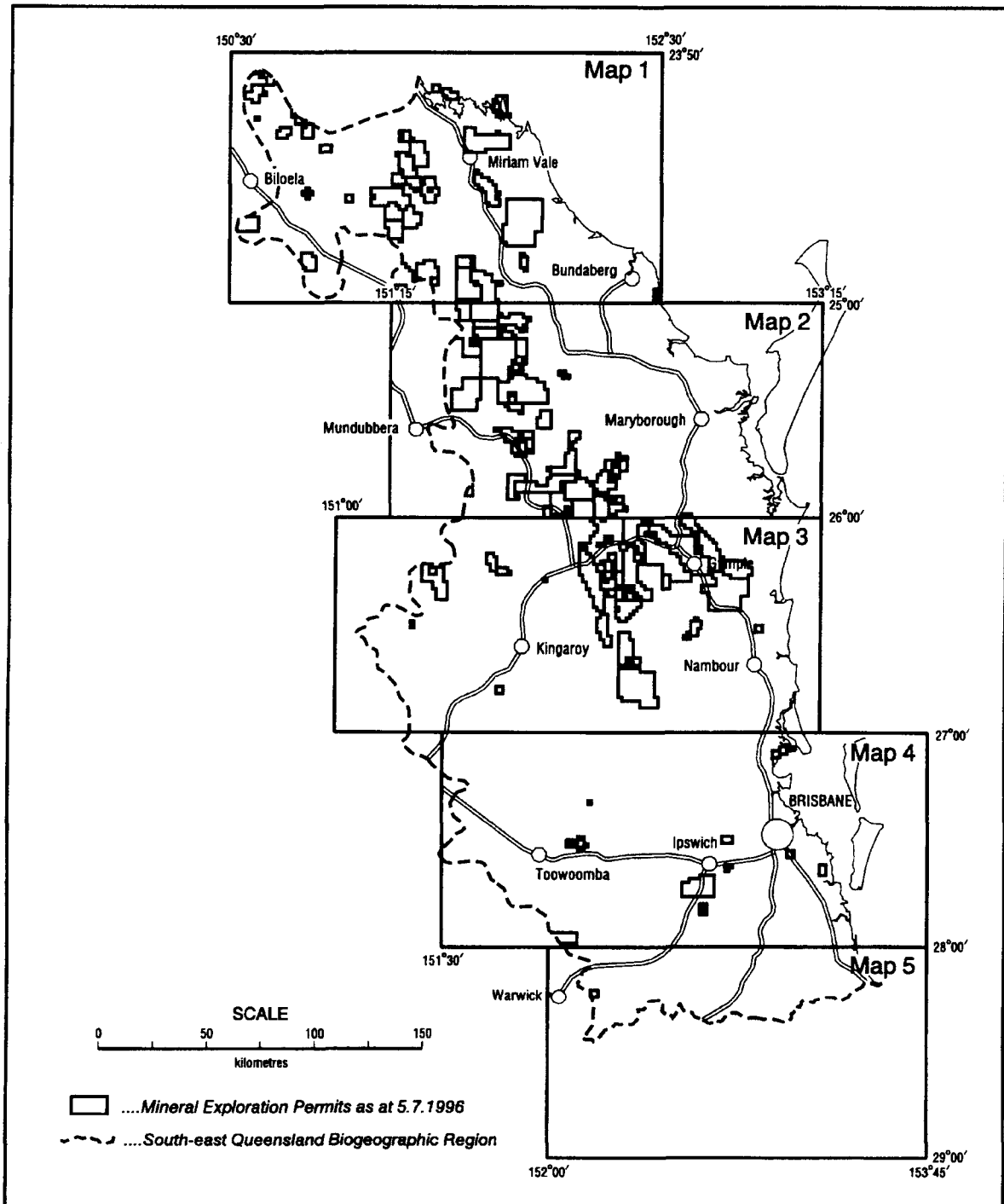


Figure 3a: Distribution of Exploration Permits for Minerals in the Region in July, 1996.

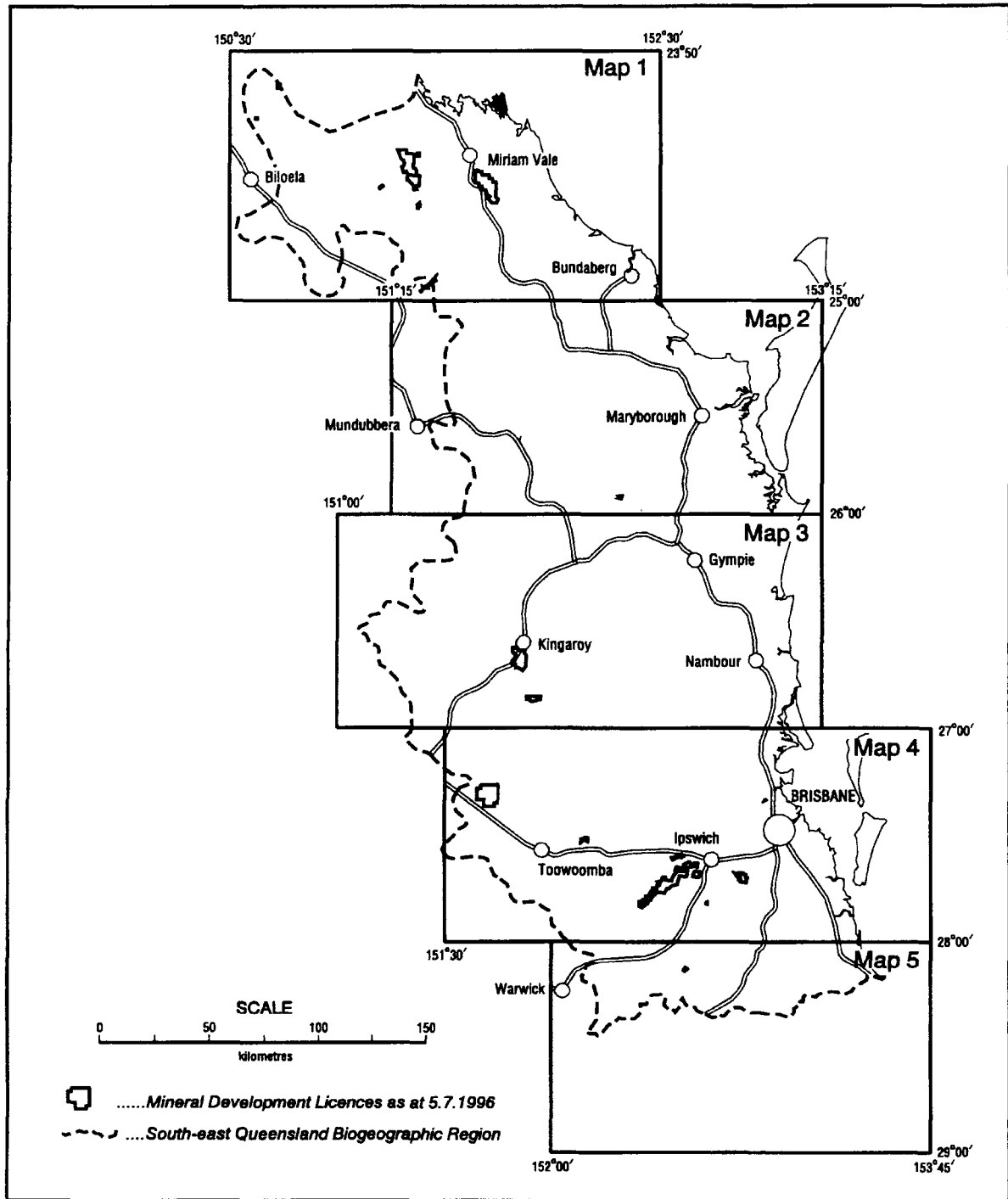


Figure 3b: Distribution of Mineral Development Licences in the Region in July, 1996.

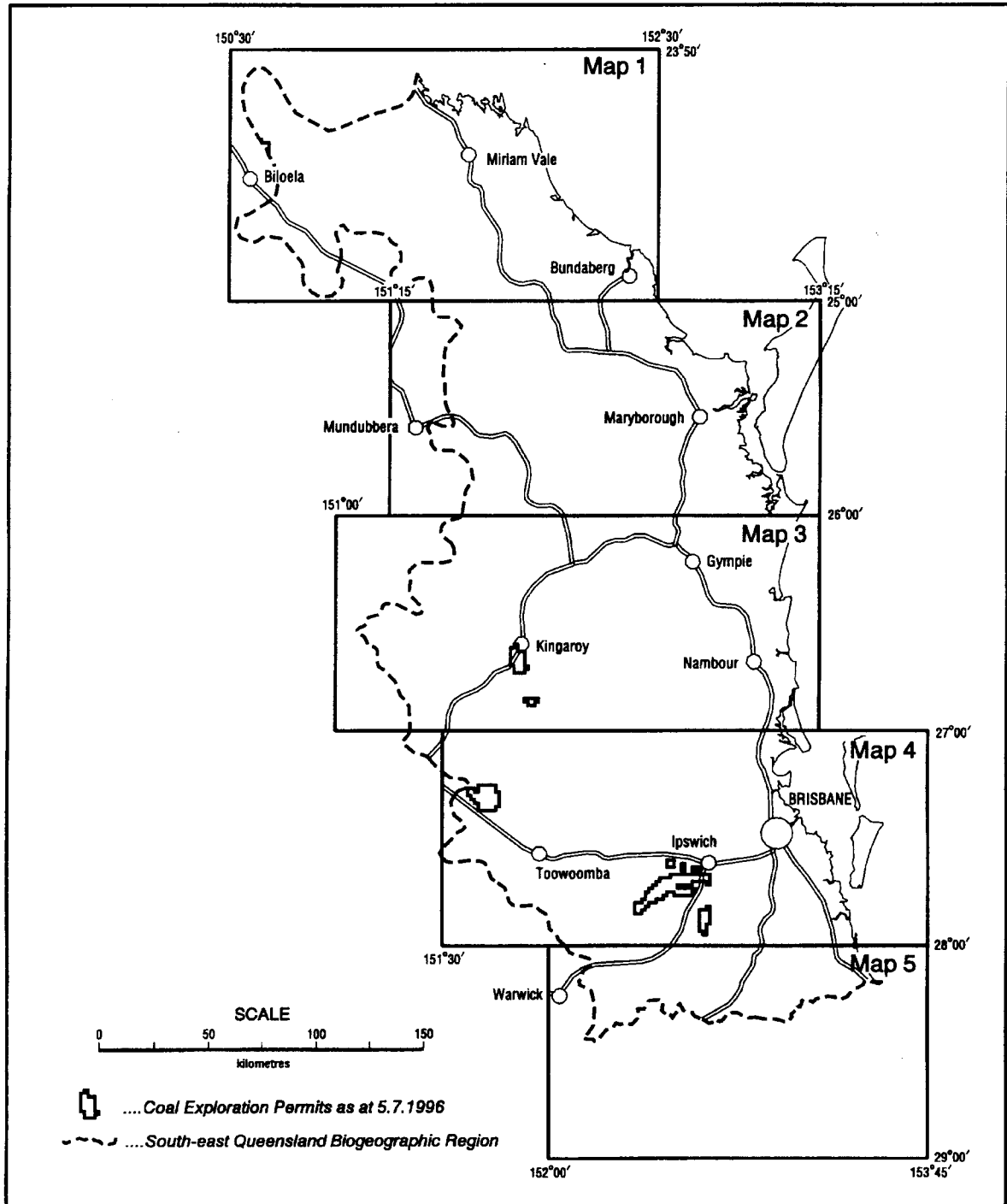


Figure 3c: Distribution of Exploration Permits for Coal in the Region in July, 1996.

PART 2 : TRENDS AND PREDICTIONS

TRENDS IN MINE PRODUCTION

Mining produces the raw materials which are an essential part of society's requirements for food, shelter and power. As world population grows, and nations achieve higher living standards by industrialisation, so mine production increases. The growth in world use of mine products is illustrated by Figures 4 and 5, below.

FIGURE 4: WORLD COAL PRODUCTION, 1950 TO 1989 (Mt)*

Year	1950	1960	1970	1976	1989
Prod'n (Mt)	1550	2161	2964	3267	4700

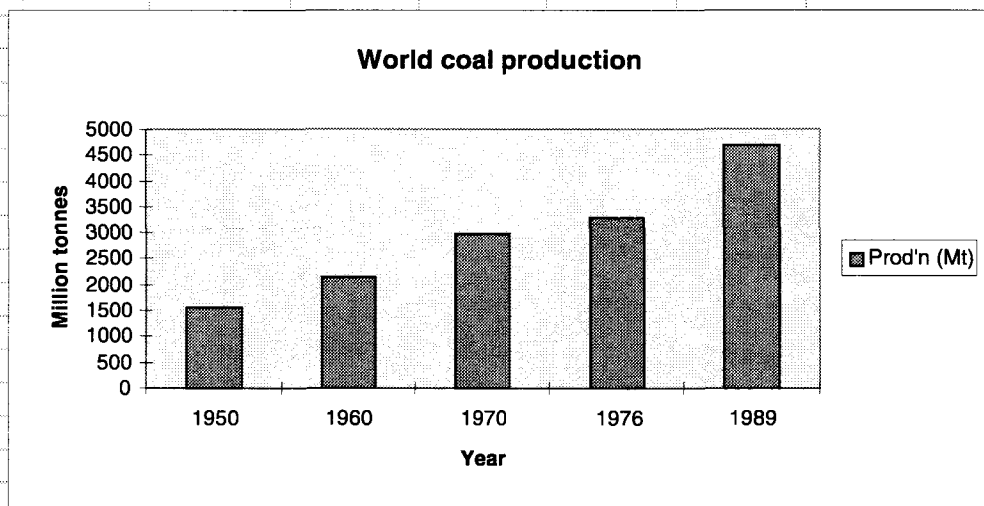
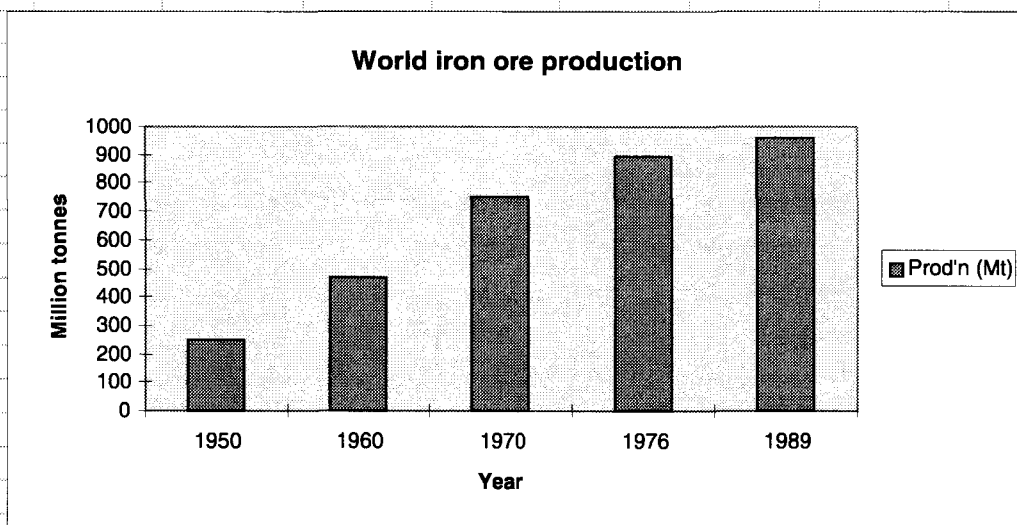


FIGURE 5: WORLD IRON ORE PRODUCTION 1950 TO 1989(Mt)*

Year	1950	1960	1970	1976	1989
Prod'n (Mt)	246	468	750	890	959

* Source is Mining Annual Review, for 1952, 1962, 1971, 1977, 1989



Production from Forested Areas

For the past five years, the Tarong coal, North Stradbroke Island heavy minerals and Mount Biggenden magnetite mines have produced at a steady rate. Output from the North Stradbroke Island glass sand operations grew at an average rate of 16% per year. A new mine was developed at the Manumbar gold deposit, in a forested area, in early 1995. Production is expected to be about 20 000 oz, valued at around \$10 million in the 1995-96 year.

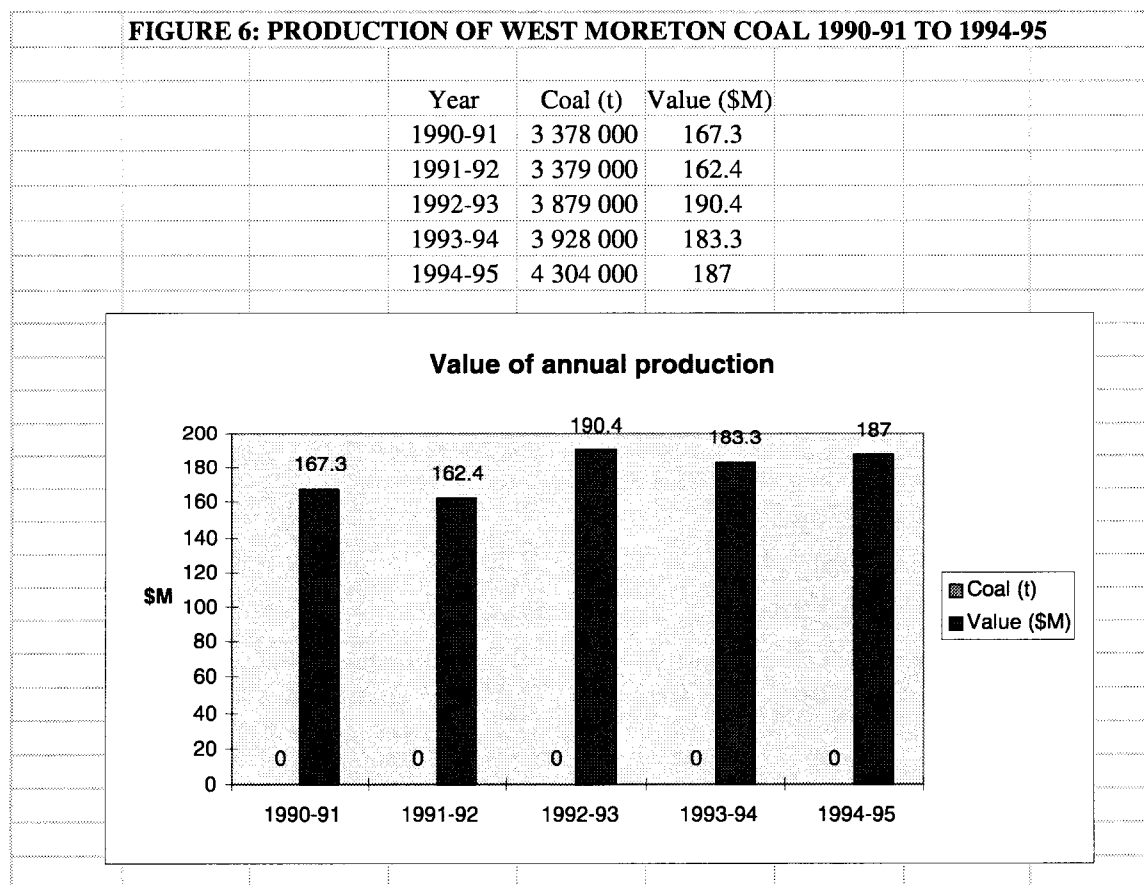
Output from the small producers of industrial minerals (mainly bentonite, dolomite, limestone and perlite) is tied to the demand from local markets, and is not expected to increase at a rate higher than the growth in Australian population, which averages a few percent per year.

Production from Cleared Areas

The major mining operation in cleared land, at the West Moreton district coal mines, showed an annual growth rate of 5%, as shown in Figure 6, below. Asian demand for seaborne steaming coal is expected to grow by almost 50% in the five years from 1995-96 to 2000-01, ('Courier Mail', 24.6.96, p. 23) and it is expected that the West Moreton coal mining operations will expand to meet this demand.

The Monkland area at Gympie, also in cleared land, is expected to produce about 30 000 oz of gold in the 1995-96 year, from a resource of 1.94 Mt at 8.2 g/t gold. Gross value of mine production in 1995-96 is expected to be about \$16 million.

FIGURE 6: PRODUCTION OF WEST MORETON COAL 1990-91 TO 1994-95



DEVELOPMENT OF KNOWN DEPOSITS

Mine production within the region is partly for local use, and partly for export. The local market is relatively small, and the established mines fully satisfy the local demand for their products. Hence any new mines developed in the region must compete with imported mine products for local use (for the small market available), or compete in the world market.

New mines must compete with operations planned or partly developed at other Australian deposits, and with operations elsewhere throughout the world. As a general rule, only high-throughput and low-cost mines, based on large deposits, are likely to have an assured and long life.

Gold mining is an exception to this general rule, as world demand has absorbed all new mine production for the last 20 years, at a relatively stable price. This stable price has effectively lowered the cash return from gold mining, as inflation has decreased the real value of mine income. However, mine operators have developed increasingly efficient and low-cost operating systems, so that break-even grades have fallen during this period, and mine profitability has remained at attractive levels.

Known mineral deposits in the region, at which mines may be developed during the next 10 years, are described below.

Possible New Mines in Forested Areas

The **Agnes Water-Middle Island-Hummock Hill Island heavy mineral deposits** are in forested coastal land in Burnett Shire, north and south of the township of Seventeen Seventy. Mining Leases and Exploration Permits here contain reserves exceeding 2.4 Mt of ilmenite, rutile and zircon. This is the largest unworked resource of heavy minerals on the Queensland coast which has not been alienated by other land uses. Mine development here is dependent on world market demand and thus product price, and on the cost of establishing infrastructure.

The **Mount Rawdon gold deposit**, about 15 kilometres southeast of Mount Perry, has a resource of 22 Mt of ore of average grade 1.2 g/t gold and 4 g/t silver. The deposit is in Perry Shire, and about 2 kilometres east of the eastern edge of Timber Reserve 296. Mine feasibility is being assessed, and results should be available after the end of June, 1996. The feasibility study assumes that ore will be produced at around 2 Mt/yr, thus allowing a mine life of about 11 years. The ore would be processed by heap leaching, to yield about 70 000 oz of gold per year. The project is expected to require a work force of about 100, and it is anticipated that many employees will be drawn from the region, and will live at Mount Perry or other townships nearby. Gross mine income is predicted to be about \$40 million per year. The project will have a major financial impact on Perry Shire, which had an estimated resident population of 404 in mid-1994 (Regional Statistics Queensland, 1995).

Development of the **Spring Mountain coal resource**, southeast of Ipswich, is expected to proceed by underground mining at a rate up to 2 Mt/year. Although the development is in a forested area, underground mining is expected to have little effect on surface conditions.

The **Ban Ban zinc deposit** is about 40 kilometres southeasterly from Gayndah and 30 kilometres southerly from Biggenden. The deposit is in Biggenden Shire, and about 2 kilometres north of the northern tip of State Forest 259. It has a resource of 1.5 Mt at 7.5% zinc and 9 g/t silver; development is dependent on an increase in the price of zinc.

The **Goondicum ilmenite project** is about 30 kilometres east of Monto, and has a total resource, in eluvial and alluvial deposits, of 112 Mt of average grade 4.3% ilmenite. Some of the alluvial resource is in sediment of the Burnett River, outside the western boundary of the region. The portion of the resource within the region is in Monto Shire, and just north of State Forest 54. Monto Minerals NL was formed in January 1994 to develop these deposits, and plans (subject to the results of a detailed feasibility study) to produce 85 000 t of ilmenite in the 1996-97 financial year, increasing output to more than 450 000 t of ilmenite in the 2001-02 year. Marketing experts have advised Monto Minerals that this quantity of ilmenite is saleable, at prices of \$103-117/t in 1996-97 and \$108-122/t in 1997-98. Using \$100/t of ilmenite sold for simplicity of calculation, gross income is estimated to be \$8.5 million in 1996-97 and \$45 million in 2001-02. The development is expected to have some impact on Monto Shire, which had an estimated population of 3005 in mid-1994 (Regional Statistics Queensland, 1995).

The **Norton gold deposit** is in Calliope Shire, about 40 kilometres southerly from Calliope, in a 'corridor' of timbered land between State Forests 645 and 719. Drilling in Mineral Development Licence 130, in part of the Norton Gold Field, has defined a resource of 120 000 t of average grade 6 g/t gold. Subject to the grant of mining title, and determination of mine feasibility, it is planned to mine this resource in an open pit and truck the ore to a treatment plant at Eidsvold (Australian Gold Annual, 1996, p. 78). The mining and transport operation here is expected to be a short term (1-2 year) project, involving some use of local contractors, but with little long-term impact on Calliope Shire.

Possible New Mines in Cleared Areas

The Walloon steaming coal in the Acland resource area is suitable for steam raising in a coalfield-based power station, as at Swanbank, Tarong and Callide. The coal is not suitable for export, as the high ash content can not be removed by washing. Development of the very large resource here is highly probable, in the medium to long term, to satisfy the demand for electricity in the region.

DEVELOPMENT BY EXPLORATION

Motivation

The ore reserves of all mines are finite, and must eventually be exhausted. The day of mine closure may be postponed by a diligent search for extensions to the known deposits, and by introducing more efficient technology, but it must eventually arrive. Thus mine operators, if they wish to remain in the industry, must explore for further resources, to replace the ore being mined. This exploration work can be considered equivalent to the research which companies in other industries undertake to improve existing production methods, and to identify other uses for their products.

Mining is a risky business compared with the financial regime in which other industries operate, and exploration carries the highest level of risk. Mining also has the possibility of a high return on the funds invested, and much higher profitability is available when compared with agriculture and industry generally. This balance of high risk and high profit potential has been known for many centuries, and was first stated by Georgius Agricola in 1550, as :

‘...the veins do in time cease to yield metals, whereas the fields bring forth fruits every year. But though the business of mining may be less reliable it is more productive, so that on reckoning up, what is wanting in stability is found to be made up in productiveness. Indeed the yearly profit of a lead mine in comparison with the fruitfulness of the best fields is three times or at least twice as great’ (Agricola, G., 1550. *De re Metallica* (Dover Publications : New York).

The Exploration Process

Mine operators manage the speculative nature of exploration by a series of safeguards, which include :

1. Ore search in a number of regions, for a variety of commodities - which might be called ‘spreading the risk’;
2. Exploring in regions in which the legislative framework provides an assurance that a discovery can be mined, allows for an acceptable return from a discovery, and has precedents which suggest that the rules will not be capriciously changed; and
3. Selecting those regions in which exploration is perceived to have the highest chance of success.

Exploration proceeds in stages, in which each step involves an increase in the level of expenditure, but a decrease in the level of risk as the likelihood of success improves. The many stages may be simplified to :

1. Area selection - This stage comprises the choice of a prospective region, and then selecting the part(s) of that region with the best chance of success, by a study of published geological data and information from unpublished exploration reports, culminating in an application for an exploration title. Note that each geoscientist brings a personal bias to this stage, and often

a different set of critical factors necessary for ore formation and exploration success - thus the same area may be prospected by many mining companies, over a long period of time, as different objectives or theories are used.

2. Reconnaissance exploration - This involves an examination of all of the area of the exploration title, using a mixture of exploration methods, which may include regional geochemical, geological and geophysical surveys. There is a multitude of techniques available for each of these three classes of survey, and every geoscientist and mining company has an individual preference. The objective of this stage is the reduction of the area of interest from hundreds of square kilometres to a number of targets, each a few square kilometres in area. As in the first stage, exploration potential is not exhausted by a few regional exploration surveys, and it is fallacious to assume that an area is 'completely' explored.

3. Prospect evaluation - This is a careful examination of each of the target areas, by a mixture of detailed geological, geophysical and geochemical surveys, culminating in drilling of some of the targets. As in stages 1 and 2, this procedure is not a conclusive test of the area, as some methods are not applied to some targets, all targets are not drilled, and in many programmes the targets drilled are only tested by a few shallow holes.

Most exploration programmes are terminated, during any of the three stages, by a decision that results to date show that the chance of success is now unacceptably low. The information collected during each programme is made available to other explorers, in 'open file' reports held by the Department of Mines and Energy. These provide an essential guide to the area selection process. In addition, this information will allow, in future, improvement to the shape and position of the zones of mineral potential which are described in Part 3.

All of the factors which companies require before investing in an exploration programme - deposits of many minerals, a satisfactory legislative system, and zones of high mineral potential - are available in the region.

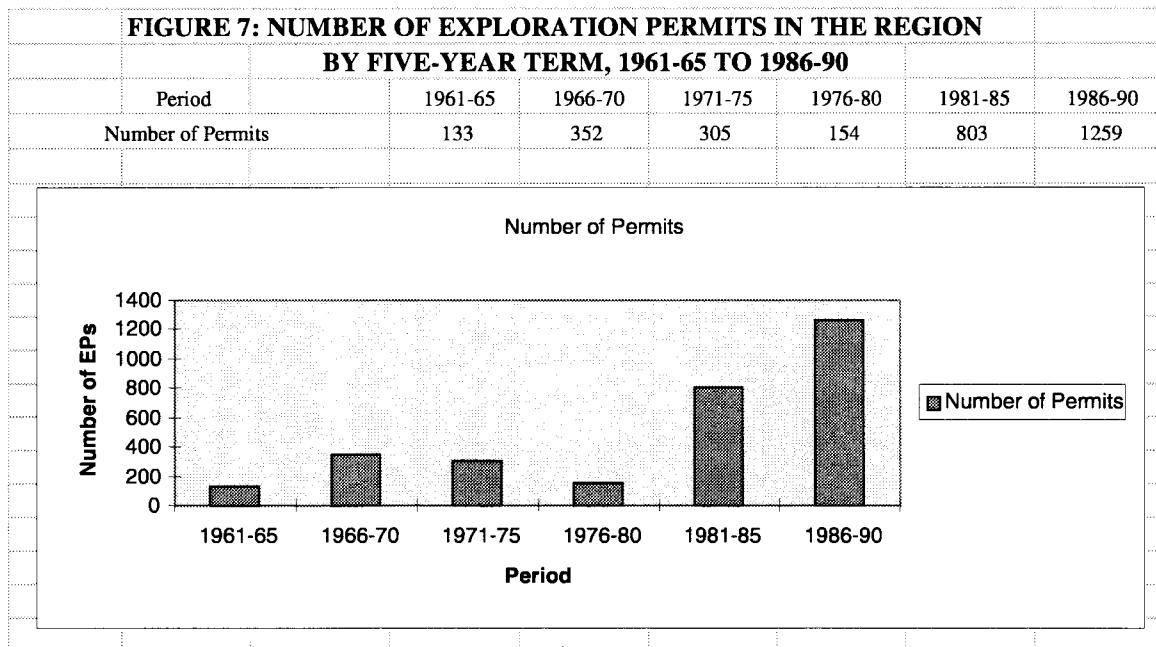
Trends in Exploration Holdings

The grant of an exploration concession to a mining company or prospector, which provides the holder with an exclusive right to apply for a mining title surrounding an exploration discovery, was pioneered in Queensland. The first such concession was granted to Mount Isa Mines Limited, for an area surrounding the Lawn Hill lead-zinc lodes, in 1930. The discovery of the major Century lead-zinc deposit in the area of this concession, in 1987, is a demonstration that ore potential is not exhausted by a series of prior exploration programmes.

The area of a concession is described by a series of sub-blocks, each being an area which measures one minute of latitude by one minute of longitude, within 'blocks' which are five minutes square. The location of each concession, now called an Exploration Permit Minerals, Coal or Petroleum (EPM, EPC or EPP) is recorded in the Department's 'Minerals and Energy Resource Location and Information Network', briefly identified as the 'MERLIN' database. Thus the number of times a sub-block has been part of an Exploration Permit can be identified from the MERLIN data. These data were compiled for the region, for EPM and

EPC titles for the past 30 years, using the five-minute square blocks as the units of area to limit the volume of data collected.

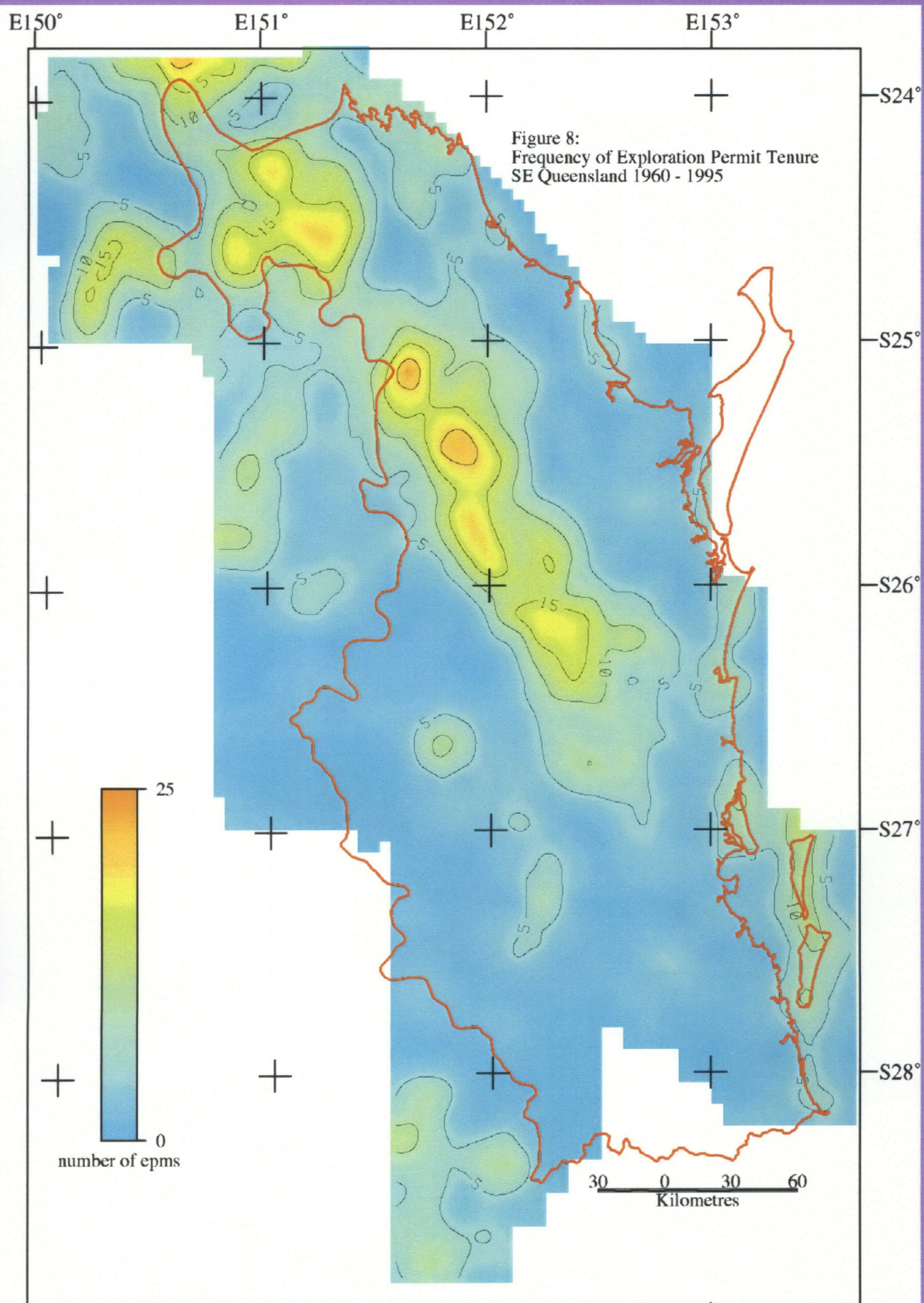
Although there has been an increasing investment by Australian mining companies in overseas exploration in recent years, the Exploration Permit frequency data do not show a reduction in exploration within the region. Indeed, in the terms of the number of Exploration Permits held in successive five-year terms, there has been a steady increase in exploration in the region, as shown in Figure 7, below.



Areas of Exploration Interest

The first stage of an exploration programme, described above as the area selection process, as applied by exploration companies acting in a free-choice process, provides a measure of the mining industry's evaluation of the mineral potential of the region. It is logical to expect that areas of perceived highest potential for the discovery of mineral deposits would be frequently held in an Exploration Permit, whereas areas assigned a low potential would be rarely explored.

The Exploration Permit frequency data used to prepare Figure 13 above were also plotted on a map of the region, in order to show where the high potential areas were located, and are presented below as Figure 8. The contours of EP frequency show that some areas, around Toowoomba and south to the NSW border, with a thick cover of basalt, have never been explored under Exploration Permit tenure. The areas of the known mineral fields areas have held many times as an Exploration Permit, and an area near the Mount Rawdon gold deposit has been in a Permit 24 times. It was found that the 10 EP contour encloses all the major mineral deposits, and this was used to identify areas of high exploration interest.



The small zones of high EP frequency in the south of the region surround the areas explored for heavy mineral deposits on Bribie, North and South Stradbroke islands; the Anduramba porphyry molybdenum prospect; and the Kingaroy kaolin deposits. The two elongate zones in the centre and north of the region appear to be part of a single geological province, and correspond to the main areas of mineral deposits. These data can not be used for more precise location of areas of mineral potential.

The zones of mineral potential, identified by geological reasoning, are described in Part 3.

Prediction of Exploration Success

The chance of discovery of an economic mineral deposit can not be precisely defined. However, in the long term, the probability of discovery can be estimated on statistical grounds, to define the average cost of exploration to achieve a success. The data-gathering and calculations have been carried out by Woodall (1993), using the cost and results of exploration for metalliferous deposits in Australia for the period 1955 to 1986. An 'economic discovery' was defined for this purpose as an exploration success for which the expected rate of return from mining is greater than the discovery cost, after taking into account the time value of money. His findings are presented in Table 2, below.

Table 2 : Cost of exploration for mineral deposits in Australia, 1955 - 1986
(in millions of 1990 \$US)

Item	Base Metals	Gold	Nickel	Total
Exploration Expenditure	2800	600	450	3850
No. of Economic Finds	17	50	35	102
Cost/Discovery, \$US M	153	12	13	36

The Region is considered to be an area of average prospectivity or mineral potential, to which Woodall's discovery cost can reasonably be applied. The 1990 \$US costs for an exploration success have been converted to an average cost in 1996 in \$A of \$A16 million to find an economic gold deposit, and \$A200 million for a base metal deposit.

The costs can not be used very precisely, because the allocation of the 1995 expenditure commitment of \$4 million in the forested areas to gold versus base metal deposits is not known. If we accept that about three-quarters of the exploration in the region is currently directed to gold deposits, we can predict the discovery of an economic gold deposit approximately every five years. This line of reasoning also suggests a discovery of an economic base metal deposit will occur about every 200 years (!).

The Woodall statistics can not be applied to the discovery of an economic coal deposit, as the exploration parameters are quite different. Coal forms extensive beds, and most of the sites of potential for coal deposits are reasonably well known from widely-spaced drill holes.

Significance of an Exploration Success

Although the results of exploration can not be quantified in terms of dollar values, some predictions can be confidently made :

1. The existing coal and industrial mineral operations have established markets, and are expected to continue to meet the demands of their markets. All of these operations, with the exception of the Mount Biggenden magnetite mine, have large inferred resources. An increased demand for mine product can be satisfied from additional reserves which will be defined by further drilling.
2. A discovery of a major metalliferous deposit is statistically unlikely in the short to medium term.
3. There is a strong statistical probability of the discovery of an economic gold deposit every five years. The deposit found may be anywhere in the range small (<50 000 oz of contained gold) to large (>500 000 oz).
4. Discovery of a large gold deposit will have a major economic impact in its vicinity.
5. The area of environmental impact arising from any discovery will be small. The largest mine development predicted, at Mount Rawdon, will be within Mining Leases of total area 6.6 square kilometres. This is an insignificant part (0.02%) of the 35 000 square kilometres of forested land in the region.

Sources of Information

Woodall, R., 1993. The multidisciplinary team approach to successful mineral exploration, pp. 1-11 in SEG Newsletter, No. 14, July 1993

PART 3 : POTENTIAL FOR ORE DISCOVERY

GEOLOGICAL SETTING

The region contains five major geological domains (Figure 9), which are briefly described below in order of decreasing age. A more comprehensive description of the geology of the region is provided in Murray (1990, pp. 1431-1450), and in reports of the Geological Survey.

The **New England Fold Belt** is the basement throughout the region, and outcrops throughout its length. It was an active continental margin from Late Silurian to Middle Triassic time (about 420 to 235 million years ago), much like the western coast of South America today. Chains of active volcanoes parallel to the old coastline fed volcanic sourced sediment to the east into continental shelf and oceanic trench basins. These sediments were deformed and uplifted by earth movements associated with collisions of major crustal plates. Subsequent sedimentary basins formed by extensional faulting, and were in turn uplifted by earth movements. The sedimentary sequences contain large limestone resources. Towards the end of this period the fold belt was intruded by Permo-Triassic granitoids, from granite to diorite in composition.

The Gympie Province, along the present eastern edge of the Fold Belt, is a unique unit, containing Permian and Early Triassic volcanics and metasediment accreted to the Belt along a major thrust fault.

Most of the mineral deposits in the Fold Belt are genetically related to the intrusion of the Permo-Triassic granitoids, and are of porphyry, skarn or structure-controlled vein type. The porphyry (copper or molybdenum) deposits were formed during the final stages of emplacement of the granitoids, and are associated with small plutons (of diameter around 5 kilometres) and areas of hydrothermal alteration. The largest examples are the Coalstoun and Mount Cannindah copper and the Anduramba molybdenum deposits. The skarn deposits are hosted by limy sediment near the margins of the intrusives, with the larger examples the Many Peaks and Glassford Creek copper-gold, the Mount Biggenden magnetite and Ban Ban zinc-lead deposits. The structure-controlled vein deposits were formed in fault planes or shear zones in the granitoids, along the granitoid-sediment contact, or in the sediment near that contact. The more important of these are clusters of deposits at the Gympie gold, Mount Perry copper-gold and Calgoa copper fields. Some vein-type deposits are distant from granitoid bodies, and may have been formed by metamorphic fluids.

The **Triassic Volcanic Province** comprises several large areas of terrestrial acid-intermediate volcanics and minor sediment, along the northeastern edge and in troughs within the Fold Belt. These are younger than the main pulse of granitoid intrusion in the Fold Belt, and immediately precede or are contemporaneous with the coal measure sediment of the Callide, Tarong and Ipswich Basins, on the western edges of the Fold Belt.

Commercial-scale mineralisation of this age includes the volcanogenic Mount Rawdon, Manumbar and North Arm gold, and Kilkivan mercury (gold) deposits, in troughs within the Fold Belt. The volcanogenic gold areas are considered most likely to be the resource base for

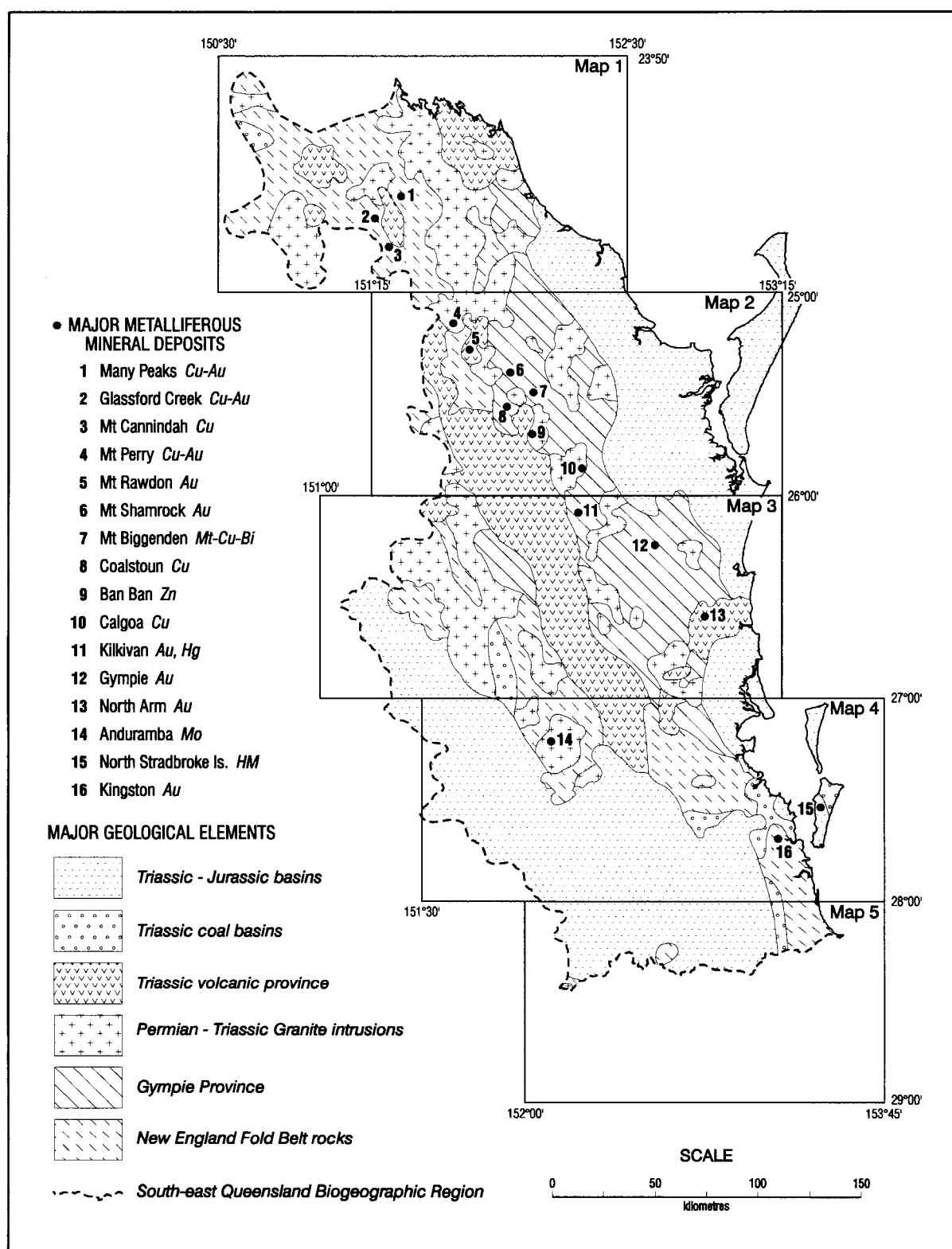


Figure 9: Simplified geological setting and metalliferous mineral deposits of the South-east Queensland Biogeographic Region.

the large future mines in the region.

The succeeding **Triassic coal basins** are important for the coal mined at Ipswich, Tarong and Callide.

The **Moreton Basin**, near the southwestern edge of the region, contains continental sediment and coal, including the Jurassic Walloon Coal Measures. These contain large resources of steaming coal which are used in power stations within the region and for export, and resources of bentonite.

The **Maryborough and Nambour Basins**, on the eastern edge of the region, contains Jurassic continental sediment, Early Cretaceous silicic to intermediate volcanics plus marine and coal measure sediment, and isolated granitoid plutons.

There are no important metalliferous deposits in these basins, but some of the porphyry-style deposits and some structure-controlled vein deposits in the Fold Belt may be related to isolated plutonic activity of this age. The Basin contains the Cretaceous Burrum Coal Measures, which are considered to have some potential for further coal deposits in the Burrum Syncline. The Tiaro Coal Measures outcrop along the western edge of the Basin, but are considered to hold low potential for economic coal deposits.

Tertiary and Quaternary sediment and volcanics cover much of the surface of the region. They include the Nagoorin and Lowmead Basins, in the north of the region, which are isolated basins of Tertiary sediment, low-quality coal and large resources of oil shale. Some dolomite resources are present in Tertiary sediments south of Ipswich, and small deposits of perlite and diatomite occur in Tertiary volcanic sequences at Numinbah (west of the Gold Coast) and Black Duck Creek (Gatton area).

The Quaternary coastal sand plains and dunes contain major deposits of heavy minerals (ilmenite, rutile and zircon), silica sand and foundry sand. Older source areas of ilmenite in the Monto district, near the northwest corner of the region, have weathered and eroded to produce eluvial and alluvial deposits of ilmenite in soil and river sediment, which may be worked in the near future.

With the exception of the oil shale basins and areas favourable for heavy mineral deposits, these sedimentary and volcanic sequences have low potential for economic mineral deposits. It does contain bauxite and manganese deposits, formed by weathering of older rocks, but these are below commercial size and grade.

As a general observation, the cleared parts of the region are areas of plains, or of rolling hills with soils of high fertility, which were attractive to our agricultural pioneers, and thus the native vegetation was removed. These areas of level or undulating topography generally have a deeper soil cover than the timbered parts, and this deep 'overburden' restricts the efficiency of inexpensive and direct exploration methods. In essence, although the cleared areas may contain metalliferous deposits under relatively deep cover, the deposits are more difficult and expensive to find. In contrast, the hills in the timbered areas often have ample exposure of the older rocks, and thus provide a chance of relatively inexpensive discovery of metalliferous deposits.

Commercial coal deposits require coal seams of acceptable quality and thickness, in an area of gentle bedding dip and an absence of major faults. These deposits are frequently in cleared areas of near-level topography, and are sought by drilling, as surface investigations are not definitive of some of the essential economic factors.

Murray, C. G., 1990. Tasman Fold Belt in Queensland, pp. 1431-1450 in *Geology of the Mineral Deposits of Australia and Papua New Guinea*, AusIMM Monograph 14

IDENTIFICATION OF ZONES OF MINERAL POTENTIAL

Identification of Mineral Occurrences

A list of mineral occurrences within the region (Appendix 3) was compiled as the first step in the assessment of the region's mineral potential. The list is a simple mineral occurrence database, derived in two ways. Detailed mineral occurrence information had been compiled for the Maryborough 250 000 sheet area, and for the Gympie, Laguna Bay, Goomeri, Nambour and Nanango 100 000 sheet areas, as Queensland Geological Records, and the basic information from these was transferred to the database, verbatim.

In the other map areas a set of less comprehensive occurrence data were obtained, partly from information collected by GSQ geologist J. H. Brooks, which had been sourced from Geological Survey published reports and correspondence, up to about 1985. Additional data were obtained from Reports and Map Commentaries published by the Geological Survey, which contain information on the larger deposits in each map area. This was supplemented by information from company exploration reports in the Department's QERI index which listed 'drilling' among their keywords.

The position of each of the occurrences is shown on the five maps on 1 : 250 000 scale which are presented with this report, and the distribution of deposits, by their principal commodity, is shown in Table 3, below.

Selection of Commodities

After reviewing the genetic type and size of the 1784 mineral occurrences in the region, it was decided to identify zones of mineral potential for deposits of coal, gold, heavy minerals (ilmenite and rutile), industrial minerals (bentonite, diatomite, dolomite, graphite, kaolin, limestone, magnetite, perlite, silica sand and foundry sand), metals (copper, lead-silver, mercury, molybdenum and zinc) and oil shale. There are 1526 occurrences in which one of the above minerals is the principal commodity, and thus there are 258 occurrences (1784 minus 1526) of commodities for which the potential for further deposits was not assessed.

This 'unassessed' group contains 102 manganese occurrences and 54 bauxite occurrences. The manganese occurrences all originate by weathering of manganese-rich sediment and precipitation of manganese oxide, to form small and low-grade deposits near the water table. There has been minor production from these deposits for use in brickworks. The bauxite deposits were formed by weathering of alumina-rich rock, generally basalt, which has left a surficial deposit of clay enriched in alumina; these are also small and low grade. It is believed that the

manganese and bauxite deposits will not be able to compete with large established mines, working high-grade deposits, for other than local markets.

Table 3 : Number of mineral occurrences in the SEQ Biogeographic Region, by principal commodity

METALS AND METAL ORES				INDUSTRIAL MINERALS			
Antimony	14	Lead	22	Asbestos	2	Magnesite	10
Arsenic	4	Manganese	102	Barite	4	Magnetite	1
Bauxite	54	Mercury	35	Bentonite	5	Marble	3
Bismuth	1	Molybdenum	18	Diatomite	10	Peat	1
Chromium	4	Nickel	1	Dolomite	7	Perlite	9
Cobalt	1	Rutile	16	Feldspar	5	Pyrite	1
Copper	161	Silver	1	Gemstone	12	Silica sand	22
Gold	1000	Tin	4	Graphite	4	Talc	1
Ilmenite	9	Tungsten	4	Kaolin	9	Vermiculite	1
Iron ore	21	Zinc	6	Limestone	78	Wollastonite	1
Total Metals and Metal Ores			1478	Total Industrial Minerals			186
HYDROCARBON FUELS							
Coal	118						
Oil Shale	2						
Total Hydrocarbon Fuels			120	TOTAL ALL DEPOSITS			1784

Definition of Zone Boundaries

The boundaries of the zones of mineral potential were identified from the distribution of the mineral occurrences, and plotted on the five 1: 250 000 scale maps attached to this report. Each zone contains deposits of the same metal or mineral, formed by the same process, in the same geological setting. Each zone contains evidence that the ore-forming process has operated, generally in the form of an ore deposit, and often many examples of the genetic class. There are no zones of mineral potential which were defined on purely theoretical ore genesis concepts.

The definition of the zone boundaries was a multi-stage process, which began with the identification of an area containing the same type of deposit. Deposits of the same type were considered to be deposits of the same principal commodity, and of the same origin. In many cases these deposits also occurred in the same ore-host formation. The boundary which encloses all the area favourable for these deposits was then selected. In many cases this is the boundary of the ore host formation, and was drawn from the formation boundaries on the 1: 250 000 scale geological maps. These are available for all of the region, and more detailed geological maps, generally on 1: 100 000 scale, were used where these have been produced. In other cases all of the ore-hosting formation was not considered prospective for the deposit

type, and the zone boundary was then drawn to enclose a concentration of deposits, allowing a 'margin' of a few kilometres around the cluster of known deposits.

The position selected for each zone boundary was then checked by overlaying the boundary, plotted at 1 : 250 000 scale, on an image (on the same scale) of the first vertical derivative (1VD) of the aerial magnetic response for that locality. The 1VD image shows the distribution of magnetic minerals throughout the area surveyed, and defines the boundaries of rock units of the same magnetic character. The image also shows structures, particularly faults, which disrupt the areas of uniform magnetic response.

Results of a 1995-96 detailed airmagnetic survey of the Monto-Bundaberg 250 000 sheet area, with a survey flight-line spacing of 400 m, were produced in the 1VD format. This image allowed accurate checking of the location of the zone boundaries for this area, as initially defined from the Monto and Bundaberg 250 000 scale geological maps. For the rest of the region, the only complete and uniform set of airmagnetic data is that generated by older AGSO aerial surveys, flown on a 1.6 kilometres line spacing. The 1VD image derived from these data is not as clear, and the boundary-checking procedure was less precise.

The zones were identified, and their boundaries were defined, from information available in early 1996. Further exploration, or regional geological and geophysical mapping, will allow a more precise location of the zones, and will identify new zones. **Users of this appraisal are advised to check the description and location of zones against the latest exploration and mapping results.** The method used to define the zone boundary is stated in the description of each of the zones of mineral potential.

Classes of Zones

Each zone of mineral potential is identified by a code, which describes the principal commodity, the economic importance of the deposits in the zone, and its location. The code is a series of letters and numbers, arranged in a standard order, to provide the following information :

1. Commodity : The first two letters indicate the principal commodity, using Cb for black coal deposits, Au for gold, HM for heavy minerals (ilmenite, rutile and zircon), IM for industrial minerals (dolomite, graphite, kaolin clay, limestone, magnetite, perlite, silica and foundry sand), ME for metals (copper, lead, mercury and zinc), and Os for oil shale.
2. Economic Importance : The economic importance of the various types of gold and metalliferous deposits is shown by the letters A, B, C and D, which are based on the **typical size** of the deposits in the class. Thus an A class zone is expected to contain large deposits of mineable grade, suitable for company mines, average B class deposits are smaller than A size, whereas D class zones contain small deposits, which may be suitable for small mines where they contain high-grade ore.

For zones of coal deposits, these letters do not indicate relative economic significance, but identify the coal measure sequence, eg type CbA zones are expected to contain deposits of Walloon coal, CbB of Ipswich Coal Measures coal, etc.

There is no letter for this purpose in the code identifying zones with potential for deposits of industrial minerals, which are only identified by the letters IM.

Some areas contain potential for mineral deposits, but the surface area has been occupied by housing or other high-value developments, and the potential deposits in these areas are unlikely to be available for mining. The zones are identified with the lowest possible economic significance, by the letter Z. As an example, zone HMZ is the area of coastal sand in the Gold Coast and Sunshine Coast districts which contains known heavy mineral deposits, but close settlement prevents their development. Areas with potential for coal mining near Ipswich, and with potential gold deposits near North Arm, are also alienated from the exploration-mine development process.

3. Location : This is a number which gives a guide to the location of the zone, starting in the north of the area.

As an example, zone AuA1 is a zone with potential to contain gold deposits, of type A genesis (in this case of volcanogenic origin) which is considered to have the potential to provide large ore bodies, and is the northernmost of the AuA type zones.

Probability of Further Deposits

Each zone was assessed to define the probability of occurrence of further mineral deposits, following methods developed for mineral resource assessment in the US (Toth et al., 1993) and used in the Cape York Peninsula Land Use Strategy (Denaro and Ewers, 1995). The probability of further deposits existing in a zone of mineral potential is judged to fall within one of three classes :

- **Likely**, ie there is a strong probability that the zone contains more deposits, abbreviated to the letter L in the coded name of the zone;
- **Possible**, indicating that there is some chance that the zone contains further deposits, abbreviated to the letter P in the coded name of the zone; or
- **Alienated**, areas of known resources where closer settlement, environmental constraints or other interests effectively preclude development for the foreseeable future, abbreviated to the letter Z in the code name of the zone
- **Low or unknown**, with only a slight or unknown chance of further deposits.

Only the areas of likely, possible and alienated potential are shown as mineral potential zones on the maps, and the area of little/unknown potential is left as a white or background area. The assessment of probability or potential is not in any way related to the size of a deposit which may exist within a zone, but is an indication of the chance that an unknown deposit, of a specified origin, may be found.

A zone was judged to have likely potential for mineral deposits if it enclosed numerous deposits of the same type, in a geological setting which could be clearly demonstrated to be favourable for the deposit type. As a general rule some of the deposits in these zones had been

evaluated by detailed geological mapping and drilling, and enough information was available to determine the origin of the deposits with some certainty.

A zone of possible potential was defined for areas which have a low density of deposits, in an area in which the geological setting and ore-associated features could not be accurately defined. Some of these zones are large, and could be divided into sub-zones of different potential after more detailed regional geological and geophysical mapping.

A zone was judged to have alienated potential where areas have been included in National Parks or World Heritage areas, as access to these areas is not likely in the foreseeable future. Urban areas are also included.

The 'background' area of low or unknown potential does contain a few widely-spaced occurrences of coal, gold, heavy minerals, metals and industrial minerals for which zones of mineral potential have not been defined. These isolated occurrences are all very small deposits, and of a genetic class which has a low potential to form a large, mine-size ore body. The background area also contains some clusters of small and below ore-grade mineral deposits, such as the areas in which the bauxite or manganese deposits occur. The potential of the Tiaro Coal Measures and much of the Burrum Coal Measures falls in this class. It also contains all the isolated deposits of non-commercial type, such as agate and other semi-precious stones.

The reason for choosing the class of potential applied to each zone is provided in the description of each zone.

Size of Deposits

The classification in Table 4, below, is based on that established by Parkinson (1988) for the Atlas of Australian Resources. It has been amended to allow for the well developed infrastructure of the Region.

Accuracy of Zone Boundaries

This is a measure of the accuracy of the location of the zone boundary, and two levels of information were used.

For level A, the position of the boundary is based on adequate knowledge, so that the boundary position is considered 'definite'. At this level the zone boundary was based on information from detailed geological mapping, or modern regional geological mapping, and confirmed by the airmagnetic pattern.

For level B, the information and concepts used to draw the zone boundary are of lesser certainty, and the position of the boundary is classed as 'probable'. In these cases the boundary is often based on information from 'first-pass' regional geological mapping, carried out in the early 1970s, which is less accurate than the recent mapping.

The description of each zone includes an explanation of the process by which the accuracy of zone boundary was decided.

Table 4 : Size classification of deposits*

Commodity	Size of Deposit (tonnes of contained commodity)		
	Small	Medium	Large
Bentonite	<100 000	100 000 - 1 000 000	>1 000 000
Coal	<10 000 000	10 000 000 - 100 000 000	>100 000 000
Copper	<50 000	50 000 - 1 000 000	>1 000 000
Dolomite	<2 000 000	2 000 000 - 10 000 000	>10 000 000
Gold (Troy ounces)	<50 000 (1.5 t)	50 000 - 500 000	>500 000
Graphite	<10 000	10 000 - 200 000	>200 000
Ilmenite	<5 000 000	5 000 000 - 10 000 000	>10 000 000
Kaolin	<200 000	200 000 - 20 000 000	>20 000 000
Lead	<100 000	100 000 - 1 000 000	>1 000 000
Limestone	<2 000 000	2 000 000 - 10 000 000	>10 000 000
Mercury	<500	500 - 20 000	>20 000
Molybdenum	<5 000	5 000 - 200 000	>200 000
Oil shale (cu. m of oil)	<10 000 000	10 000 000 - 100 000 000	>100 000 000
Rutile	<200 000	200 000 - 500 000	>500 000
Silica sand	<1 000 000	1 000 000 - 2 500 000	>2 500 000
Zircon	<500 000	500 000 - 1 000 000	>1000 000
Zinc	<200 000	200 000 - 5 000 000	>5 000 000

*Amended from Parkinson, G (Ed.), 1988. Atlas of Australian Resources, vol. 5 (AUSLIG : Canberra)

Sources of Information

The reference documents which were consulted during the process of defining the zone parameters are listed throughout the text, and not in a separate group of references. Sources for this section are :

DENARO, T. J. & EWERS, G. R., 1995: Mineral Resource Assessment - Cape York Peninsula Land Use Strategy. *Queensland Minerals and Energy Review Series*, Department of Minerals and Energy, Queensland.

TOTH, M. I., WILSON, A. B., COOKRO, T. M., BANKEY, V., LEE, G. K. & CASE, J. E., 1993: Mineral resource potential and geology of the White River National Forest and the Dillon Range District of the Arapaho National Forest, Colorado. *US Geological Survey Bulletin*, **2035**.

PART 4: ZONES OF MINERAL POTENTIAL

COAL DEPOSITS

There are very large resources of black coal, within or on the margins of the Region, largely suitable for steam raising and generation of electric power, in five sedimentary basins. All of the electric power used in southeast Queensland is generated using coal from deposits within some of these basins, and an export trade for this coal has been established.

Types of Deposits

CbA Steaming coal of the Walloon Coal Measures (Moreton Basin)

CbB Steaming and coking coal of the Ipswich Coal Measures (Ipswich Basin)

CbC Steaming coal of the Tarong Coal Measures (Tarong Basin)

CbD Steaming coal of the Burrum Coal Measures (Maryborough Basin)

CbE Steaming coal of the Callide Coal Measures (Callide Basin)

In addition to the above, the Tiara Coal Measures of the Maryborough Basin, between Kadina and Childers, contain thin and lenticular coal seams, principally in the southern part, disrupted by extensive faulting. The seams were altered to anthracite and graphite in the Mount Bauple area, by contact metamorphism, and were worked for graphite in small mines (Deposits 377-380) in the early 1900s. The coal is suitable for steam raising and power generation, if a commercial deposit could be located, but scout drilling to date does not indicate any areas of promise. These coal measures are considered to be an area of low mineral potential, and are not described further.

DEPOSITS OF WALLOON COAL

Known Deposits

All of the known deposits and zones of mineral potential for the Walloon Coal Measures are in the Brisbane-Ipswich and Warwick-Tweed Heads 250 000 sheet areas. Coal resources have been defined at the Barney View, Bremer View East, Bremer View West, Ebenezer, Ebenezer East, Ebenezer Extended, Oakleigh, Jeebropilly, Hodgson Vale, Minto Vale, Moomba, Mount Forbes, Purga Central, Purga East, Purga West, Rosemount, Veresdale and Wellcamp deposits.

Geological Setting of Type CbA Deposits

The Jurassic Walloon Coal Measures were deposited in the Moreton intracratonic basin. They contain abundant thinly banded coal seams at three stratigraphic positions

- the Mount Walker (uppermost), Ebenezer, and Mount Mort (lowermost) groups. The coal is a high-volatile bituminous type, which is used locally or exported principally for steam raising, in electric power stations.

Bentonite clay, interbedded with the other sediment of the Coal Measures, is produced from the Ebenezer open cut, and can be produced, as demand requires, from the Oakleigh, Malabar and Jeebropilly mines.

Exploration has been concentrated in recent times on near-surface deposits under shallow overburden, suitable for open pit mining. Total measured and indicated resources, generally to 60 m depth, were about 2200 Mt of in-situ coal in 1995. Production of Walloon coal began in the 1870s, and was about 3.8 Mt in 1995, largely from the Ebenezer, Jeebropilly and Oakleigh mines.

Sources of Information

Matheson, S. G., 1993. Coal Geology and Resources of the Moreton Basin, Queensland. Queensland Minerals and Energy Review Series, Dept of Minerals and Energy, Brisbane.

DESCRIPTION OF ZONES OF MINERAL POTENTIAL

Zone CbA1; P; A; Walloon coal; small; sedimentary

Location : The zone is roughly fish-hook shaped, extending from northwest of Ipswich southerly through Boonah, then turning westerly to Killarney, then northwesterly to Warwick. Most of the area is cleared, and it includes parts of the City of Ipswich and of Boonah, Gatton, Laidley and Warwick shires.

Zone Features : The zone is a major area of Walloon Coal Measures, and surrounds but does not include 12 known deposits (Rosemount, Bremer View East, Bremer View West, Ebenezer, Ebenezer East, Ebenezer Extended, Minto Vale, Moomba, Mount Forbes, Purga Central, Purga East and Purga West). Drilling within the zone has shown numerous sections of thick (+1 m) coal, within 100 m of the surface. The level of potential reduces from a maximum in the north of the zone, to a minimum in the south, due to the effects of igneous intrusions and steeper topography in the south.

Probability of Further Deposits : The zone does not contain any commercial deposits at present, but further drilling could result in the definition of resources.

Definition of Zone Boundary : The boundary was copied from the 1 : 500 000 scale geological map of Moreton Basin Geology in Matheson (1993), and corresponds to a major area of outcrop of Walloon Coal Measures.

Accuracy of Zone Boundary : A -Based on regional drilling and surface mapping.

Zone CbA2; L; A; Walloon coal; small; sedimentary

Location : The Barney View deposit is about 10 kilometres south of Rathdowney, and in the approximate centre of the Mount Lindesay 100 000 sheet. The land surface is all cleared, and it is within Beaudesert Shire.

Zone Features : The zone is on the northern nose of a syncline. Fifteen seams were intersected by exploratory drill holes, with total cumulative seam thicknesses of 0.9 to 5.9 m. The area of coal seams is limited by Tertiary igneous rocks to the north, south and west. Analyses of drill hole samples of raw coal from 15 seams averaged 42% ash.

Probability of Further Deposits : The zone is defined by drill holes on about 500 m centres

Definition of Zone Boundary : The boundary was interpreted from Fig. 27 of Matheson (1993), and was drawn to include the area of drill holes 2C, 6C, 30C and 32C.

Accuracy of Zone Boundary : A - Based on broadly-spaced drill holes.

Zone CbA3; L; A; Walloon coal; small; sedimentary

Location : The Minto Vale steaming coal deposit is about 18 kilometres south-southwesterly from Boonah, in the northwest quadrant of the Mount Lindesay 100 000 sheet. It is an area of cleared land within Boonah shire.

Zone Features : The Walloon Coal Measures here dip westerly at an angle of 5-10 degrees, on a limb of a northerly-trending syncline. The deposit is limited to the west by the Minto Crag ring dyke, and elsewhere by alluvium up to 20 m thick. More than 20 holes were drilled into the deposit, which contains 11 seams within the lowermost sequence of the Walloon Coal Measures. Aggregate thickness for the 11 seams is about 7 m of coal within an interval 25-30 m thick. Typical coal quality is 25% raw ash and 28 MJ/kg specific energy. The resource here is about 12 Mt of in-situ coal with <20% raw ash.

Probability of Further Deposits : The deposit is adequately defined by drill holes on about 100 m spacing.

Definition of Zone Boundary : The zone boundary corresponds to the perimeter of the Minto Vale deposit as shown on Fig. 32 in Matheson (1993).

Accuracy of Zone Boundary : A - Based on closely-spaced drill holes.

Zone CbA4; L; A; Walloon coal; small; sedimentary

Location : The Moomba deposit straddles the Ipswich-Boonah road, about 25 kilometres south of Ipswich, in the south of the Ipswich 100 000 sheet area. It is in cleared land, and in the City of Ipswich and Boonah Shire.

Zone Features : Up to five groups of coal seams of the lowermost sequence of Walloon Coal Measures outcrop or subcrop at Moomba. The seams dip westerly at 7-8 degrees, and are overlain by Marburg Group sediment. Individual seams are 2.8 to 5.1 m thick, and comprise thin coal plies up to 0.6 m thick separated by clay bands. A resource of approximately 8 Mt of raw coal has been estimated to about 65 m depth.

Probability of Further Deposits : The deposit is adequately defined by 20 drill holes.

Definition of Zone Boundary : The zone boundary corresponds to the perimeter of the Moomba deposit as shown on Fig. 14 in Matheson (1993).

Accuracy of Zone Boundary : A - Based on pattern drill holes.

Zone CbA5; L; A; Walloon coal; small to medium; sedimentary

Location : The zone has an arcuate outcrop outline, with its centre about 20 kilometres southwest of Ipswich, in the centre of the western half of the Ipswich 100 000 sheet area. The land is all cleared, and all in the City of Ipswich.

Zone Features : This zone corresponds to the known extent of the Mount Walker or uppermost sequence of Walloon Coal Measures, in the Ipswich district. The sequence outcrops or is under shallow cover on the eastern and western limbs, and along the northern margin, of the Warrill Creek Syncline. The Measures dip at <2 degrees.. Eighteen seams have been identified, in an upper zone from about 65 to 80 m depth and a lower zone from about 185 to 225 m depth. Individual seams are generally thick, with little interseam claystone banding. A resource has been defined in the Mount Forbes area, but figures are not available.

Probability of Further Deposits : The zone contains known coal seams, with a high probability of development in the long term.

Definition of Zone Boundary : The zone boundary is copied from the outline of the Mount Walker sequence as shown on Fig. 22 in Matheson (1993).

Accuracy of Zone Boundary : A - Based on detailed geological mapping and scout drill holes.

Zone CbA6; L; A; Walloon coal; small to medium; sedimentary

Location : The zone has an arcuate outcrop outline, across the northwest quadrant of the Ipswich 100 000 sheet area. All of the land is cleared, and within the City of Ipswich.

Zone Features : This zone is the known extent of the Ebenezer or middle sequence of Walloon Coal Measures in the Ipswich district. The sequence is flat-lying to very shallowly dipping, and contains eight groups of seams (Groups A to H), with up to 11 seams in each group. Seams down to 10 cm thick are mined in the Ebenezer open pit, and the seams are generally less than 1.4 m thick. Ebenezer coal is a high-volatile bituminous type, with a raw ash content of about 20% and specific energy of 28-35 MJ/kg on an air-dried basis.

Resources available to the Ebenezer open pit are 45.5 Mt of in-situ coal. Inferred resources have been estimated for the Purga West deposit (16-24 Mt) and for the Bremer View East deposit (33-60 Mt). Further resources may be available at the Bremer View West, Rosemount, Ebenezer Extended, Ebenezer East, Purga West, Purga Central and Purga East areas.

Probability of Further Deposits : The numerous known deposits within the zone indicate that there is a high probability of identifying further resources.

Definition of Zone Boundary : The boundary corresponds to the boundary of the Ebenezer sequence as shown in Fig. 22 in Matheson (1993).

Accuracy of Zone Boundary : A - Based on detailed geological mapping and drill holes. Matheson (1993) reports that 748 holes were drilled in the 600 sq kilometres area of EPC 424, which encloses most of the Ebenezer sequence in the Ipswich district

Zone CbA7; L; A; Walloon coal; small to medium; sedimentary

Location : The zone has an arcuate outcrop outline, north of zone CbA6 and across the northwest quadrant of the Ipswich 100 000 sheet area. The area is all cleared land, in the City of Ipswich.

Zone Features : This zone encloses the area of outcrop and shallow subcrop of the Mount Mort or lowermost sequence of the Walloon Coal Measures in the Ipswich district. The average grade of washed and air-dried coal is about 15% ash, 5.7% moisture and 27 Mj/kg specific energy.

Resources with open cut potential have been calculated for the Jeebropilly mine at 47 Mt, for the Kunkala, Malabar and Haigslea parts of the Rosewood leases as 28 Mt, for the Mount Mort deposit as 21 Mt, and for the Oakleigh mine as 4.5 Mt.

Probability of Further Deposits : The numerous known deposits within the zone indicate that there is a high probability of identifying further resources.

Definition of Zone Boundary : The boundary was copied from Fig. 22 in Matheson (1993).

Accuracy of Zone Boundary : A - Based on detailed geological mapping, extensive mine workings and numerous drill holes.

Zone CbA8; P; A; Walloon coal; small; sedimentary

Location : The zone has an inverted 'U' shape at the junction of the Beenleigh, Ipswich, Mount Lindesay and Murwillumbah 100 000 sheet areas. It is within Beaudesert Shire, and all the land has been cleared .

Zone Features : Walloon Coal Measures outcrop in the Beaudesert area on the eastern side of the South Moreton Anticline and on both limbs of the Logan River Syncline. Scout drill holes have intersected coal seams up to 5 m thick at Laravale, Woodhill and Cedar Grove.

Probability of Further Deposits : Most of the zone is held under Exploration Permit for Coal tenure. The zone has not been completely evaluated, and further drilling or a change in commercial factors have a reasonable chance of leading to the definition of coal resources.

Definition of Zone Boundary : The boundary was copied from the 1 : 500 000 scale geological map of the Moreton Basin in Matheson (1993).

Accuracy of Zone Boundary : A - Based on geological mapping and scout drill holes.

Zone CbA9; L; A; Walloon coal; small; sedimentary

Location : The zone is about 10 kilometres north of Beaudesert and about 3 kilometres east of Veresdale, in the Beenleigh 100 000 sheet area. It is within Beaudesert Shire, and contains cleared land.

Zone Features : A resource of Walloon Coal Measures has been defined by drilling, but figures are not available. The coal seams dip westerly at about 20 degrees.

Probability of Further Deposits : The resource is defined by about 100 drill holes.

Definition of Zone Boundary : The boundary corresponds to the outline of the Veresdale resource shown on Fig. 28 in Matheson (1993).

Accuracy of Zone Boundary : A - Based on geological mapping and detailed drilling.

Zone CbA10; P; B; Walloon coal; small; sedimentary

Location : The zone is near the headwaters of the Albert River, about 5 kilometres northwest from Mount Razorback and near the centre of the western edge of the Murwillumbah 100 000 sheet area. It is all cleared land, within Beaudesert Shire.

Zone Features : An outcrop of Walloon Coal Measures in the bank of the upper Albert River is described as a 2 m exposure of banded coal and mudstone, which dip northerly at 25-30 degrees.

Probability of Further Deposits : The extent of the Coal Measures has not been defined by drilling, but the zone is considered to have a reasonable probability of containing a small coal resource.

Definition of Zone Boundary : The boundary was inferred from the 1 : 500 000 scale geological map of the Moreton Basin in Matheson (1993).

Accuracy of Zone Boundary : B - Based on 1 : 250 000 scale geological mapping.

Zone CbA11; P; B; Walloon coal; small; sedimentary

Location : Walloon Coal Measures outcrop intermittently in creek cuttings, beneath basalt cover, in the southern half of the Helidon 100 000 sheet area. The area is timbered, and within Cambooya and Gatton Shires. Two areas have been identified with potential for small resources.

Zone Features : Many of the prospective areas are under thick basalt cover, or in areas of steep terrain. There has been little exploration for coal in this zone, and Matheson (1993) records only 16 drill holes from the southern half of the Helidon 100 000 sheet area. Coal seams were intersected in all of the ten holes drilled in the Heifer Creek area, and in five of the six holes drilled near Thornton. A coal seam outcrops in Blackfellow Creek, south of Grantham.

Probability of Further Deposits : The widespread outcrops of the Coal Measures indicate that there is a reasonable probability of delineating a small coal resource within the two selected areas.

Definition of Zone Boundary : The boundary was inferred from the 1 : 500 000 scale geological map of the Moreton Basin in Matheson (1993).

Accuracy of Zone Boundary : B - Based on 1 : 250 000 scale geological mapping and sparse drill holes.

Zone CbA12; P; B; Walloon coal; small; sedimentary

Location : The Hodgson Vale zone is 12 kilometres south of Toowoomba, adjacent to the New England Highway, and near the northeast corner of the Toowoomba 100 000 sheet. All of the land is cleared, and within Cambooya shire.

Zone Features : Walloon Coal Measures here are partly covered by basalt or by thick alluvium, and only rarely exposed in creek banks. Only 11 holes have been drilled at Hodgson Vale, of which two holes at about the same site intersected a coal seam 23 m thick, from 40 m depth. The seam was described as banded, but was not analysed.

Probability of Further Deposits : The existence of thick and banded coal seams has been confirmed by drilling, and there is a reasonable probability that further coal resources would be found by more detailed, closely-spaced drill holes.

Definition of Zone Boundary : The boundary was copied from Fig. 30 in Matheson (1993).

Accuracy of Zone Boundary : B - Based on a few drill holes and limited exposures.

Zone CbA13; L; A; Walloon coal; medium; sedimentary

Location : The Wellcamp resource is about 15 kilometres west of Toowoomba and largely south of the Toowoomba-Cecil Plains road, in the northeast corner of the Toowoomba 100 000 sheet. All of the land is cleared, and in Jondaryan Shire.

Zone Features : Walloon Coal Measures were intersected in seven of the twelve holes drilled at Wellcamp. They identified two banded seams of the lowermost Walloon sequence, at depths from 72 to 105 m. Average seam thicknesses were 6.6 and 12.5 m, and average aggregated seam thickness is 13.8 m in an area of 12.6 sq kilometres. Possible resources are estimated to be 261 Mt of in-situ coal, to a depth of 100 m.

Probability of Further Deposits : Testing was adequate to show a strong probability of a medium sized resource of Walloon coal.

Definition of Zone Boundary : The boundary was copied from Fig. 30 in Matheson (1993).

Accuracy of Zone Boundary : A - All of the drill holes within the resource area intersected the same sequence of seams, at predictable depths.

Zone CbA14; L; A; Walloon coal; medium-large; sedimentary

Location : The Acland zone extends along the Oakey to Dalby road for a northwesterly distance of about 60 kilometres, and for a width of about 25 kilometres northerly from the road. It trends northwesterly from about the centre of the Oakey 100 000 sheet. the land here is all cleared, and the zone is in Jondaryan and Rosalie shires.

Zone Features : In this zone the lowermost sequence of the Walloon Coal Measures has been shown, by drilling, to contain three major groups of seams, which dip at < 2 degrees towards the south and southwest. The coal is a high-volatile bituminous type, and average grade on an air dried basis is about 3-5% moisture and 33% ash.

Estimated resources for the Glen Roslyn, Sabine, Manningvale East, Manningvale West and Acland deposits, to 65 m depth, total 512 Mt. Most of these resources are suitable for open cut mining. The coal is not suitable for export, as the ash content can not be reduced below about 25% by washing. It is suitable for on-site power generation.

Probability of Further Deposits : The existence of major resources has been demonstrated by drilling, and further drilling or an improvement in commercial factors should enable identification of further resources.

Definition of Zone Boundary : The boundary was copied from Figs. 14 and 15 in Matheson (1993).

Accuracy of Zone Boundary : A - Based on extensive drilling.

DEPOSITS OF IPSWICH COAL

Known Deposits

All of the known deposits and zones of mineral potential are in the Brisbane and Ipswich 250 000 sheet areas, and on the Ipswich, Beenleigh and Brisbane 100 000 sheets. All of the historic and operating mines are near Ipswich; the principal producers are the Swanbank open cut and the Newhill underground mines. A major resource has also been defined in the Spring Mountain area, within MDL 148.

Minor outcrops of the Coal Measures are known in a northerly trending area, from about Mount Tamborine to Aspley, near the western edge of the Brisbane 100 000 sheet. It is all cleared land except for a small timbered area along the southeast edge of the zone, and it is in the cities of Brisbane, Logan and Gold Coast, and Beaudesert Shire. This area does not contain any known resources. A small colliery at Nundah produced 1832 t of coal between 1895 and 1923, and there was also minor historic production from the Kingston area. A small deposit might be found by drilling in this area, but close settlement would prevent development. The area is considered to have low potential for an economic resource.

Geological Setting of Type CbB Deposits

The Ipswich Coal Measures were deposited in a Late Triassic continental basin, and all the commercial seams are in the Brassal Sub-Group of lake or swamp sediments. The Sub-Group has a surface extent of about 180 sq kilometres, and contains commercial seams in the basal Tivoli Formation and the uppermost Blackstone Formation.

The Tivoli Formation is up to 500 m thick, and comprises shale, coal seams and sandstone. Commercial seams are confined to the upper 300 m of the sequence, and ten seams have been worked in the North Ipswich area. These coals are medium to high volatile, bituminous, medium to high rank and strongly coking types. There are no remaining mines in the Tivoli Formation.

The Blackstone Formation is 200 to 300 m thick, with an upper and lower set of seams, of which the upper series which is mined in the Bundamba district is the more important. The coals are medium to high volatile, bituminous, medium rank, medium coking types. All of the seams contain numerous shale and mudstone bands, and the coal is washed before use to reduce the ash content to about 23%. The coal is principally used for power generation at the Swanbank power station.

Sources of Information

Cranfield, L. C., Hutton, L. J. and Green, P. M., 1989. Ipswich, Queensland 1 : 100 000 geological map commentary (Dept of Mines : Brisbane).

Mengel, D. C., 1975. Ipswich coal field, Q, pp. 290-297 in Economic Geology of Australia and Papua New Guinea, Vol. 2 Coal (The Australasian Institute of Mining and Metallurgy : Melbourne)

DESCRIPTION OF ZONES OF MINERAL POTENTIAL

Zone CbB1; L; A; Ipswich coal; small to medium; sedimentary

Location : The zone is about 15 kilometres long southeasterly and up to 5 kilometres wide, with its centre about 10 kilometres southeast of Ipswich. It is within the northeast quadrant of the Ipswich 100 000 sheet area, and in the City of Ipswich and Beaudesert Shire. The surface of the northern half of the zone has been cleared. The possible northerly extensions of this zone are occupied by the city and suburbs of Ipswich, and are shown on the map as a **CbZ** zone.

Zone Features : Total resources of open cut and underground coal within the zone were about 575 Mt in 1995.

Probability of Further Deposits : Numerous mines and drill holes define the area of the zone and the extension of the mining area towards the southeast (Spring Mountain area) where underground mining is likely in the medium term future.

Definition of Zone Boundary : The boundary was drawn from the Ipswich 100 000 scale geological map, and from unpublished information supplied by the Geological Survey.

Accuracy of Zone Boundary : A - Defined by detailed mapping and numerous drill holes.

DEPOSITS OF TARONG COAL

Known Deposits

All of the known deposits are within the Tarong Basin, which extends northerly from about lat. 27 degrees S to Kingaroy. Practically all of the Tarong Basin is within the Kingaroy 100 000 sheet area.

Geological Setting of Type CbC Deposits

The Tarong Basin is elongate towards the north-northwest, and developed on a basement of Palaeozoic sediment and Permo-Triassic intrusives. The Basin sequence includes sandstone and conglomerate, largely sourced from the intrusives, and 19

major coal seams. Bedding dips at gentle angles towards the south and southeast, and there are a few faults which displace the seams by up to 30 m vertically.

Individual seams are 2 to 20 m thick, and coalesce in some areas to provide a total coal thickness of up to 35 m. On an air-dried basis the coal has a moisture content of about 4% and contains around 50% ash. After washing, the coal has an average of 28% ash, 14% moisture and a specific energy of 19.4 MJ/kg. Tarong coal is a high ash, high volatile, sub-bituminous to bituminous, low sulphur steaming type.

The large Meandu (Tarong) open cut coal mine supplies the Tarong power station, which provides about 40% of Queensland's electricity needs. The mine is the second largest in the forested parts of the region.

Sources of Information

Seppanen, M., 1995. The Meandu coal mine, Tarong Basin, pp. 321-327 in Bowen Basin Symposium 1995 (Geological Society of Australia : Brisbane)

DESCRIPTION OF ZONES OF MINERAL POTENTIAL

Zone CbC1; L; A; Tarong coal; medium; sedimentary

Location : The centre of the zone is Meandu mine, which is about 10 kilometres west-northwesterly from Yarraman, in the southeast quadrant of the Kingaroy 100 000 sheet. The zone is all timbered except for a small area of cleared land at its southern end, and the timbered section includes part of State Forest 289. It is in Nanango and Rosalie Shires.

Zone Features : The zone contains the Meandu mine resource, which totals about 750 Mt of in-situ coal within ML 6674, and a further resource to the south at the Southwest Yarraman deposit, within EPC 235 (2).

Nineteen coal seams are known in this zone, ranging in thickness from 2 to 20 m. Seams low in the sequence have a higher ash content, are less laterally continuous and contain more stone bands than stratigraphically higher seams. Coal blended from several seams is washed to maintain a standard feed to the Tarong power station.

Probability of Further Deposits : The zone contains substantial resources, defined by drilling.

Definition of Zone Boundary : The boundary was drawn about 2 kilometres outside the perimeter of the individual resource areas shown on p. 323 in Seppanen (1995).

Accuracy of Zone Boundary : A - Based on detailed drilling and geological mapping.

Zone CbC2; L; A; Tarong coal; medium; sedimentary

Location : The centre of this zone is the Kunioon-Goodger resource area, about 15 kilometres west of Nanango, in the northeast quadrant of the Kingaroy 100 000 sheet area. The zone is all cleared land except for a small timbered area near its western edge, and it is within Kingaroy and Yarraman shires.

Zone Features : The zone contains the Kunioon and Goodger resource areas, within EPC 235(1).

Probability of Further Deposits : The zone encloses substantial resources, defined by drilling.

Definition of Zone Boundary : The boundary was drawn about 2 kilometres outside the perimeter of the individual resource areas shown on p. 323 in Seppanen (1995).

Accuracy of Zone Boundary : A - Based on detailed drilling and geological mapping.

Zone CbC3; P; B; Tarong coal; small to medium; sedimentary

Location : The zone contains most of the area of the Tarong Basin. It extends northerly from about lat. 27¼ S to near Kingaroy, in Kingaroy, Rosalie and Nanango shires. About half of the zone is timbered, and includes parts of State Forests 118, 258, 289 and 379.

Zone Features : The zone does not contain any defined resources, but it does contain numerous thin coal seams.

Probability of Further Deposits : The zone encloses the known extent of the Tarong coal basin, in which numerous coal seams are known to occur.

Definition of Zone Boundary : The boundary was drawn so as to enclose all of the Tarong Basin.

Accuracy of Zone Boundary : B - Based on regional scale geological mapping and a few drill holes.

Sources of Information

Ellis, P., 1968. Geology of the Maryborough 1 : 250 000 sheet Area, Geol. Surv. Qld Rep 26

Park, W. J., 1975. Tiara district (coals), pp. 317-318 in Economic Geology of Australia and Papua New Guinea, Vol. 2 Coal (The Australasian Institute of Mining and Metallurgy : Melbourne)

DEPOSITS OF BURRUM COAL

Known Deposits

The only production from the Burrum field is from the Burgowan No. 12 colliery. Reserves at this mine and at other areas are small, of the order of 1 Mt in-situ at any deposit.

Geological Setting of Type CbD Deposits

The Burrum Coal Measures contain more than 1650 m of Early Cretaceous continental sediment. The thirteen most significant coal seams occur in a zone about 500 m thick near the centre of the stratigraphic section, and the six seams mined in the past in the Burrum district are within a 160 m interval. Workable seams generally average about 1 m in thickness, and nowhere exceed 2 m. The coal is a medium-volatile bituminous type, and average composition of the mined coal on an air-dried basis is 2% moisture, 12% ash and a specific energy around 35 MJ/kg.

Sources of Information

Ellis, P., 1968. Geology of the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rept 26.

Koppe, W. H., 1975. Maryborough Basin (coal), Q, pp. 320-323 in Economic Geology of Australia and Papua New Guinea, Vol. 2 Coal (The Australasian Institute of Mining and Metallurgy : Melbourne)

DESCRIPTION OF ZONES OF MINERAL POTENTIAL

Zone CbD1; L; A; Burrum coal; small; sedimentary

Location : The zone encloses the known resources and mines of the Burrum Syncline, in the Howard-Childers area of the City of Hervey Bay. It is nearly all timbered, except for the area of cleared land around Howard township, and it includes Crown land and the eastern edge of State Forest 1294.

Zone Features : The zone contains the outcrop and depth extensions of the most productive section of the Burrum Coal Measures, and all the productive mines (Deposits 486-503). Current production from the Burgowan No. 12 colliery (No. 487) is small scale only, for local use mainly in brick kilns.

Probability of Further Deposits : The zone contains numerous historic mine sites and a small resource. There is a reasonable probability that further drilling, and/or a change in economic factors would lead to the definition of further small resources.

Definition of Zone Boundary : The boundary was copied from the outline of the outcrop of the main series of coal seams in the Burrum Syncline, from Fig. 2 in Koppe (1975).

Accuracy of Zone Boundary : A - Based on detailed geological mapping and numerous drill holes and mine workings.

Zone CbD2; P; B; Burrum coal; small; sedimentary

Location : The zone is about 25 kilometres long northerly by up to 15 kilometres wide, in the northeast quadrant of the Childers 100 000 sheet. It is in Burnett and Isis shires, and largely forested, including part of State Forest 840.

Zone Features : The zone contains areas of Burrum Coal Measures on the west flank of the Goodwood Anticline and the west flank of the Pig Creek Syncline which have been explored by scout drilling. On the west flank of the Goodwood Anticline, three seams were found in a 50 m interval, with the lowest seam reaching 3.5 m thickness. One seam of clean coal, of average thickness about one metre, was found by drilling on the west flank of the Pig Creek Syncline. There are no defined resources within the zone.

Probability of Further Deposits : The zone contains a known coal measure sequence, which has not been thoroughly explored. There is a moderate probability that further drilling may lead to the definition of a small resource.

Definition of Zone Boundary : The boundary corresponds to the area of the Goodwood Anticline and Pig Creek Syncline., from the Maryborough 250 000 scale geological map.

Accuracy of Zone Boundary : B -The boundary does not precisely identify the area of mineral potential.

Source of Information

Koppe, W. H., 1975. Maryborough Basin, Q., pp. 320-323 in Economic Geology of Australia and Papua New Guinea, Vol. 2 Coal, AusIMM Monog. 6.

DEPOSITS OF CALLIDE COAL

Known Deposits

Callide coal is mined at the Callide and Boundary Hill open pits, a few kilometres to the west of the Region. Resources of Callide coal totaled about 860 Mt in 1995.

Geological Setting of Type CbE Deposits

The Triassic Callide Coal Measures were deposited in a southeasterly trending basin about 25 kilometres long and up to 10 kilometres wide. The Measures are largely covered by early Jurassic Precipice Sandstone, and current mining operations are all

sited in areas in which this cover has been removed by erosion. The north, east and south margins of the basin are exposed, but the western edge is obscured by Tertiary sediment cover.

The Measures are up to 3000 m thick, and dip at about $5\frac{1}{4}$ towards a central, northwesterly trending synclinal axis along the centre of the basin. Four major coal seams are known, of which the Callide seam, which is 10-26 m thick, is the most important. Callide seam coal is a medium ash, high volatile, low sulphur and non-swelling type. Typical analyses after air drying are 8-12% moisture, 15-19% ash, and 20-22 MJ/kg specific energy. The coal is used for steam raising in the adjacent Callide power station.

Sources of Information

Svenson, D. and Hayes, S., 1975. Callide Coal Measures, Q, pp. 283-287 in Economic Geology of Australia and Papua New Guinea, Vol. 2 Coal (The Australasian Institute of Mining and Metallurgy ; Melbourne)

DESCRIPTION OF ZONES OF MINERAL POTENTIAL

Zone CbE1; P; B; Callide coal; small to medium; sedimentary

Location : The zone corresponds to the part of the Callide Coal Measures, which extends into the western part of the Region, near the western edge of the Biloela 100 000 sheet area. All of the zone is timbered, including part of State Forest 170; it is within Banana Shire.

Zone Features : Within the Region the Coal Measures are overlain by the Precipice Sandstone, and in part by basalt. There are no known resources within the Region.

Probability of Further Deposits : Commercial coal seams are known to exist a few kilometres to the west of the boundary of the Region, at the Callide and The Hut deposits. The part of the Coal Measures within the Region has potential, in the long term, for underground mining of these seams.

Definition of Zone Boundary : The boundary corresponds to the edge of the Callide Coal Measures, copied from the Monto 250 000 scale geological map.

Accuracy of Zone Boundary : B - Based on regional-scale geological mapping.

GOLD DEPOSITS

The Region contains 1000 occurrences in which gold is the principal commodity. Gold mineralisation is frequently accompanied by valuable by-products, such as silver, copper, lead and zinc. In all the examples from the Region gold occurs in its native, metallic form, although in some deposits the gold is very fine-grained, and in some it is contained in pyrite.

Types of Deposits

Type A : Volcanogenic deposits, in which gold mineralisation is associated with a broad zone of hydrothermal alteration associated with volcanic activity. These are expected to provide the largest deposits in the region, and in many cases will be suitable for low-cost, open cut mining.

Type B : Structurally-controlled vein deposits, in which gold is contained in a body of planar shape. Most of these are small, but they occasionally occur in 'clusters', as at Gympie, and can then provide large resources.

Type C : Skarn deposits, in altered limestone or sediment, near an intrusive. These are generally in the small to medium size range.

Alluvial placer deposits are described with the adjacent primary gold deposits from which they were derived. There is potential for the definition of resources in the Cania and Gympie gold fields, but as these are within zones of potential for primary gold deposits, they are not shown as separate zones of mineral potential.

VOLCANOGENIC GOLD DEPOSITS

Known Deposits

The best known examples are the Mount Shamrock and Mount Rawdon ore bodies.

Geological Setting of Type AuA Deposits

In the volcanogenic deposits gold mineralisation is associated with a stockwork of thin quartz (pyrite) veins within a broad zone of hydrothermal alteration, commonly in volcanic rocks. The deposits are formed by reaction of volcanic-related fluids with the host rock, in zones of structural preparation. The structural preparation stage is an essential component, and many deposits occur in fault zones or at the intersection of two faults; in many cases the volcanic process is thought to have caused this local increase in permeability. Thus this type is broadly related to the structure-controlled vein deposits (Type B) but the critical difference is the shape of the ore bodies, which is roughly circular rather than long and narrow, and the volcanogenic deposits generally have the potential to provide a much larger volume of ore than is available from the structure-controlled veins.

The presence of open-space filling textures and banding of the ore minerals are distinctive. Many of the volcanogenic deposits have an irregular shape, and contain much disseminated mineralisation; ore minerals are native gold, silver-antimony and silver-arsenic sulphides, gold and silver tellurides, and cinnabar, with varying amounts of copper, lead and zinc sulphides. They occur within a larger zone of hydrothermal alteration, typified by chalcedonic quartz, adularia, calcite and minor sericite.

DESCRIPTION OF ZONES OF MINERAL POTENTIAL

Zone AuA1; P; B; gold; small to large; volcanogenic

Location : The zone is crudely circular, of diameter 15 to 20 kilometres, in the southeast quadrant of the Biloela 100 000 sheet. It is in Banana and Calliope Shires, in forested land including part of State Forest 316, and includes part of Kroombit Tops National Park.

Zone Features : The Kroombit Tops zone encloses an area of the Triassic Muncon Volcanics in which the 1VD airmagnetic image suggests the presence of caldera rim outlines. Recent geological mapping in this zone has found extensive areas of hydrothermal alteration and pyrite, and traces of gold mineralisation. These suggest that the faulted margins of the caldera structure may have channelled hydrothermal fluids to sites favourable for the formation of volcanogenic gold deposits. There are no deposits known in the zone to date.

Probability of Further Deposits : There is a moderate probability of the occurrence of volcanogenic gold mineralisation within the zone.

Definition of Zone Boundary : The boundary was defined by recent mapping by the Geological Survey, and encloses the area of hydrothermal alteration and the inferred caldera rim.

Accuracy of Zone Boundary : A - Based on detailed investigations and recent geological mapping.

Zone AuA2; L; A; gold-copper; small to medium; volcanogenic

Location : The zone is elongate northerly, across the centre of the Mount Perry 100 000 sheet, and is about 35 kilometres long by up to 8 kilometres wide. It is in Gayndah and Perry Shires, and the northern half is largely timbered, including State Forest 296 and most of State Forest 157.

Zone Features : The zone contains the major Mount Rawdon (Swindon) deposit (No. 439), and the Mount Yeatman gold mine (445). Each deposit contains gold in quartz-sulphide veins, and disseminated in shear zones in tuff and porphyry dykes of the Triassic Aranbanga Volcanic Group. The gangue minerals include quartz, with iron, copper, arsenic, lead and zinc sulphides. The mineralisation at Mount Rawdon has been studied in detail, and shown to relate to a multi-stage process, involving

intrusion of rhyolite dykes or a volcanic vent, and accompanied by extensive hydrothermal alteration, related to a later and more acid stage of the Aranbanga volcanism.

The ore zone at Mount Rawdon is about 500 m long northeasterly, by 200 m wide, and extends to about 200 m depth. A resource has been calculated for this deposit as 22 Mt of ore of average grade 1.2 g/t gold (830 000 oz of contained gold) and 4.2 g/t silver (Gallo et al., 1990). Mine feasibility is being assessed.

The zone contains an area of hydrothermal alteration, about 10 kilometres long northerly by about 4 kilometres wide, in its northeast corner. The altered area is largely in Aranbanga Volcanics, but partly in the adjacent Triassic Hogback Granite. It has been prospected by rock and stream sediment sampling, and the only sign of gold or base metal mineralisation near surface is a small quartz body in the headwaters of Major Creek, from which rock samples show a maximum assay of 0.28 g/t gold. The area contains widespread rutile mineralisation (Deposit 430), as part of the series of alteration minerals, and has potential for a large 'hard rock' rutile deposit, of average grade about 2% rutile (Richards, 1985).

Probability of Further Deposits : The zone hosts a medium-size gold deposit in an area of rhyolitic intrusives, emplaced in basic members of the Aranbanga Volcanic Group. The remaining area of the Group is known to contain further areas of rhyolite dykes, and has a reasonable chance of containing more resources. The area of alteration in the north of the zone has potential to contain a resource of rutile (which may be of commercial importance as a replacement for rutile from coastal plain deposits), and a lesser chance of a volcanogenic gold deposit.

Definition of Zone Boundary : The boundary is the outline of the area of Aranbanga Volcanics, copied from the Maryborough 1 : 250 000 scale geological map, and extended to the northeast to enclose the area of alteration in Hogback Granite.

Accuracy of Zone Boundary : A - Based on detailed investigations and recent regional geological mapping.

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Gallo, J. B., Mustard, H. and Taylor, S., 1990. Mount Rawdon gold deposit, pp. 1505-1507 in *Geology of the Mineral Deposits of Australia and Papua New Guinea*, AusIMM Monograph 14.

Richards, D., 1985. Final report on ATP 3792M (CR 14571)

Zone AuA3; L; A; gold; small to medium; volcanogenic

Location : The zone is an area of irregular outline in Biggenden Shire, of diameter about 5 kilometres, in the southeast corner of the Mount Perry 100 000 sheet area. It is nearly all cleared, with a small timbered area in the centre of its western edge.

Zone Features : The zone contains the five principal deposits (No. 384, 421, 427, 428, 441) of the Mount Shamrock Mining Field. The Mount Shamrock deposit (441) is typical, and the largest. It comprises a zone of diorite dykes in Carboniferous-Permian Good Night beds, which has been intruded by thin felsic dykes which introduced gold-bismuth-copper-zinc mineralisation. There are vein, breccia zone and pipe deposits, all containing pyritic quartz, with the highest gold values associated with arsenic and bismuth minerals. Production from Mount Shamrock from 1886 to 1909 was 22 500 oz of gold from 36 654 t of ore.

Probability of Further Deposits : The zone includes all the known deposits of Mount Shamrock type. Further exploration, or an improvement in commercial factors, should lead to the identification of further resources.

Definition of Zone Boundary : The boundary encloses a zone of uniform airmagnetic response, which surrounds all the known deposits. It was drawn from a first vertical derivative enhancement of AGSO regional airmagnetic survey data.

Accuracy of Zone Boundary : A - Based on detailed investigations, modern regional geological mapping and airmagnetic data.

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone AuA4; P; B; gold-copper; small to medium; volcanogenic

Location : The zone is about 220 kilometres long and up to 20 kilometres wide. It starts northwest of Gayndah, on the Maryborough 250 000 sheet, and extends southwesterly across the Gympie 250 000 sheet to end near Bigges Crossing of the Brisbane River, on the Ipswich 250 000 sheet. It contains parts of Gayndah, Kilkivan, Murgon, Rosalie, Esk and Kilcoy shires. The part on the Maryborough 250 000 sheet is largely timbered, the part on the Gympie sheet is about half timbered, and the section on the Ipswich sheet is about one-third timbered; it contains parts of State Forests 67, 74, 210, 215, 329, 343, 637, 673 and 1072.

Zone Features : The zone contains, throughout its length, the Early-Middle Triassic sediment and intermediate volcanics of the Toogoolawah Group. Recent detailed mapping in the Maryborough 250 000 sheet area has determined that the younger acid to basic volcanics of the Aranbanga Volcanics partly overlie and intrude the Toogoolawah Group. In the remaining, southwesterly extension of the zone, which

has not been mapped in the same detail, only the andesitic Neara Volcanics of the Toogoolawah Group have been recognised.

This zone contains eight isolated gold deposits (321, 357, 612, 622, 1321, 1325, 1326, 1443), the cluster of four gold deposits (530, 606, 628, 1465) of the Gooroomjan Creek area, and four isolated copper deposits (300, 303, 370, 1450). The deposits of the Gooroomjan Creek group are narrow quartz-calcite veins, and emplaced in an area, about 4 kilometres in diameter, of intrusive diorite; production was largely from adjacent alluvial workings. The primary deposits are clearly of the structure-controlled vein type.

The largest producer was the South Burnett/Mount Mac Mine (No. 612), which produced about 1300 oz (41 kg) of gold from 3200 t of ore.

Four of the isolated gold deposits (300, 303, 321, 1325), all from the Maryborough 250 000 sheet area, are clearly of volcanogenic type. They occur in zones of hydrothermal alteration, in brecciated volcanics (usually andesite), of the Mount Marseille Volcanics member of the Toogoolawah Group. They are genetically related to Late Triassic rhyolitic intrusives associated with the Aranbanga Volcanics. At the Lord Nelson deposit (1325) the mineralisation is of quartz vein type, along the rhyolite-andesite contact, but the other three deposits are described as hosted by brecciated andesite with fumarolic alteration.

The airmagnetic image for this zone in the Maryborough and Gympie 250 000 sheet areas shows large circular features, which are interpreted to be caldera rims, along which fumarolic activity may be expected. There are no defined resources within this zone, but the zones of hydrothermal alteration associated with some of the known deposits are notably large. As an example, at the Dadamarine deposit (303) the altered area is said to be 2 kilometres long and 500-800 m wide, substantially larger than the 500 x 200 m zone of mineralisation at Mount Rawdon.

Probability of Further Deposits : The zone contains a few examples of volcanogenic gold (copper) mineralisation, and is an obvious area of exploration interest .

Definition of Zone Boundary : The zone outline was copied from the area of outcrop of the volcanic units on the Maryborough, Gympie and Ipswich 1 : 250 000 scale geological maps. The area of diorite at the Gooroomjan Creek group of deposits is clearly identifiable in the airmagnetic image, but the image is generally too fuzzy to give anything better than a broad indication of the zone margins.

Accuracy of Zone Boundary : B - Based on a few deposits and limited airmagnetic data

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Randall, R. E., Osborne, J. H., Donchak, P. J. T. and Scott, M., 1996. A review of mineral exploration and known mineral occurrences within the Goomeri (9345), Nambour (9444) and Nanango (9344) 1 : 100 000 sheet area, south-east Queensland, Geol. Surv. Qld Rec. 1996/4

Zone AuA5; L; A; gold; small; volcanogenic

Location : The zone is an oval area in Cooloola and Kilkivan Shires, about 16 kilometres long northerly and up to 7 kilometres wide, with the Manumbar mine near its centre. It is near the southeast corner of the Goomeri 100 000 sheet. The zone is all timbered, and includes parts of State Forests 546 and 639.

Zone Features : The zone contains an isolated area of the Triassic Neara Volcanics, which are principally andesite here. It contains the Manumbar gold deposit (No. 571), which was found in an area without historic mine workings, and is presently being mined in an open pit. The mineralisation is within a shear zone in andesitic agglomerate, and is predominantly hosted by a calcite lode with minor quartz veining and chalcedonic alteration.

A resource of about 300 000 t of ore was defined at Manumbar in early 1995. Production was 9600 oz of gold in the 1994-95 year, and is expected to be about 20 000 oz in 1995-96 (Cornwall, 1995).

Probability of Further Deposits : The zone contains volcanogenic gold mineralisation, and is being intensely explored in order to add resources to the current mining operation.

Definition of Zone Boundary : The zone boundary is the edge of the area of Neara Volcanics, traced from the Gympie 1: 250 000 scale geological map. This line also encloses an area of uniform airmagnetic response.

Accuracy of Zone Boundary : A - Based on detailed investigations at the Manumbar deposit, and on regional geological information confirmed by the airmagnetic pattern

Sources of Information

Cornwall Resource Corporation Ltd, 1995 Annual Report and subsequent Quarterly Reports.

Randall, R. E., Osborne, J. H., Donchak, P. J. T. and Scott, M., 1996. A review of mineral exploration and known mineral occurrences within the Goomeri (9345), Nambour (9444) and Nanango (9344) 1 : 100 000 sheet area, south-east Queensland, Geol. Surv. Qld Rec. 1996/4

Zone AuA6L; A; gold; small; volcanogenic

Location : The zone has a crudely elliptical shape, about 20 kilometres long northeasterly by up to 12 kilometres wide, across the boundary of the Gympie and

Nambour 100 000 sheets. It is in Maroochy and Noosa Shires, with timbered areas on its northeast, southeast and southwest corners, including parts of State Forests 351, 689, 959 and 1239. The cleared land in the eastern part of this zone, in the Nambour-Yandina-Cooroy area is densely settled, and has been placed in the 'alienated' category as zone **AuZ**.

Zone Features : The zone contains the cluster of workings at the North Arm Gold Field (1386) in the south, and three isolated gold-copper deposits (1268-1270) in the north. The zone contains several small intrusions of Jurassic-Cretaceous quartz diorite.

The North Arm deposits contain quartz-pyrite veins, up to a metre wide and containing up to 50 g/t gold, in lower grade envelopes of sheared and altered rock of average grade about 1 g/t gold, which are up to 20 m wide. They are hosted by acid volcanics (mainly dacite) of the Late Triassic North Arm Volcanics. They are clearly volcanogenic deposits, with standard features of this type such as widespread sericitic alteration and the presence of silver selenide. The North Arm deposits produced about 32 000 oz (about 1000 kg) of gold-silver bullion in the 1930s, and contain a resource of 904 000 t of ore of average grade 1.17 g/t gold.

The northern deposits are much smaller, and contain gold and copper sulphide in narrow pyritic quartz veins in zones of silicification, in andesite of the North Arm Volcanics.

Probability of Further Deposits : The zone contains deposits of a single type, in the same host sequence. Further resources, including extensions to the known deposits, could be located by further exploration.

Definition of Zone Boundary : The boundary was drawn from the airmagnetic (1VD) image, and encloses all of the small quartz diorite intrusives, all of the known deposits, and most of the area of the North Arm Volcanics.

Accuracy of Zone Boundary : A - Based on detailed studies at North Arm and airmagnetic pattern which confirms the information shown on the Gympie 250 000 scale geological map.

Sources of Information

Barker, R. M., Burrows, P. E., Scott, M. and Cranfield, L. C., 1993. Mineral occurrences of the Gympie and Laguna Bay 100 000 sheet areas, Geol. Surv. Qld Rec. 1993/14.

Randall, R. E., Osborne, J. H., Donchak, P. J. T. and Scott, M., 1996. A review of mineral exploration and known mineral occurrences within the Goomeri (9345), Nambour (9444) and Nanango (9344) 1 : 100 000 sheet area, south-east Queensland, Geol. Surv. Qld Rec. 1996/4

STRUCTURE-CONTROLLED VEIN DEPOSITS OF GOLD

Known Deposits

Most of the gold deposits of the Region are structure-controlled veins. They include the ore bodies of the Gympie, Perry, Chowey/Mount Steadman, Paradise, Gaeta, Calliope, Eastern Boyne, Fig Tree, Mount Rainbow, Barmundoo/Tableland, Norton, Cania, Yarrol and Reids Creek fields, and many isolated deposits. Most of the deposits are small, and only suitable for small-scale mining, but occasionally a cluster of veins can provide a large resource, suitable for company-size mines. The Gympie field is the best-known example of a large group of structure-controlled veins.

Geological Setting of Type AuB Deposits

The vein deposits are defined as those with ore body shapes which are elongate in the direction of the enclosing shear zone or fault line, or along the contact between two rock formations. Some structural preparation is essential to all ore deposits genetically related to igneous intrusions, but in this type the shape of the deposit is the critical distinguishing factor. The deposits often contain gold in a quartz lode along a linear formation contact or fault line, or within quartz veinlets in a shear zone, or occasionally disseminated within a shear zone.

A second essential feature in these deposits is the absence of widespread hydrothermal alteration, and disseminated or stockwork ore mineralisation, outside the margins of the controlling structure.

Most of the deposits are in or next to an igneous intrusion, and were formed by the interaction of hydrothermal solutions, derived from this 'mineralising' intrusive. Within the Region these intrusives are almost all of Late Permian to Triassic age. The deposits can occur in almost any rock type except limestone - in a limestone host the mineralising solutions react with the carbonate to form a distinctive series of contact metasomatic minerals which define the skarn class of deposits.

The igneous intrusive can be of any size, from a major pluton to minor dykes, and may be of any composition, from granite to gabbro. In some gold fields there is also a stratigraphic control, ie the lodes are of highest gold grade where the controlling structure is within or intersects a rock formation of favourable composition. The association of the Gympie lodes with carbonaceous beds of the upper Rammutt Formation is a well-known example. Individual vein deposits are usually small, but a concentration of lodes may provide a medium to large resource, as at Gympie.

In some cases there is no known mineralising intrusive in the vicinity of the deposit, and here a genetic association with fluids produced during regional metamorphism seem more likely.

The gold deposits of the Brisbane-Ipswich-Gold Coast area are, with one exception, all very small structure-controlled veins, from which there has been negligible production. The Mount Taylor mine at Kingston is the exception, with historic

production of about 20 000 oz (612.3 kg) of gold from 149 487 t of ore in the period 1932 to 1954. However, there is considered to be a low potential for gold deposits in this area, and close settlement is expected to prevent further exploration.

DESCRIPTION OF ZONES OF MINERAL POTENTIAL

Zone AuB1; L; A; gold; small; structure-controlled veins

Location : The zone is in the northwest corner of the Miriam Vale 100 000 sheet, and partly overlaps onto the northeast corner of the Calliope sheet; it is about 25 kilometres long northerly and up to 6 kilometres wide. With the exception of a small cleared area in the southwest corner, all of the zone is timbered. It is in Miriam Vale shire, and about 4 kilometres east of State Forest 471.

Zone Features : The zone encloses the Rodds Bay deposit (No. 170) and the Jackass (172) mine workings. The mineralisation comprises quartz lodes, which strike easterly and dip southerly at about 60¼ at both sites. The Rodds Bay lode is 15-20 cm wide, and outcropped as a quartz-ironstone body emplaced in hornblende diorite which has been intruded by aplite and diorite dykes (Ridgway, 1939). The Jackass reef was up to 2.7 m wide, and contained quartz, calcite, chlorite and pyrite, minor amounts of arsenic, copper and zinc sulphides and native bismuth, and gold. Recorded production from the Jackass mine (1939-1953) was about 330 zo (10.3 kg) of gold from 312 t of ore.

The lodes are contained within the Permo-Triassic Miriam Vale Granodiorite, a composite batholith with a range of compositions and several discrete plutons, which was not subdivided on the preliminary Bundaberg 1 : 250 000 scale geological map. The two deposits are considered to be genetically related to the emplacement of one intrusive phase of the Miriam Vale Granodiorite.

There are no defined resources within the zone.

Probability of Further Deposits : The zone contains two similar deposits, about 5 kilometres apart. The zone is an area of uniform granitoid type, and there is considered to be a strong probability that further resources will occur.

Definition of Zone Boundary : The eastern boundary of the zone was drawn along the edge of the area of outcrop of the Miriam Vale Granodiorite, and the western boundary was inferred from airmagnetic patterns. The northern limit of the zone is the northern edge of the Region, and the southern limit was drawn to correspond to a change in the airmagnetic pattern, which suggests a change in the character of the Granodiorite.

Accuracy of Zone Boundary : A - Based on geological boundaries from the Bundaberg 1 : 250 000 scale geological map, and on an interpretation of airmagnetic data.

Sources of Information

Ellis, P. L. and Whitaker, W. G., 1976. Geology of the Bundaberg 1 : 250 000 Sheet Area, Geol. Surv. Qld Rep. 90.

Ridgway, J. E., 1939. Rodds Bay, p. 228 in QGMJ

Zone AuB2; P; B; gold (copper); small; structure-controlled veins

Location : The zone is an elongate band in Miriam Vale Shire, which trends southerly from the southern edge of the Miriam Vale 100 000 sheet to terminate in the approximate centre of the Rosedale 100 000 sheet area. Practically all of the zone is timbered, and the southern tip of the zone includes a small part of State Forest 406

Zone Features : The zone encloses a gold prospect near Rosedale (No. 239) and two copper-gold prospects (240, 245). The three prospects are quartz-vein types, hosted by andesite and sediment of the Permian Biggenden Beds, and near the margins of the Permo-Triassic Miriam Vale Granodiorite. There are no records of ore production from the three sites, and no defined resources.

Probability of Further Deposits : The zone is the northern extension of a much larger, similar zone to the south, from which it is separated by a mass of Miriam Vale Granodiorite. The association of gold and lesser copper deposits hosted by Permian andesite and sediment is clearly demonstrated, by many deposits of this type, in the southern zone.

Definition of Zone Boundary : The zone boundary shown is the margin of the Biggenden Beds, traced from the Bundaberg 1 : 250 000 scale geological map.

Accuracy of Zone Boundary : B - Based on an observed association of gold (copper) deposits with a Permian volcanic and sedimentary sequence, which is more definite in the strike extension of the zone to the south. The boundary is based on regional scale geological mapping.

Sources of Information : Ellis, P. L. and Whitaker, W. G., 1976. Geology of the Bundaberg 1 : 250 000 Sheet Area, Geol. Surv. Qld Rep. 90.

Zone AuB3; L; A; gold; small; structure controlled veins

Location : The zone is an arcuate band in Miriam Vale and Kolan shires, which trends northerly across the approximate centre of the Rosedale 100 000 sheet area, and continues southerly across the northern edge of the Mount Perry 100 000 sheet. The northern two-thirds of the zone is timbered, and includes part of State Forests 406 and 424.

Zone Features : On the Rosedale sheet the zone contains gold mineralisation at the Bell Booth/Curds (Deposit No. 252), Busy Bee (253) and Cherry Bell (254) mine workings, and at the Tararan (No. 256) prospect; it also contains the Langdon (250) lead-zinc prospect. At the southern end of the zone, on the Mount Perry sheet, the

zone contains two gold deposits (381, 388) and a copper-gold deposit (389), which are the major workings in the eastern group of deposits of the Boolboonda Gold and Mineral Field. They are hosted by the Miriam Vale Granodiorite or by adjacent metasediment of the Devonian to Carboniferous Curtis Island Group, and one of the southern group (388) is in the Triassic Goyan Andesite. Each is a quartz vein deposit, with the vein commonly striking northwesterly; most are less than 25 cm wide.

The Bell Booth, Busy Bee and Cherry Bell deposits occur along a sinuous northerly-trending narrow band visible in the airmagnetic pattern, which continues southerly beyond the area of the known deposits. The band may be a major shear zone, or perhaps a zone of hydrothermal alteration. None of the deposits has produced more than a few tonnes of ore, in which the gold silver ratio is fairly uniform at about 3 : 1, and there are no defined resources. The deposits of the eastern Boolboonda group are placed in this zone because they are gold-rich, and genetically related to Triassic granite, whereas the western group are copper-rich, and related to the New Moonta Diorite.

Probability of Further Deposits : The zone encloses a series of gold-rich deposits, hosted by sediment of the Curtis Island Group, and genetically related to Triassic granites. These granites are likely to have produced other resources, particularly along the Bell Booth-Cherry Bell structure.

Definition of Zone Boundary : The zone boundary was traced from the boundary of the Curtis Island Group on the Bundaberg and Maryborough 1 : 250 000 scale geological maps, and confirmed by the shape of the area of distinctive airmagnetic pattern.

Accuracy of Zone Boundary : A - Based on regional-scale geological mapping and a feature inferred from airmagnetic patterns.

Sources of Information :

Ellis, P. L. and Whitaker, W. G., 1976. Geology of the Bundaberg 1 : 250 000 Sheet Area, Geol. Surv. Qld Rep. 90.

Zone AuB4; P; B; gold; small; structure-controlled veins

Location : The zone begins near the south edge of the Rosedale 100 000 sheet, and continues southerly as a band 5-20 kilometres wide to the southern edge of the Mount Perry sheet, for a total length of about 75 kilometres. It is the southern extension of zone AuA2. The zone is largely cleared land, except for a small area in its northeast corner, which includes part of State Forest 645. It is partly in Kolan Shire and partly in Miriam Vale Shire.

Zone Features : The zone surrounds but excludes the small zones of likely potential for gold deposits at the Perry, Paradise and Mount Shamrock fields. There are occasional gold deposits within this larger, outer zone, in which the localising factors are a structurally prepared site in favourable beds (either andesitic volcanics or

sediment) of the Permian Biggenden Beds or Good Night beds, or at the edge of the mineralising intrusive. The mineralising intrusives are all of Permo-Triassic age, from the Miriam Vale Granodiorite in the north to the Chowey Granite in the south.

The known lodes are quartz reef types, containing pyrite, gold, and minor copper sulphide. The two lodes in the far north of the zone (No. 260, 261) contain calcite, and occur along a sinuous northerly-trending line, visible in the airmagnetic pattern, which is perhaps a fault line. Two deposits (443, 444) of the Mount Steadman Gold Field, in the far south of the zone, are simple narrow quartz reefs, associated with aplite dykes. Bismuth and molybdenum are associated with the gold at the Venus mine (444), which was the largest producer from this zone, yielding about 626 oz (19.5 kg) of gold from 773 t of ore, from a quartz reef 4 cm wide.

The southernmost deposit, at Mount Steadman (442) appears to be an unusual member of this group, as it contains disseminated gold mineralisation in granite, with very little alteration or sulphides. Exploration by the Probe Resources NL-CRA Exploration Pty Ltd joint venture has indicated a resource of 1 Mt at 1 g/t gold here (Queensland Minerals and Energy Review, 1995).

Probability of Further Deposits : The zone contains a uniform series of rocks and a number of Permo-Triassic mineralising intrusives which have produced a few gold deposits. There is a fair chance that further resources of this type can be found.

Definition of Zone Boundary : The boundary of the zone corresponds to the edge of the areas of Biggenden and Good Night beds, copied from the Bundaberg and Maryborough 1 : 250 000 scale geological maps.

Accuracy of Zone Boundary : B - Based on regional geological mapping, and few deposits.

Zone AuB5; L; B; gold; small; structure-controlled veins

Location : The zone is a narrow, northerly trending band in the southeast corner of the Rosedale 100 000 sheet area, which extends for a few kilometres southerly into the Mount Perry sheet area. With the exception of the northernmost 7 kilometres length, all of the zone is timbered. The zone cuts across the boundaries of State Forest 381, and is in Kolan Shire.

Zone Features : The zone contains the gold deposits of the Gaeta Mining Field (No. 251), the Mount Bania mining area (259), a prospect (262) about 2 kilometres south of Mount Bania, and two deposits (387, 395) in the southern Bania Range. It also contains the Mount Bania molybdenum deposit (258). There are no defined resources within the zone.

The Gaeta Mining Field contains seven quartz fissure-reef deposits, of which the Pioneer is the largest. The reefs were emplaced in the younger quartz-diorite phase of the Miriam Vale Granodiorite, in an area of ample xenoliths of Curtis Island Group metasediment and dykes. Minor pyrite, pyrrhotite and chalcopyrite occur on the reef

margins. Total production was about 4000 oz gold from ore of average grade about 20 g/t gold. Mines Dept drilling in 1970 established that the Pioneer reef continues beneath the old workings, with an average grade of about 5.5 g/t gold and 4 g/t silver, and an average width of 58 cm.

The Mount Bania gold mineralisation is associated with pyrite, in altered granophyre of the Miriam Vale Granodiorite, in patchy and irregularly shaped deposits. The only production was a 40 t trial parcel of ore, of average grade about 5 g/t gold. The No. 387 and 395 occurrences also occur in Miriam Vale Granodiorite. Two deposits (259, 262) occur along a prominent line in the airmagnetic pattern, which displaces the outline of the Miriam Vale Granodiorite and is probably a fault line.

The Mount Bania molybdenum mineralisation comprises a quartz vein, about 60 cm wide and at least 122 m long, in a shear zone in Miriam Vale Granodiorite. Molybdenite and minor pyrite are contained in the vein and in the adjacent granite; production was about 3.9 t of high grade concentrates from 47.4 t of ore.

Probability of Further Deposits : The zone encloses gold mineralisation in the same formation, and three deposits are apparently localised by a major fault. The fault line is considered prospective for further resources of this type.

Definition of Zone Boundary : The zone boundary was drawn to enclose all of the known deposits hosted by Miriam Vale Granodiorite in this area, and all of the inferred fault line. The boundary was closed on the northern and southern ends of the zone at points where the fault line could no longer be seen in the airmagnetic pattern.

Accuracy of Zone Boundary : B - Inferred from airmagnetic data

Sources of Information :

Ellis, P. L. and Whitaker, W. G., 1976. Geology of the Bundaberg 1 : 250 000 Sheet Area, Geol. Surv. Qld Rep. 90.

Zone AuB6; L; A; gold; small; structure-controlled veins

Location : The zone is a northerly trending band across the centre of the northern half of the Calliope 100 000 sheet area and within Calliope Shire. Most of the zone is timbered, except for small areas of cleared land in its northwest and southwest corners. The zone is within State Forests 521 and 583.

Zone Features : The zone encloses the reef and alluvial gold mines of the Calliope, Eastern Boyne and Uncle Sam fields. All of the primary deposits are narrow quartz reefs, to a maximum width of about 40 cm in the Calliope field and 50 cm in the Eastern Boyne group. The reefs are steeply to vertically dipping, and have been worked to shallow depths - to a maximum of about 30 m at Calliope and about 50 m at Eastern Boyne. The gold is associated with traces of pyrite and galena, and all of the reefs are emplaced in the Middle Devonian Calliope Beds.

Workings at the Calliope field began in 1853, and were the start of commercial gold mining in Queensland. The production is largely unrecorded, but is probably in the range 10 000 to 20 000 oz. Total production from the Eastern Boyne deposits is around 2000 oz, and probably less from the Uncle Sam reefs. There are no defined resources in this zone.

The alluvial gold deposits were all adjacent to the known reefs, and were small, of the order of a few thousand cubic metres at any deposit.

Probability of Further Deposits : The deposits are all emplaced in Calliope Beds, which provide a 'secondary' localising control. Further resources of this type are considered likely within the area of Calliope Beds.

Definition of Zone Boundary : The zone boundary was traced from the border of this area of Calliope Beds, as shown on the Monto 1 : 250 000 scale geological map.

Accuracy of Zone Boundary : B - Based on regional geological map data.

Sources of Information

Dear, J. F., McKellar, R. G. and Tucker, R. M., 1971. Geology of the Monto 1 : 250 000 sheet Area, Geol. Surv. Qld Rep. 46.

Zone AuB7; P; B; gold (copper); small; structure-controlled veins

Location : The zone is roughly circular and of diameter about 15 kilometres, near the centre of the northern edge of the Biloela 100 000 sheet area, in Banana and Calliope shires. All of the zone is timbered, and it includes the edges of State Forests 218 and 337.

Zone Features : The zone encloses the gold deposits of the Fig Tree Provisional Mining Field (No. 17), the Jims Reef workings (19) and the Elude copper-gold prospect (17). The primary deposits are quartz-pyrite-chalcopyrite lodes emplaced in the western end of the Permo-Triassic Galloway Plains Tonalite or in sediment near its margin. The lodes are narrow, of average width about 30 cm and never exceeding 60 cm, and only a few tens of metres long. The Jims Reef deposit also contains hessite (Denmead, 1935), a silver telluride, and the only known occurrence of a telluride mineral in the Region. Total production from the Fig Tree field and the other deposits is small, and unlikely to exceed 1000 oz of gold at any site. There are no defined resources in this zone.

Probability of Further Deposits : The zone encloses an area of hydrothermal gold, silver and minor copper mineralisation, associated with a part of the Galloway Plains Tonalite which contains numerous dykes. Further resources of this type can be expected.

Definition of Zone Boundary : The boundary was drawn to enclose all the known deposits and the area of closely-spaced dykes in the western part of the Tonalite.

Accuracy of Zone Boundary : B - Based on regional geological map information

Sources of Information

Denmead, A. K., 1935. Gold at the head of the Don River, pp. 41-42 in QGMJ

Zone AuB8; P; B; gold (copper); small; structure-controlled veins

Location : The zone is a roughly square block in Banana Shire, of side length about 15 kilometres, in the northwest corner of the Biloela 100 000 sheet. All of the zone is timbered, and it contains part of State Forest 218 in its northeast corner.

Zone Features : The zone contains the Day Dawn (2) and Back Creek (5) groups of gold workings; the E. D. (No. 3), Don (14) and Last Chance (31) gold-copper deposits; and the Argoon copper-gold workings (1). The deposits are hosted by quartz diorite of the Permo-Triassic Mount Gerard Complex, or by sediment of the Permian Youlambie Conglomerate or Owl Gully Volcanics near the margin of the Complex. They have quartz vein or quartz stockwork style mineralisation; the E. D. contains several flat-lying veins, each averaging about 1.5 m thick and confined to a zone about 10 m thick (Taylor, 1989). Recorded production from the E. D. deposit is about 12 t of selected ore averaging about 20 g/t gold, and a few tens of tonnes of selected copper ore from the Argoon mine. All of the reef mining areas also contained small alluvial gold deposits, of which the Back Creek deposits (Morton, 1931) were worked in several episodes. There are no publicly-available resource data.

Probability of Further Deposits : The deposits are of a single type, in the same geological environment. Additional resources can probably be found by further exploration.

Definition of Zone Boundary : The boundary of the zone encloses the Complex and its contact zone, and the known deposits, and was copied from the Monto 1 : 250 000 scale geological map.

Accuracy of Zone Boundary : B - Based on regional geological map information.

Sources of Information

Dear, J. F., McKellar, R. G. and Tucker, R. M., 1971. Geology of the Monto 1 : 250 000 sheet Area, Geol. Surv. Qld Rep. 46.

Morton, C. C., 1931. Workings on the Back Creek Road, Dumgree, pp. 173-174 in QGMJ

Taylor, S., 1989. Final report for ATP 5438M (CR 20679)

Zone AuB9; L; B; gold; small; structure-controlled veins

Location : The zone is elongate easterly, in the northern half of the Biloela 100 000 sheet. The zone is in Banana and Calliope shires, is all timbered, and it includes the western end of State Forest 680.

Zone Features : The zone encloses the quartz-calcite-pyrite-arsenopyrite-gold reefs of the Mount Rainbow and Maxwellton areas. The reefs were emplaced in the Permo-Triassic Galloway Plains Tonalite in the Mount Rainbow group, and in the sediment of the early Carboniferous Crana beds near the edge of the Tonalite in the Maxwellton set. The maximum reef width is quoted as 38 cm, and the enclosing altered tonalite formation was discarded at the time of mining as being unpayable. Ore zones are up to 200 m long in the strike direction, and were worked to a maximum depth of about 30 m. Production from the Mount Rainbow mines was about 8000 ounces of gold, and about 2800 ounces from 1600 t of ore from Maxwellton (Ball, 1916). There are no defined resources in this zone.

Probability of Further Deposits : The zone contains a concentration of gold deposits, which have only been worked to shallow depths. Additional resources could probably be found by further exploration.

Definition of Zone Boundary : The boundary was drawn to enclose all the known deposits, and the potentially mineralised zone of 2 kilometres width surrounding the Tonalite. The boundary of the Tonalite was taken from the Monto 1 : 250 000 scale geological map.

Accuracy of Zone Boundary : B - Based on regional geological map data

Sources of Information

Ball, L. C., 1916. Maxwellton Goldfield, pp. 261-263 in QGMJ

Dear, J. F., McKellar, R. G. and Tucker, R. M., 1971. Geology of the Monto 1 : 250 000 sheet Area, Geol. Surv. Qld Rep. 46.

Zone AuB10; L; A; gold; small; structure controlled veins

Location : The zone is roughly heart shaped, largely on the eastern edge of the Biloela 100 000 sheet but extending onto the Calliope sheet. The zone is all timbered, and includes the edges of State Forests 316 and 680; it is within Calliope Shire.

Zone Features : The zone encloses the gold workings of the Barmundoo/Tableland Gold Field, in which there were two major groups of mines, with their centres at Mount Seaview/Griffiths Hill and at Mount Pack/Crow Creek. The primary deposits were pyritic quartz reefs, hosted by Permo-Triassic granite or adjacent Carboniferous sediment. Lode widths were usually less than 20 cm, and lengths less than 30 m, to a maximum of 300 m. However, the Griffiths Hill workings are within a major zone of alteration and brecciation, about 800 m easterly by 250 m, and five other similar but

smaller areas of alteration have been identified within the zone (Hunter and Richards, 1983). All of the reefs contained a trace to a few percent arsenic, copper, lead and zinc; the adjacent alluvial and eluvial deposits have also been mined in small operations.

Recorded production for the Barmundoo mines was 25 163 oz gold from 12 554 t of selected ore, from 1891 to 1917 (Anon., 1931). The largest zone of alteration, at Griffiths Hill, was tested by two drill holes (Hunter and Richards, 1983), which intersected three isolated one metre lengths of about 1 g/t gold. There are no defined resources within the zone.

Probability of Further Deposits : The zone contains two sets of gold deposits, and is intensely altered in six areas. It seems probable that further exploration will locate further sources, including extensions to the known mineralisation.

Definition of Zone Boundary : The boundary was drawn to correspond to the airmagnetic pattern which encloses the granitoid body which surrounds the Mount Griffiths workings, and extended to the northeast to enclose the zones of intrusive granitoid and the gold deposits of the Mount Pack area.

Accuracy of Zone Boundary : A - Based on numerous mine workings, regional scale geological mapping confirmed by airmagnetic patterns

Sources of Information :

Anon., 1931. Barmundoo goldfield, QGMJ, 1931, pp. 497-498.

Hunter, M. J. and Richards, D. N. G., 1983. Final report on ATP 2953M (CR 11811).

Zone AuB11; L; A; gold-base metals; small; structure controlled veins

Location : The zone is a roughly circular area in Calliope Shire, about 5 kilometres in diameter, and near the western edge of the Calliope 100 000 sheet. The zone is all timbered, and includes the northwest corner of State Forest 645.

Zone Features : The zone encloses the quartz-sulphide lodes of the Norton Gold Field, which are emplaced within shear zones in an isolated body of Miriam Vale Granodiorite. The lodes are simple veins in some deposits, and in others a complex of thin veins forming a stockwork. In the single vein deposits the lode was usually about 25 cm wide, within shear zones commonly about a metre wide, to a maximum of 3 m.

The lode minerals are quartz, calcite, pyrite (to 50%), and up to 5% of arsenic, copper, lead and zinc in sulphide minerals. At depth the gold was largely within the pyrite, and thus difficult to recover with the treatment methods available in the late 19th century. Production from 1871 to 1905 was about 20 000 oz gold from ore of average grade about 1.3 oz/t gold (Ball, 1906). Part of the Norton field is within Mineral Development Licence 130, in which a resource of 120 000 t of 6 g/t gold has been defined.

Probability of Further Deposits : The gold deposits are confined to a single mass of Miriam Vale Granodiorite. There is a strong probability that further resources could be found.

Definition of Zone Boundary : The boundary of the zone is the outline of the granodiorite body, from the Monto 1 : 250 000 scale geological map, which is confirmed by the airmagnetic pattern.

Accuracy of Zone Boundary : A - Based on a defined pluton of particular character, with the mapped boundary confirmed by its airmagnetic pattern.

Sources of Information

Ball. L. C., 1906. The Norton Goldfield, QGMJ, pp. 295-301, 350-357.

Zone AuB12; L; B; gold-copper; small; structure-controlled veins

Location : The zone is roughly circular, of diameter about 25 kilometres, and extends from the northwest corner of the Monto 100 000 sheet area into the southwest corner of the Calliope 100 000 sheet area. The zone is nearly all timbered, except for a small area across its eastern edge. It includes part of State Forests 121, 506, 509 and 645, and is in Calliope and Monto shires.

Zone Features : All of the mineral deposits within the zone are genetically related to the Triassic Glassford Complex, which comprises adamellite, granodiorite and tonalite. The airmagnetic pattern shows that the Complex contains several phases, and those hosting porphyry copper deposits are described elsewhere. There are also skarn-type deposits in the sediment near the margin of the complex, also described separately.

There is a concentration of structure controlled gold deposits in the Monal Gold Field, and many isolated veins in the margins of the Granodiorite and adjacent sediment. The largest in the Monal field is the Lady Griffiths reef, which produced about 4000 oz of gold from about 4000 t of ore. It is typical of the deposits of this zone, with a shear zone up to 3 m wide enclosing a quartz-sulphide reef of average width 0.75 m. The principal sulphides were pyrite and chalcopyrite, with an average ore grade of about 1% copper (Pope, 1988a, b). There are no defined resources within the zone.

Probability of Further Deposits : The zone boundary was drawn so as to enclose all the structure-controlled gold deposits within and encircling the Glassford Complex. The boundary was extended as a southerly lobe to include isolated small areas of granite, which are not formally identified as part of the complex but contain Glassford-type veins. There is a strong probability of further resources within the zone.

Definition of Zone Boundary : The boundary was drawn from the Monto 1 : 250 000 scale geological map

Accuracy of Zone Boundary : B - Information is inferred from data of regional mapping quality.

Sources of Information

Dear, J. F., McKellar, R. G. and Tucker, R. M., 1971. Geology of the Monto 1 : 250 000 Sheet Area, Geol. Surv. Qld Rep. 46.

Pope, G. J., 1988a. Final report, ATPs 3453M and 3530M (CR 17108)

Pope, G. J., 1988b. Report on ATP 4854M to 9/2/88 (CR 18158).

Zone AuB13; L; A; gold; small; structure-controlled veins

Location : The zone is a northwesterly trending band in Monto Shire, about 10 kilometres long and up to 5 kilometres wide, in the northeast corner of the Scoria 100 000 sheet. The zone is northeast of State Forest 69 and is all timbered, and includes the northwest corner of Cania Gorge National Park.

Zone Features : The zone encloses the most productive parts of the Cania and Kroombit Mineral Field. These were workings on quartz-pyrite-chalcopyrite reefs, mostly with a northwesterly trend, and emplaced in sediment of the Early Permian Youlambie Conglomerate. The reefs are genetically related to the Permo-Triassic Wingfield Adamellite. The reefs were generally less than 40 cm wide, and only a few hundred metres long. Copper was an important constituent, but was not recovered; most of the gold was produced from alluvial deposits along Four Mile and Three Moon Creeks and their tributaries (Rands, 1885).

Production from the Cania reefs and alluvial deposits during its major term (1870-1910) is largely unrecorded, but is unlikely to exceed 10 000 oz of gold. It is one of the few areas in the Region in which dredging for gold was attempted, with the most effective episode the production of 551 oz from about 140 000 t dredged in 1906-1907.

Probability of Further Deposits : The zone encloses all the reef deposits with a northwesterly strike on the northeast margins of the Wingfield Adamellite, and all of the deposits are hosted by the same formation, the Youlambie Conglomerate. It has clear promise of further deposits.

Definition of Zone Boundary : The zone boundary was drawn to enclose all the known deposits and the area of Conglomerate near the Adamellite. It was copied from the boundary of the Conglomerate on the Monto 1 : 250 000 scale geological map, which was based on detailed mapping by Dear (1968).

Accuracy of Zone Boundary : A - Based on numerous deposits of the same time, within an area of detailed mapping.

Sources of Information

Dear, J. F., 1968. The geology of the Cania district, Geol. Surv. Qld Publ. 330.

Dear, J. F., McKellar, R. G. and Tucker, R. M., 1971. Geology of the Monto 1 : 250 000 Sheet Area, Geol. Surv. Qld Rep. 46.

Rands, W. H., 1885. Report on the goldfields of Raglan, Calliope Milton(Norton) and Cania, in the Port Curtis district, and on the mineral deposits in the Burnett district, Geol. Surv. Qld Publ. 21

Zone AuB14; L; A; gold; small; structure-controlled veins

Location : The zone encloses the Yarrol Gold Field. It is in Monto and Perry shires, near the southeast corner of the Scoria 100 000 sheet, and extends southerly into the Rawbelle sheet. Most of the zone is outside the boundary of the Region; the small area within the Region is all timbered, and to the east of State Forest 215.

Zone Features : The Yarrol field contains a series of northerly-trending diorite dykes, emplaced in the sediment and volcanics of the Early Permian Burnett Formation and Owl Gully Volcanics. High grade gold mineralisation (Deposits 232, 233, 235, 236) occurs in quartz reefs, in or along the margins of the diorite dykes, or associated with younger dykes of felsic porphyry or microgranite. Silver-lead mineralisation is predominant in the Yarrol prospect (231), on the eastern edge of the zone. The reefs are narrow, rarely wider than 25 cm, and discontinuous. In the sulphide zone the reefs contain quartz, epidote, pyrite, gold, chalcopyrite and argentiferous galena (Ridgway, 1937). Historic production, largely before 1885 and unrecorded, required selective mining to produce ore of grade +1 oz/t gold, and total production is thought to be around 1000 oz. The field is presently being evaluated as a large-volume, lower grade deposit, with some encouragement, as trench sampling has shown values to 2 g/t over a 27 m length (Strike Mining, 1994).

Probability of Further Deposits : The zone has the potential to contain a much larger resource than those worked before, by the mining of reefs and adjacent mineralised country rock.

Definition of Zone Boundary : The boundary of the zone was drawn to correspond to an airmagnetic pattern, which encloses the area of dykes.

Accuracy of Zone Boundary : A - Based on numerous mine workings, recent detailed investigations, and airmagnetic data.

Sources of Information

Ridgway, J. E., 1937. Yarrol field, pp. 159-162 in QGMJ.

Strike Mining, 1994. Annual report for 1994

Zone AuB15; L; A; gold-copper-lead-molybdenum-zinc; small; structure-controlled veins

Location : The zone has an irregular shape, about 20 kilometres long northerly and up to 8 kilometres wide, in the northwest corner of the Mount Perry 100 000 sheet. It is practically all cleared, and is in Kolan and Perry shires.

Zone Features : The zone encloses the deposits (No. 383, 395, 400, 415, 422, 429-435, 447, 459, 460, 461, 463, 465, 466, 467) of the Reids Creek gold field. They contain gold with varying quantities of arsenic, copper, lead, molybdenum and zinc sulphides. The ore bodies are emplaced in zones of shearing and alteration ('greisen') in the Permian Tenningering Granodiorite, and at one site (459) in the Wolca Granite. Most of the mineralisation is in pyritic quartz veins, rarely more than a metre wide and usually much narrower. Most of the primary deposits have an adjacent small alluvial gold deposit.

The Mount Perry mine (431) was the largest producer, providing 17 270 t copper, about 24 000 oz (750 kg) of gold and 790 000 oz (24 570 kg) of silver from workings 900 m long and 366 m deep, on a shear zone 1.6 m wide.. There are no defined resources within the zone.

Probability of Further Deposits : The zone contains a large number of the same class of deposit, in the same host formation. It is clearly an area of concentrated deposits, in which more resources could be available.

Definition of Zone Boundary : The boundary was traced from the Maryborough 1 : 250 000 scale geological map, and corresponds to the boundary of the Tenningering Granodiorite, enlarged on its western side to include Regans (No 459) deposit.

Accuracy of Zone Boundary : A - Based on numerous deposits, and on recent geological mapping.

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone AuB16; P; A; gold (copper); small; structure-controlled veins

Location: The zone is an elongate band in Isis and Kolan shires, in the northwest corner of the Childers 100 000 sheet, about 30 kilometres long and up to 9 kilometres wide. It is nearly all timbered, and includes part of State Forest 832.

Zone Features : The zone encloses four gold deposits (332, 336, 341, 345) emplaced as quartz or quartz-calcite veins in wide shear/breccia zones in sediment of the Triassic Brooweena Formation. The mineralised veins are narrow, and contain pyrite with arsenic, copper and lead sulphides in addition to gold and silver. The deposits are thought to be genetically related to the Late Triassic Broomfield Granite.

A resource has been estimated for the Defiance/Bonnie Jan deposit (No. 336), as 50 000-60 000 t of ore of average grade 5-7 g/t gold, 179 g/t silver, 29% copper and 1.8% arsenic.

Probability of Further Deposits : The zone encloses all of the Brooweena Formation, and its contact zone with the Broomfield Granite in the south and an unnamed granite at the northern end. The four known deposits are widely separated, and suggest that mineralisation can occur at any point within the zone.

Definition of Zone Boundary : The zone boundary was traced from the outline of the Brooweena Formation on the Maryborough 1 : 250 000 scale geological map.

Accuracy of Zone Boundary : A - Based on modern regional geological mapping and a series of uniform-style ore deposits

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone AuB17; P; B; gold; small; structure-controlled veins

Location : The zone is about 60 kilometres long, and up to 15 kilometres wide, along the western edge of the Childers 100 000 sheet and extending southerly into the Biggenden sheet. It is in Biggenden and Isis shires, and about half timbered; it includes all of State Forest 287 and part of State Forest 832.

Zone Features : The zone encloses the lode workings of the Stanton Harcourt Gold Field (No. 347), two isolated gold deposits (334, 348), a copper deposit (322) and the Dallarnil lead-silver-zinc deposit (335). The mineralisation is in highly pyritic quartz-calcite veins, emplaced in shear zones in sediment of the Permian Gympie Group (334, 347), at the contact of the sediment with an intrusive granite (348), in andesite of the Gympie Group (335), or within the Late Triassic Broomfield Granodiorite (322). Vein widths recorded are about 1.5 m at the Teebar copper deposit (322), 45-60 cm at the Wild Irishman (348), about 45 cm at the Stanton Harcourt reefs (347), and less than 7 cm at Dallarnil. Recorded production is about 100 oz (3 kg) of gold from the Stanton Harcourt field, and about 80 oz (2.4 kg) of gold from 136 t of ore at the Wild Irishman. There are no known resources within the zone.

Probability of Further Deposits : The zone contains a scattering of gold deposits, which demonstrate that the mineralising granites have been active. There is a fair chance of finding further resources.

Definition of Zone Boundary : The boundary is the outline of the Gympie Group, traced from the Maryborough 1 : 250 000 scale geological map.

Accuracy of Zone Boundary : B - Based on few deposits and regional scale geological mapping

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone AuB18; L; A; gold; small; structure-controlled veins

Location : The zone is a northeasterly trending band in Kolan Shire, about 6 kilometres long and 2 kilometres wide, near the eastern edge of the Mount Perry 100 000 sheet. Nearly all of the zone is timbered, the only cleared land being a small area in the eastern half.

Zone Features : The zone encloses the four principal mineralised areas (Deposits 397, 410, 448, 470) of the Perry Gold Field. The mineralisation is contained within quartz-pyrite-arsenopyrite-chalcopyrite-molybdenite veins, which are up to 20 m long and up to 3 m wide, but usually only 15-45 cm wide, and in zones of disseminated sulphides. The mineralisation was emplaced in shear zones in slate or phyllite of the Carboniferous to Permian Good Night Beds. The northern end of the zone terminates at an area of Hogback Granite, which is assumed to be the source of the mineralisation. There are no defined resources within the zone.

Probability of Further Deposits : The zone contains a number of uniform ore deposits, in the same host formation. Exploration should define further resources.

Definition of Zone Boundary : The zone boundary encloses all the known deposits, and an area along the contact with the mineralising intrusive. It corresponds to an area of uniform airmagnetic response.

Accuracy of Zone Boundary : A - Based on modern regional geological mapping, confirmed by the airmagnetic response

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone AuB19; L; A; gold; small; structure-controlled veins

Location : The zone has an elliptical outline, about 7 kilometres long and 4 kilometres wide, and is in the southeast corner of the Mount Perry 100 000 sheet. It is in Biggenden and Kolan shires: the western half is timbered, and includes the southeast corner of State Forest 169.

Zone Features : The zone contains the six principal areas of workings (No. 450-455) of the Paradise Gold Field. They contain narrow quartz reefs, with minor pyrite, plus

bismuth, copper, lead and zinc sulphides, emplaced in shear zones in sediment of the Carboniferous to Permian Good Night beds. Total production from the 15 lines of quartz reefs was about 12 000 oz of gold, mainly in the period 1890-1901.

Probability of Further Deposits : The zone boundary encloses all the known deposits of the Paradise Gold Field. Exploration should define further resources.

Definition of Zone Boundary : The boundary shown corresponds to an area of uniform airmagnetic response which encloses all the known deposits.

Accuracy of Zone Boundary : A - Based on the correspondence of a zone of uniform airmagnetic response to the zone of known mineralisation.

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone AuB20; L; A; gold; small; structure-controlled veins

Location : The zone is about 25 kilometres long northerly and up to 5 kilometres wide, in the southeast corner of the Biggenden 100 000 sheet. It is in Woocoo Shire; the northern two-thirds is timbered, and includes a small portion of State Forest 50.

Zone Features : The zone includes the principal deposits (No. 304, 305, 315, 316, 319, 325) of the Glenbar Gold and Mineral Field. All occur at the contact between sediment of the Kolbar Formation (of the Permian Gympie Group) and an intrusive Triassic granitoid. The Munna deposit (No. 319) is a skarn type, at a site at which the granitoid has intruded a limestone unit; the others are vein or breccia deposits along the intrusive contact. The contact is generally a shear zone, up to 30 m wide (at the XYZ mine, No. 325), containing quartz or quartz-calcite lodes up to 30 cm wide. There are commonly multiple veins, which contain arsenic, copper, lead and zinc sulphides in addition to pyrite. The Mount Melanie deposit (315) was the largest producer, providing about 240 oz (7.4 kg) of gold from 386 t of ore. There are no defined resources within the zone.

Probability of Further Deposits : The zone contains six deposits of the same type, in the same setting. Further resources could be found by more exploration.

Definition of Zone Boundary : The boundary was traced from the Maryborough 1 : 250 000 geological map, and is the boundary of the Kolbar Formation.

Accuracy of Zone Boundary : A - Based on mine data and modern regional geological mapping.

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone AuB21; L; A; gold; small; structure controlled veins

Location : The zone is an irregularly shaped area in Kilkivan Shire.. It is about 25 kilometres long by 12 kilometres wide, and extends across the boundary between the Gayndah and Murgon 100 000 sheets. The western half of the zone is timbered, and includes the eastern edge of State Forest 632.

Zone Features : The zone contains a group of gold deposits which are genetically related to the intrusion of Permian-Triassic diorite. In the Marodian Gold Field (Deposit 302) and nearby Three Bells Mine (323) the deposits are quartz-pyrite veins placed at the contact between the Calgoa Diorite and Carboniferous sediment. The deposits of the Yorkeys Knob Gold Field (326-330) are pyritic quartz-calcite veins within breccia in shear zones in the Permian-Triassic Yorkeys Diorite. Gangue minerals at Yorkeys Knob include quartz, calcite, pyrite, arsenopyrite, stibnite, sphalerite, chalcopryrite and galena. Recorded production, largely from alluvial deposits, comprised about 1930 oz (60 kg) of gold from the Marodian field and about 4400 oz (137.2 kg) from 6107 t of ore at Yorkeys Knob. There are no known resources in the zone.

Probability of Further Deposits : The zone contains a series of gold deposits which are genetically related to the same intrusive. There is a good chance of finding further resources.

Definition of Zone Boundary : The boundary of the zone encloses all the known deposits associated with Permo-Triassic diorite. It was drawn from the boundary of the diorite bodies and adjacent Carboniferous sediment as broadly shown on the Maryborough 1 : 250 000 scale geological map, and modified from the airmagnetic pattern to include only an area of uniform airmagnetic response which is inferred to be the area intruded by diorite.

Accuracy of Zone Boundary : A - Based on a uniform series of deposits, on modern regional geological mapping and a distinctive airmagnetic pattern.

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone AuB22; L; A; gold; small; structure controlled veins

Location : The zone is an elongate area in Murgon and Wondai shires, of average width about 3 kilometres, which extends southerly from near the southern boundary of the Gayndah 100 000 sheet into the Murgon 100 000 sheet, for a total length of about 38 kilometres. It is all cleared, except for small timbered areas on the northeast and northwest corners of the zone, which contain part of State Forest 254.

Zone Features : The zone contains four gold deposits (1313, 1316, 1324,1330) which are within a Triassic intrusive granitoid. The only record of workings is at the Red Rock (No. 1330) deposit (Kretchmer, 1989). Here four auriferous quartz lodes have been emplaced in grey quartzite and chert, intruded by diorite and later granitic dykes. A parcel of 5.5 t mined from an open pit about 50 m long in about 1922 returned 2.5 oz of gold. There are no defined resources within the zone.

Probability of Further Deposits : The deposits are all in the same setting. Exploration could locate further resources.

Definition of Zone Boundary : The zone boundary encloses all the known deposits, and an area with a uniform airmagnetic response, which is inferred to be the near-surface extent of the mineralising intrusive.

Accuracy of Zone Boundary : A - Based on a uniform geological setting, confirmed by the airmagnetic data.

Sources of Information

Kretchmer, R. N., 1989. Final report for ATP 5857M (CR 20929)

Zone AuB23; L; A; gold; small; structure-controlled veins

Location : The zone is about 60 kilometres long southerly, by about 15 kilometres wide, on the eastern side of the Gympie 100 000 sheet. It is within Cooloola, Noosa and Tiaro shires, and is largely forested in its northern half. This half contains many small areas of State Forest, from No. 700 in the north to 234 in the south.

Zone Features : The zone contains many gold deposits, emplaced in metasediment of the Lower Triassic Kin Kin Beds. The deposits are pyritic quartz veins, containing traces of antimony and arsenic sulphides, and up to 60 cm wide. Antimony was the principal product from the Neardie lodes (1052, 1206) in the northeast corner of the zone.

The major producers were the Enterprise (812), Veteran (1208), Corella Reefs group (761-769) and Mount Wonga (1041) mines. The largest was the Enterprise, which yielded about 200 oz (6.2 kg) of gold from 794 t of ore; the other three each produced more than 60 oz (2 kg) of gold. The Neardie mines produced about 1200 t of ore, and have an indicated resource of about 12 000 t at an average grade of 2% antimony.

Probability of Further Deposits : The Kin Kin Beds host about 40 known gold or antimony deposits, widely spread throughout the zone. There is a strong probability that further resources can be found.

Definition of Zone Boundary : The boundary is the outline of the main area of Kin Kin Beds, east of Gympie, and was copied from the Gympie 1 : 250 000 scale geological map.

Accuracy of Zone Boundary : A - Based on numerous deposits of the same class in the same host formation.

Sources of Information

Barker, R. M., Burrows, P. E., Scott, M. and Cranfield, L. C., 1993. Mineral occurrences of the Gympie and Laguna Bay 100 000 sheet areas, Geol. Surv. Qld Rec. 1993/14.

Zone AuB24; L; A; gold; small; structure-controlled veins

Location : The zone is triangular, about 15 kilometres long northerly and a maximum of 10 kilometres wide, at its northern end, which is in the approximate centre of the Gympie 100 000 sheet. It is in Cooloola and Noosa shires, and mostly timbered, including the area of State Forest 393.

Zone Features : The zone contains eight gold deposits (1037, 1040, 1047, 1143, 1186, 1214, 1259, 1262), two molybdenum deposits (1261, 1263) and one copper deposit (1264), all hosted by the Lower Triassic Woondum Granite or by rocks of the Kin Kin Beds near the margin of the granite. The gold is in quartz veins in shear zones or along fault lines, and at one site (1040) is disseminated in the granite. There are no records of production from these deposits, and no defined resources.

Probability of Further Deposits : The zone contains deposits of the same genetic type, in the same host setting. Exploration should locate further resources.

Definition of Zone Boundary : The zone broadly corresponds to the outline of the Woondum Granite, as shown on the Gympie 250 000 scale geological map, but was drawn so as to incorporate some of the sediment along the granite margin where the sediment is known to contain deposits.

Accuracy of Zone Boundary : A - Based on an adequate number of deposits in a simple setting

Sources of Information

Barker, R. M., Burrows, P. E., Scott, M. and Cranfield, L. C., 1993. Mineral occurrences of the Gympie and Laguna Bay 100 000 sheet areas, Geol. Surv. Qld Rec. 1993/14.

Zone AuB25; L; A; gold; small; structure-controlled veins

Location : The main part of the zone is about 45 kilometres long northwesterly by about 10 kilometres wide, as a flanking area west of the main cluster of Gympie gold workings. The zone has a long southerly tail, about 20 kilometres long and around a

kilometres wide. It is in Cooloolo and Kilkivan shires, and the northern half is timbered, including the areas of State Forests 82, 575 and 932.

Zone Features : The zone encloses the Permian Gympie Group rocks which surround the area of closely-spaced deposits of the Gympie Gold Field. Only nine gold deposits (560, 617, 737, 876, 1035, 1038, 1039, 1235, 1240, 1241) have been found in this zone, compared with the hundreds in the adjacent Gympie field; all are narrow pyritic quartz veins in non-carbonaceous members of the Gympie Group. The Great Gorge (876) was the most successful mine, producing about 110 oz (3.4 kg) of gold from 343 t of ore, from a series of gold veins 30-70 cm wide. There are no defined resources within the zone.

Probability of Further Deposits : The zone contains a sparse distribution of gold deposits, all in the same group of rocks. There is considered to be a reasonable probability that further resources can be found.

Definition of Zone Boundary : The zone boundary contains all the 'outer' deposits of the Gympie district, and was copied from the boundary of the Gympie Group as shown on the Gympie 250 000 scale geological map, modified by recent (unpublished) data supplied by Geological Survey staff.

Accuracy of Zone Boundary : A - Based on known deposits and reasonably well-defined geological boundaries.

Sources of Information

Barker, R. M., Burrows, P. E., Scott, M. and Cranfield, L. C., 1993. Mineral occurrences of the Gympie and Laguna Bay 100 000 sheet areas, Geol. Surv. Qld Rec. 1993/14.

Zone AuB26; L; A; gold; small to medium; structure-controlled veins

Location : This is the 'inner zone' of Gympie gold deposits, which are within an area about 15 kilometres long northerly and up to 5 kilometres wide. It is in Cooloolo Shire, and all cleared or urbanised except for a small timbered area in its northeast corner.

Zone Features : The zone encloses about 550 gold mines, which worked 64 lines of reef to a maximum depth of about 900 m. The reef lines are faults, or contacts between dykes and the rocks of the Permian Gympie Group. The ore bodies were of highest grade where the reefs or dykes crossed favourable pyritic and carbonaceous shale beds.

The Gympie field is the sixth largest of the historic Australian gold mining districts. It produced about 105 t (3.5 M oz) of gold from about 4.8 Mt of ore (recovered grade about 22 g/t gold), plus a significant quantity of alluvial and unrecorded reef gold. A resource of 1.9 Mt of ore at 8.4 g/t gold (~500 000 oz of contained gold) has been calculated for the Monkland area, at which mining began in January, 1995. The initial

extraction rate of 120 00 t of ore per year is to be increased to 280 000 t of ore per year, after sinking a second production shaft.

A resource of 9.5 million cubic metres of alluvials, of average grade 0.26 g of gold per cubic metre, was estimated from drill holes in the Mary River flats downstream from Gympie in 1906 but it is probably unavailable due to urban development and current public attitudes.

Probability of Further Deposits : The zone contains an intense concentration of gold deposits within a small area, and a resource has been identified in a small portion. Further resources will be found by further exploration.

Definition of Zone Boundary : The boundary of the zone was drawn so as to enclose the area of closely-spaced workings.

Accuracy of Zone Boundary : A - Based on a very large number of deposits

Sources of Information

Barker, R. M., Burrows, P. E., Scott, M. and Cranfield, L. C., 1993. Mineral occurrences of the Gympie and Laguna Bay 100 000 sheet areas, Geol. Surv. Qld Rec. 1993/14.

Kitch, R. B. and Murphy, R. W., 1990. Gympie Gold Field, pp. 1515-1518 in Geology of the Mineral Deposits of Australia and Papua New Guinea, AusIMM Monograph 14.

Zone AuB27; L; A; gold; small; structure-controlled veins

Location : The zone has an irregular outline, elongate northerly, and about 50 kilometres long by 10 kilometres wide. It is entirely within the Goomeri 100 000 sheet area. It is in Kilkivan Shire, and is nearly all timbered, with small cleared area near its northern and southern ends. The timbered area includes parts of State Forests 298 and 637.

Zone Features : The zone encloses the reef and alluvial workings of the Kilkivan, Black Snake/Shamrock and Gobongo gold fields, and isolated deposits hosted by Palaeozoic metasediment. The deposits are quartz veins with minor sulphides, emplaced in shear zones in the metasediment or in small granitoid intrusives.

The Shamrock deposit at Black Snake (608) is the largest producer in the zone. It yielded a total of about 13 000 oz (403.9 kg) of gold, 2900 oz (90.1 kg) of silver and +56.6 t of copper from 107 533 t of ore, in several episodes, starting in the 1860s. The deposit was worked by open-pit mining from 1990 to 1992, and yielded 9563 oz from 96 000 t of ore. Resources remaining were about 200 000 t at 5 g/t in mid 1995 (Cornwall, 1995).

The largest mine on the Kilkivan field was the Rise and Shine Reef (No. 605), which produced about 3900 oz (122 kg) of gold from a narrow shear zone about 500 m long. Total production from the Kilkivan field was about 20 500 oz of gold.

Probability of Further Deposits : The zone contains many vein-type deposits. It is being explored at present, and identification of further resources seems probable.

Definition of Zone Boundary : The boundary of the zone is the edge of the Palaeozoic sediment unit, which encloses all the known deposits. It was copied from the Gympie 250 000 scale geological map.

Accuracy of Zone Boundary : A - Based on numerous deposits and detailed investigations at operating mines.

Sources of Information

Randall, R. E., Osborne, J. H., Donchak, P. J. T. and Scott, M., 1996. A review of mineral exploration and known mineral occurrences within the Goomeri (9345), Nambour (9444) and Nanango (9344) 1 : 100 000 sheet area, south-east Queensland, Geol. Surv. Qld Rec. 1996/4

Zone AuB28; L; A; gold; small; structure-controlled veins

Location : The zone is approximately rectangular, about 8 kilometres long northeasterly by 4 kilometres wide, across the boundary between the Gympie and Goomeri 100 000 sheets. It is in Cooloola and Kilkivan Shires and all timbered, including parts of State Forest 82.

Zone Features : The zone contains the deposits of the Glastonbury Gold Field (834-847), and the isolated Spring Creek deposit (1183). The deposits are all pyritic quartz veins, with minor lead and zinc sulphides, hosted by small intrusives or the adjacent sediment of the Devonian-Carboniferous Amamoor Beds. The veins are generally 5-7.5 cm wide, and rarely reach 30 cm width; they are genetically related to small Permo-Triassic intrusives. Production was small, the highest annual output for the field being about 650 oz (20.2 kg) of gold in 1889, from 551 t of ore. There are no defined resources in the zone.

Probability of Further Deposits : The zone contains a series of deposits of the same type, in the same host. Further resources could be found by exploration.

Definition of Zone Boundary : The boundary was drawn from the 1VD airmagnetic image, and encloses an area of uniform response which contains all the known deposits.

Accuracy of Zone Boundary : A - Based on numerous deposits, in an area of uniform airmagnetic response.

Sources of Information

Murphy, P. R., Schwarzbock, H., Cranfield, L. C., Withnall, I. W. and Murray, C. G., 1976. Geology of the Gympie 1 : 250 000 sheet Area, Geol. Surv. Qld Rep. 96.

Zone AuB29; P; A; gold; small; structure-controlled veins

Location : The zone is about 35 kilometres long northwesterly and up to 10 kilometres wide, in the northwest corner of the Nambour 100 000 sheet and extending a few kilometres into the Gympie 100 000 sheet. It is in Caloundra, Cooloola and Maroochy Shires, and all timbered, including all of State forest 918 and part of 135.

Zone Features : The zone contains seven areas of gold workings (700, 703, 716, 1346, 1369, 1404, 1410), at quartz vein deposits or alluvials shed from these. The veins were emplaced in sediment of the Devonian-Carboniferous Amamoor Beds, or on the margins of small granitoid intrusions which are the source of the mineralisation. The primary deposits are simple quartz veins, usually less than one cm thick. Production from the zone was small, the largest producer being the Breakneck group of veins (1346) which yielded about 240 oz (7.4 kg) of gold from 148 t of ore. Resources have not been calculated for any deposit in this zone.

Probability of Further Deposits : The zone contains deposits of the same origin in the same setting. There is a chance that further exploration will locate further resources.

Definition of Zone Boundary : The zone boundary was drawn from the results of recent (unpublished) mapping by the Geological Survey, and encloses all the known deposits.

Accuracy of Zone Boundary : A - Based on recent mapping and a uniform ore deposit type within the zone.

Sources of Information

Randall, R. E., Osborne, J. H., Donchak, P. J. T. and Scott, M., 1996. A review of mineral exploration and known mineral occurrences within the Goomeri (9345), Nambour (9444) and Nanango (9344) 1 : 100 000 sheet area, south-east Queensland, Geol. Surv. Qld Rec. 1996/4

Zone AuB30; L; A; gold; small; structure-controlled veins

Location : The zone is an elongate block, about 38 kilometres long northerly by up to 10 kilometres wide, in the northwest corner of the Nambour 100 000 sheet. It is in Caloundra, Cooloola and Maroochy Shires and all timbered, and includes parts of State Forests 135, 274 and 736.

Zone Features : The zone contains 29 gold deposits (1338, 1342, 1350, 1351, 1353-1355, 1359-1361, 1367, 1368, 1371, 1382, 1383, 1387, 1390, 1394, 1397, 1398, 1405, 1406, 1408, 1409, 1418-1422) and one zinc-lead deposit (1365). The primary deposits

are of quartz vein type, in andesite or sediment of the Permian Cambroon Beds or Cedarton Volcanics, or rarely in the adjacent Late Triassic Neurum Tonalite. The quartz veins contain some mixture of calcite, pyrite, and copper, lead or zinc sulphides; the veins are usually around 2.5 cm thick, and occasionally up to 25 cm thick. The Jessies Dream zinc-lead deposit (1365) is a series of narrow pyritic quartz veins containing zinc, lead and copper sulphides, in a shear zone which is about 70 cm wide and 60 m long.

Reef mine production was small, to a maximum of about 90 oz (2.8 kg) of gold from 23 t of ore from the Dulcie deposit (1355). Eluvial and alluvial deposits were the principal ore source at five sites (1350, 1371, 1387, 1407, 1408). A resource has been calculated for the Glittering Hills deposit (1360), as 13 400 t of ore of grade 3.8 g/t gold, 51 g/t silver and 1.7% copper.

Probability of Further Deposits : The zone contains many ore deposits of the same type, in the same setting. Exploration should locate further resources.

Definition of Zone Boundary : The zone encloses all of the areas of Cambroon Beds and Cedarton Volcanics which contain gold deposits, and was drawn from recent geological mapping (unpublished data) by the Geological Survey.

Accuracy of Zone Boundary : A - Based on many mines and detailed geological mapping.

Sources of Information

Randall, R. E., Osborne, J. H., Donchak, P. J. T. and Scott, M., 1996. A review of mineral exploration and known mineral occurrences within the Goomeri (9345), Nambour (9444) and Nanango (9344) 1 : 100 000 sheet area, south-east Queensland, Geol. Surv. Qld Rec. 1996/4

Zone AuB31; L; A; gold; small; structure-controlled veins

Location : The zone is elongate northwesterly, extending across the Nambour 100 000 sheet and on to the Gympie 100 000 sheet. It is about 70 kilometres long and up to 15 kilometres wide.

Zone Features : The zone contains 32 areas of gold workings (664, 693, 1200, 1337, 1341, 1347, 1349, 1357, 1358, 1362, 1363, 1366, 1372, 1374, 1377, 1378, 1384, 1385, 1389, 1391, 1392, 1396, 1400, 1401, 1407, 1411, 1413-1417). Alluvial deposits were important sources of gold at seven of these sites (1341, 1349, 1366, 1389, 1391, 1401, 1411), the largest being a 7 kilometres length of alluvials along Peters Creek (1389). The primary deposits are all of quartz vein type, largely in shear zones in slate of the Devonian-Carboniferous Jimna Phyllite or Booloumba Beds. A few are hosted by the Permo-Triassic Tungi Creek Granodiorite or Monsildale Granodiorite, or in small unnamed apophyses of these. The quartz veins may contain only quartz, or varying amounts of pyrite plus arsenic, copper and lead sulphides; they are less than 75 cm thick and of average width 5-10 cm.

The largest producer was the Empress mine (1357), which yielded about 420 oz (13.1 kg) of gold from 432 t of ore.

Probability of Further Deposits : The zone contains all the quartz vein gold deposits in Jimna Phyllite, Booloumba Beds and adjacent intrusives. Further exploration in the zone should identify further resources.

Definition of Zone Boundary : The zone boundary is the boundary of the Devonian-Carboniferous sediment, and was drawn from recent (unpublished) mapping by the Geological Survey.

Accuracy of Zone Boundary : A - Based on numerous deposits and recent geological mapping.

Sources of Information

Randall, R. E., Osborne, J. H., Donchak, P. J. T. and Scott, M., 1996. A review of mineral exploration and known mineral occurrences within the Goomeri (9345), Nambour (9444) and Nanango (9344) 1 : 100 000 sheet area, south-east Queensland, Geol. Surv. Qld Rec. 1996/4

Zone AuB32; L; A; gold (lead, zinc, mercury); very small; structure-controlled veins

Location : The zone is elongate northerly, and about 34 kilometres long by up to 10 kilometres wide, in the northeast quadrant of the Nanango 100 000 sheet. It is in Esk and Kilcoy Shires, and all timbered, including parts of State Forests 207, 343, 344 and 986.

Zone Features : The zone contains 10 mineral deposits, all emplaced in sediment of the Lower Permian Marumba Beds or in the adjacent Permo-Triassic Kimbala Granodiorite or Monsildale Granodiorite. At two sites (1433, 1458), only eluvial or alluvial gold has been won, from surface material overlying Marumba Beds basement.

Seven of the deposits (1424, 1434, 1440, 1444, 1454, 1455, 1464) are of 'Monsildale type', with quartz-calcite-sulphide veins in shear zones in the sediment or intrusive. The veins contain a mixture of arsenic, copper, lead and zinc sulphides, and pyrite; at the Monsildale mine (1440) lead was the principal product, but the other deposits were worked for their gold content. The veins are narrow, to a maximum of 90 cm wide, and emplaced in major shear zones; at Urquarts mine (1464) the shear was 427 m long and up to 12 m wide. Production to date is small, and not more than a few tens of tonnes of ore at any deposit. Resources have been estimated for the Monsildale/Golden Plover deposit (1440) as 350 000 t of ore of grade +2 g/t gold, and for the Big Hill deposit (1424) as 60 000 t at +2 g/t gold.

One deposit (1439) has cinnabar mineralisation in a quartz-calcite lode in Marumba Beds, from which about 38 kg of mercury have been produced.

Probability of Further Deposits : The zone contains a series of similar deposits, in the same setting. Further exploration should find more resources.

Definition of Zone Boundary : The boundary was drawn so as to enclose all the known deposits, and to contain an area of uniform airmagnetic signature.

Accuracy of Zone Boundary : A - Based on a series of deposits of the same origin, for which the enclosing boundary is defined by airmagnetic data.

Sources of Information

Randall, R. E., Osborne, J. H., Donchak, P. J. T. and Scott, M., 1996. A review of mineral exploration and known mineral occurrences within the Goomeri (9345), Nambour (9444) and Nanango (9344) 1 : 100 000 sheet area, south-east Queensland, Geol. Surv. Qld Rec. 1996/4

Zone AuB33; L; A; gold; small; structure-controlled veins

Location : The border of the zone is an elliptical shape, about 60 kilometres long northwesterly by up to 20 kilometres wide, largely in the southwest corner of the Nanango 100 000 sheet and continuing on to the Esk sheet. It is in Crows Nest, Esk, Nanango and Rosalie Shires, timbered in its southern half, and includes parts of State Forests 257, 283, 316, 379, 466 and 618.

Zone Features : The zone contains 28 areas of gold workings (1423, 1425, 1427, 1430-1432, 1437, 1438, 1441, 1442, 1446-1449, 1451-1453, 1456, 1457, 1459-1462, 1466, 1467, 1573, 1582, 1586) and four (1428, 1435, 1445, 1463) in which silver-lead was the principal commodity. Three of the mines (1456, 1457, 1466) worked alluvial gold deposits only.

The primary gold and silver-lead deposits are contained by shear zones in andesite and sediment of the Devonian-Carboniferous Maronghi Creek Beds, or in the Permo-Triassic Taromeo Tonalite. Most of the ore grade material came from narrow quartz veins, of average width about 15 cm, in shear zones generally less than a metre wide but up to 4 m wide at Mount Langan (1442). The vein assemblage was quartz with any combination of pyrite and calcite, with arsenic, copper, lead and zinc sulphides. Bismuth, cobalt and mercury minerals were each recorded at one deposit. In some of the silver-lead deposits the galena was quartz-free, and occurred as blebs and veins in the shear zone.

The largest producer was the One Mile Diggings group of workings (1451), which yielded about 325 oz (10.1 kg) of gold from 3950 t of ore. A resource has been calculated for the Yarraman Creek alluvials (1466) as 10 000 cubic metres of average grade 0.4 g of gold per cubic metre. A larger resource may be available at the Seven Mile Diggings (1457), but mining here would conflict with Nanango Shire Council plans to use the area as a recreational reserve.

Probability of Further Deposits : The zone contains a uniform series of deposits, in the same setting. Further exploration should find further resources.

Definition of Zone Boundary : The zone contains all the known deposits, and was drawn to include a 3 kilometres width of the band of sediment which encircles the mineralising Taromeo tonalite.

Accuracy of Zone Boundary : A - Based on numerous deposits of a single type.

Sources of Information

Randall, R. E., Osborne, J. H., Donchak, P. J. T. and Scott, M., 1996. A review of mineral exploration and known mineral occurrences within the Goomeri (9345), Nambour (9444) and Nanango (9344) 1 : 100 000 sheet area, south-east Queensland, Geol. Surv. Qld Rec. 1996/4

SKARN TYPE GOLD DEPOSITS

Known Deposits

The best-known examples are the Diglum skarns, the Mount Biggenden gold-bismuth-copper-magnetite deposit (described among the industrial mineral deposits), and the Glassford Creek copper-gold deposits (described under metalliferous deposits).

Geological Setting of Type AuC Deposits

The skarn deposits are all emplaced in limestone or limy sediment near an intrusive granite, and contain a distinctive mineral assemblage, which includes magnetite, garnet, wollastonite and other species typical of high-temperature metasomatism. Most of the skarn gold deposits contain a wide range of accessory commercial minerals in addition to the gangue minerals, such as bismuth, copper, lead and arsenic. Structural preparation of the ore site is an essential factor prior to ore deposition, to provide sufficient permeability to allow circulation of the mineralising solutions. The skarn ore bodies usually have irregular shapes, quite different to the elongate and narrow reefs of the structurally-controlled veins.

DESCRIPTION OF ZONES OF MINERAL POTENTIAL

Zone AuC1; P; A; gold; small; skarn

Location : The **Diglum skarn zone** has an elliptical annular shape, about a kilometre long and surrounding a 'barren' central zone of granite, in the centre of the western part of the Calliope 100 000 sheet. It is within Calliope Shire. The western two-thirds of the zone is timbered, and between State Forests 53, 316 and 583.

Zone Features : The zone contains the altered sediment, including limestone, of the Early Carboniferous Caswell Creek Group, which surrounds a roughly elliptical outcrop of unmineralised Triassic tonalite (the 'Diglum' intrusive). It contains three deposits (No. 92, 99, 141) with predominant gold-copper mineralisation in pyroxene, garnet and wollastonite skarns, and several prospects (144, 145) with magnetite or tungsten mineralisation. None of the deposits has been worked, and there are no defined resources within the zone.

Probability of Further Deposits : Skarn-type mineralisation has been identified at three sites within the zone, in the same geological setting. Although the deposits are not currently of economic interest, they have only been tested by a few drill holes (Rigby, 1991). More intensive regional or site exploration has some chance of locating larger and higher grade resources.

Definition of Zone Boundary : The boundary was drawn so as to surround the margin of the Diglum intrusive, as a prospective zone about a kilometres wide, which encloses all the known deposits. The inner boundary is the margin of the Diglum intrusive, from the Monto 1 : 250 000 scale geological map, and the outer line is one kilometres out from the inner boundary, and also corresponds to a change in the airmagnetic pattern.

Accuracy of Zone Boundary A - Based on modern regional geological mapping, a uniform geological setting and an airmagnetic pattern.

Sources of Information

Rigby, G. B., 1991. Annual report for EPM 7392, to 8.1.92 (CR 23237).

HEAVY MINERAL DEPOSITS

The Region contains major deposits of weathering-resistant heavy minerals, of which the principal commercial species are rutile (titanium dioxide), ilmenite (iron-titanium oxide) and zircon (zirconium oxide). Minor amounts of garnet, monazite and gold are won as by-products of mining of some heavy mineral deposits.

Types of Deposits

HMA Coastal placers, containing rutile, ilmenite and zircon, with minor amounts of garnet and ilmenite. The deposits occur in Quaternary coastal plain and dune sands throughout the length of the Region, from Tweed Heads in the south to the northern end of the coastline, on the northern end of the Bundaberg 250 000 sheet.

HMB Alluvial and eluvial placer deposits of heavy minerals, with eluvial deposits in residual soils near primary deposits, and alluvial deposits with minor gold in river and flood plain sediments in the drainage system downstream from the source areas.

COASTAL PLACER HEAVY MINERAL DEPOSITS

Known Deposits

Current production from type HMA deposits is mainly on North Stradbroke Island. Two dredging plants (at the Bayside and Gordon deposits) operated in 1996, treating about 50 Mt of sand per year, of average grade about 0.7% heavy minerals, from which rutile, zircon and upgraded ilmenite were recovered.

Similar deposits on South Stradbroke, Moreton and Bribie islands, and along the Gold and Sunshine coasts and Fraser Island are unavailable for mining due to their National Park status or close urban development, and are shown on the maps as '**HMZ**'.

Deposits with a high ilmenite content are known from the coastal areas of the Bundaberg 250 000 sheet, extending northerly from about Wreck Rock, which is about 50 kilometres northerly from Bundaberg.

Geological Setting of Type HMA Deposits

Many granitic and high-grade metamorphic rocks contain a little rutile and zircon, and some contain garnet and monazite; all basic igneous rocks contain some ilmenite. Long-term weathering of these source rocks liberates all the constituent minerals, changing most of the rock-forming minerals to clays, and leaving the weathering-resistant minerals (such as garnet, native gold, ilmenite, monazite, quartz, rutile, and zircon) in the sedimentary regime of the drainage system.

These minerals are transported by water flow in rivers to the coastline, and during this process all minerals not resistant to further weathering and mechanical abrasion are broken down to very fine, clay-sized particles. The heavy minerals and coarser grains are deposited on the shoreline when the sediment load reaches the ocean, and the finer

and lighter minerals are transported further offshore. In the near-shore areas the winnowing action of tides, waves and winds concentrates the heavy minerals into high-grade seam deposits. Wind action distributes all the beach sediment into coastal dunes, and upgrades the heavy mineral content of the dunes near the shoreline as the finer-grained and lighter particles are blown away (either further inland or out to sea). With movement of sea level, up and down during geological time, seam and dune deposits may be 'stranded' some kilometres inland from the present beaches and adjoining dunes.

There is a steady increase in the ilmenite content of the HM deposits, from south to north, and a corresponding decrease in rutile and zircon content. In the far south of the Region, at Tweed Heads, the heavy mineral fraction contains about 35% rutile, 40% zircon and 25% ilmenite; at Bustard Head at the northern end of the Region's coastline the values are 4% rutile, 5% zircon and 90% ilmenite.

Sources of Information

Connah, T. H., 1961. Beach Sand Heavy Mineral Deposits of Queensland, Geol. Surv. Qld Publ. 302

Wallis, D. S. and Oakes, G. M., 1990. Heavy mineral sands in eastern Australia, pp. 1599-1605 in AusIMM Monog. 14

DESCRIPTION OF ZONES OF MINERAL POTENTIAL

Zone HMA1; L; A; heavy minerals; small to medium; coastal placer

Location : The **Agnes Water-Middle Island-Hummock Hill Island zone** contains three groups of Mining Leases and Exploration Permits over coastal plain and dune sand in Miriam Vale Shire. The zone is in the northwest corner of the Bundaberg 250 000 sheet area., and is timbered, with its margins the edges of National Parks in some places.

Zone Features : The zone contains significant resources in deposits defined by scout drilling. Resources of about 100 Mt of mineralised sand containing +1% rutile have been calculated for deposits between Wild Cattle Island and Rocky Point (Wallis and Oakes, 1990, pp. 1602-1603).

Probability of Further Deposits : The zone was part of a Department of Mines and Energy Restricted Area, considered to be a possible resource base for an integrated heavy mineral sand mining and processing industry (Wallis and Oakes, 1990, p. 1602). It represents the areas retained for mining purposes after other areas were reserved for conservation purposes.

Definition of Zone Boundary : The zone boundary was traced from maps showing Mining Leases and Exploration Permits, and encloses the area in which mining leases are current or may be approved.

Accuracy of Zone Boundary : A - Based on accurate title maps

Zone HMA2; L; A; heavy minerals; large; coastal placer

Location : The zone comprises the area of Mining Leases for heavy minerals on North Stradbroke Island. The island is within Redland Shire, is partly timbered, and contains a National Park.

Zone Features : The zone contains all of the heavy mineral resources identified to date and available for mining on North Stradbroke Island. Reserves amenable to large-scale dredging contained about 1.4 Mt of rutile, 1.2 Mt zircon and 5 Mt ilmenite in 1987; large resources of lower grade mineralisation are available which may become reserves using higher volume mining methods or at higher product prices.

Probability of Further Deposits : Despite mining operations over more than 40 years in this zone, larger-volume working and substantial exploration efforts have continued to develop further reserves. The large low-grade deposits only broadly outlined to date could become reserves for larger-scale mining in the future.

Definition of Zone Boundary : The boundary was traced from the shape of the mining leases as shown on Department of Mines and energy maps.

Accuracy of Zone Boundary : A - Based on substantial exploration drilling and detailed investigations

Zone HMZ; Z; B; heavy minerals; small to large; coastal placer.

This zone of alienated deposits includes small deposits, chiefly of ilmenite, in Wild Cattle Island, Rodds Peninsula, and Eurimbula National Parks, lower-grade resources south of Agnes Water in Deepwater National Park, and the large deposits of rutile, zircon and ilmenite on Fraser Island, the Cooloola sand mass, and Moreton Island (within National Parks or World Heritage areas), smaller deposits on Bribie Island and the remaining deposits on the Gold Coast beaches and South Stradbroke Island. Boundaries shown are diagrammatic.

These alienated deposits contain most of the remaining resources of the Region.

ALLUVIAL AND ELUVIAL HEAVY MINERAL DEPOSITS

Known Deposits

The only known deposits with commercial potential are in the southwest corner of the Monto 100 000 sheet area, in the Tellebang Plateau-Mount Goondicum-Burnett River area.

Geological Setting of Type HMB Deposits

In eluvial deposits the heavy and weathering resistant minerals are concentrated in the residual soil over or near a primary (source) deposit, by removal of some of the rock forming minerals by erosion. When the heavy minerals are transported in the drainage system, they concentrate in the river bed or flood-plain sediment to form an alluvial placer deposit. Critical components for formation of these deposits is a source area containing a high primary content of heavy minerals, and a weathering-transport system which produces a concentration of heavy minerals of mineable grade.

Source areas with primary rutile mineralisation are known at deposits 437 and 438 at Mount Perry (Connah, 1957)) and at deposits 1276, 1277 and 1279 in the Dangore-Jumna Creek area (Jack, 1896 and Cribb, 1943). There are ilmenite source rocks indicated by the eluvial deposit (200) at Mount Goondicum and the similar 226 deposit nearby on Tellebang Plateau (Monto Minerals Prospectus), and at the 1620 deposit at Frasersview (Sawers, 1977). All of these have adjacent eluvial and alluvial deposits, but only the Goondicum-Tellebang zone has any known resource potential.

An eluvial deposit (No. 200) was formed on the southerly flanks of Mount Goondicum, by concentration of weathering-resistant ilmenite in residual soil there, as a result of removal of some of the other rock-forming minerals by weathering and erosion. A similar eluvial deposit was formed on the Tellebang Plateau, by weathering and removal by chemical transport of some of the rock constituents. The source rocks were the ilmenite-rich, Mount Goondicum gabbro complex and an inferred similar mafic intrusive on the Tellebang Plateau. Some of the ilmenite from the Mount Goondicum primary and eluvial deposits has been transported into the Burnett River sediment, and here forms an alluvial deposit (with by-product gold).

Sources of Information

Connah, T. H., 1957. Lode rutile, Mt Perry, pp. 909-911 in QGMJ, 1957.

Cribb, H. S., 1943. Rutile, Kingaroy district, pp. 39-40 in QGMJ, 1943.

Jack, R. L., 1896. Notes on two traverses of the Bunya Bunya Range and a visit to the Brovinia Gold Field, Geol. Surv. Qld Publ. 114, p. 2

Prospectus of Monto Minerals NL, 1995

Sawers, J. D., 1977. Departmental drilling programme - Frasersview ilmenite deposit, Aratula district, pp. 81-86 in QGMJ, 1977.

Zone HMB1; L; A; alluvial & eluvial ilmenite and gold; large; placer

Location : The zone extends from the perched Tertiary eluvial deposit on the Tellebang Plateau and the eluvial deposit on the south and southwest flanks of Mount Goondicum, then down the Burnett River as an alluvial river-bed and flood plain deposit. The zone is in the southwest corner of the Monto 100 000 sheet area, in

timbered country, in Perry and Monto shires. The alluvial deposit in the Burnett River valley is partly in State Forest 54

Zone Features: A total resource for the Tellebang, Mount Goondicum and Burnett River deposits was calculated as about 112 Mt of alluvium and eluvium, at an average grade of 4.3% ilmenite, for a total ilmenite content of about 9 Mt.

Probability of Further Deposits : The resource is identified by samples from pits and trenches

Definition of Zone Boundary : The boundaries of the zone were copied from plans in the Monto Minerals NL prospectus (pp. 18, 23, 26)

Accuracy of Zone Boundary : A - Based on detailed mapping and sampling.

INDUSTRIAL MINERAL DEPOSITS

Commodities

The Region contains five bentonite, seven diatomite, seven dolomite, four graphite, nine kaolin, eighty-one limestone (including three marble), one magnetite, nine perlite and twenty-two silica and foundry sand occurrences. These are all low-value commodities, for which the transport cost from mine to user is a critical factor in commercial success. Mining of these commodities has been concentrated on a few deposits, which satisfy market demand. In a few cases, a high quality product has allowed a single producer to develop an Australia-wide market, as at the Mount Biggenden magnetite mine. High-volume extraction of high-quality silica sand on North Stradbroke Island allows this commodity to enter overseas markets at a competitive price.

Types of Deposits

Total **limestone** production in the Region was about 60 000 t in 1994-95. Only the large deposits are of commercial importance, although small deposits may satisfy a local agricultural demand. The cost of establishing processing facilities (crushing, mixing and roasting plants) has restricted operations to a few sites. The major uses are in chemical works (as at the Comalco alumina refinery at Gladstone, for which the high-purity Taragooola limestone is required), and for agricultural purposes, for which higher impurity levels can be tolerated. Limestone quarries at Barambah (Moffatdale), Curra, Marule and Taragooola satisfy the demand in the Region.

The Taragooola quarry is just north of the northern boundary of the Region, but the limestone resource which may be needed for long-term operations continues southerly into the Region. Coralline mud dredged from shallow areas of Moreton Bay, near the mouth of the Brisbane River, is suitable for the Darra cement works but is being replaced by limestone from the Gladstone hinterland. Zones of mineral potential have only been identified for the major limestone deposits.

Magnetite production from the Mount Biggenden mine satisfies the eastern Australian market for this additive used in coal washing plants. The quality of the product, and a long association with users, has enabled this operation to dominate in its market.

Glass sand is obtained from North Stradbroke Island, which satisfies the market in the Region, and provides a large export volume. Sand of similar value is present on Moreton and Fraser islands, and in the Cooloola sand mass, but is alienated from mining by conservation reserves. **Silica sand** is produced from Iveragh, and used at the cement works at Gladstone. **Foundry sand** is produced from leases at Coonaar Creek and in the Beachmere and Bribie Island areas.

Lower-grade silica sand is dredged from Rous Channel in Moreton Bay and sold for foundry and general use. These off-shore deposits are not included in the zones of

mineral potential, nor are production quantities and values included in the statistics for mine production.

Dolomite is produced for agricultural purposes from dolomitic limestone in Tertiary sediments at Flinders south of Ipswich. The operation is in cleared land.

Diatomite is a sedimentary rock composed of the siliceous skeletons of microscopic plants called diatoms which flourish in small lakes in volcanic terrains. A number of small occurrences are known in the Tertiary volcanic sequences of southeast Queensland. The material is of use in a number of industrial processes such as filtration. It has been mined previously from forested land at Black Duck Creek south of Gatton but the operation is currently inactive

Perlite, a volcanic glass with properties of expansion when heated, is mined in small quantities from the Gold Coast hinterland for use in plaster board.

Production from the foundry sand, bentonite, dolomite, kaolin and perlite deposits are all at rates of less than 10 000 t/yr. There has been no diatomite production since the mid 1980s, nor graphite production since 1908.

Sources of Information

Krosch, N. J., 1990. Limestone, pp. 93-102 in QGMJ.

DESCRIPTION OF ZONES OF MINERAL POTENTIAL

Zone IM1; L; B; silica sand; small to medium; sedimentary

Location : The **Iveragh sand zone** is about 10 kilometres south of Tannum Sands, and is a northwesterly trending area about 8 kilometres long and two kilometres wide. It is in forested land in Miriam Vale Shire.

Zone Features : The zone contains a 'stranded' ridge of beach sand, which is mined by end-loader for use in cement clinker. Production is usually about 40 000 t of sand per year, and reserves of 4 Mt are available.

Probability of Further Deposits : The zone contains a resource of commercial quality.

Definition of Zone Boundary : The boundary was copied from the Bundaberg preliminary 1 : 250 000 scale geological map

Accuracy of Zone Boundary : B - Based on preliminary regional-scale mapping

Zone IM2; L; A; limestone; large; sedimentary

Location : The **Taragoola limestone zone** is about 20 kilometres long northerly and up to 2 kilometres wide, in the approximate centre of the northern half of the Calliope

100 000 sheet. It is in Calliope Shire, and timber-covered except for a small cleared area at the northern end.

Zone Features : The zone encloses the Taragoola limestone, a sequence of fossiliferous limestone in the Devonian Calliope Beds. The limestone is quarried at Taragoola, beyond the northern edge of the Region. The zone contains 13 limestone occurrences (Deposits 102-114), and further deposits in the Boynedale and Wietalaba areas on the southern end of the zone which are not shown on the map.

The limestone is railed to Gladstone for use at the alumina refinery. Resources at the Boynedale-Wietalaba end of the zone are estimated to be 25 Mt above ground level, and 1.75 Mt /vertical metre below ground.

Probability of Further Deposits : The zone contains limestone of commercial quality.

Definition of Zone Boundary : The boundary was copied from the Monto 1 : 250 000 scale geological map

Accuracy of Zone Boundary : A - Based on detailed mapping at known deposits

Zone IM3; L; A; limestone; medium to large; sedimentary

Location : The **Diglum limestone zone** is 10 kilometres long northerly and up to 3 kilometres wide, near the centre of the western edge of the Calliope 100 000 sheet. It is in Calliope Shire, and most of the zone is cleared land.

Zone Features : The zone contains beds and lenses of limestone in the Carboniferous Caswell Creek Group, including a marble deposit of high calcium oxide content near Diglum.

Probability of Further Deposits : The zone contains known limestone and marble deposits.

Definition of Zone Boundary : The boundary was drawn from recent unpublished mapping by the Geological Survey, and contains all the known deposits in this area.

Accuracy of Zone Boundary : A - Based on detailed geological mapping

Zone IM4; L; A; limestone; small to medium; sedimentary

Location : The **Kroombit Creek limestone zone** is roughly circular, of diameter about 10 kilometres, near the centre of the Biloela 100 000 sheet. It is in forested land in Banana Shire, to the west of State Forest 316.

Zone Features : The zone contains Devonian limestone of the Kroombit beds. At Kroombit Creek the outcrop of limestone is about 300 m thick and about 5 kilometres long, and of grade +52% calcium oxide.

Probability of Further Deposits : The zone contains known limestone deposits.

Definition of Zone Boundary : The boundary was drawn from recent unpublished mapping by the Geological Survey, and contains all the known deposits in this area.

Accuracy of Zone Boundary : A - Based on detailed geological mapping

Zone IM5; L; A; foundry sand; small; sedimentary

Location :The **Coonaar Creek foundry sand zone** is in two parts; a portion in cleared land on the coastal plain north of Burnett Heads, and an area of coastal sand with forest cover at the mouth of Coonaar Creek. Both parts are in Burnett Shire.

Zone Features : The zone contains known deposits of foundry sand, which are worked at three sites in the southern area. Total annual production meets the demand for foundry sand in the Region, of about 5000 t/yr.

Probability of Further Deposits : The zone contains defined resources.

Definition of Zone Boundary : The boundary was drawn to enclose the known available deposits. The deposits continue farther south into the Coonaar National Park but are not shown there.

Accuracy of Zone Boundary : A - The boundary encloses known deposits

Zone IM6; L; A; limestone; medium to large; sedimentary

Location : The **Dalysford limestone zone** is about 3 kilometres long northerly and a kilometres wide, in the northeast quadrant of the Mount Perry 100 000 sheet. It is in Kolan Shire in cleared land.

Zone Features : The zone contains a series of limestone bodies within the Carboniferous-Permian Good Night beds, including three deposits (401, 403, 407). The deposits are individually small, of potential up to 5000 t/v m, but may be of future value. Some limestone has been produced from quarries at the three deposits, but resources have not been calculated.

Probability of Further Deposits : The zone contains three deposits, at which commercial resources could be calculated, subject to demand.

Definition of Zone Boundary : The zone boundary was drawn to enclose the three deposits and the limestone lenses shown on the Maryborough 1 : 250 000 scale geological map.

Accuracy of Zone Boundary : A - Based on recent regional geological mapping

Zone IM7; L; A; limestone; small to medium; sedimentary

Location : The **Marule limestone zone** comprises four lenticular areas, up to 3 kilometres long northerly and a kilometres wide, in the northwest corner of the Childers 100 000 sheet. They are in Isis Shire, timbered, and contain part of State Forest 832.

Zone Features : Each of the four areas which comprise this zone is a limestone body within the Permian Gympie Group. The Marule quarry (343, 344) is producing from the northern deposit.

Probability of Further Deposits : The zone contains four limestone bodies, at which resources could be defined on demand.

Definition of Zone Boundary : The boundaries of the four areas correspond to the four bodies of limestone shown on the Maryborough 1 : 250 000 scale geological map.

Accuracy of Zone Boundary : A - Based on recent regional geological mapping

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone IM8; L; B; limestone; medium to large; sedimentary

Location : The **Goodnight Scrub limestone zone** is boomerang-shaped, about 8 kilometres long and up to 2 kilometres wide, near the centre of the Mount Perry 100 000 sheet. It is in Kolan and Perry Shires, all timbered, and on the western edge of State Forest 169.

Zone Features : The zone encloses the Back Creek (386), Limestone Creek (423) and Tenningering Creek (471) limestone deposits, which are in sediment of the Carboniferous-Permian Good Night beds. Parts of the limestone bodies near the edge of the Permo-Triassic intrusive have been metamorphosed to marble. Several quarries (MLs 1213-1215) have been opened, but production has been intermittent. the resource at Back Creek is about 35 000 t/v m.

Probability of Further Deposits : The zone contains three deposits, and further resources could be defined by further testing.

Definition of Zone Boundary : The zone boundary was drawn to enclose the three deposits.

Accuracy of Zone Boundary : B - The boundary was inferred, and drawn to enclose the known deposits.

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone IM9; L; A; limestone; small; sedimentary

Location : The **Paradise limestone zone** is oval-shaped, about 8 kilometres long northerly by 5 kilometres wide, in the southeast quadrant of the Mount Perry 100 000 sheet. It is in Biggenden, Kolan, and Perry shires, about half forested, and contains part of State Forest 169.

Zone Features : The zone contains limestone beds and lenses of the Permian Biggenden Beds, including the Bowden Creek marble deposit (392) and the Paradise Creek limestone deposit (456).

Probability of Further Deposits : There is considered to be a strong chance that further resources can be found in the zone.

Definition of Zone Boundary : The boundary was drawn from recent unpublished mapping by the Geological Survey.

Accuracy of Zone Boundary : A - Based on recent geological mapping

Zone IM10; L; B; limestone and magnetite; small to medium; sedimentary and skarn

Location : The **Mount Biggenden limestone and magnetite zone** is about 2 kilometres long northerly and 0.5 kilometres wide, in the northeast corner of the Gayndah 100 000 sheet. It is in Biggenden Shire, and all cleared.

Zone Features : The zone encloses the Mount Biggenden skarn deposit (No. 371), emplaced in a limestone horizon within a sequence of basic lava and tuff of the Permian Gympie Group, by the intrusion of the Late Triassic Degilbo Granite. The deposit is a typical metasomatic replacement type, containing magnetite and a host of other minerals, emplaced in a shear zone at the margin of the Granite. The associated minerals include gold; pyrite; arsenic, bismuth, copper and molybdenum sulphides; calcite and scheelite; gold, copper and bismuth were recovered in earlier mining episodes. At present only the magnetite content is sold, for use in coal washing plants, but by-product limestone may be available if a demand arises. Resources figures are not publicly available.

The zone also contains the Degilbo limestone deposit (No. 367, in the same limestone bed. Some limestone has been quarried here for local agricultural use, but resource figures have not been calculated.

Probability of Further Deposits : The zone encloses limestone deposits and their possible extensions.

Definition of Zone Boundary : The zone boundary was drawn to enclose the area of the known deposits and a length of one kilometres along strike to the north and south.

Accuracy of Zone Boundary : B - The zone boundary is inferred

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone IM11; L; A; limestone; small to medium; sedimentary

Location : The **Gigoomgan limestone zone** is about 68 kilometres northwest of Gympie. It contains a northern and a southern area of potential, which are near the centre and in the southeast quadrant of the Biggenden 100 000 sheet. The northern area is the larger, and in cleared land; the southern area has a small forested part including part of State forest 50 on its northeastern corner, and forest in its southwestern corner. Both areas are in Woocoo Shire.

Zone Features : The zone contains outcrops of limestone of the Permian Biggenden beds. Here the limestone outcrops discontinuously in a belt about 16 kilometres long northerly and up to 5 kilometres wide. The grade varies, but averages about 45% calcium oxide.

Probability of Further Deposits : The zone contains known limestone deposits.

Definition of Zone Boundary : The boundary was defined from recent unpublished mapping by the Geological Survey.

Accuracy of Zone Boundary : A - Based on recent geological mapping

Zone IM12, L; A; graphite; small; metamorphic

Location : The **Mount Bauple graphite zone** is an area of cleared land in Tiaro Shire, about 5 kilometres long northerly by up to 2 kilometres wide, in the southwest corner of the Maryborough 100 000 sheet.

Zone Features : The zone contains four graphite deposits (377-380), formed by metamorphism of coaly beds of the Tiaro Coal Measures at the contact of the Measures with an intrusive hornblende microdiorite. Recorded production, prior to 1908, was 148 t of graphite, and there are no defined resources within the zone.

Probability of Further Deposits : The zone contains known graphite deposits, and exploration could locate further resources, but they are unlikely to be of interest to modern industry.

Definition of Zone Boundary : The boundary encloses an isolated area of Tiaro Coal Measures, as shown on the Maryborough 250 000 scale geological map, and all of the known deposits.

Accuracy of Zone Boundary : A - Based on recent geological mapping

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone IM13; L; A; limestone; medium to large; sedimentary

Location : The **Curra limestone zone** contains two areas about 18 kilometres apart. The eastern area is about 5 kilometres long northerly by a kilometres wide, and the western area is about 18 kilometres long and a kilometres wide. they are in the northwest quadrant of the Gympie 100 000 sheet, and in Cooloola and Tiaro Shires. The eastern area is all timbered, and contains part of State Forest 700; the northern half of the western area is also timber-covered.

Zone Features : The two areas enclose the two outcrop zones of the South Curra Limestone, a conformable member of the Permian Gympie Group Krosch, 1977). The limestone unit is about 135 m thick, and was quarried at the eastern area (1916-1954) at which the Tamaree lime works are placed (Deposits 1196, 1244). Production from the western area (1954-1992) was about 260 000 t of limestone, from the Curra quarries (Deposit 776). Reserves here were 600 000 t of limestone in 1992 (Barker et al., 1993).

Probability of Further Deposits : The zone contains extensive limestone units, in which further resources could be identified.

Definition of Zone Boundary : The boundary of the two limestone areas was drawn to enclose the limestone units shown on the Gympie 1 : 250 000 geological map.

Accuracy of Zone Boundary : A - Based on detailed investigations.

Sources of Information

Barker, R. M., Burrows, P. E., Scott, M. and Cranfield, L. C., 1993. Mineral occurrences of the Gympie and Laguna Bay 100 000 sheet areas, Geol. Surv. Qld Rec. 1993/14.

Krosch, N., 1977. Limestone deposits of the Gympie area, Geol. Surv. Qld Rep. 97

Zone IM14; L; A; limestone; medium to large; sedimentary

Location : The **Barambah limestone zone** is about 8 kilometres long and a kilometres wide, near the centre of the eastern edge of the Murgon 100 000 sheet. It is

in Murgon and Wondai Shires, and nearly all timbered, including part of State Forest 12.

Zone Features : The zone contains a fault-bounded wedge of Permo-Carboniferous sediment, which contains a major limestone bed. This bed is mined at the Barambah (Deposits 1314, 1315) and Cherbourg (1322) quarries. It is a high-purity limestone, of average grade about 54% calcium oxide, suitable for chemical and glass-making uses. Resource figures have not been made publicly available.

Probability of Further Deposits : The zone contains limestone deposits within a clearly-defined unit, and further resources should be available by exploration.

Definition of Zone Boundary : The boundary was drawn to enclose the band of sediment which contains the limestone bed, and taken from the Gympie 1 : 250 000 geological map.

Accuracy of Zone Boundary : A - Based on detailed studies at operating mines.

Sources of Information

Murphy, P. R., Schwarzbock, H., Cranfield, L. C., Withnall, I. W. and Murray, C. G., 1976. Geology of the Gympie 1 : 250 000 sheet Area, Geol. Surv. Qld Rep. 96, p. 111.

Zone IM15; L; A; kaolin; small; sedimentary

Location : The **Kingaroy kaolin zone** is about 25 kilometres long northerly and up to 5 kilometres wide, and extends to the north and south of Kingaroy township. It is in the northeast quadrant of the Kingaroy 100 000 sheet, in Kingaroy and Yarraman Shires, and in cleared land.

Zone Features : The zone contains the main area of kaolin deposits (No. 1276, 1305, 1306, 1311, 1329) in the Kingaroy district. The deposits are probably lake-bed sediment, of clay formed by weathering and erosion of altered granites. The kaolin resource is more than 3 Mt (Queensland Minerals and Energy Review, 1995, p. 27).

There is an area of unknown potential surrounding kaolin deposits 1275 and 1304, south of the Kingaroy zone, in cleared land. These deposits are not adequately described for the purpose of determining the potential for further resources nearby.

Probability of Further Deposits : The zone is known to be favourable for kaolin deposits, and further resources could be discovered.

Definition of Zone Boundary : The boundary was drawn to enclose the main group of known deposits, and is not related to any geological units or information.

Accuracy of Zone Boundary : B - The boundary was drawn to enclose the known deposits, and other deposits may be found outside this zone of potential.

Zone IM16; L; B; bentonite; small; sedimentary

Location : The **Yarraman bentonite zone** is about 5 kilometres long northeasterly by 2 kilometres wide, and about 10 kilometres southwest of Yarraman, near the southeast corner of the Kingaroy 100 000 sheet. It is in Nanango and Rosalie Shires, with cleared land in the centre of the zone and timbered land on its northern and southern ends. Current operations are from a deposit (No. 1301) in forested land near the northern end of the zone.

Zone Features : The zone contains two bentonite deposits (1301, 1310). The Meandu Creek deposit (1301) has been worked by an open pit since 1985, and production of beneficiated bentonite was 7700 t in the 1994-95 year. The bentonite is a lake-bed deposit, formed by the deposition of clay derived by weathering of Tertiary volcanics. It also contains some layers of kaolinitic clay. Resources available to the Meandu Creek open cut are adequate for 20 years production.

Probability of Further Deposits : The zone contains known deposits, and further exploration is expected to locate further resources.

Definition of Zone Boundary : The boundary was drawn to enclose the two known deposits, and is not related to any geological or genetic feature.

Accuracy of Zone Boundary : B - The boundary does not correspond to an area of ore-forming processes

Note: bentonite resources available from mines extracting Walloon coal are described in the section on coal deposits.

Zone IM17; L; B; foundry sand; small to medium; sedimentary

Location : The **Beachmere foundry sand zone** comprises two areas in Caboolture Shire, one on the southern end of Bribie Island and the other inland from the Beachmere settlement. The Beachmere portion is cleared, and the island section is forested.

Zone Features : The zone encloses stranded beach ridges, which are dry-mined on Bribie Island and dredged at Beachmere, for use as foundry sand.

Probability of Further Deposits : The zone contains known deposits, and further exploration is expected to locate further resources.

Definition of Zone Boundary : The boundaries were drawn to generally enclose the two known deposits, and are not related to any precise delineation of deposits.

Accuracy of Zone Boundary : B - The boundary is drawn from preliminary regional geological mapping.

Zone IM18; L; B; glass sand; medium; sedimentary

Location : The **Cooroonpah glass sand zone** is near the northwest corner of North Stradbroke Island, and comprises a boomerang-shaped area about 4 kilometres east of Dunwich. The zone is about 8 kilometres long and up to 3 kilometres wide, in forested land in Redland Shire.

Zone Features : The zone contains deposits of Pleistocene coastal sand, of average grade +99% silica, in an area of low dunes. The sand is mined by an end-loader, and processed prior to sale to remove impurities including a small heavy mineral content. production has averaged about 500 000 t for the last five years, of which about 80% is exported to Asia, largely for glass making. Reserves are not publicly stated.

Probability of Further Deposits : The zone is the area of a defined deposit

Definition of Zone Boundary : The boundary was drawn to correspond to the area held as mining leases or mining lease applications for silica sand, and is a minimum area of mineral potential. Similar sand may occur elsewhere on North Stradbroke Island.

Accuracy of Zone Boundary B - The zone is expected to contain further resources.

Sources of Information

Cooper, W., 1993. Silica sand, Queensland Mineral Commodity Information leaflet No. 3

Zone IM19; L; A; dolomite, palygorskite; small to medium; sedimentary

Location : The **Flinders dolomite zone** is about 5 kilometres long northerly and one kilometres wide, in the southwest quadrant of the Ipswich 100 000 sheet. It is in the City of Ipswich and in cleared land.

Zone Features : The zone encloses the Tertiary Flinders Dolomite, a sedimentary magnesian limestone up to 60 m thick and covering an area of about 5 square kilometres. Drilling by the Department of Mines has shown that about a quarter of the formation is acceptable for use as agricultural dolomite. It is selectively quarried at two sites (Deposits 1618, 1619) and used locally; production is less than 20 000 t/yr (Cranfield et al., 1989).

The dolomite unit is underlain by a palygorskite-bearing shale, which is up to 7 m thick. Palygorskite is a clay mineral, used commercially for its absorptive properties. The deposit is probably large (Willmott et al., 1979, p. 53), but has not been tested in detail or worked.

Probability of Further Deposits : The zone contains known deposits, and resources could be defined after further testing.

Definition of Zone Boundary : The boundary was copied from the outline of the Flinders Dolomite on the Ipswich 1 : 100 000 scale geological map.

Accuracy of Zone Boundary : A - Based on detailed geological mapping

Sources of Information

Cranfield, L. C., Hutton, L. J. and Green, P. M., 1989. Ipswich 100 000 scale geological map commentary, Dept of Mines and Energy

Willmott, W. F., Cooper, W. and Martin, J. E., 1979. Industrial rocks and minerals of the Ipswich 100 000 sheet area, Geol. Surv. Qld Publ. 373

Zone IM20; L; A; diatomite; small; volcanogenic-sedimentary

Location : On a spur between Black Duck and Rocky Scrub Creeks south of Mount Sylvia in Gatton Shire. It is partly forested private land.

Zone Features : The zone encompasses a small deposit of diatomite which occurs in a layer of average thickness of 2m and outcrop length of about 2 km interbedded between two basalt flows of the Main Range Volcanics. The deposit was mined on a small scale until the mid 1980s and is still held under mining lease, but there has been little if any recent production because of limited markets and the economics of the operation.

Probability of Further Deposits : The zone contains the principal known deposits of any size. The material may occur elsewhere in the district but is unlikely to be in workable thicknesses.

Definition of Zone Boundary : The boundary was drawn to enclose the spur between the two creeks.

Accuracy of Zone Boundary : Based on the extent of the known deposits.

Sources of Information :

Sawers, J. D., and Cooper, W., 1985: Some Queensland industrial minerals. pp 188-195, QGMJ, 1985.

Willmott, W. F., 1987: Revision of industrial rock and mineral resources of Gatton Shire. Geol. Surv. Qld Rec. 1987/30.

Zone IM21; L; A; perlite; small; volcanogenic

Location : The **Numinbah perlite zone** is a circular area about 2 kilometres in diameter, in the northwest quadrant of the Murwillumbah 100 000 sheet. It is in the City of Gold Coast, in its mountainous and densely forested hinterland.

Zone Features : The zone contains the principal perlite deposit (No. 1739) in this district. It comprises seams of rhyolitic glass, up to 30 m thick, of the Tertiary Lamington Group. Production has been at a rate of about 4000 t for some years, which satisfies most of the Australian perlite requirements. Resources are adequate to satisfy Australian demand for many years, but are unable to compete in overseas markets. This district contains many other small perlite occurrences, and some diatomite occurrences, but the mountainous terrain and limited markets inhibit development outside the existing mines.

Probability of Further Deposits : The zone contains the principal deposit, and further resources could be available from exploration.

Definition of Zone Boundary : The boundary was drawn to enclose the principal perlite deposit, and an area of reasonably level terrain, about 2 kilometres in diameter, containing the rhyolitic unit of the Lamington Group, as shown on the Murwillumbah 100 000 scale geological map. The rhyolitic unit outcrops on the sides of ranges in many other parts of the Gold Coast hinterland, and other deposits may be found outside the defined zone of potential, but the mountainous terrain limits the possibility of further mining operations.

Accuracy of Zone Boundary : B - Based on an inferred area of potential, which does not include all the possibly favourable areas for this type.

Sources of Information

Jones, M. R., 1995. Perlite, Queensland Mineral Commodity Information leaflet No. 24. Dept Minerals and Energy. Brisbane.

METALLIFEROUS DEPOSITS

The metalliferous zones with commercial potential are considered to include the 161 known occurrences in which copper is the principal commodity, the 29 silver-lead-zinc occurrences, 18 molybdenum occurrences and 35 mercury occurrences. The metals occur in secondary (oxidised) minerals above the water table, and as sulphides at depth. There are common associations of elements in these deposits, principally gold with copper, and silver in all the lead deposits. There are no operating metalliferous mines in the Region.

Types of Deposits

Type A : Porphyry-type, bulk-tonnage deposits of copper or molybdenum, associated with granitic intrusives. These are by far the potentially largest metalliferous deposits in the Region, and they would have an ore body shape which would permit low-cost, open cut mining.

Type B : Skarn deposits, in altered limestone near an intrusive granite. Some of these, particularly the Ban Ban zinc deposit, have large resources.

Type C : Volcanogenic deposits, in which the metals are associated with a broad zone of hydrothermal alteration, commonly in volcanic rocks, and related to the final stages of volcanic activity.

Type D : Structurally-controlled vein deposits, in which the base metal is usually contained in a quartz vein or lode, within a linear formation contact, fault line or shear zone. All of the deposits of this type in the Region are of the small size class.

PORPHYRY-TYPE COPPER AND MOLYBDENUM DEPOSITS

Geological Setting of Type MEA Deposits

The Region contains 20 porphyry-type copper or molybdenum deposits, from which 19 zones of potential for this type of deposit have been identified.

The nearest commercial porphyry-type mineralisation is at the North Parkes deposit, about 30 kilometres northwest of Parkes in central NSW. Here a deposit of about 50 Mt of 1% copper and 0.5 g/t gold is being open-pit mined at a rate of about 5 Mt/year, for an annual yield of about 65 000 t of copper and 50 000 oz of gold. The ore is a stockwork of quartz-copper sulphide veins, in a cylinder-shaped deposit about 300 m in diameter and proved to +300 m depth. The ore host is a hydrothermally-altered intrusion of quartz monzonite.

Porphyry-type deposits are associated with the final stages of emplacement of granitoid intrusions. The mineralisation is commonly a network of thin (<5 mm) quartz-sulphide veins, which 'glue together' fragments of broken and altered country rock, to form a stockwork texture. A few sulphide veins may be much thicker, and at

some deposits the large veins were mined, decades ago, in small and widely-separated individual workings. The widespread stockwork mineralisation and enveloping zone of hydrothermal alteration are diagnostic of the porphyry-type deposits. The ore bodies are usually roughly circular in plan shape, and have a near-vertical dip. In addition to the major zone of copper or molybdenum sulphides within the zone of pervasive alteration, some contain marginal zones of lead and zinc mineralisation. The copper deposits usually have a zone of secondary (supergene) sulphides at the transition between weathered and fresh rock.

There was a pulse of intense exploration for porphyry-type deposits in eastern Queensland from about 1965 to 1975. The twenty deposits found in the Region (Horton, 1982), were identified by airmagnetic surveys and regional stream sediment sampling, followed by grid soil surveys and pattern drilling. These were all shown to be below current ore grade and size, and none has been mined. It was generally concluded that these deposits are the 'roots' of larger bodies, from which the major and upper parts have been removed by erosion. There remains the theoretical possibility that larger deposits of this type may remain in down-faulted blocks, under a cover of younger rocks which have preserved these from erosion. There is no inexpensive set of exploration methods which can be used to seek the hypothetical preserved deposits.

In most cases the known deposits were found to be associated with a small pluton of circular or elliptical plan shape, which is around 5 kilometres in diameter. These plutons can be accurately located by detailed airmagnetic data, from surveys with a line spacing of around 400 m, as are available for the Monto-Bundaberg part of the zone. For the remainder of the Region the only uniform set of airmagnetic data are from regional AGSO surveys, which used a line spacing of 1.6 kilometres, and the location of the mineralising plutons is not so precise.

In theory, any of the granitoid intrusions in the Region could host a porphyry-type deposit in a late stage portion. In the absence of detailed airmagnetic surveys, and all the follow-up evaluation stages, these theoretically favourable areas can not be identified. Further exploration for deposits of this style will very probably find further zones of mineral potential. Only the plutons which are known to contain a porphyry-type copper or molybdenum deposit are shown as zones of mineral potential in this appraisal. The zone boundary shown on the maps is the outline of the mineralising phase, as shown by an area of uniform airmagnetic pattern which encloses the known deposits.

Sources of Information

Horton, D. J., 1982. Porphyry-type copper and molybdenum mineralisation in eastern Queensland, Geol. Surv. Qld Publ. 378.

DESCRIPTION OF ZONES OF MINERAL POTENTIAL

Zone MEA1; L; A; copper; small to medium; porphyry

Location : The zone is about 5 kilometres in diameter, in Calliope shire, and near the centre of the northern edge of the Biloela 100 000 sheet. Only the western half of the zone is within the Region, in timbered country east of State Forest 218.

Zone Features : The zone corresponds to a small pluton which contains the Briggs/Riverhead (No. 6) porphyry copper deposit near its northern border. Here country rock of Devonian-Carboniferous dacitic tuff has been intruded by microgranite of the Permo-Triassic Galloway Plains Tonalite. The deposit is an area of hydrothermal alteration containing widespread low-grade copper and traces of molybdenum mineralisation. The area of mineralisation is about 1300 x 400 m in plan dimensions, and has been tested by drilling to 270 m depth. A resource of 19 Mt of grade about 0.25% copper has been calculated for this deposit (Horton, 1982).

Probability of Further Deposits : The zone contains one porphyry-type deposit, and may contain further resources.

Definition of Zone Boundary : The zone outline corresponds to the border of an area of airmagnetic response which contains the Briggs deposit, on the edge of the Permian-Triassic Galloway Plains Tonalite.

Accuracy of Zone Boundary : A - Based on a known deposit and airmagnetic data

Zone MEA2; L; A; copper; small to medium; porphyry

Location : The zone is roughly circular, of diameter about 4 kilometres and near the centre of the Calliope 100 000 sheet. It is in Calliope and Monto Shires, in an area of timbered land south of State Forest 121.

Zone Features : The zone contains a late-stage phase of the Triassic Glassford Complex, which has The Ridler Creek/Burns Spur prospect (No. 186) in its northeast corner. Here a series of ring fractures has provided a locus for brecciation, intrusion of syenite dykes, widespread hydrothermal alteration and sporadic copper mineralisation (Horton, 1982). The deposit contains an area of plan dimensions of about 300 by 100 m (about 90 000 tonnes per vertical metre) of higher grade mineralisation, of average grade <0.2% copper (Anon., 1974).

Probability of Further Deposits : The zone contains a porphyry copper prospect, and may contain further resources.

Definition of Zone Boundary : The zone encloses an area of uniform magnetic response which hosts the Ridler Creek prospect.

Accuracy of Zone Boundary : A - Based on known mineralisation in an area of uniform airmagnetic pattern.

Sources of Information

Anon., 1974. Final report on ATP 1242M (CR 5040).

Zone MEA3; L; A; copper-molybdenum-lead-silver-zinc; small to medium; porphyry

Location : The zone is a nearly circular area of diameter about 4 kilometres, in the northwest corner of the Monto 100 000 sheet area. It is in Monto Shire, all timbered, and to the southeast of State Forest 316.

Zone Features : The zone contains the Silver Star porphyry copper-molybdenum deposit (No. 222), which is hosted by rhyolite breccia of the Early Carboniferous Three Moon Conglomerate. The mineralisation is related to the intrusion of diorite dykes, possibly associated with the Triassic Glassford Complex. Drilling of the deposit (14 holes for total 1600 m) identified a central mineralised body, about 100 by 200 m in plan, with values in the range 0.3-0.5% copper, 3-5% zinc and 3-5 oz/t silver. This centre is surrounded by a much larger zone of mineralisation, in which the diorite contains pervasive fine quartz-sericite-pyrite veins, with a trace of copper and molybdenite mineralisation (O'Connor, 1972).

The zone also contains the Nestor workings (216), which were on narrow quartz-calcite veins containing gold and minor copper, arsenic and zinc sulphides, in granodiorite and diorite (Pope, 1990).

Probability of Further Deposits : The zone contains at least one area of porphyry-type mineralisation, and may contain further resources.

Definition of Zone Boundary : The zone is an area of uniform airmagnetic response which surrounds the Silver Star mineralisation, and is inferred to be the area of the mineralising intrusion.

Accuracy of Zone Boundary : A - Based on the presence of mineralisation associated with a small mineralising pluton.

Sources of Information

O'Connor, C. K., 1972. Summary report on exploration of the Silver Star leases (CR 4074)

Pope, G. J., 1990. Six monthly report for ATP 4854M and 5480M, to 9/2/90 CR 21657)

Zone MEA4; L; A; copper-silver; small to medium; porphyry

Location : The zone outline is roughly elliptical, and about 7 kilometres long northwesterly by 2 kilometres wide. It is in the northwest corner of the Calliope 100 000 sheet, in Monto Shire, all timbered, and to the southeast of State Forest 316.

Zone Features : The zone contains the Munholme Creek copper-silver prospect (No. 215) near its southeast corner. The prospect has pyrite and lesser chalcopyrite mineralisation associated with extensive hydrothermal alteration, in an area of quartz diorite dykes intrusive into sediment and tuff of the Early Carboniferous Three Moon Conglomerate. The dykes are probably apophyses of the Triassic Glassford Complex. A resource of 230 000 t at 0.49% copper, 135 g/t silver, 1.2% lead and 2.8% zinc has been defined in part of the Munholme Creek deposit (Register of Australian Mining 1995/96, p. 239).

Probability of Further Deposits : The zone contains an area of porphyry-type mineralisation, and encloses the area of rocks considered favourable for this type of deposit. There is some chance of further resources.

Definition of Zone Boundary : The boundary was drawn from the 1VD image of regional airmagnetic data, and encloses an area of uniform response, assumed to be the area containing intrusive diorite.

Accuracy of Zone Boundary : A - Based on an area of uniform rock type which contains a porphyry-type deposit.

Zone MEA5; L; A; copper-molybdenum; small to medium; porphyry

Location : The zone is an elongate area in Banana and Monto shires, about 15 kilometres long northwesterly by up to 4 kilometres wide, and in the northeast quadrant of the Scoria 100 000 sheet. The southern half of the zone is timbered, and includes part of State Forest 69.

Zone Features : The zone encloses the northwest flank of the Permo-Triassic Wingfield Adamellite, and contains the Cania porphyry copper deposit (No. 276). At the deposit a swarm of granitic dykes intrudes granodiorite of the Adamellite, and is accompanied by extensive hydrothermal alteration and weak copper with trace molybdenum mineralisation. The area of copper mineralisation is about 2000 by 1000 m in plan, and of average grade about 0.03% copper. A resources has not been calculated for the zone.

Probability of Further Deposits : The zone contains porphyry copper style mineralisation and thus is an area favourable for this type of deposit, and may contain further resources.

Definition of Zone Boundary : The boundary was drawn from the 1VD airmagnetic image, and encloses an area of uniform airmagnetic response, inferred to be area in which granitic dykes were intruded.

Accuracy of Zone Boundary : A - Based on known mineralisation in an area of uniform airmagnetic response.

Zone MEA6; P; A; copper; small to medium; porphyry

Location : The zone is an elongate area, about 10 kilometres long northerly by up to 3 kilometres wide, in the northeast quadrant of the Scoria 100 000 sheet. It is in Banana and Monto Shires and largely timbered, and encloses part of State Forest 69.

Zone Features : The zone contains part of the eastern edge of the Permo-Triassic Wingfield Adamellite, and includes the Kiwi Carpet porphyry copper deposit (No. 294) at its northern end. At Kiwi Carpet an elongate, late stage body of porphyritic granodiorite has intruded adamellite and granodiorite along a northwesterly-trending fracture zone. This has been accompanied by alteration in the porphyritic granodiorite, in an area about 2500 by 1000 m, within which is a square kilometre of weak pyrite-chalcopyrite-molybdenite mineralisation. The average grade of the mineralised area is about 0.1% copper, and a resource has not been calculated.

Probability of Further Deposits : The zone contains an example of porphyry copper mineralisation, and is considered favourable for further resources.

Definition of Zone Boundary : The boundary was drawn from the 1VD airmagnetic image, and encloses an area of uniform response, inferred to be the area in which the mineralising porphyritic granodiorite was intruded.

Accuracy of Zone Boundary : A - Based on known mineralisation and airmagnetic data.

Zone MEA7; L; A; copper; small to medium; porphyry

Location : The zone has an elliptical shape, about 11 kilometres long northerly by up to 4 kilometres wide, near the centre of the Monto 100 000 sheet. It is in Monto Shire, all timbered, and between State Forests 506 and 695.

Zone Features : The zone contains Carboniferous sediment of the Caswell Creek and Boiling Creek groups, intruded by small Permo-Triassic granite plutons. It encloses the Mount Cannindah porphyry copper deposit (214) near its eastern margin. There are other deposits within the zone, including skarn type where limestone beds were intruded, and some structure-controlled veins.

The Mount Cannindah deposit contains a high-grade zone of breccia-fill mineralisation in which pyrite and chalcopyrite are associated with a quartz-calcite gangue, and widespread areas of low grade pyrite-chalcopyrite-molybdenite mineralisation in areas of fractured and altered intrusives. Production from Mount Cannindah (1906-1918) from shallow workings was 830 t of copper, and the deposit has a resource of 3 Mt of 1.3% copper, 0.9 g/t gold and 28 g/t silver (Murray, 1990).

Probability of Further Deposits : The zone contains an example of porphyry copper mineralisation, and may contain further resources.

Definition of Zone Boundary : The zone boundary envelops an area of uniform magnetic response, from the 1VD image, which is thought to be the area intruded by the mineralising plutons.

Accuracy of Zone Boundary : A - Based on known mineralisation in an area of uniform airmagnetic pattern

Sources of Information

Murray, C. G., 1990. Tasman Fold Belt in Queensland, p. 1441 in AusIMM Monograph 14.

Zone MEA8; L; A; copper; small to medium; porphyry

Location : The zone is about 5 kilometres long and up to 3 kilometres wide, near the centre of the Scoria 100 000 sheet. It is in Banana Shire, and all cleared.

Zone Features : The zone is on the northwest flank of the Permo-Triassic Wingfield Adamellite, and includes some of the adjacent Lower Permian Youlambie Conglomerate. It contains the Grevillea Creek porphyry copper deposit (No. 283) near its eastern end. Exploration at Grevillea Creek by soil and rock-chip sampling, and three shallow drill holes, located a body of disseminated copper mineralisation, containing lesser pyrite, in altered quartz diorite and biotite schist. The zone has a potential of about 100 000 tonnes of ore per vertical metre, of grade <0.2% copper (Roberts, 1972).

Probability of Further Deposits : The zone contains porphyry copper mineralisation, and may contain further resources.

Definition of Zone Boundary : The boundary encloses an area of uniform 1VD airmagnetic response, inferred to be the area in which the diorite dykes were intruded.

Accuracy of Zone Boundary : A - Based on identified mineralisation in an area of uniform airmagnetic response.

Sources of Information

Roberts, P. J., 1972. Final report on ATP 732M (CR 4368)

Zone MEA9; L; A; molybdenum-tungsten; small to medium; porphyry

Location : the zone has an elliptical shape and is about 9 kilometres long northerly by up to 3 kilometres wide, and is near the western edge of the Rosedale 100 000 sheet. It is in Kolan and Miriam Vale Shires and all timbered except for a small cleared area near its southern tip, and includes part of State Forest 406.

Zone Features : The zone contains Triassic Watalgan Granite and its contact zone with sediment and andesitic volcanics of the Permian Biggenden Beds. The Native

Dog molybdenum-tungsten-bismuth-zinc deposit (No. 247) is emplaced in altered granite near this contact, in a large zone of hydrothermal alteration. Within the altered area tungsten, as wolframite, is confined to large quartz veins (Reid, 1943), whereas the molybdenite occurs throughout the altered area in veins, vein stockworks and as disseminations on joints. The mineralised area measures about 3000 by 300 m in plan, of average grade about +0.01% molybdenum, and contains a body with resource potential of about 72 000 tonnes per vertical metre of +0.02% molybdenum (Whitcher, 1971).

Probability of Further Deposits : The zone contains an example of porphyry-type mineralisation, and is considered to be favourable for this type of deposit.

Definition of Zone Boundary : The boundary was drawn from the 1VD airmagnetic image, and is assumed to be the area of hydrothermal activity.

Accuracy of Zone Boundary : A - Based on identified mineralisation associated with an area of uniform airmagnetic response.

Sources of Information

Whitcher, I. G., 1971. Report on drilling of Native Dog Mo-W prospect, ATP 584M (CR 3515)

Reid, J. H., 1943. Native Dog wolfram workings, Rosedale Mineral Field, Bundaberg District, p. 10 in QGMJ

Zone MEA10; L; A; copper-molybdenum; small to medium; porphyry

Location : The zone has an elliptical outline, about 5 kilometres long northerly by up to 3 kilometres wide, in the southeast quadrant of the Scoria 100 000 sheet. It is in Monto Shire, and all cleared.

Zone Features : The zone is within and near the eastern edge of the Permo-Triassic Wingfield Adamellite, and contains the Whitewash porphyry copper-molybdenum deposit (No. 299) near its centre. At the deposit the granodiorite of the Wingfield Adamellite has been intruded by porphyritic granite and aplite-leucogranite, and by trachyte and andesite dykes. The copper-molybdenum-pyrite mineralisation is hosted by altered and strongly fractured granodiorite, in an area of about 1.2 square kilometres. Average grade in the mineralised area is <0.1% copper and <0.03% molybdenum. A resource has not been calculated for this body.

Probability of Further Deposits : The zone contains porphyry-type mineralisation, in an area of uniform magnetic response, and is considered favourable for further resources.

Definition of Zone Boundary : The boundary is the outline of an area of uniform airmagnetic response on the 1VD image, inferred to be the area in which hydrothermal alteration has occurred.

Accuracy of Zone Boundary : A - based on known mineralisation in an area of uniform airmagnetic response

Zone MEA11; L; A; molybdenum; small to medium; porphyry

Location : The zone is about 6 kilometres long northerly by up to 2 kilometres wide, in the northwest corner of the Childers 100 000 sheet. It is in Isis Shire, all timbered, and to the west of State Forest 832.

Zone Features : The zone contains sediment and volcanics of the Permian Gympie Group, intruded by small Triassic granitoid plutons. The Duingal Creek porphyry molybdenum deposit (No. 340) is near the eastern edge of the zone, and has molybdenite hosted by a granite plug. The mineralisation is sparse, as fracture fill and veins, in an area of kaolinitic alteration. A resource has not been estimated for this deposit.

Probability of Further Deposits : The zone contains an example of porphyry molybdenum mineralisation, and may contain further resources.

Definition of Zone Boundary : The boundary was drawn from the 1VD airmagnetic image, and encloses an area of uniform response, inferred to be the extent of the mineralising plutons.

Accuracy of Zone Boundary : A - Based on an airmagnetic pattern which defines an area in which porphyry-type mineralisation occurs.

Zone MEA12; L; A; copper-molybdenum; small to medium; porphyry

Location : The zone is about 6 kilometres long northerly by up to 3 kilometres wide, in the northwest quadrant of the Mount Perry 100 000 sheet. It is in Perry Shire, and all cleared.

Zone Features : The zone encloses the contact between the Permian Wolca Granite and Tenningering Granodiorite. The Chinaman Creek porphyry-type deposit (No. 398) is near the southern end of the contact, and contains copper-gold-molybdenum mineralisation in brecciated and sericitised granodiorite. The mineralised zone is about 1200 x 1000 m in plan dimensions, and of average grade about 0.2% copper. There are no defined resource figures for this zone.

Probability of Further Deposits : The zone contains a porphyry-type deposit, along a favourable contact, and further resources may be found.

Definition of Zone Boundary : the boundary was drawn from the 1VD airmagnetic image, and is inferred to be the area in which hydrothermal alteration has occurred.

Accuracy of Zone Boundary : A - Based on known mineralisation in an area of uniform airmagnetic response.

Zone MEA13; L; A; copper; small to medium; porphyry

Location : The zone is about 4 kilometres in diameter, in the southeast quadrant of the Mount Perry 100 000 sheet. It is in Biggenden Shire, and the southern half is timbered, and to the south of State Forest 169.

Zone Features : The zone contains sediment and basic volcanics of the Carboniferous-Permian Good Night beds, intruded by small bodies of Permo-Triassic granite. The Gebangle porphyry copper deposit (No. 413) is near the centre of the zone, in an area of hydrothermally-altered diorite. The mineralisation is largely disseminated pyrite, with minor chalcopyrite, in an area of propylitic alteration. The mineralised zone has an area of about a square kilometre and an average grade about 0.03% copper.

Probability of Further Deposits : The zone contains a porphyry-type copper deposit, in an area of uniform magnetic response. There is a reasonable chance that other resources can be found.

Definition of Zone Boundary : The boundary encloses an area of uniform airmagnetic response on the 1VD airmagnetic image, inferred to be the area of Good Night beds which have been intruded by the mineralising plutons.

Accuracy of Zone Boundary ; A - Based on known mineralisation in an area of uniform setting.

Zone MEA14; L; A; copper-gold; small to medium; porphyry

Location : The zone is about 20 kilometres long northerly and up to 4 kilometres wide, in the northeast quadrant of the Gayndah 100 000 sheet area. It is in Biggenden and Gayndah shires, and all cleared.

Zone Features : the zone contains sediment and volcanics of the Carboniferous-Permian Gympie Group and of the Permian Good Night beds, intruded by small plutons of Triassic granitoid. All of the known deposits of this zone (358-365) are along a northerly-trending line of brecciation and hydrothermal alteration, related to the intrusives.

The Coalstoun porphyry copper deposit (359) is the largest, but the others were all formed by the same process. At Coalstoun the sediment has been intruded by a tonalite plug about three kilometres long and one kilometres wide, which has caused widespread alteration. The main body of copper mineralisation (with minor gold and molybdenum) is in the zone of biotite alteration, which measures about 400 x 300 m in plan and has been drilled to +300 m depth. this body contains a resource of 85 Mt of grade 0.29% copper (Cranfield and Garrad, 1991).

Probability of Further Deposits : The zone contains eight porphyry-type deposits, and is considered to have a strong chance of providing further resources, subject to further exploration.

Definition of Zone Boundary : The boundary is the outline of an area of uniform airmagnetic response on the 1VD image, which encloses the northerly trending ore locus and all the known deposits.

Accuracy of Zone Boundary : A - Based on known mineralisation in an area of uniform airmagnetic response.

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone MEA15; L; A; copper; small to medium; porphyry

Location : The zone is about 7 kilometres long northerly by up to 3 kilometres wide, near the southern edge of the Biggenden 100 000 sheet. It is in Kilkivan and Woocoo shires, and timbered in its southern half, which contains State Forest 632.

Zone Features : The zone contains Carboniferous sediment and basic volcanics, intruded by the Triassic Calgoa Diorite. The Calgoa porphyry copper deposit (301) is near the northern end of the zone, and contains copper with minor gold, silver and lead mineralisation. This is largely located in faults and shears, but some is disseminated in the diorite, and all of the mineralisation is associated with kaolin and chlorite alteration. There are no defined resources within this zone.

Probability of Further Deposits : The zone contains known porphyry-type mineralisation, and there is a reasonable chance that further exploration will locate further resources.

Definition of Zone Boundary : The boundary encloses an area of uniform magnetic pattern, as shown on the 1VD image, which is inferred to be the zone of influence of the mineralising diorite.

Accuracy of Zone Boundary : A - Based on known mineralisation in an area of uniform airmagnetic response.

Zone MEA16; L; A; copper; small to medium; porphyry

Location : the zone is roughly circular and of diameter 8 kilometres, in the northeast quadrant of the Goomeri 100 000 sheet. It is in Kilkivan Shire and all timbered, containing much of the area of State Forest 220.

Zone Features : The zone contains an isolated area of Triassic Neara Volcanics, surrounded by the intrusive Station Creek Adamellite. The Gibraltar Rock porphyry copper deposit (548) is near the eastern edge of the zone. The mineralisation here is related to porphyry dykes which have intruded the Neara Volcanics and Station Creek Adamellite. The area of finely disseminated pyrite and chalcopyrite in phyllically-altered Neara Volcanics here totals 12 square kilometres (Randall et al., 1996). The

deposit contains widespread pyrite, with chalcopyrite, galena and sphalerite largely emplaced in fractures. The mineralised zone measures about 1800 by 1000 m in plan, and has been drilled to about 500 m depth. average grade is about 0.1% copper. A resource figure has not been calculated for this zone.

Probability of Further Deposits : The zone contains porphyry-type mineralisation, and further exploration may locate further resources.

Definition of Zone Boundary : The boundary of the zone is the outline of an area of uniform response on the 1VD image, inferred to equate to the Area of mineralising dykes.

Accuracy of Zone Boundary : A - Based on known mineralisation in an area of uniform airmagnetic pattern.

Sources of Information

Randall, R. E., Osborne, J. H., Donchak, P. J. T. and Scott, M., 1996. A review of mineral exploration and known mineral occurrences within the Goomeri (9345), Nambour (9444) and Nanango (9344) 1 : 100 000 sheet area, south-east Queensland, Geol. Surv. Qld Rec. 1996/4

Zone MEA17; L; A; copper; small to medium; porphyry

Location : The zone is about 10 kilometres long easterly and 2 kilometres wide, in the southeast quadrant of the Goomeri 100 000 sheet. It is in Cooloola Shire, all timbered, and between State Forests 124 and 639.

Zone Features : The zone contains Palaeozoic sediment and basic volcanics, intruded by Permo-Triassic granitoids in a process involving at least two intrusive stages. The Mary Creek porphyry copper deposit (No. 573) is near the centre of the zone, and contains sparsely disseminated chalcopyrite in areas of weak sericitic alteration in a granitic intrusive. There are no defined resources within the zone.

Probability of Further Deposits : The zone contains a porphyry copper deposit in a setting favourable for these deposits, and more resources may be found by further exploration.

Definition of Zone Boundary : The boundary encloses an area of uniform airmagnetic response on the 1VD image, inferred to be the extent of the mineralising intrusives.

Accuracy of Zone Boundary : A - Based on known mineralisation in an area of uniform magnetic character.

Zone MEA18; L; A; molybdenum-tungsten; small to medium; porphyry

Location : The zone is roughly circular, of diameter about 6 kilometres, and in the northwest corner of the Esk 100 000 sheet. It is in cleared land in Crows Nest Shire.

Zone Features : The zone contains the Permo-Triassic Eskdale Granodiorite, and an area of metasediment of the Palaeozoic Sugarloaf Metamorphics which embays the northwest margin of the Granodiorite. The zone has the Anduramba porphyry molybdenum deposit near its centre. Here molybdenite and wolframite occur in quartz veins, and disseminated, within a pipe-like body of porphyry which is largely emplaced in granodiorite but also in the adjacent metasediment. The 1VD airmagnetic image shows that the deposit is also on a northwesterly-trending line, which may be a fault and perhaps another localising feature for the mineralisation. A resource has been calculated for this deposit as 16 Mt of 0.07% molybdenum (Whitcher, 1975).

Probability of Further Deposits : The zone contains a porphyry-type deposit, and there is a reasonable chance that exploration may locate further resources.

Definition of Zone Boundary : The boundary corresponds to the outline of an area of uniform airmagnetic response in the 1VD image, and is considered to be the extent of the mineralising phase of the Granodiorite. The possible fault line extending northwesterly from the Anduramba deposit may contain zones with potential for deposits of this type along its length, but these can not be identified with the airmagnetic data available.

Accuracy of Zone Boundary : A - Based on an area of uniform airmagnetic response

Sources of Information

Whitcher, I. G., 1975. Anduramba molybdenum prospect, pp. 793-794 in Economic Geology of Australia and Papua New Guinea, Vol. 1 Metals, AusIMM Monograph 5

Zone MEA19; P; B; copper, molybdenum; small to medium; porphyry

Location : The zone is roughly circular, of diameter about 10 kilometres, and on the border between the Caboolture and Ipswich 100 000 sheets. It is in the Cities of Brisbane and Ipswich, and largely timbered, with cleared areas on the eastern and southern edges which correspond to outer suburban development of the city of Brisbane.

Zone Features : The zone contains areas of Triassic granite, and metasediment of the Palaeozoic Neranleigh-Fernvale Group, and two porphyry-type deposits.

At the Enoggera porphyry molybdenum prospect (No. 1516) molybdenite occurs on joints and in cavities in an area of weak hydrothermal alteration in the Enoggera Granite. At Mount Crosby prospect (1655) disseminated copper mineralisation occurs in the Karana Quartz Diorite and in the adjacent metasediment, in an area about 1200 x 100 m in plan. There are no defined resources in this zone, and spreading suburban settlement on Brisbane's margins probably prevents exploration.

Probability of Further Deposits : The zone encloses two porphyry-type prospects, and there is a chance that further exploration could identify further resources.

Definition of Zone Boundary : The zone boundary was drawn to enclose the two prospects, as a possible 'zone of influence' of the mineralising plutons. It does not correspond to a geological or geophysical entity.

Accuracy of Zone Boundary : B - Based on known deposits, but the boundary is not precisely located.

SKARN-TYPE METALLIFEROUS DEPOSITS

Known Deposits

The best-known deposits are the Biggenden copper-magnetite, Many Peaks copper and the Ban Ban zinc-gold skarn deposits

Geological Setting of Type MEB Deposits

The skarn deposits are formed by metasomatic replacement of limestone or limy sediment, near an intrusive granitoid. During the mineralising process the carbonate minerals of the host rock are changed to a suite of skarn-indicator minerals, including calcite, garnet and wollastonite. Skarns are common sources of copper, lead and zinc sulphide, and of scheelite (tungsten carbonate) deposits. The mineralisation is often accompanied by and enclosed in massive magnetite, which has commercial value at some sites, as at the Mount Biggenden mine.

The deposits are irregularly-shaped bodies, often crudely pipe-like ellipsoidal, and sometimes elongate in the direction of the regional strike of the enclosing sediment.

Zone MEB1; L; A; copper; small to medium; skarn

Location : The zone is a narrow, northerly trending band in Calliope Shire, about 18 kilometres long and up to 3 kilometres wide, which straddles the boundary between the Calliope and Monto 100 000 sheets. It is all timbered except for a small part along the northeast edge of the zone.

Zone Features : The zone encloses the Many Peaks (208) skarn-type copper deposit, which is hosted by limestone of the Early to Middle Devonian Calliope Beds. The deposit is within a regional shear zone, which marks the course of the major Yarrol Fault. The deposit is an irregularly shaped mass of garnet, magnetite and calcite skarn, containing bodies of pyrite-chalcopryrite ore. Many Peaks produced 8500 t of copper from 500 000 t of ore (1910-1918), and an inferred resource of about 300 000 t of ore of average grade about 1.5% copper remains.

Within this zone the Calliope Beds also contain andesitic lava and sediment, and other, non-skarn type deposits were formed where the mineralising fluids reacted with these rocks, as at the Bompa/Sugarbag Creek deposits (93-95). These are of the structure-controlled vein type, and were worked for their gold, silver, lead and zinc content (Pope, 1990).

Probability of Further Deposits : The mineralising process which operated at Many Peaks also produced ore deposits in non-limy beds, at Sugarbag Creek. Any limestone formations in this vicinity are considered to be prospective for skarn-type base metal deposits.

Definition of Zone Boundary : The boundary was defined from the area of uniform airmagnetic pattern which encloses the Many Peaks deposit and part of the Calliope Beds.

Accuracy of Zone Boundary : A - Based on an airmagnetic pattern which defines the mineralised area

Sources of Information

Dear, J. F., McKellar, R. G. and Tucker, R. M., 1971. Geology of the Monto 1 : 250 000 sheet Area, Geol. Surv. Qld Rep. 46.

Pope, G. J., 1990. Annual report for EPMs 4854 and 5480 (CR 22295)

Zone MEB2; L; A; copper-gold-lead-zinc; small; skarn

Location : The zone has an arcuate shape in Calliope Shire, near the northern edge of the Monto 100 000 sheet, and is about 12 kilometres long northerly by 2 kilometres wide. It is all timbered, and contains part of Timber Reserve 353 and of State Forest 506.

Zone Features : The zone encloses the base metal deposits of the Glassford Creek Mining Field (181, 195, 196, 201, 204) and the Mount Sperber zinc prospect (213). They are hosted by a limestone unit of the Early Carboniferous Caswell Creek Group, and mineralised by the adjacent Permo-Triassic Glassford Complex. The ore occurs as irregularly shaped bodies, largely pyrite but also containing copper, lead and zinc sulphides, plus gold and silver, in an area of garnet and magnetite metasomatism. The major producers were the Blue Bag (181) and Lady Inez (204) mines, which provided 724 t of copper, 2540 oz of gold and 23 250 oz of silver from 18 116 t of ore. There are no defined resources in this zone.

Probability of Further Deposits : The zone contains an area of intense mineralisation of the same type, in which further resources should be present.

Definition of Zone Boundary : The zone was drawn so as to enclose all the known deposits, and a peripheral zone 3 kilometres out from these.

Accuracy of Zone Boundary : A - Based on numerous mine workings in a small area.

Sources of Information

Dear, J. F., McKellar, R. G. and Tucker, R. M., 1971. Geology of the Monto 1 : 250 000 sheet Area, Geol. Surv. Qld Rep. 46.

Zone MEB3; L; A; copper-gold-magnetite; small; skarn

Location : The zone is a narrow band about 25 kilometres long and up to 8 kilometres wide, in the northeast corner of the Gayndah 100 000 sheet. It is in Biggenden and Gayndah Shires and largely cleared, with Timber Reserves 580 and 581 along its edges.

Zone Features : The zone encloses the bismuth province group of deposits to the east and south of the Triassic Degilbo Granite. The four larger deposits (366, 367, 369, 372) all occur in altered sediment or lava of the Permian Gympie Group, and contain a complex assemblage of arsenic, bismuth, copper, gold, molybdenum, silver and tungsten minerals in bodies of magnetite skarn. At the largest deposit (Mount Biggenden, 368), the magnetite bodies are up to 150 m long and 60 m wide.

Production from Mount Biggenden, to late 1989, was about 6000 oz (185 kg) of gold, 235 t of bismuth, and 440 000 t of magnetite (Murray, 1990). Production is used in coal washing plants and the bismuth, copper and gold values are not extracted. Resources are limited, and production will probably cease in this decade.

Probability of Further Deposits : The zone contains a single type of deposit, in the same host formation. Further exploration or a change in economic factors could lead to the establishment of further resources.

Definition of Zone Boundary : The zone was drawn to enclose a marginal zone about 4 kilometres wide which surrounds the Degilbo Granite, and to contain eight strong airmagnetic anomalies, of which one is caused by the Mount Biggenden deposit.

Accuracy of Zone Boundary : A - Based on a series of uniform deposits in the same host rocks, for which the shape of the prospective zone was confirmed by airmagnetic data.

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Murray, C. G., 1990. Tasman fold belt in Queensland, pp. 1431-1450 in AusIMM Monog. 14

Zone MEB4; L; B; zinc-lead-gold; small; skarn

Location : The zone is near the eastern edge of the Gayndah 100 000 sheet, to the southeast of Ban Ban Springs, and in Gayndah, Kilkivan and Woocoo shires. It is nearly all timbered, and includes parts of Timber Reserve 376 and of State Forest 259.

Zone Features : The zone contains the Ban Ban zinc deposit (No. 355) and the Unique Mineral Freeholds lead-silver-copper deposit (375), both hosted by the Permian Gympie Group. At Ban Ban the deposit is a zone of metasomatic replacement of

limestone, about 1200 m long and averaging about 20 m wide, containing zinc, lead and copper sulphides with abundant pyrite, and lesser magnetite, chlorite, calcite and garnet, and containing important gold values (Davies, 1975).

The reserves at Ban Ban are 1.5 Mt of average grade 7.4% zinc and 9 g/t silver, and mining feasibility is being assessed.

The mineralisation at Unique Mineral Freeholds is of the structure-controlled vein type. It was emplaced at the contact of a sheared feldspar porphyry intrusive with Gympie Group sediment. The ore host rocks include altered granite, aplite, porphyry and rhyolite, and average grade mined was about 36% lead, 280 g/t silver and 14% copper.

Probability of Further Deposits : The zone contains the band of Permian volcanic and sedimentary rocks which encircle a number of isolated areas of Permo-Triassic granite. Two deposits are known within the zone, which are most probably genetically related to the granite emplacement process. Further resources could be found by further exploration.

Definition of Zone Boundary : The zone boundary was drawn so as to include all the areas of Gympie Group rocks near the margins of the Triassic granitoids in this area. It was traced from the boundary of the Gympie Group on the Maryborough 1 : 250 000 scale geological map.

Accuracy of Zone Boundary : B - The zone boundary was inferred from the regional geological map, and can not be checked by any readily-available method.

Sources of Information

Davies, E. R., 1975. Ban Ban zinc lode, pp. 797-798 in *Economic Geology of Australia and Papua New Guinea*, Vol. 1 Metals, AusIMM Monog. 5

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

VOLCANOGENIC METALLIFEROUS DEPOSITS

Geological Setting of Type MEC Deposits

These are the volcanogenic group of deposits, formed near the earth's surface and at relatively low temperatures, generally taken to be less than 200°C. The deposits may contain planar veins, and be similar in shape to the structure-controlled veins, but the presence of open-space filling textures and banding of the ore minerals are distinctive. Many of the volcanogenic deposits have an irregular shape, and contain much disseminated mineralisation; ore minerals are native gold, silver-antimony and silver-arsenic sulphides, gold and silver tellurides, and cinnabar, with varying amounts of copper, lead and zinc sulphides. They occur within a larger zone of hydrothermal alteration, typified by chalcedonic quartz, adularia, calcite and minor sericite. The ore

host is most commonly a much-altered volcanic rock. As in all ore deposits, structural preparation of the ore body site is an essential factor, in order to provide permeability which will allow fluids to circulate; in many cases the volcanic process is thought to have caused this local increase in permeability.

DESCRIPTION OF ZONES OF MINERAL POTENTIAL

Zone MEC1; L; A; mercury; small; volcanogenic

Location : The 'Kilkivan mercury zone' zone is boomerang-shaped, about 20 kilometres long northerly by 5 kilometres wide, in the northwest quadrant of the Goomeri 100 000 sheet. It is in Kilkivan Shire, and timbered along its southeastern edge.

Zone Features : Of the 35 deposits in the Region in which mercury is the principal commodity, 33 (524, 526, 528, 533, 535-538, 541, 549, 555, 591, 597, 604, 611, 618, 621, 630, 632-644, 647) are in this zone. The mercury occurs as the red oxide, cinnabar, in zones of low-temperature hydrothermal alteration in a range of rock types.

The cinnabar is in quartz-calcite-siderite veins containing minor copper and iron sulphides in shear zones in andesite and sandstone of the Triassic Neara Volcanics, in quartz-chalcedony joint filling in the Carboniferous Manumbar Metamorphics, in quartz-calcite-chalcopyrite-magnetite veins in altered andesite of the Devonian-Carboniferous Wongela Metamorphics, in quartz-calcite-siderite-chalcopyrite veins in shear zones in the Carboniferous Coppermine Granodiorite, and in quartz-calcite-siderite gash veins in shale of the Devonian-Carboniferous Mount Clara beds.

There was a zone of near-surface enrichment in cinnabar, and the largest producer was a mine working an eluvial-alluvial deposit (524), which yielded 1873 kg of mercury. Total production from the field was about 15 t of mercury. A resource has been calculated for the eluvial-alluvial deposit of 612 000 cubic metres at 0.45 kg of mercury per cubic metre.

The Gold Top group of mines (No. 550), in the northeast corner of the zone, were mainly worked for their gold content. However, the mineralisation here includes cinnabar, and copper, antimony, arsenic, lead and zinc sulphides, in quartz-calcite veins, within a zone of hydrothermal alteration. There is a possibility of gold mineralisation at greater depth in the Kilkivan mercury zone, for which the mercury mineralisation is a halo or high-level indicator.

Probability of Further Deposits : The zone has a concentration of deposits, which have not been thoroughly explored. Further exploration should locate new deposits or extensions to the known mineralisation.

Definition of Zone Boundary : The zone boundary was drawn to enclose all of the mercury deposits, and corresponds to the border of a zone of uniform airmagnetic response.

Accuracy of Zone Boundary : A - Based on a concentration of mineral deposits, in an area of uniform magnetic pattern.

Sources of Information

Randall, R. E., Osborne, J. H., Donchak, P. J. T. and Scott, M., 1996. A review of mineral exploration and known mineral occurrences within the Goomeri (9345), Nambour (9444) and Nanango (9344) 1 : 100 000 sheet area, south-east Queensland, Geol. Surv. Qld Rec. 1996/4

Brooks, J. H., Syvret, J. N. and Sawers, J. D., 1974. Mineral Resources of the Kilkivan District, Geol. Surv. Qld Rep. 60

Zone MEC2; L; B; copper-lead-zinc-gold; small; volcanogenic

Location : The zone is in the approximate centre of the Esk 100 000 sheet, and is a 'fish-hook' shaped area about 40 kilometres long and up to 15 kilometres wide. It is in Crows Nest, Esk and Gatton Shires, and practically all timbered, including parts of State Forests 528, 564 and 616.

Zone Features : The zone encloses the rocks of the Permian Cressbrook Creek Group, which contains a series of andesitic flows and sediment (Pinecliffe Formation), a rhyolite and sediment formation (Hampton Road Rhyolite), and other sedimentary formations. The Group is equivalent in age and host rock assemblage to the epithermal copper-gold-lead-zinc deposits in the Drake Volcanics of northern NSW (Muggeridge et al., 1993).

There are four clusters of ore deposits within the zone. These comprise a group of six copper deposits (1579, 1580, 1583, 1585, 1589, 1591) in the northwest corner, hosted by Pinecliffe Formation; the four lead-arsenic-silver-gold deposits (1566-1568, 1581) of the Blue Hills group in the northeast corner, in Hampton Road Rhyolite; the central Bunker Hill group of four gold deposits (1569-1572) and one zinc deposit (1594) in Pinecliffe Formation; and copper (1584, 1588), gold (1564) and lead (1593) mineralisation in Pinecliffe Formation in the southwest corner.

Some of the deposits are in structurally controlled veins, related to the intrusion of the Triassic Eskdale Granodiorite; the others are syngenetic with late stage volcanic activity. There has been little production from the deposits, and resources have not been defined.

Probability of Further Deposits : The zone is prospective for large-volume volcanogenic deposits, based on its similarity to the Drake Volcanics and the presence of some deposits of this type. There is a reasonable chance that more or larger resources will be found.

Definition of Zone Boundary : The boundary is the approximate border of the Cressbrook Creek Group, copied from the Ipswich 1 : 250 000 scale geological map.

Accuracy of Zone Boundary B - The area has not been mapped in detail, and the airmagnetic data do not present a clear pattern.

Sources of Information

Muggeridge, G. D., Young, D. I. and Bisset, A. T., 1993. Relinquishment report for EPM 6087 (CR 24285)

Cranfield, L. C., Schwarzbock, H. and Day, R. W., 1976. Geology of the Ipswich and Brisbane 1 : 250 000 sheet Areas, Geol. Surv. Qld Rep. 95

STRUCTURE-CONTROLLED VEIN METALLIFEROUS DEPOSITS

Geological Setting of Type MED Deposits

The structure-controlled vein deposits are defined as those with ore body shapes which are elongate in the direction of the enclosing shear zone or fault line, or along the contact between an intrusive igneous body and the country rock. The principal vein mineral is quartz, often pyritic, which may contain arsenic, copper, lead and zinc minerals. There is a common association of gold with copper, silver with lead and lead with zinc.

The metals occur as carbonate or oxide minerals near-surface, in the zone of weathering. The deposits are generally noted at the surface by green malachite staining, and by an iron-rich reef or gossan if the vein is sulphide-rich at depth. The ore metals occur as sulphides at depth; chalcopyrite, galena and sphalerite are the common copper, lead and zinc minerals in the sulphide zone. There is not usually a zone of enrichment in secondary sulphides at the transition between the weathered and sulphide zones. Some of the structurally controlled deposits do not contain quartz veins, and the metals are present as veins of single or mixed sulphide minerals (massive sulphide veins).

The zone of structural preparation may be minor joints, filled with quartz or sulphide ('gash veins'), or a continuous planar fault line, or a zone of broken and altered rock (a shear zone). Most of the deposits are close to, or within intrusive igneous bodies of Permo-Triassic age, either large bodies of granitoid rock or a series of dykes.

DESCRIPTION OF ZONES OF MINERAL POTENTIAL

Zone MED1; L; A; copper; small; structure-controlled veins

Location : The zone is a rectangular block in Banana Shire, about 14 kilometres long northwesterly by about 7 kilometres wide, in the northwest quadrant of the Biloela 100 000 sheet. It is all timbered, and east of Timber Reserve 170.

Zone Features : The zone encloses six copper-gold deposits (No. 7, 10, 54, 56, 57, 59) hosted by andesitic lavas of the Early Carboniferous Three Moon Conglomerate. There are three types of deposit : structure controlled veins, disseminated copper

sulphides in particular lava flows, and zones of disseminated native copper in lava. The vein and disseminated sulphide deposits are accompanied by extensive alteration zones, marked by the addition of epidote and calcite, and containing high bismuth, gold and silver values. It is assumed that the syngenetic native copper mineralisation has been remobilised by hydrothermal activity associated with the intrusion of the adjacent Permian to Triassic Galloway Plains Tonalite, and deposited as disseminated and vein sulphide deposits (Anon., 1974). There are no defined resources within the zone.

The deep lead gold deposits of the Mount Rainbow field, capped by Tertiary basalt, are within this zone, but are not considered to be of any economic importance and to be of low mineral potential.

Probability of Further Deposits : The zone contains a series of copper deposits of the same origin, within the same formation. There is considered to be a reasonable chance of finding further resources.

Definition of Zone Boundary : The boundary encloses all of the known deposits and the area of Three Moon Conglomerate on the western flank of the Galloway Plains Tonalite, and was traced from the Monto 1 : 250 000 scale geological map.

Accuracy of Zone Boundary : A - Based on detailed geological mapping (in ATP 1255M), and numerous exposures of the copper mineralisation.

Sources of Information

Anon, 1974. Final report for ATP 1255M, to 31.12.1973 (CR 4910).

Zone MED2; L; A; copper-gold; small; structure-controlled veins

Location : The zone is an arcuate shaped area, in Banana and Monto Shires, which straddles the boundary between the Biloela and Scoria 100 000 sheets. The northern two-thirds is timbered, to the west of State Forest 316, and includes a small part of a National Park.

Zone Features : The zone contains three broadly similar styles of copper mineralisation, all hosted by andesite and sediment of the Late Devonian Kroombit Beds, or by a series of post-Permian diorite dykes.

In the northwest part of the zone, the mineralisation (Deposits 9, 11, 20, 30, 49) is associated with narrow zones of propylitic alteration, typified by calcite-epidote-quartz veining along the edges of the diorite dykes (Douch, 1972).

Near the centre of the zone, the mineralisation at the Kroombit/Five Mile (No. 49) and Tea Tree (61) deposits is a copper-gold-silver-zinc type, emplaced with small bodies of magnetite in sediment (Ball. 1906).

In the southwest end, the mineralisation (Deposits 282, 298) is in highly pyritic quartz veins, as a copper-gold-zinc assemblage, with minor magnetite (average about 5%), in a shear zone in propylitically-altered andesite. This section contains the largest known deposit, the Great Blackall (No. 281), which contains two parallel lodes, about 0.5 m wide, in diorite. The lodes are about 50 m apart, and the shear zone is mineralised for about 400 m length (Strickland, 1988); production was a few thousand tonnes of high grade ore. There are no defined resources in the zone.

Probability of Further Deposits : The zone contains many copper deposits in the same formation, associated with a mineralising process related to the placement of the diorite dykes. Only a few exploratory holes have been drilled, all at the Great Blackall deposit (Anon., 1971). There is a strong probability of further resources within the zone.

Definition of Zone Boundary : The boundary was partly drawn from the geological information shown on the Monto 1 : 250 000 scale map, and to include an area of uniform airmagnetic response which encloses the area in which the diorite dykes were emplaced.

Accuracy of Zone Boundary : A - Based on numerous deposits, detailed mapping by exploration companies, and a uniform airmagnetic response.

Sources of Information

Anon, 1971. Diamond drilling programme at Great Blackall mine, CR 4956

Ball. L. C., 1906. Mineral Lease 262, Kroombit, Gladstone district, pp. 98-99 in QGMJ.

Douch, 1972. Final report on ATP 997M (CR 4303).

Strickland, C. D., 1988. Final report on ATP 4567M (CR 18456).

Zone MED3; P; A; copper-gold; small; structure-controlled veins

Location : The zone contains a triangle-shaped area of cleared land in Banana Shire, which extends across the western boundary of the Region and the Scoria 100 000 sheet.

Zone Features : The zone contains nine copper deposits (No. 279, 280, 284, 285, 288, 289, 290, 292, 293) hosted by small granitoid intrusions or in the Early Permian Camboon Andesite, with the gold workings of the Glandore Provisional Mining Field (No. 295) on its southern margin.

The copper deposits occur in 'formation', a zone of altered and crushed country rock, as masses of copper sulphide and as sulphide in small quartz veins. The ore was selectively mined and hand sorted, to provide a direct-shipping product of grade +10% copper, and railed to the Chillagoe smelter for treatment. Production was small, of the order of a few hundred tonnes of ore (Whitcher, 1971).

The gold-copper deposits of the Glandore field are small quartz-pyrite reefs, averaging about 30 cm wide and 25 m long, emplaced in granite (Shepherd, 1932). There are no defined resources within the zone.

Probability of Further Deposits : The zone contains a concentration of copper deposits of the same type, in the same setting. There is a reasonable chance of further deposits.

Definition of Zone Boundary : The zone boundary was traced from the outline of an area of uniform airmagnetic response, which encloses all the known deposits within the Camboon Andesite and on its margins

Accuracy of Zone Boundary : A - Based on many deposits, detailed mapping by exploration companies and airmagnetic data.

Sources of Information

Shepherd, S. R. L., 1932. Notes on the Glandore Goldfield, pp. 385-386 in QGMJ.

Whitcher, I. G., 1971. Final report on ATP 784M (CR 3612)

Zone MED4; P; B; lead-silver; small; structure-controlled veins

Location : The zone is elongate northerly and about 40 kilometres long by about 15 kilometres wide, in the southern half of the Scoria 100 000 sheet. It is within Monto Shire and is all timbered except for a small area near its western edge, and encloses part of State Forest 28.

Zone Features : The zone contains three lead-silver deposits (No. 264, 286, 287) emplaced in the Permo-Triassic Wingfield Adamellite or in Permian sediment near the margin of the Adamellite. The only recorded production from these deposits (Morton, 1927) is 48 t of selected ore of grade 28% lead and 61 oz/t silver from Mount Prospect (No. 286). There are no defined resources in the zone.

Probability of Further Deposits : The Wingfield Adamellite is shown to be the mineralising influence in the formation of three lead deposits of similar type. It is reasonable to expect that further resources could be found by more extensive exploration.

Definition of Zone Boundary : The zone boundary encloses the contact zone of the Wingfield Adamellite on its eastern flank, including outliers of the Adamellite on the northeast corner, and all the known deposits. The eastern boundary is reasonably well-defined, but the western boundary is inferred, and drawn to include the Rawbelle deposit (264).

Accuracy of Zone Boundary B - Based on regional geological mapping data and an inferred position for the western zone boundary.

Sources of Information :

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Morton, C. C., 1927. Mount Prospect silver-lead lode, Cania, pp. 484-485 in QGMJ

Zone MED5; L; A; copper-gold-silver; small; structure-controlled veins

Location : The zone is a roughly square area in Kolan Shire, with a side length of about 8 kilometres, and near the northern edge of the Mount Perry 100 000 sheet. The western half of the zone is timbered, and includes part of State Forest 381.

Zone Features : The zone contains the copper-gold-silver deposits of the Boolboonda Gold Field (Deposits 390, 391, 394, 406, 407, 409, 414, 440, 446, 449, 458, 469, 473). These are generally quartz lodes, 10-15 cm wide, in a shear zone in the Early-Middle Triassic New Moonta Diorite or in the adjacent sediment of the Carboniferous Curtis Island Group. The New Moonta deposit (446) was in the widest shear, averaging about 1.5 m width, but the quartz veins were of the same size as in the shear zones which host the other members of the group, ie 15-45 cm. The quartz lodes contained arsenopyrite, chalcopyrite, gold and silver. The largest production was from New Moonta, which yielded 580 t of copper, about 92 000 oz (2850)of silver and about 3100 oz (96.6 kg) of gold from 7233 t of ore, largely between 1876 and 1911.

Probability of Further Deposits : The zone encloses all of the known deposits, and the body of New Moonta Diorite and its margins. There is a strong probability of further resources; including extensions to known deposits.

Definition of Zone Boundary : The boundary was copied from the formation boundaries on the Maryborough 1 : 250 000 scale geological map, and interpolated for the small portion on the Bundaberg sheet.

Accuracy of Zone Boundary : A - Based on numerous deposits of the same class, and recent regional geological mapping.

Sources of Information :

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone MED6; L; A; copper-gold-molybdenum and copper-lead-zinc; small; structure-controlled veins

Location : The zone is a narrow northeasterly trending band, about 5 kilometres wide and 20 kilometres long, in the northwest corner of the Mount Perry 100 000 sheet. It is in Kolan and Perry shires, and all cleared except for a small timbered area, north of Timber Reserve 157, near its eastern end.

Zone Features : The zone contains a series of copper-gold-molybdenum deposits and copper-lead-zinc deposits (No. 396, 404, 411, 416, 417, 418, 419, 425, 457, 478, 479, 480, 481) emplaced in the Late Triassic Wonbah Granodiorite or in adjacent sediment of the Carboniferous Curtis Island Group. The mineralisation occurs in narrow pyritic quartz veins in a wider zone of shearing and alteration, or as disseminated sulphides within a shear zone.

The Wonbah deposit (481) is an exception, being a near-vertical quartz-calcite pipe in the Granodiorite, with pyrite and copper, lead, molybdenum and zinc sulphides concentrated at the margins of the pipe. The zone also contains two minor quartz-vein gold deposits (383, 406). There are no defined resources within the zone.

Probability of Further Deposits : The zone contains a group of similar deposits, in the same setting. Further exploration should identify further resources.

Definition of Zone Boundary : The boundary encloses all of the Wonbah Granodiorite, and its contact with older sediment on the northwest edge of the Granodiorite. It was largely copied from the Maryborough 1 : 250 000 scale geological map, and inferred in the northwest corner.

Accuracy of Zone Boundary : A - Based on many deposits and recent regional geological mapping

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone MED7; L; A; copper; small; structure-controlled veins

Location : The zone is about 18 kilometres long northerly by about 10 kilometres wide, in the approximate centre of the southern half of the Biggenden 100 000 sheet. It is in Woocoo Shire and nearly all cleared, but has small areas of timber on its edges, which include parts of State Forests 521 and 632.

Zone Features : The zone encloses five deposits (308, 310, 311, 314, 318) which are genetically related to the Triassic Calgoa Diorite. Three of the deposits are highly pyritic quartz veins, up to a metre wide, in shear zones in the diorite. The mineralogy in these veins is simple, with predominant pyrite and lesser quartz, and chalcopryrite containing the gold and silver values.

At the other two deposits in this zone (314, 318) the mineralisation is of skarn type, at sites where the Calgoa Diorite has intruded adjacent Permian limestone. These are narrow (20-50 cm) veins of epidote-garnet skarn, containing copper sulphide with gold and silver credits, and scheelite.

The larger producers were the Knight of Gwynn (308), which yielded 294 t of copper, and the Lug-e-Nor (311), which provided 324 t of copper from 4090 t of ore. There are no defined resources within the zone.

Probability of Further Deposits : The zone contains ore deposits which are genetically related to the Calgoa Diorite. More resources should be found by further exploration.

Definition of Zone Boundary : The boundary was copied from the outline of the Calgoa Diorite on the Maryborough 1 : 250 000 scale geological map.

Accuracy of Zone Boundary : A - Based on adequate mine information, and recent regional geological mapping.

Sources of Information

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Zone MED8; L; A; copper-gold; small; structure-controlled veins

Location : The zone is a circular area in Kilkivan Shire, with a diameter of about 5 kilometres, and on the border of the Biggenden and Goomeri 100 000 sheets. It is all timbered, and includes parts of State Forest 632 and Timber Reserve 26.

Zone Features : The zone encloses five copper-gold deposits (324, 525, 579, 603, 614) hosted by the Mid Triassic Boonara Granodiorite. Each comprises narrow quartz-pyrite-calcite veins in a shear zone. The veins contain minor arsenopyrite, molybdenite and scheelite, in addition to the copper and iron sulphides. The Mount Mudlo deposit (579) also contains minor disseminated blebs of chalcopyrite and flakes of molybdenite in late stage dykes. Mount Mudlo was the major producer, from veins 0.6-2.1 m wide, over a 335 m length of the enclosing shear zone. Yield was 43 t of copper, about 400 oz (12.7 kg) of silver and about 8 oz (0.26 kg) of gold, from 598 t of ore. There are no defined resources within the zone.

Probability of Further Deposits : The zone contains the same style of deposit, in the same setting. Further exploration should locate further resources.

Definition of Zone Boundary : The zone boundary encloses all the deposits, and corresponds to the boundary of the Boonara Granodiorite, as shown on the Maryborough and Gympie 250 000 scale geological maps, amended to fit the zone of uniform airmagnetic response.

Accuracy of Zone Boundary : A - Based on regional geological map data, amended to suit the airmagnetic pattern.

Sources of Information :

Cranfield, L. C. and Garrad, P. D., 1991. Mines and prospects in the Maryborough 1 : 250 000 sheet area, Geol. Surv. Qld Rec. 1991/3

Randall, R. E., Osborne, J. H., Donchak, P. J. T. and Scott, M., 1996. A review of mineral exploration and known mineral occurrences within the Goomeri (9345), Nambour (9444) and Nanango (9344) 1 : 100 000 sheet area, south-east Queensland, Geol. Surv. Qld Rec. 1996/4

Zone MED9; L; A; copper; small; structure-controlled veins

Location : The zone is about 40 kilometres long northerly, and up to 5 kilometres wide, across the centre of the Goomeri 100 000 sheet. It is in Kilkivan Shire, and all timbered except for a small cleared area near its northern end; the timbered area includes parts of State Forests 138, 220 and 639, and all of Timber Reserve 502.

Zone Features : The zone contains 14 copper deposits (532, 542, 562, 564, 569, 577, 578, 598, 599, 613, 659, 662, 663, 666) emplaced in shear zones in the Devonian-Carboniferous Mount Mia Serpentinite or in greenstone of the Mount Clara beds. The deposits are simple quartz-pyrite veins, or occasionally veins of copper sulphide, to 60 cm wide and in shear zones to 3 m wide. Many of the mineralised shear zones are along the contact between the altered host rock and a diorite dyke. The gangue minerals include arsenic, lead and zinc sulphides, and in some cases the copper sulphide contains recoverable gold and silver values. The host serpentinite and greenstone bodies are small remnants, on a basement of older Palaeozoic sediment, and the deposits are of magmatic origin, in a cupola or magma capping setting.

The zone also contains the Shamrock Mine at Black Snake (No. 608), which is a structure-controlled gold vein deposit in feldspar porphyry, and thus not of this class. It yielded a total of about 13 000 oz (403.9 kg) of gold, about 3000 oz (90.1 kg) of silver and +56.6 t of copper from 107 533 t of ore, in several episodes.

The Mount Coora mine (578) was the largest copper mine in this zone, working pyritic quartz veins to 30 cm wide in a shear zone 168 m long and up to 46 m wide; it produced 139 t of copper from about 1000 t of ore. There are no defined resources within the zone.

Probability of Further Deposits : The zone contains many deposits of the same type, in the same setting. Further exploration should identify further resources.

Definition of Zone Boundary : The boundary was drawn so as to enclose all the known deposits, and all of the small areas of serpentinite and greenstone nearby, as shown on the Gympie 1 : 250 000 geological map.

Accuracy of Zone Boundary : A - Based on numerous deposits which identify the mineralised areas.

Sources of Information:

Randall, R. E., Osborne, J. H., Donchak, P. J. T. and Scott, M., 1996. A review of mineral exploration and known mineral occurrences within the Goomeri (9345),

Nambour (9444) and Nanango (9344) 1 : 100 000 sheet area, south-east Queensland, Geol. Surv. Qld Rec. 1996/4

Zone MED10; P; B; copper-gold; small; structure-controlled veins

Location : The zone is elongate northerly, about 40 kilometres long and up to 8 kilometres wide, in the southeast quadrant of the Goomeri 100 000 sheet. It is in Cooloola and Kilkivan Shires and all timbered, including parts of State Forests 467, 546 and 639.

Zone Features : The zone contains five copper-gold deposits (553, 574, 581, 582, 601) in shear zones in the Devonian-Carboniferous Mount Mia Serpentinite. The mineralisation is in pyritic quartz veins, and is a mixture of copper, lead and zinc sulphides, with useful gold and silver values. The quartz veins are narrow, and in shear zones up to 6 m wide and one kilometres long (at deposit 574). several of the deposits are associated with an albite or feldspar porphyry dyke, assumed to be the mineralising intrusive. There are no records of ore production from the deposits, and no defined resources in this zone.

Probability of Further Deposits : The zone is analogous to the more densely mineralised area of copper in basic rocks (Zone MED9) further west. This zone is larger, with fewer exposures of the favourable site for mineralisation at the base of the Mount Mia Serpentinite, and this is considered to be the reason fewer deposits have been found. Intensive exploration, or a technique which will locate sulphide bodies under serpentinite cover, may locate further resources.

Definition of Zone Boundary : The boundary encloses all the main, eastern mass of Mount Mia Serpentinite, and was copied from the Gympie 1 : 250 000 geological map.

Accuracy of Zone Boundary : B - Based on a few deposits and regional geological map data.

Sources of Information:

Randall, R. E., Osborne, J. H., Donchak, P. J. T. and Scott, M., 1996. A review of mineral exploration and known mineral occurrences within the Goomeri (9345), Nambour (9444) and Nanango (9344) 1 : 100 000 sheet area, south-east Queensland, Geol. Surv. Qld Rec. 1996/4

OIL SHALE DEPOSITS

The Region contains the Nagoorin and Lowmead oil shale basins, which have some chance of commercial development. The small areas of oil shale about 5 kilometres northwest of Gin Gin, and in the Brisbane suburb of Strathpine, are considered to be areas of low mineral potential.

Geological Setting

Each of the basins contains Tertiary sediment, including bands of oil shale and low-rank coals. Mining of these is not anticipated for some years, and will largely depend on success with development of the oil production operation using oil shale from the Stuart deposit, near Gladstone.

Sources of Information

Dear, J. F., McKellar, R. G. and Tucker, R. M., 1971. Geology of the Monto 1 : 250 000 sheet Area, Geol. Surv. Qld Rep. 46.

Swarbrick, E., 1975. Oil shale in Queensland, pp. 519-523 in Economic Geology of Australia and Papua New Guinea, Vol. 3 Petroleum, AusIMM Monograph 7

Wilkinson, D. (Ed), 1995. Oil shale, p. 277 in Register of Australian Mining, 1995-96 (Resource Information Unit : Subiaco, WA)

DESCRIPTION OF ZONES OF MINERAL POTENTIAL

Zone OS1; L; A; oil shale; medium to large; sedimentary

Location : The zone is an elongate area, about 40 kilometres long northerly by up to 5 kilometres wide, across the centre of the Calliope 100 000 sheet. It is in Calliope Shire and largely cleared, with small areas of timber cover along the eastern edge and at the south end.

Zone Features : The zone encloses all of the Tertiary Nagoorin Beds, a sequence of freshwater sediment, including beds of carbonaceous (oil) shale and low rank coal (Dear et al., 1971). The area of greatest economic interest is about 9 kilometres long and 2.5 kilometres wide, and contains at least two oil shale horizons, each up to 50 m thick. this part has been estimated to contain a resource of 2.65 billion barrels (424 million cubic metres) of oil (Wilkinson, 1995).

Probability of Further Deposits : The zone contains an inferred resource, and a larger resource or other resource sites may be identified by further exploration.

Definition of Zone Boundary : The boundary was traced from the outline of the Nagoorin Beds on the Monto 1 : 250 000 scale geological map, and validated by comparison with the 1VD airmagnetic image.

Accuracy of Zone Boundary : A - Based on detailed investigations and confirmed by the airmagnetic pattern.

Zone OS2; L; A; oil shale; medium to large; sedimentary

Location :The zone is elliptical and about 24 kilometres long northerly by up to 6 kilometres wide, across the southern edge of the Miriam Vale 100 000 sheet. It is in Miriam Vale Shire, and all timbered.

Zone Features : The zone contains the Tertiary Lowmead Beds, a series of sediment, lignite and oil shale beds less than 200 m thick. There are at least three layers of oil shale, each up to 30 m thick, from which yield is in the range 40-370 litres of oil per tonne of shale. A resource of 740 million barrels (120 million cubic metres) of oil is inferred for this zone (Wilkinson, 1995).

Probability of Further Deposits : The zone contains an inferred resource of oil shale, and further resources may be located by further exploration.

Definition of Zone Boundary : The boundary of the zone was traced from the outline of the Lowmead Beds on the Bundaberg 1 : 250 000 scale geological map, and confirmed by comparison of this shape with the airmagnetic pattern.

Accuracy of Zone Boundary : A - Based on detailed investigations and confirmed by the airmagnetic pattern.

APPENDIX 1 : MINING LEASES IN FORESTED AREAS IN SOUTHEAST QUEENSLAND IN THE 1994-95 YEAR									
(Arranged by 1 : 250 000 Sheet)									
ML No.	Area (ha)	Rent (\$/yr)	Name/Location	ML Owner	Commodities	Employees	Production	Value	Royalty
Monto Sheet									
3664	88	880	Iveragh	Qld Cement & Lime PL	silica sand	4	Confid.	Confid.	Confid.
5652	1.3	20	E. D.	H. B. Clark	Au Cu Pb Zn Ag	nil	nil	nil	nil
5651	8.1	90	Last Chance	H. B. Clark	Au Cu Ag	nil	nil	nil	nil
5631	32.4	812	Mt Kroombit	Carpentaria Gold PL	Au Cu Pb Zn	nil	nil	nil	nil
3635	88	880	Silica No. 1	Qld Cement Ltd	Silica	nil	nil	nil	nil
3626	30	987	Blue Bag	Commercial Minerals Ltd	Au Ag Cu Fe Pb	nil	nil	nil	nil
3633	5.7	60	Lady Inez	Commercial Minerals Ltd	Au Ag Cu Fe Pb	nil	nil	nil	nil
3201, 3202, 3203, 3204, 3205, 3206, 3207, 3208, 3209	556	18 188	Mt Cannindah	MIM Ltd or Carpentaria Gold PL	Au Ag Cu Mo Pb	nil	nil	nil	nil
Bundaberg									
1186, 1196, 1197, 1198, 1199, 1201, 3623, 3624	1342.9	11 323	Rocky Point Group	BHP Titanium Minls PL	Im Rut Zir	nil	nil	nil	nil
1249	66.2	1648	Nike, Kolan dist.	R. Smith	Au Ag	nil	nil	nil	nil
1254	107.5	2657	Dike, do	R. Smith	Au Ag	nil	nil	nil	nil
1182, 1183, 1228, 1229	119.8	3182	Coonarr Creek	Sunstate Sands PL	foundry sand	nil	nil	nil	nil

ML No.	Area (ha)	Rent (\$/yr)	Name/Location	Title Owner	Commodities	Employees	Production	Value	Royalty
Bundaberg	Sheet	(cont'd)							
1178	80.9	1458	Coonarr Creek	Eastern Smelting (Q) PL	foundry sand	2	Confid.	Confid.	Confid.
1211	5.1	90	Coonarr Creek	Bundabg Metal Indust PL	foundry sand	1	Confid.	Confid.	Confid.
1180	12	299	Coonarr Creek	Toowoomba Foundry PL	foundry sand	3	Confid.	Confid.	Confid.
1179	9.1	230	Coonarr Creek	Smiths Premix PL	foundry sand	nil	nil	nil	nil
Chinchilla	Sheet								
6602	2.5	69	Brigooda	L. W. Koy	garn, sapph, zirc	2	rough garnet	Confid.	Confid.
Maryborough	Sheet								
3738	72	1404	Colo, Marodian	B. J. Hallt	Au Ag Cu Pb Zn	nil	nil	nil	nil
1204, 1206, 1210, 1231, 1231, 1259	661.6	20 309	Mount Rawdon	Placer Exploration PL or Resolute Samantha Ltd	Au Ag Bi Co Mo	nil	nil	nil	nil
1248	3.8	98	Marule Lime	K. D. Scarlett	limestone	5	Confid.	Confid.	Confid.
1195, 1207	10.3	257	Defiance	E. J. Vella	Au Ag Cu Pb	nil	nil	nil	nil
7224	46.7	1546	Bob Note	Union Mining NL	Au Ag	nil	nil	nil	nil
3686, 3687, 3689, 3690, 3700	230.7	1654	Ban Ban Zinc	Union Mining PL	Cu Pb Zn	nil	nil	nil	nil

ML No.	Area (ha)	Rent (\$/yr)	Name/Location	Title Owner	Commodities	Employees	Production	Value	Royalty
Maryborough	Sheet	(cont'd)							
3682, 3684, 3685, 3688, 3692, 3693, 6604, 50039	142.7	4477	Mount Biggenden	Commercial Minerals Ltd	magnetite Bi Co	23	Confid.	Confid.	Confid.
50098	107.5	3553	Yorkeys Extd	K. A. Reinikka	Au Ag Sb	nil	nil	nil	nil
3759	7.7	184	Malachi	K. A. Reinikka	Au Ag Cu Pb Zn	nil	nil	nil	nil
5373, 5374	263.2	2754	Burgowan	Burgowan Collieries PL	coal	19	Confid.	Confid.	Confid.
5397	2.3	58	Cinderella	Pylewell Holdings	Au Ag Cu Pb Zn	nil	nil	nil	nil
Gympie	Sheet								
5673, 6611	11	216	Moffatdale	South Burnett Lime PL	limestone	40	Confid.	Confid.	Confid.
6674	4267	42 670	'Meandu', Tarong	Pacific Coal PL	coal	270	Confid.	Confid.	Confid.
3731	14	273	Kilkivan district	T. G. Henderson	Au Ag	2	nil	nil	nil
50034	4	132	Kilkivan district	J. E. Parsons	Au	2	Tourist Mine	nil	nil
50069, 50084	47.3	1612	Curra	Tamaree Lime PL	limestone	9	nil	nil	nil
3739	23.6	552	at Glastonbury	J. M. S. Kay	Au	nil	nil	nil	nil
3699	16.3	391	at Glastonbury	J. W. Cox	Au	nil	nil	nil	nil
3732	50	1230	Kabunga	J. W. Cox	Au Ag Cu Bi Pb	nil	nil	nil	nil
6610	8	191	Meandu Creek	P C P Douglass PL	bentonite	8	Confid.	Confid.	Confid.

ML No.	Area (ha)	Rent (\$/yr)	Name/Location	ML Owner	Commodities	Employees	Production	Value	Royalty
Gympie	Sheet	(cont'd)							
3678, 3741, 3747, 3748, 3749, 3752, 3753, 3755	107.9	2606	Shamrock (Black Snake)	Waraluck Mining PL	Au Ag As Cu Pb	20	Confid.	Confid.	Confid.
50059, 50099	195.7	6448	Manumbar	CRA Exp/Cornwall Res.	Au Ag Cu	11	Confid.	Confid.	Confid.
6622	17.3	414	Golden Spur	Waraluck Mining PL	Au Ag Co Cu Mo	nil	nil	nil	nil
6616	1.6	66	German Gully	Mt Gunyan Min & Exp	Au	nil	nil	nil	nil
6623	38	935	Three Star 1	Claybyrne PL	Au Ag Cu Pb Pt	nil	nil	nil	nil
7127	8.3	296	Thunder Egg Farm	T. K. Kensell	Au, amethyst	nil	nil	nil	nil
6617	4	123	NW of Monsildale	R. J. Crawford	Au	nil	nil	nil	nil
6655	1.6	20	Hell Hole Creek	J. S. Deane	Au	2	Confid.	Confid.	Confid.
50092	17.6	592	Golden Plover 2	Earldale PL	Au Ag Pb Zn	nil	nil	nil	nil
3769	46.3	1156	S of Kenilworth	S. R. Bauld	Au Ag Ni Pb Zn	nil	nil	nil	nil
3669, 3770, 50081	90.4	2651	Mt Mudlo	G. A. Krenske	Ag Cu Mo W	nil	nil	nil	nil

ML No.	Area (ha)	Rent (\$/yr)	Name/Location	Title Owner	Commodities	Employees	Production	Value	Royalty
Ipswich	Sheet								
5969, 5970, 5971, 5972	9.6	180	Alice Ck, nr Gatton	R. Endean	Au	nil	nil	nil	nil
5954, 5955, 5956, 5957	11.6	264	Mount Sylvia mine	G. D. Kafoa	diatomite	4	nil	nil	nil
4589	231.1	4524	Swanbank area	New Hope Collieries PL	coal				
4595	251.4	2520		do	do				
4658	62.5	630	New Hope No. 5	do	do				
4571	244.9	4410		New Haenke Coal PL	do	nil	nil	nil	nil
4603	125	2656		New Hope Collieries PL	do				
4644	7.3	263	Bluff Hope	do	do				
Brisbane	Sheet								
1103, 1105, 1108, 1109, 1112, 1113, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1129, 1130, 1140, 1153, 1159, 1160, 1162, 1163, 1164, 1172, 1174, 1175	11 866.8	210 042	Nth Stradbroke Is	Stradbroke Rutile PL	Rut Zir Im Mz	154	Confid.	Confid.	Confid.
1107	7.9	120	Nth Stradbroke Is	James Hardie & Co PL	silica sand	nil	nil	nil	nil

ML No.	Area (ha)	Rent (\$/yr)	Name/Location	Title Owner	Commodities	Employees	Production	Value	Royalty
Brisbane	Sheet	(cont'd)							
1124	247.9	5704	Cooroonpah	ACI Operations PL	glass sand	13	Confid.	Confid.	Confid.
1132	485.6	11 956		ACI Operations PL	glass sand	nil	nil	nil	nil
1126	99.4	2300	Kounpee Swamp	Moreton Tug Barge Co	silica sand	nil	nil	nil	nil
1161	30.5	310	Talls Lease	A. S. G. Tall	Ilm Rut Mz Si Zir	nil	nil	nil	nil
5914	3.7	98	Mt Tamborine	Fretwood PL	chert	nil	nil	nil	nil
50067	9.8	329	Bribie Is	Toowoomba Foundry PL	foundry sand	3	Confid.	Confid.	Confid.
50064, 50088	147.5	4869	Beachmere	Bribie Ind. Sands	foundry sand	3	Confid.	Confid.	Confid.
Tweed	Heads	Sheet							
5915	77	770	Numinbah Mine	Aust. Perlite PL	perlite	3	4088 t perlite	241 908	1022
50025	12	395	Perlite One	Menzies Resources PL	perlite	nil	nil	nil	nil
Tot : 147 MLs	23 005	394 081				593		190 612 082	5 683 296

APPENDIX 2 : EXPLORATION TITLES IN FORESTED AREAS IN SOUTHEAST QUEENSLAND								
(At February, 1996)								
								BERK2.EPM
Forest	Area of	Number of	Area of	Title	Annual	Expenditure	Title Owner	Remarks
Section	Section	Exploration			Rent (\$)	Commitment		
No.	(sq. km)	Title	(sub-blocks)	(sq. km)	(Pro-rata)	(\$, Pro-rata)		
MONTO SHEET								
	5800	EPM 10575	15/18	47	1218	20 800	J. E. Kingsley	
		EPM 8372	1	3	81	30 000	H. B. Clark	
		EPM 10716	6/29.	19	487	16 600	Queensland Metals Corpn Ltd	
		EPM 9137	10	32	812	150 000	N. F. Stuart	
		EPM 10351	36	112	2925	50 000	Barkly Minerals NL	
		EPM 9207	41/75.	128	2310	82 000	Barkly Minerals NL	
		EPM 9778	38	118	3040	65 000	Coffee Gold NL	
		EPM 10534	5	16	425	40 000	Barkly Minerals NL	
		EPM 7721	4/27.	12	340	5 900	Southern Pacific Petroleum NL	
		EPM 10162	4/12.	12	325	36 700	CRA Exploration PL	
		EPM 2268	5/12.	16	425	12 500	Central Pacific Minerals NL	Same area as MDL 178
		EPM 10880	25	78	2031	30 000	Gold Exploration NL	
		EPM 9747	50	156	4062	50 000	CRA Exploration PL	
		EPM 9935	94	293	7999	80 000	North Mining Ltd	
		EPM 9504	4	12	325	40 000	J. E. Kenny	
		EPM 9008	5	16	406	20 000	Carpentaria Gold PL	
		EPM 10820	68/115.	212	5525	59 100	North Mining Ltd	
		EPM 9752	10/50.	31	851	4 000	L. G. Johnson	
		EPM 9006	21	65	1706	100 000	CRA Exploration PL	
		EPM 9007	23	72	1869	100 000	CRA Exploration PL	
		EPM 10262	28/82.	87	2275	6 800	Monto Minerals NL	
		EPM 9100	27/81.	84	2194	66 700	Monto Resources PL	
		EPM 9412	4	12	325	25 000	Monto Resources PL	
		EPM 9977	2/7.	6	170	14 300	Industrial Minerals (Aust.) Ops PL	
		EPM 7164	5/26.	16	406	4 800	RZM PL	

Forest Section No.	Area of Section (sq. km)	Number of Exploration Title	Area of Title		Annual Rent (\$) (Pro-rata)	Expenditure Commitment (\$, Pro-rata)	Title Owner	Remarks
			(sub-blocks)	(sq. km)				
MONTO	SHEET	(cont'd)						
		EPC 188	4/58.	12	325	12 400	Shell Oil Co.	
		MDL 30		0.04	125		Plutonic Operations Ltd	Au Cu Pb Zn Ag
		MDL 31		0.61	958		Plutonic Operations Ltd	
		MDL 32		0.19	298		Plutonic Operations Ltd	
		MDL 33		0.5	785		Plutonic Operations Ltd	
		MDL 128		1.36	2151		Central Pacific Minerals NL	Au Cu Ag
		MDL 130		1.32	1729		A. T. Prowse	Au Cu Pb Zn Ag
		MDL 169		4.31	(appn)		Monto Resources PL	Au, Ilm, Diamond
		MDL 178		28.63	(appn)		Southern Pacific Petroleum NL	oil shale
		MDL 207		0.81	(appn)		H. B. Clark	Au Cu Pb Zn As Ag
MONTO								
TOTAL	5800	25 EPM		1655	42 532	1 110 200		
		1 EPC		12	325	12 400		
		9 MDL, MDLA		37.77	6046			
	5800				51 803	1 122 600		

[illegible]

[illegible]

Forest Section No.	Area of Section (sq. km)	Number of Exploration Title	Area of (sub-blocks)	Title (sq. km)	Annual Rent (\$) (Pro-rata)	Expenditure Commitment (\$, Pro-rata)	Title Owner	Remarks
MUNDUBBERA & MARYBOROUGH SHEETS (cont'd)								
5	450	EPM 10072	37/96	114	3006	30 800	North Mining Ltd	
		EPM 9652	5/33.	15	406	30 300	North Mining Ltd	
		EPM 9996	30/66.	93	2437	27 300	Kowloon Equities PL	
		EPM 9759	27/145.	83	2298	18 600	Cornwall Resource Corp. NL	
		EPM 5737	4	12	340	255 000	Combined Mining & Milling NL	
6	460	nil						
MU + MY								
TOTAL	8355	23 EPM		1819	48 515	1 176 400		
		1 MDL		0.02	47			
CHINCHILLA SHEET								
1	138	EPM 10192	32/53.	98	2600	24 200	BHP Minerals PL	
		EPM 10048	4	12	340	25 000	Aust. Kimberley Diamonds NL	
2	377							
3	37							
CHINCH								
TOTAL	592	2 EPM		110	2940	49 200		

Forest Section No.	Area of Section (sq. km)	Number of Exploration Title	Area of (sub-blocks)	Title (sq. km)	Annual Rent (\$) (Pro-rata)	Expenditure Commitment (\$, Pro-rata)	Title Owner	Remarks
GYMPIE SHEET								
1	442	EPM 6467	2/19.	6	163	9 100	Scanford PL	
2	267							
3	6217	EPM 9996	39/66.	119	3168	35 400	Kowloon Equities PL	
		EPM 9759	71/145.	218	6042	49 000	Cornwall Resource Corp. NL	
		EPM 7072	2/4.	6	162	60 000	Three Star Mining NL	
		EPM 6939	4	12	325	32 000	Three Star Mining NL	
		EPM 10894	32/50.	98	2600	38 400	Strike Exploration PL	
		EPM 10274	55	169	4469	80 000	Ealesworth PL	
		EPM 5187	8	25	681	112 000	CRA Exploration PL	
		EPM 10844	4	12	325	150 000	Gympie Eldorado GM PL	
		EPM 6031	35/100.	107	2844	87 500	Gympie Eldorado GM PL	
		EPM 10578	69/99.	212	5606	104 500	Gympie Eldorado GM PL	
		EPM 10135	29/69.	89	2356	33 600	Three Star Mining NL	
		EPM 10142	47	144	3819	100 000	Cynate PL	
		EPM 9978	90/96.	276	7659	70 300	Cornwall Resource Corp. NL	
		EPM 8289	1	3	871	10 000	E. L. Franz	
		EPM 7682	15/67.	69	1219	24 600	Three Star Mining NL	
4	340	EPM 10192	5/53.	15	406	3 800	Aust. Kimberley Diamonds NL	
		EPM 10049	2/4.	6	170	25 000	BHP Minerals PL	
5	34							
6	83							
7	518							

<i>Forest</i>	<i>Area of</i>	<i>Number of</i>	<i>Area of</i>	<i>Title</i>	<i>Annual</i>	<i>Expenditure</i>	<i>Title Owner</i>	<i>Remarks</i>
<i>Section</i>	<i>Section</i>	<i>Exploration</i>			<i>Rent (\$)</i>	<i>Commitment</i>		
<i>No.</i>	<i>(sq. km)</i>	<i>Title</i>	<i>(sub-blocks)</i>	<i>(sq. km)</i>	<i>(Pro-rata)</i>	<i>(\$, Pro-rata)</i>		
GYMPIE SHEET (cont'd)								
8	113							
9	12	EPM 10943	2/4.	6	170	10 000	Papillon Jewellery PL	
10	9							
11	294	EPC 235	7/32.	21	569	4 400	Pacific Coal PL	
12	310							
13	58							
14	55							
15	12							
16	71							
GYMPIE								
TOTAL	8760	19 EPM		1613	43 624	1 039 600		
		1 EPC		21	569	4 400		
					44 193	1 044 000		

<i>Forest Section No.</i>	<i>Area of Section (sq. km)</i>	<i>Number of Exploration Title</i>	<i>Area of Title</i>		<i>Annual Rent (\$) (Pro-rata)</i>	<i>Expenditure Commitment (\$, Pro-rata)</i>	<i>Title Owner</i>	<i>Remarks</i>
			<i>(sub-blocks)</i>	<i>(sq. km)</i>				
IPSWICH SHEET								
1	3129	EPC 424	3/85.	9	244	3 500	Idemitsu Qld Coal PL	coal
2	122							
3	970							
4	15							
5	61							
6	487	MDL 148		16	8544		New Hope Collieries PL	Spring Mountain', coal
7	21							
IPSW								
TOTAL	4805	1 EPC		9	244	3500		
		1 MDL		16	8544			
					8788	3500		
BRISBANE SHEET								
1	52							North Stradbroke Is
2	350							
3	313							
BRIS								
TOTAL	715							

Forest Section No.	Area of Section (sq. km)	Number of Exploration Title	Area of (sub-blocks)	Title (sq. km)	Annual Rent (\$) (Pro-rata)	Expenditure Commitment (\$, Pro-rata)	Title Owner	Remarks
WARWICK SHEET								
1	1248							
2	12							
3	12							
4	112							
5	12							
6	21							
TOTAL	1417							
TWEED HEADS SHEET								
TOTAL	271							
SUMMARY								
Sheet Name	Area of Forest	Number of EPMs	Total EPM Area	Number of EPCs	Total EPC Area	No. of MDLs MDLAs & Area	Total Rent, EPM, EPC, MDL & MDLA	Expenditure Commitment for EPMs & EPCs
MONTO	5800	25	1655	1	12	9, 37.77	51 803	1 122 600
B'BERG	4300	10	1035			3, 94.29	28 704	752 600
MU + MA	8355	23	1819			1. 0.02	48 562	1 176 400
CHINCH.	592	2	110				2 940	49 200
GYMPIE	8760	19	1613	1	21		44 193	1 044 000
IPSWC	4805			1	9	1. 16	8 788	3 500
BRIS.	715							
W'WCK	1417							
TW HDS	271							
TOTAL	35 015	79	6232	3	42	14, 148.08	184 990	4 148 300

APPENDIX 3 : MINERAL OCCURRENCE DATABASE FOR THE SEQ BIOGEOGRAPHIC REGION										(berk9.xls)
No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1	BILOELA	Argoon mine (CR 26133)	Cu			257700	7338700	andesite of EP Youlambie Cgt; intruded	P-TR	shear
2	BILOELA	Day Dawn mine	Au	Ag	Py	263600	7329000	Mount Gerard Complex		
3	BILOELA	E. D. prospect; ML 5652 (CR 26133)	Au	Cu	Pb	Zn	258400	7338000		P-TR Q stkwk
4	BILOELA	Au-Ag-Cu-Zn-As prospect	Au	Ag	Cu	Zn	288300	7311300		
5	BILOELA	Back Ck alluvial workings	Au				263500	7329000	Altered biotite granodiorite	
6	BILOELA	Briggs prospect (GSQ Publ. 378)	Cu	Mo			271100	7342100		P PO
7	BILOELA	Collards Creek prospect	Cu	Au			264600	7319700		
8	BILOELA	Crow Creek workings	Au				295600	7315100		
9	BILOELA	Copper prospect	Cu				275500	7298200		
10	BILOELA	Copper prospect	Cu				269400	7314500		
11	BILOELA	Copper prospect	Cu				277000	7301700	Diorite	
12	BILOELA	Dan Dan No. 1 (CR 11811)	Au	Ag			293900	7313100	Diorite	QV
13	BILOELA	Dan Dan No. 2 (CR 11811)	Au	Ag			294200	7313100		QV
14	BILOELA	Don Au	Au				258800	7328400		
15	BILOELA	Duffer's Ridge Au prospect	Au				289500	7309600		
16	BILOELA	Elude Cu prospect	Cu				265600	7332000		
17	BILOELA	Fig Tree Provisional Mining Field	Au				268200	7339700		
18	BILOELA	Griffiths Hill (Benjavi; Comedy King; Atlanta; Pi	Au	Zn	As	Ag	289600	7312300	adamellite of Mt Seaview Complex	P-TR QV
19	BILOELA	Jim's Reef Au prospect	Au	Ag	Te		263800	7343100		
20	BILOELA	Karita Cu prospect	Cu				274700	7299400		
21	BILOELA	Kelly's Gully alluvial workings	Au				260400	7312800		
22	BILOELA	Kroombit limestone; deposit A	Ls				272200	7296200		
23	BILOELA	Kroombit limestone; deposit B	Ls				275600	7290500		
24	BILOELA	Kroombit limestone; deposit C	Ls				277300	7303600		
25	BILOELA	Kroombit limestone; deposit D	Ls				277500	7292000		
26	BILOELA	Kroombit limestone deposit (Cave Mtn)	Ls				277700	7295900		
27	BILOELA	Kroombit limestone; deposit E	Ls				279900	7302400		
28	BILOELA	Kroombit limestone; deposit F	Ls				280800	7293300		
29	BILOELA	Kroombit bauxite	Bx				275200	7288900		
30	BILOELA	Kroombit West prospect	Cu				275400	7294600		
31	BILOELA	Last Chance mine; ML5651 & MDL 207	Au				258600	7328100		

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
32	BILOELA	MF 250 (Krombit) Cu prospect	Cu			272700	7296800			
33	BILOELA	Malakoff workings (CR 20515)	Au			279300	7319000			Q-calc V
34	BILOELA	Mannersley prospect (GSQ Publ. 378)	Cu			279600	7340300	Altered Permian quartz diorite	P-TR	PO
35	BILOELA	Maxwelton G F (Kellys workings)	Au			281700	7323100	andesite (QGMJ; 1916; 261-263)		QV
36	BILOELA	Maxwelton G F (Caledonian)	Au			282300	7323000	andesite		QV
37	BILOELA	Maxwelton G F (Madam Besant)	Au			282300	7322800	andesite		QV
38	BILOELA	Maxwelton G F (Blacks)	Au			281700	7322200	andesite		QV
39	BILOELA	Maxwelton G F (Rassmussens)	Au			282200	7322300	andesite		QV
40	BILOELA	Maxwelton G F (Nipple Dick)	Au			283800	7322200	andesite		QV
41	BILOELA	Maxwelton G F (Beyntons)	Au			281400	7321900	andesite		QV
42	BILOELA	Maxwelton G F (Mt Coker)	Au			281700	7321800	andesite		QV
43	BILOELA	Maxwelton G F (Mt Alice)	Au			282100	7321700	andesite		QV
44	BILOELA	Maxwelton G F (Golden Crown)	Au			281400	7320900	andesite		QV
45	BILOELA	Mt Alma Cu prospect	Cu			285900	7339000			SKARN
46	BILOELA	Mt Grim Au prospect	Au			277300	7340800			SKARN
47	BILOELA	Mt Grim Fe prospect	Fe	Cu	Au	278900	7340700			SKARN
48	BILOELA	Mt Grim Ist deposit	Ls			278400	7340800			
49	BILOELA	Mt Kroombit (5 mile) Cu prospect; ML 5631	Cu	Au	Zn Ag	282500	7290300			
50	BILOELA	Mt Rainbow (Camerons Lookout) deep lead	Au			271200	7323400	Under Miocene basalt cover (GSQ Publ. T		DL
51	BILOELA	Mt Rainbow (Slaughteryard Hill) deep lead	Au			270700	7322800	Under Miocene basalt cover (GSQ Publ. T		DL
52	BILOELA	Mt Rainbow South Au workings	Au			271000	7321400			
53	BILOELA	Mt Rainbow (Specimen Hill) workings	Au			271300	7321900			Q-calc V
54	BILOELA	Mt Rainbow copper mine	Cu			270600	7320800			
55	MT PERR	Mt Seaview prospect (GSQ Publ. 378)	Cu			290600	7328000	Altered adamellite	P-TR	PO
56	BILOELA	Mount Fane copper prospect	Cu			270100	7316100			
57	BILOELA	Mt Walturn Cu prospect	Cu	Mt		267900	7315800			
58	BILOELA	Nipple Dick Au (Maxwelton GF)	Au			283300	7322400			
59	BILOELA	Rainbow Creek prospect	Cu			269000	7319900			
60	BILOELA	Specimen Hill South prospect (CR 20513)	Au			272300	7321000			Q-calc V
61	BILOELA	Tea Tree prospect	Cu	Zn		280100	7296000			
62	BUNDAB	Littabella Creek coal outcrop	Cb			409500	7270300	Burrum CM	K	Synsed
63	BUNDAB	Coastal silica sands	Sf			426000	7266000	Quaternary alluvium; Qa	Q	Synsed

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code	
64	BUNDAB	Coastal silica sands	Sf			427400	7261700	Quaternary alluvium; Qa	Q	Synsed	
65	BUNDAB	Coastal silica sands	Sf			427900	7264500	Quaternary alluvium; Qa	Q	Synsed	
66	BUNDAB	Coastal silica sands	Sf			430400	7262200	Quaternary alluvium; Qa	Q	Synsed	
67	BUNDAB	Coastal silica sands	Sf			430400	7262800	Quaternary alluvium; Qa	Q	Synsed	
68	BUNDAB	Coastal silica sands	Sf			430900	7258200	Quaternary alluvium; Qa	Q	Synsed	
69	BUNDAB	Coastal silica sands	Sf			434000	7261800	Quaternary alluvium; Qa	Q	Synsed	
70	BUNDAB	Coastal silica sands	Sf			435000	7262300	Quaternary alluvium; Qa	Q	Synsed	
71	BUNDAB	Coastal silica sands	Sf			436000	7261600	Quaternary alluvium; Qa	Q	Synsed	
72	BUNDAB	Branyan coal; borehole BR1; CR9395	Cb			421400	7249600	Burrum CM	K	Synsed	
73	BUNDAB	Branyan coal; borehole BR2A; CR9395	Cb			422000	7247200	Burrum CM	K	Synsed	
74	BUNDAB	Branyan coal; borehole BR3; CR9395	Cb			421900	7245300	Burrum CM	K	Synsed	
75	BUNDAB	Branyan coal; borehole BR4; CR9395	Cb			422300	7244200	Burrum CM	K	Synsed	
76	BUNDAB	Bingera coal; borehole BR14; CR9395	Cb			421500	7239600	Burrum CM	K	Synsed	
77	BUNDAB	Bingera coal; borehole BR15; CR9395	Cb			422300	7239300	Burrum CM	K	Synsed	
78	BUNDAB	Bingera coal; borehole BR16; CR9395	Cb			422600	7238600	Burrum CM	K	Synsed	
79	BUNDAB	Bingera coal; borehole BR17; CR9395	Cb			423300	7238600	Burrum CM	K	Synsed	
80	BUNDAB	Bingera coal outcrop (PD)	Cb			417500	7241300	Burrum CM	K	Synsed	
81	BUNDAB	Coonarr Creek sands; ML1183	Sf			448100	7238000	Quaternary coastal dune sand; Qd	Q	Synsed	
82	BUNDAB	Snake Creek coal outcrop	Cb			407800	7237400	Burrum CM	K	Synsed	
83	BUNDAB	Coonarr Creek sands; ML1182	Sf			448200	7237300	Quaternary coastal dune sand; Qd	Q	Synsed	
84	BUNDAB	Geramanbulgan Creek coal outcrop	Cb			407800	7237300	Burrum CM	K	Synsed	
85	BUNDAB	Pine Creek coal outcrop	Cb			413800	7237000	Burrum CM	K	Synsed	
86	BUNDAB	Burnett R. - Pine Creek junction coal o/c	Cb			415000	7236600	Burrum CM	K	Synsed	
87	BUNDAB	Coonarr Creek sands; ML1211	Sf			448100	7236500	Quaternary coastal dune sand; Qd	Q	Synsed	
88	BUNDAB	Coonarr Creek sands; ML1180	Sf			448000	7236200		Q	Synsed	
89	BUNDAB	Coonarr Creek sands; ML1179	Sf			447900	7235900	Quaternary coastal dune sand; Qd	Q	Synsed	
90	BUNDAB	Coonarr Creek sands; ML1178 & MDL 145	Im	R	Zr	448500	7235300	Quaternary coastal dune sand; Qd	Q	Synsed	
91	CALLIOP	Six Mile Creek workings	Au			332500	7301200				
92	CALLIOP	Ajax (Diglum) workings	Au			309600	7315900				
93	CALLIOP	Bompa/Sugarbag Ck N mine (CR 21657)	Au	Ag	Pb	Zn	332100	7291200	andesite & seds of Calliope Beds; D		QV
94	CALLIOP	Bompa/Sugarbag Ck W mine (CR 21657)	Au	Ag	Pb	Zn	331400	7290800	andesite & seds of Calliope Beds; D		QV
95	CALLIOP	Bompa /Sugarbag Ck E mine (CR 21657)	Au	Ag	Pb	Zn	332100	7290800	andesite & seds of Calliope Beds; D		QV

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products	GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
96	CALLIOP	Bompa M F; Jacobs Garden mine (CR12645)	Au		340400	7291400	shear hosted in Castletower Granite; str 270		QV
97	CALLIOP	Bompa M F; Jcbs Gdn Extd mine (CR12645)	Au		340800	7291200	shear hosted in Castletower Granite; str 300		QV
98	CALLIOP	Bompa M F; Mt Rand workings (CR 12645)	Au		338400	7292200			
99	CALLIOP	Booreeco Creek prospect	Cu		303000	7308400			
100	CALLIOP	Boyne River iron deposits	Fe		323600	7323600			
101	CALLIOP	Boyne River iron deposits	Fe		324900	7322200			
102	CALLIOP	Boyne R. limestone deposits	Ls		309200	7317500	Calliope Beds	E-M D	Synsed
103	CALLIOP	Boyne R. limestone deposits	Ls		321000	7332600			
104	CALLIOP	Boyne R. limestone deposits	Ls		321200	7333500			
105	CALLIOP	Boyne R. limestone deposits	Ls		321300	7332900			
106	CALLIOP	Boyne R. limestone deposits	Ls		321400	7330700			
107	CALLIOP	Boyne R. limestone deposits	Ls		321600	7332200			
108	CALLIOP	Boyne R. limestone deposits	Ls		321900	7330400			
109	CALLIOP	Boyne R. limestone deposits	Ls		322200	7326400			
110	CALLIOP	Boyne R. limestone deposits	Ls		322700	7323300			
111	CALLIOP	Boyne R. limestone deposits	Ls		323200	7326100			
112	CALLIOP	Boyne R. limestone deposits	Ls		323200	7327500			
113	CALLIOP	Boyne R. limestone deposits	Ls		323400	7323100			
114	CALLIOP	Boyne R. limestone deposits	Ls		323600	7329800			
115	CALLIOP	Boyne R. limestone deposits	Ls		299300	7342300			
116	CALLIOP	Boyne R. limestone deposits	Ls		321400	7336500			
117	CALLIOP	Boyne R. limestone deposits	Ls		321900	7335900			
118	CALLIOP	Boyne R. limestone deposits	Ls		323200	7334200			
119	CALLIOP	Boyne R. limestone deposits	Ls		323600	7334700			
120	CALLIOP	Boyne R. limestone deposits	Ls		333300	7291400			
121	CALLIOP	Boyne R. limestone deposits	Ls		333400	7290800			
122	CALLIOP	Boyne R. Ist; Taragoola quarries; MLs 3594-36	Ls		320500	7333000			
123	CALLIOP	Calliope & Boyne Mining Fld; Alexandra reef	Au		320900	7336900			
124	CALLIOP	C & B M F; Charters reef	Au		326000	7333400			
125	CALLIOP	C & B M F; Connemarra and John Bull reefs	Au		321200	7338600			
126	CALLIOP	C & B M F; Mitchells reef	Au		322100	7336700			
127	CALLIOP	C & B M F; The Companys reef	Au		317000	7343700			

Sheet1

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
128	CALLIOP	C & B M F; Tuckers Gully reefs	Au			326100	7341300			
129	CALLIOP	C & B M F; Woody reef	Au			322600	7335900			
130	CALLIOP	C & B M F; Benaraby alluvial workings	Au			325200	7340900			
131	CALLIOP	C & B M F; Oaky Ck alluvials; MLA 775; 776	Au			318700	7339800			
132	CALLIOP	C & B M F; 10 Mens Gully alluvials; MLA 777	Au			320600	7339500			
133	CALLIOP	C & B M F; Gordons Gully alluvials; MLA 779	Au			319900	7338200			
134	CALLIOP	C & B M F; Charters alluvials	Au			325600	7333100			
135	CALLIOP	C & B M F; Dog Leg Gully alluvials	Au			319100	7341600			
136	CALLIOP	C & B M F; New Zealand Gully alluvials	Au			322700	7334800			
137	CALLIOP	C & B M F; Nuggety Gully alluvials	Au			316900	7342800			
138	CALLIOP	C & B M F; Tucker Gully prospect	Mo	Cu	Au	325400	7340300			
139	CALLIOP	Calliope manganese deposits	Mn			320200	7345000			
140	CALLIOP	Calliope porphyry Cu (GSQ Publ. 378)	Cu	Mo		325500	7341000	Bio gd intruding Shoalwater & Wandilla	P-TR	PO
141	CALLIOP	Diglum copper prospect	Cu			309700	7313800			
142	CALLIOP	Netherleigh copper prospect	Cu			325500	7321000			
143	CALLIOP	Degalgil Creek workings	Au			321200	7300200			
144	CALLIOP	Diglum Ck wollastonite; garnet prospect	Wo	Gs		308400	7316200			
145	CALLIOP	Diglum iron prospect	Fe			309900	7314100			
146	CALLIOP	Diglum limestone deposit	Ls			310800	7314600			
147	CALLIOP	Johnsons workings (CR 21657)	Au			320300	7294600	limy seds; Caswell Ck Gp; intr by Glass	P-TR	skarn
148	CALLIOP	Lady Griffith workings (CR 21657)	Au	Cu		311500	7289600	Caswell Creek Group		
149	CALLIOP	Lightning ridge prospect (CR11811)	Au			297300	7315500			skarn
150	CALLIOP	Littlemore scheelite mine (CR 3959)	W	Cu		325700	7292100			
151	CALLIOP	Norton G F; Advance reef; GSQ Pub. 208	Au	Ag	Cu Pb	335000	7310100	Cpd veins in Norton Tonalite (M. Vale)	P-TR	QSV
152	CALLIOP	Norton G F; Bald Hill reef; Pub. 208	Au	Ag	Cu Pb	335100	7309700	Cpd veins in Norton Tonalite (M. Vale)	P-TR	QSV
153	CALLIOP	Norton G F; Galena reef; Pub. 208	Au	Ag	Cu Pb	333900	7309000	Cpd veins in Norton Tonalite (M. Vale)	P-TR	QSV
154	CALLIOP	Norton G F; Frampton reef; now known as Nor	Au	Ag	Cu Pb	335000	7308800		P-TR	QSV
155	CALLIOP	Norton G F; New Constitution reef; Pub. 208	Au	Ag	Cu Pb	334300	7308400	Cpd veins in Norton Tonalite (M. Vale)	P-TR	QSV
156	CALLIOP	Norton G F; Sulphide/Smarts reef; Pub. 208	Au	Ag	Cu Pb	335400	7308200	Cpd veins in Norton Tonalite (M. Vale)	P-TR	QSV
157	CALLIOP	Mt Forrest workings (CR 21657)	Au			313700	7290800	Caswell Creek Group		QV
158	CALLIOP	Mt Hector (Monument) mine; MDL 128	Au	Cu	Ag	318000	7291800	Mass. sulph in lst & seds of Caswell Ck	P-TR	skarn
159	CALLIOP	Mt Hector (Mai prospect); CR 21657	Au	Cu	Ag	318200	7292900	Mass. sulph in lst & seds of Caswell Ck	P-TR	skarn

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
160	CALLIOP	Nagoorin (All Nations) gold prospect;	Au			334800	7308600			
161	CALLIOP	Nagoorin antimony prospect	Sb			332500	7302300			
162	CALLIOP	Nagoorin molybdenum prospect	Mo			324200	7300600			
163	CALLIOP	Nagoorin oil shale; MDL 178	Ol			334000	7296000	Nagoorin Beds	T	Synsed
164	CALLIOP	Qld Cement Ltd silica quarry; ML 3635	Si			335400	7342300			
165	CALLIOP	Patriot workings (CR 21657)	Au			314300	7291300	Caswell Creek Group		QV
166	CALLIOP	Pinnacle prospect	Cu			325800	7290100			
167	CALLIOP	Unnamed	Cu			317700	7291000			
168	CALLIOP	True Blue mine; Eastern Boyne Prov G.F.	Au			327700	7318900	Calliope Beds; E-M D		QV
169	CALLIOP	Uncle Sam Prov. M F	Au			328200	7322100			
170	MIRIAM	Rodds Bay workings (QGMJ; July 1939)	Au			348000	7337800		P-TR	QV
171	MIRIAM	Middle Island black sands; MDL 168	Im	R	Zr	374000	7236000	Coastal dunes; Qd	Q	CP
172	MIRIAM	Jackass mine	Au			349000	7233000	Miriam Vale Granodiorite; P-TRgm	P-TR	QV
173	MIRIAM	North Rocky Point black sands; ML3624	Im	R	Zr	377700	7229000	Coastal dunes; Qd	Q	CP
174	MIRIAM	South Rocky Point black sands; ML1198	Im	R	Zr	392000	7218000	Coastal dunes; Qd	Q	CP
175	MIRIAM	Bucket Gully quarry; ML1191	Si			388500	7296800	Agnes Water Volcanics; TRw	L-M TF	Synvolc
176	MIRIAM	Lowmead oil shale; MDL188	Ol			368000	7294000	Lowmead Beds; To	T	Synsed.
177	MONTO	Apple Tree prospect (CR 3077)	Cu			326800	7268900			
178	MONTO	Barrimoon prospect (CR 18487)	Au			329400	7271200	Quartz veins & skarn in Muncon Volca	TR	skarn
179	MONTO	Barrimoon West prospect (CR 18487)	Au			327900	7270500	Quartz veins & skarn in Muncon Volca	TR	skarn
180	MONTO	Black Boy limestone deposits (CR 14829)	Ls			314500	7251000	Limestone beds of the Caswell Creek (E C	Synsed
181	MONTO	Blue Bag mine; ML 3626	Cu	Au	Ag Pb	321700	7281700			
182	MONTO	Blue Star mine (CR 17108)	Au			311800	7283700	Quartz veins in Glassford complex		QV
183	MONTO	Bobby Dazzler workings (CR 21657)	Au	Ag	Cu Zn	309600	7279400	QV in andesite of Dawes Range Forma	L D	QV
184	MONTO	Burnett R. alluv ilmenite; NE end MDL 169	Im	Au		343300	7246100	River alluvium	Q	placer
185	MONTO	Burnett R. alluv ilmenite; SW end MDL 169	Im	Au		336700	7239000	River alluvium	Q	placer
186	MONTO	Burns Spur (Ridler Ck) porph. Cu prospect	Cu			314600	7285000	Glassford Complex		
187	MONTO	Cannindah West prospect (CR 18487)	Au			323300	7270900	Quartz vein in f.g. silic. volcanics	TR	
188	MONTO	Cemetary mine (CR 21657)	Au			310500	7287600			QV
189	MONTO	Coppermine Creek limestone	Ls			323500	7282300			
190	MONTO	Dooloo Creek prospect	Cu			312400	7280700	andesites of `Dawes Range Formation		
191	MONTO	Dooloo Diggings mines (CR 5040; 21657)	Au	Cu		311800	7281500		L D	Q-S V

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
192	MONTO	Eastern Star workings (CR 17108)	Au	Cu	Ag	304400	7279800	Limestone beds of the Caswell Creek Group		
193	MONTO	Flood Creek limestone deposits (CR 14829)	Ls			317500	7247000		E C	Synsed
194	MONTO	Galatea alluvial workings	Au			342800	7254200			
195	MONTO	Garnet (Kellys) mine	Cu			321500	7280500	at Caswell Ck Gp/Mt Glassford Cplx contact		
196	MONTO	Glassford Creek mine	Cu	Au		321800	7282500	Glassford Complex		skarn
197	MONTO	Golden Age mine	Au			315900	7283600		L TR	
198	MONTO	Golden Crown (Barrimoon) prospect	Au			329700	7271200	quartz veins in Glassford Complex		
199	MONTO	Goody's mine (CR 17108)	Au	Cu	Ag	310300	7285800	at Caswell Ck Gp/Mt Glassford Cplx contact		QV
200	MONTO	Goondicum eluvial ilmenite deposit	Im			340000	7247400	Recent alluvium	Q	placer
201	MONTO	Horrigan's prospect (CR 18835)	Cu	Fe	Im	319700	7284900			skarn
202	MONTO	Kellys Find mine	Au			313100	7286300	hosted by aplite of the Glassford Complex		
203	MONTO	Kellys Find prospect (CR 17108)	Mo			313700	7286600		L TR	QV
204	MONTO	Lady Inez mine; ML 3633	Cu	Au	Ag Pb	321700	7279800			
205	MONTO	Lifesaver prospect (CR 3077)	Cu			326300	7269000			
206	MONTO	Little Wonder mine (CR 3077)	Au			325200	7269400			
207	MONTO	Many Peaks limestone deposit	Ls			335600	7282800			
208	MONTO	Many Peaks mine; MDLs 30-33	Cu			335400	7284100			
209	MONTO	Margin prospect (CR 18487)	Au			325700	7271300	Quartz veins in Muncon Volcanics	TR	QV
210	MONTO	Middle Creek limestone outcrop	Ls			304400	7274700			
211	MONTO	Moonford limonite; N prospect (CR14092)	Fe			299000	7257700	Limestone beds in Evergreen Formation	J	Synsed
212	MONTO	Moonford limonite S prospect (CR 14092)	Fe			299700	7254700	Limestone beds in Evergreen Formation	J	Synsed
213	MONTO	Mount Sperber prospect	Zn	Cu		321100	7278000			
214	MONTO	Mt Cannindah mine; MLs 3201-3209	Cu			325600	7270000	Granodiorite mineraliser of P-TR age	P-TR	PO
215	MONTO	Munholme Creek prospect	Cu	Ag		300100	7282300			
216	MONTO	Nestor workings (CR 21657)	Au	Cu	As Zn	302400	7287600	Q-calc. veins in gd and diorite		Q-calc V
217	MONTO	Old Cannindah Ist deposits (CR 14829)	Ls			318500	7241500	Limestone beds of the Caswell Creek Group	E C	Synsed
218	MONTO	Red Flag workings (CR 21657)	Au			311200	7288000	Caswell Creek Group		
219	MONTO	Red Wing mine (CR 21657)	Au			310300	7287100	Quartz veins in sst or q-f porphyry		QV
220	MONTO	Ridler Creek prospect	Cu			314200	7284400			PO
221	MONTO	Silver Plane workings (CR 18835)	Au	Ag		310300	7281700	Glassford Complex	L TR	QV
222	MONTO	Silver Star porphyry copper prospect	Cu	Pb	Zn Ag	302500	7286000	Quartz diorite intruding Crana Beds; open-pit		PO
223	MONTO	Spring Creek alluvial workings	Au			305600	7283200	resource 230 000 t @ 134 g/t Ag; 0.5% Cu;		

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
224	MONTO	Spring Creek mines	Au	Fe		306300	7282600	Quartz-hematite veins		
225	MONTO	Stony Creek ironstone outcrop	Fe			304100	7284100			
226	MONTO	Tellebang Plateau alluv. ilmenite	Im			328500	7248500		T	placer
227	MONTO	True Blue mine (CR 21657)	Au	Cu	Ag	310100	7280400	Tertiary alluvium		
228	MONTO	United Rise mines (CR 21657)	Au			311500	7289500	Caswell Creek Group		Q-S V
229	MONTO	Wild Bull mine (CR 21657)	Au	Cu	Ag	Pb	309700	Quartz veins in gd of Glassford Comple	L TR	QV
230	MONTO	Wounded Eye Ist deposits (CR 14829)	Ls			317500	7243000	Limestone beds of the Caswell Creek (E C	Synsed
231	MONTO	Yarrol silver-lead prospect	Pb	Ag		335100	7238700			
232	MONTO	Yarrol workings No. 1	Au			334200	7234500	in altered (silic.; chlor.; epid.) diorite	P-TR	QV
233	MONTO	Yarrol workings No. 2	Au			334300	7235100	in altered (silic.; chlor.; epid.) diorite	P-TR	QV
234	MONTO	Yarrol ironstone	Fe			336600	7233700			
235	MONTO	Yarrol NW 1 workings (CR 15741)	Au			332800	7237500	in brecciated porphyritic andesite		
236	MONTO	Yarrol NW 2 workings (CR 15741)	Au			332400	7236900	in brecciated porphyritic andesite		
237	ROSEDA	Wolfram prospect	W			376000	7280400		P-TR	QV
238	ROSEDA	Manganese prospect	Mn			390400	7279900	Biggenden Beds; Plb	P	Synsed
239	ROSEDA	Rosedale Au	Au			384400	7278500	Bigg`n Beds-Miriam Vale Gran. contac	P-TR	QV
240	ROSEDA	Royals Creek Cu prospect	Cu			384900	7276500	Andesite of Biggenden Beds; Plb	P	QV
241	ROSEDA	Jones limestone quarry	Ls			388900	7275000	Biggenden Beds; Plb	P	Synsed
242	ROSEDA	Manganese prospect	Mn			389200	7273700	Biggenden Beds; Plb	P	Synsed.
243	ROSEDA	Rosedale Mn prospect	Mn			389000	7272400	Biggenden Beds; Plb	P	Synsed
244	ROSEDA	Limestone outcrop	Ls			387100	7266600	Biggenden Beds; Plb	P	Synsed
245	ROSEDA	Rosedale (Mulgai lode) Cu	Cu			385500	7265700	Biggenden Beds; Plb	P	QV
246	ROSEDA	Rosedale Mineral Freehold limestone	Ls			389400	7265600	Biggenden Beds; Plb	P	Synsed
247	ROSEDA	Rosedale (Native Dog; Jack Pot), CR3515	W	Mo	Bi	Zn	387500	Alt aplite; granite of Watalgan Granite;	TR	PO
248	ROSEDA	Koonanalla Cu prospect	Cu			371700	7261900	Miriam Vale Granodiorite; P-TRgm	P=TR	QV
249	ROSEDA	Pinnacle Mn prospect	Mn			384700	7257300	Curtis Island Group; Pz	Pz	Synsed
250	ROSEDA	Langdon Pb-Zn prospect; CR 5797	Zn	Pb	Ag		386400	Silicified rhyolite of Langdon Volcanics	TR	Diss+Qvlet
251	ROSEDA	Pioneer mine (Gaeta G F)	Au			357900	7255400	Miriam Vale Granodiorite; P-TRgm	P-TR	Q-calcV
252	ROSEDA	Bell Booth (Curds) prospect	Au			383400	7254000	Veins in biotite (?Watalgan) granite	TR	QV
253	ROSEDA	Busy Bee prospect	Au			383600	7250100	Curtis Island Group; Pz	Pz	QV
254	ROSEDA	Cherry Bell mine	Au			383600	7249200	Miriam Vale Granodiorite; P-Trgm	P-TR	QV
255	ROSEDA	Kolonga prospect	Mo			364200	7247900	Miriam Vale Granodiorite; P-TRgm	P-TR	QV

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
256	ROSEDA	Tararan prospect	Au			373300	7244700	Curtis Island Group; Pz	Pz	QV
257	ROSEDA	GML 62	Au			393900	7242600	Biggenden Beds; Plb	P	Q-calcV
258	ROSEDA	Mt Bania Mo mine	Mo			357200	7242400	Miriam Vale Granodiorite; P-Trgm	P-TR	QV
259	ROSEDA	Mt Bania (Red Streak) prospect	Au			358200	7242400	Miriam Vale Granodiorite; P-TRgm	P-TR	dissem
260	ROSEDA	Garson's N mine	Au			389300	7241900	Argillites of `Biggenden Beds; Plb	P	Q-calcV
261	ROSEDA	Garson's S mine	Au			389300	7241200	Argillites of `Biggenden Beds; Plb	P	Q-calcV
262	ROSEDA	Gold prospect	Au	Ag		359000	7241100	Miriam Vale Granodiorite; P-TRgm	P-TR	?
263	ROSEDA	GML 63; 64	Cu			389500	7240200	Biggenden Beds; Plb	P	?
264	SCORIA	Rawbelle/Sandy Creek prospect	Pb	Ag		280600	7235100			
265	SCORIA	Cania & Kroombit Mining Fld; Mt Rose reef	Au			293400	7274500			QV
266	SCORIA	Cania & K M F; Black Ant/Wild Horse reef	Au			294000	7271900			QV
267	SCORIA	Cania & K M F; Duke of Devonshire reef	Au			289800	7275700			QV
268	SCORIA	Cania & K M F; Stevens copper lode	Cu			289600	7273700			
269	SCORIA	Cania & K M F; Four Mile Ck alluvial wkngs	Au			291000	7274700			placer
270	SCORIA	Cania & K M F; Garryowen reef	Au			293800	7274200			QV
271	SCORIA	Cania & K M F; Moonlight Gully alluv. wkngs	Au			294300	7273100			placer
272	SCORIA	Cania & K M F; Mt Hope reef	Au			294400	7272500			QV
273	SCORIA	Cania & K M F; Clifton reef	Au			294800	7272100			QV
274	SCORIA	Cania & K M F; Shamrock reef	Au			295400	7271200			QV
275	SCORIA	Cania ironstone outcrop	Fe			294800	7273800			
276	SCORIA	Cania porphyry copper prospect (Pub. 378)	Cu			285800	7274000	Wingfield Adamellite		
277	SCORIA	Erin Hill chalcedony	Gs			268200	7260400			
278	SCORIA	Coominglah gemstones	Gs			287800	7246200			
279	SCORIA	Scoria Creek prospect	Cu			250700	7274500			
280	SCORIA	Drumburle prospect	Cu			249900	7271400	in altd andesite		
281	SCORIA	Great Blackall mine	Cu	Au		278353	7279451	contact of Kroombit And. and Spring C	P-TR	MS
282	SCORIA	Flanagans prospect (CR 18456)	Cu	Au		279114	7280225			Q-calc V
283	SCORIA	Grevillea Creek prospect (CR4368)	Cu			272100	7269000			
284	SCORIA	Gossan-a-Go-Go prospect (CR4560)	Cu			258400	7272800	in altd/epidotised andesite		
285	SCORIA	Harrami prospect	Cu			260900	7258300			
286	SCORIA	Mt Prospect (Glenda Rose) prospect	Pb	Ag		289800	7269900	in Wingfield Adamellite		
287	SCORIA	Starlight Gully (Tellands) prospect	Pb	Ag		293600	7271100			

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
288	SCORIA	Prospect Park mine	Cu	Au		249900	7263800			Q-calc V
289	SCORIA	Scoria North prospect	Cu			253200	7274300			
290	SCORIA	Scoria South prospect	Cu			254100	7273100			
291	SCORIA	Rawbelle/Six Mile Creek workings	Pb	Mo	Cu	271700	7244900			
292	SCORIA	Sanders (Mt Shaw) mine	Cu			261400	7254900			
293	SCORIA	Twenty Mile Creek prospect (CR 4560)	Cu	Ag		248500	7258200	in altd/epidotised andesite		
294	SCORIA	Kiwi Carpet porph. copper prospect (P. 378)	Cu	Mo		285100	7270100	Wingfield Adamellite		PO
295	SCORIA	Glandore Prov. M F; Lone Hand mine	Au			253900	7254400			
296	SCORIA	Denny Creek limestone	Ls			290400	7276200			
297	SCORIA	Three Moon Creek limestone	Ls			295600	7274200			
298	SCORIA	McCoys prospect	Cu	Au		278652	7279363			
299	SCORIA	Whitewash porph. copper prospect (P. 378)	Cu	Mo		284900	7254600	Wingfield Adamellite		
300	BIGGEN	Boobyjan mine	Cu	Au		403600	7133280		T	
301	BIGGEN	Calgoa porphyry Cu prospect (Pub. 378)	Cu	Ag	Au Pb	426090	7137930	CALGOA DIORITE	T	PO
302	BIGGEN	Colo mine; ML 3738	Au	Pb	Zn As	431850	7132490	CALGOA DIORITE	T	
303	BIGGEN	Dadamarine prospect	Cu	Mo		394000	7139000	MOUNT MARCELLA VOLCANICS	TM	
304	BIGGEN	Daphne (Daphnel) mine	Au	Pb	Zn As	431420	7147060	GYMPIE GROUP	TM	
305	BIGGEN	Dawn mine	Au	Pb	Zn	430560	7154790	GYMPIE GROUP/Gigoomgan Limesto	T	
306	BIGGEN	Gigoomgan limestone deposit	Ls			425600	7149000	GIGOOMGAN LIMESTONE/GYMPIE	P	
307	BIGGEN	Glenbar antimony mine	Sb			430500	7154600	GYMPIE GROUP	P	
308	BIGGEN	Knight of Gwynn mine	Cu			422680	7138670	CALGOA DIORITE	T	
309	BIGGEN	Kola prospect	Mn			430480	7133980		C	
310	BIGGEN	Louisa mine	Cu			423510	7136980	CALGOA DIORITE	T	
311	BIGGEN	Lug-e-Nor mine	Cu	Ag	Au	422600	7138110	CALGOA DIORITE	T	
312	BIGGEN	Miva Creek prospect	Ba			444440	7132040		C	
313	BIGGEN	Moonlight mine; Glenbar G F	Au	Pb	Zn As	434400	7153160	GYMPIE GROUP		
314	BIGGEN	Mount Allen mine	Cu	Ag	Au W	425720	7149520	GYMPIE GROUP/Gigoomgan Limesto	P	
315	BIGGEN	Mount Melanie mine	Au	Pb	Zn As	431070	7152970	GYMPIE GROUP	T	Q-calc V
316	BIGGEN	Mount Ruby mine	Au	Pb	Zn As	430760	7152390	GYMPIE GROUP	P	Q-calc V
317	BIGGEN	Mount Scougall mine	Au	Cu	Fe Zn	433450	7150840	BROOWEENA FM/OORAMERA VOLC	T	
318	BIGGEN	Mt Suthers/Mt Sutters/Mt Searle mine	Cu	Ag	Au	424370	7145450	CALGOA DIORITE/GIGOOMGAN LST	T	
319	BIGGEN	Munna mine	Au	Cu	W	429960	7142930	GYMPIE GROUP/GIGOOMGAN LIME	P	skarn; TR

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
320	BIGGEN	Running Creek prospect	Ba			435510	7130760		C	
321	BIGGEN	Star of Dawn mine	Au	Cu		408290	7125580	MOUNT MARCELLA VOLCANICS	T	
322	BIGGEN	Teebar mine	Cu			421790	7166730	BROOMFIELD GRANITE	TL	
323	BIGGEN	Three Bells mine	Au			432730	7133530	CALGOA DIORITE	C	
324	BIGGEN	White Rocks mine	Cu	Mo		420720	7124380	BOONARA GRANODIORITE	TM	
325	BIGGEN	XYZ mine	Au	Pb	Zn As	431420	7147260	GYMPIE GROUP	T	
326	BIGGEN	Yorkeys G F; Beer and Dawsons mine	Au	Pb	Zn As	428600	7128600	YORKEYS DIORITE	C	
327	BIGGEN	Yorkeys G F; Malachi; ML 3759	Au	Pb	Zn As	430400	7129000			
328	BIGGEN	Yorkeys G F; Triad-Triad Extd mines	Au	Pb	Zn As	428400	7128700	YORKEYS DIORITE	P T	
329	BIGGEN	Yorkeys G F; Waratah mine	Au	Pb	Zn As	428700	7128900			
330	BIGGEN	Yorkeys G F; Yorkeys Surprise/Zealandia/York	Au	Pb	Zn As	428800	7128600			
331	CHILDER	Booyal alluvial workings	Au			403250	7212000		P	
332	CHILDER	Bullant (Bull Ant) prospect; MDL 108	Au	Ag	Cu Pb	405960	7226430	Brooweena Formation	T	
333	CHILDER	Coonarr Creek sands; ML 1185	Sf			449400	7234700	Coastal sands; Qc	Q	Synsed
334	CHILDER	Cornfield Creek prospect	Au			410490	7203650	Gympie Group	P	
335	CHILDER	Dallarnil prospect	Pb	Ag		407420	7192110	Gympie Group	P	
336	CHILDER	Defiance/Bonnie Jan mine; MLs 1195; 1207	Au	Cu	As	418530	7215470	Brooweena Formation	T	
337	CHILDER	Degilbo prospect	Mn			401800	7188300	Gympie Group	P	
338	CHILDER	Degilbo South prospect	Mn			402380	7183600	Gympie Group (un-named volcanics)	P	
339	CHILDER	Dills Hope prospect	Au			419000	7215500			
340	CHILDER	Duingal Ck porphyry Mo prospect (P. 378)	Mo			404300	7221800	Granite plug host		?M T
341	CHILDER	Grey Dawn prospect	Au			411260	7214770	Brooweena Formation	T	
342	CHILDER	Mackenzie prospect	Au			418800	7214900			
343	CHILDER	Marule limestone quarry	Ls			407380	7218460	Gympie Group	P	
344	CHILDER	Marule East limestone; ML 1248	Ls			408800	7218700			
345	CHILDER	Mount Ideal	Au	Ag		418250	7215920	Brooweena Formation	T	
346	CHILDER	Palean prospect	Au			418400	7215900			
347	CHILDER	Stanton Harcourt G F; Stony & Slimy Ck alluv	Au	Ag	Bi	405700	7197000	Gympie Group	P	
348	CHILDER	Wild Irishman mine	Au			403620	7227970	Gympie Group	P	
349	CHILDER	Young Australian mine	Au			408920	7180060	Gympie Group	P	
350	EIDSVOL	Branch Creek/Southern Cross mine	Au			331700	7196600			
351	EIDSVOL	Peters Knob ironstone quarry	Fe			344300	7217700			

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
352	EIDSVOL	Yarrol (True Blue) workings	Au			334000	7231700			
353	EIDSVOL	Yarrol ironstone deposit	Fe			334400	7233600			
354	GAYNDA	Ban Ban earthy lime deposit	Ls			378500	7167500		T	
355	GAYNDA	Ban Ban Zinc Lode; MLs 3686; 3687; 3689; 36	Zn	Pb	Cu Ag	396840	7148930	GYMPIE GROUP/(Unnamed volcanics	P	
356	GAYNDA	Biggenden manganese prospect	Mn			397650	7175980	GYMPIE GROUP	P	
357	GAYNDA	Bob Note prospect; ML 7224	Au	Ag		377300	7151200			
358	GAYNDA	Coalstoun Lakes Grp-Coalstn Lks Cu mine	Cu	Au	Mo	386530	7166980	GOOD NIGHT BEDS	C P	
359	GAYNDA	Clstn Lakes Grp-Dundarra mine (P. 378)	Cu	Au	Mo	386010	7164370	L P tonalite intruding GOOD NIGHT BE	L P	PO
360	GAYNDA	Clstn Lakes Grp-Lutveys mine	Au	Cu	Mo	385380	7160400	GOOD NIGHT BEDS	C P	
361	GAYNDA	Clstn Lakes Grp-Mount Hudave mine	Au	Cu		385190	7161730	GOOD NIGHT BEDS	C P	
362	GAYNDA	Clstn Lakes Grp-Prickly Pear MDL 24	Au	Cu	Mo	385610	7163300	GOOD NIGHT BEDS	C P	
363	GAYNDA	Clstn L Grp-Seven Sisters/Mt Walla MDL 121	Au	Cu	Mo	385120	7162910	GOOD NIGHT BEDS		
364	GAYNDA	Clstn Lakes Grp-Walla Range mine	Au	Cu	Mo	383980	7168360	GOOD NIGHT BEDS		
365	GAYNDA	Clstn Lakes Grp-Walla Range South mine	Au			385200	7161200	GOOD NIGHT BEDS		
366	GAYNDA	Commonwealth/Mount Havilah mine	Cu	Fe	Ag Au	397760	7177590	GYMPIE GROUP/DEGILBO GRANOD	P	
367	GAYNDA	Degilbo limestone quarry	Ls			397720	7176500	GYMPIE GROUP	P	
368	GAYNDA	Didcot earthy lime quarry; MLs 3710; 3746	Ls			386000	7179000	MOUNT MARCELLA VOLCANICS	T	
369	GAYNDA	Don Jon mine	Au	Bi	Cu Fe	397510	7175030	GYMPIE GROUP	P	
370	GAYNDA	Lord Nelson mine	Cu	Au		396440	7128470	MOUNT MARCELLA VOLCANICS	TM	
371	GAYNDA	Mount Biggenden mine; MLs 3684; 3685; 3686	Mt	Au	Bi Co	397510	7174930	GYMPIE GROUP/(Unnamed volcanics	P	
372	GAYNDA	Mount Hastings mine	Au	Bi	Cu	397250	7173440		P	
373	GAYNDA	Robina/Deep Creek mine	Cu	Ag	Au	390420	7174930	DEGILBO GRANODIORITE/GYMPIE G	P T	
374	GAYNDA	Scotland Hills ironstone deposit	Fe			359930	7158290	ARANBANGA VOLC GP/(Tertiary base	T	
375	GAYNDA	Unique (Ban Ban) Mineral Freehold mine	Cu	Ag	Pb	393320	7155100	GYMPIE GROUP	P T	
376	GAYNDA	Wetheron earthy lime deposit	Ls			371000	7169000	ARANBANGA VOLC GP/WETHERON	TL	
377	MARYBO	Mount Bauple mine	Gt			458340	7145810	TIARO COAL MEASURES	J	
378	MARYBO	Mount Bauple Graphite mines 1	Gt			457140	7148110	TIARO COAL MEASURES	J	
379	MARYBO	Mount Bauple Graphite mines 2	Gt			458510	7147280	TIARO COAL MEASURES	J	
380	MARYBO	Mount Bauple Graphite mines 3	Gt			458920	7147760	TIARO COAL MEASURES	J	
381	MT PER	Ace of Hearts mine	Au			372250	7226600	CURTIS ISLAND GROUP	TE	
382	MT PER	All Nations (Cambria Flat; Lookere) mine	Cu	Au	Ag	369500	7229650	CURTIS ISLAND GROUP	C	
383	MT PER	Allendale Lode mine	Au			362100	7222710	TENNINGERING GRANODIORITE	P	

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
384	MT PER	Allendale (Chowey Creek) prospect	Au	Pb	Ag		390510	7187240	GOOD NIGHT BEDS	C P
385	MT PER	Arsenic (Silvermine Creek) mine	Au	As	Pb	Ag	362000	7210300		
386	MT PER	Back Creek limestone deposit	Ls				388800	7206200	GOOD NIGHT BEDS	C P
387	MT PER	Bania Range mine	Au	As	Mo		358590	7230650	WONBAH GRANODIORITE	T
388	MT PER	Bartons/Bartons Ag Lode/Baron's Lode mine	Au	Ag			374250	7226600	GOYAN ANDESITE	
389	MT PER	Beatrice mine	Cu	Au	Ag		373050	7226690	CURTIS ISLAND GROUP	C
390	MT PER	Beauty/Big Beauty/Little Beauty mine	Cu				367400	7229150	CURTIS ISLAND GROUP	
391	MT PER	Boolboonda mine	Cu	Au	Ag		368040	7228210	CURTIS ISLAND GROUP	C
392	MT PER	Bowden Creek marble deposit	Ma				388550	7199500	GOOD NIGHT BEDS	CL P
393	MT PER	Bowden Creek manganese deposit	Mn				388800	7299800		
394	MT PER	British Lion/Albert/Mulgrave mine	Cu	Au			370190	7229060	NEW MOONTA DIORITE	T
395	MT PER	Campbells mine	Au	Ag	Pb	As	359740	7228330	WONBAH GRANODIORITE	C
396	MT PER	Cervic Lode/Carvic Lode mine	Cu				361000	7223000	TENNINGERING GRANODIORITE	P
397	MT PER	Childers Retreat mine	Au	Ag			392120	7214640	GOOD NIGHT BEDS	C P
398	MT PER	Chinaman Creek porphyry copper prospect	Cu	Au	Mo		361300	7207600	Bio. granodiorite of Mt Perry Complex	L P
399	MT PER	Chowey Gold Field mines	Au	Ag	Bi	Pb	385650	7185600	CHOWEY GRANITE	P QV
400	MT PER	Cobeye Lode prospect	Au				359500	7209990	TENNINGERING GRANODIORITE	PL
401	MT PER	Dalysford 1/Tobans quarries	Ls				390990	7224180	GOOD NIGHT BEDS	
402	MT PER	Dalysford 2 open pit	Ls				390300	7224300	GOOD NIGHT BEDS	
403	MT PER	Dalysford 3 (Stevens) deposit	Ls				390450	7223400	GOOD NIGHT BEDS	
404	MT PER	Dreadnought mine	Mo	Cu			356620	7222130	WONBAH GRANODIORITE	TL
405	MT PER	Dreadnought (Wolca) prospect	Mo				356000	7219700		
406	MT PER	Duke of York mine	Au				369900	7231100	NEW MOONTA DIORITE	TM
407	MT PER	Edina mine	Cu	Au			366040	7228870	CURTIS ISLAND GROUP	C
408	MT PER	Enterprise No. 3 mine	Au	Ag	Cu	Zn	356300	7219600	WONBAH GRANODIORITE	TL QV
409	MT PER	Federation mine	Cu	Au	Ag		368270	7229060	CURTIS ISLAND GROUP	C
410	MT PER	Floris Find mine	Au	Mo	Ag	Cu	391550	7213600	GOOD NIGHT BEDS	C P
411	MT PER	Fortunatus mine	Cu				363500	7225200	WONBAH GRANODIORITE	TL
412	MT PER	Gebangle mines	Au	Ag			385370	7191840	GOOD NIGHT BDS/ARANBANGA VO	C T
413	MT PER	Gebangle porphyry copper prospect	Cu				385370	7191840	Hbl-bio. porphyry intr. Biggenden Beds	L P
414	MT PER	Gibb (Caledonian 1; 2 & 3) mines	Cu	Ag	Au		369930	7229600	NEW MOONTA DIORITE	T
415	MT PER	Gibbs lode mine	Cu	Au			362500	7211850	TENNINGERING GRANODIORITE	P

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
416	MT PER	Globe mine	Cu	Mo		356060	7221530	WONBAH GRANODIORITE	TL	
417	MT PER	Globe Extended mine	Mo	Cu	Au Ag	356100	7220600	WONBAH GRANODIORITE	TL	
418	MT PER	Greenbank/Mungai Lode mine	Cu			349360	7219050	GREENBANK QUARTZ DIORITE	T	
419	MT PER	Harpers (Harpurs) Hill mine	Cu	Ag	Au As	355490	7218680	WONBAH GRANODIORITE	TL	
420	MT PER	Kalliwa manganese prospect	Mn			385200	7200500	GOOD NIGHT BEDS	C P	
421	MT PER	Kents Knob mine	Au	Cu	Ag	391980	7187200	GOOD NIGHT BDS/ARANBANGA VO	T	
422	MT PER	Lanes mine	Mo			363100	7222710	TENNINGERING GRANODIORITE	P	
423	MT PER	Limestone Ck deposit; MLs 1213; 1214; 1215	Ls			389800	7208000	GOOD NIGHT BEDS	CL	
424	MT PER	Lord Nelson mine	Cu			385870	7191030	GOOD NIGHT BEDS	C P	
425	MT PER	Marchioness mine	Cu	Au	Ag Mo	357500	7220500	WONBAH GRANODIORITE	TL	
426	MT PER	Moolboolaman Gap mine	Au			366450	7225530	Wonbah Granodiorite	TL	
427	MT PER	Mount Melville mine	Au			392640	7186150	GOOD NIGHT BDS/ARANBANGA VO	C T	
428	MT PER	Mount Ophir/Chowey Creek mine	Au	Pb	Zn Mo	391030	7186020	GOOD NIGHT BDS/ARANBANGA VO	C T	
429	MT PER	Mount Perry Group; Canterbury mine	Cu	Au		361840	7213770	TENNINGERING GRANODIORITE	P	
430	MT PER	Mount Perry Group; Fig Tree Lode mine	Au			362500	7214100	TENNINGERING GRANODIORITE	PL	
431	MT PER	Mount Perry Group; Mount Perry mine	Cu	Ag	Au	362500	7213480	TENNINGERING GRANODIORITE	P	
432	MT PER	Mt Perry Grp; Normanby-Perseverance mine	Cu	Au	Ag	361440	7214370	TENNINGERING GRANODIORITE	P	
433	MT PER	Mount Perry Group-Orphan Angel mine	Au	Cu		362300	7215000	TENNINGERING GRANODIORITE	P	
434	MT PER	Mount Perry Group-Palmer prospect	Cu			362400	7215300	TENNINGERING GRANODIORITE	P	
435	MT PER	Mount Perry Group-Pascoe mine	Au	Cu		361640	7213000	TENNINGERING GRANODIORITE	P	
436	MT PER	Mount Perry ironstone quarry	Fe			367900	7212400	Hogback Granite	TL	
437	MT PER	Mount Perry rutile; S prospect	R			369260	7213480	Aranbanga Volcanic Group	T	
438	MT PER	Mount Perry rutile; N prospect	R			369600	7213900			
439	MT PER	Mount Rawdon (Swindon) mine; MLs 1204; 12	Au	Ag		374910	7205310	ARANBANGA VOLCANIC GROUP	T	
440	MT PER	Mt Rose/Big Mt Rose/Little Mt Rose mines	Cu	Ag		366910	7228630		C	
441	MT PER	Mount Shamrock mine; ML 58026	Au	Bi	Cu Zn	391980	7186430	GOOD NIGHT BDS/ARANBANGA VO	C P	
442	MT PER	Mount Steadman G F; Mt Steadman mine	Au			380860	7184330	CHOWEY GRANITE	P	
443	MT PER	Mount Steadman G F; London mine	Au			380260	7184630	CHOWEY GRANITE	P	
444	MT PER	Mount Steadman G F; Venus mine	Au	Bi	Mo	380500	7185500	CHOWEY GRANITE	P	
445	MT PER	Mount Yeatman mine	Au			372960	7192120	ARANBANGA VOLCANIC GROUP	T	
446	MT PER	New Moonta mine	Cu	Au	Ag	369970	7230350	NEW MOONTA DIORITE	T	
447	MT PER	One Mile Gp/One Mile N/One Mile S mines	Cu			362100	7215300	TENNINGERING GRANODIORITE	TL	

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
448	MT PER	Painkiller mine	Au	Cu	Mo	393080	7215060	GOOD NIGHT BEDS	C P	
449	MT PER	Pansy and Champion mine	Cu	Au		366990	7229300	CURTIS ISLAND GROUP	C	
450	MT PER	Paradise G F Gp -Bushnells Advance mine	Au			390490	7194050	GOOD NIGHT BEDS	C P	
451	MT PER	Paradise G F Gp-Great Eastern mine	Au			392500	7194500	GOOD NIGHT BEDS	CL PE	
452	MT PER	Paradise G F Gp-Lady Jane mine	Au			391620	7192270	GOOD NIGHT BEDS	C P	
453	MT PER	Paradise G F Gp-Lady Margaret mines (No1 E	Au			390780	7193480	GOOD NIGHT BEDS	C P	
454	MT PER	P'dise G F Gp-Nil Desperandum/Victory mine	Au			390170	7193390		C P	
455	MT PER	Paradise G F Gp-Paradise mine	Au	Ag	Bi	Cu	391390	7195030	GOOD NIGHT BEDS	C P
456	MT PER	Paradise Limestone deposit	Ls			391790	7195030	GOOD NIGHT BEDS	C P	
457	MT PER	Potosi mine	Cu	Ag	Pb		354650	7219080	TENNINGERING GD/WONBAH GD	TL
458	MT PER	Red Streak (Mount Bania) mine	Cu	Au			369840	7228430	NEW MOONTA DIORITE	T
459	MT PER	Regans mine	Mo	Au			356600	7212640	WOLCA GRANITE	P
460	MT PER	Reids Ck G & M F Gp -Arsenical Lode mine	Au	As	Pb	Ag	361300	7207800	TENNINGERING GRANODIORITE	P
461	MT PER	Reids Ck G & M F Gp-Caledonian mine	Au	Zn	As		360610	7209220	TENNINGERING GRANODIORITE	P
462	MT PER	Reids Ck G & M F Gp-Chinaman Creek mine	Cu	Au	Mo		360600	7208300	TENNINGERING GRANODIORITE	P
463	MT PER	Reids Ck G & M F Gp-Flying Pig mine	Au				359890	7208790	TENNINGERING GRANODIORITE	P
464	MT PER	R Ck G & M F Gp-Goodluck/Good Luck mine	Au	As	Pb	Zn	358690	7211420	TENNINGERING GRANODIORITE	P
465	MT PER	R Ck G & M F Gp-Manganese Lode mine	Au	Mn			360610	7210600	WOLCA GRANITE	P
466	MT PER	R Ck G & M F Gp-United Options Lease mine	Au	Pb	Zn		362300	7210430	TENNINGERING GRANODIORITE	P
467	MT PER	R Ck G & M F Gp-Welcome & Cobeye mine	Au				361720	7208840	TENNINGERING GRANODIORITE	P
468	MT PER	Rocky Creek mine	Cu				358220	7219970	WONBAH GRANODIORITE	TL
469	MT PER	Royal Standard (?Standard) mine	Cu	Au			368720	7229010	NEW MOONTA DIORITE	T
470	MT PER	Southern Extended mine	Au				391170	7212700	GOOD NIGHT BEDS	C P
471	MT PER	Tenningering Creek limestone deposit	Ls				389300	7209400	GOOD NIGHT BEDS	CL
472	MT PER	The Great Freeholds mine	Cu				358890	7220030	WONBAH GRANODIORITE	TL
473	MT PER	True Blue mine	Au				365500	7228900	CURTIS ISLAND GROUP	CE
474	MT PER	Venus mine	Au	Bi	Mo		380500	7185500	CHOWEY GRANITE	P
475	MT PER	Walla Manganese Group-Walla 1 open cut	Mn				390950	7227400	GOOD NIGHT BEDS	C P
476	MT PER	Walla Manganese Group-Walla 2 open cut	Mn				392000	7227200	GOOD NIGHT BEDS	C P
477	MT PER	Walla Manganese Group-Walla 3 open cut	Mn				391500	7226000	GOOD NIGHT BEDS	C P
478	MT PER	Waverley mine	Cu				363070	7226400	Wonbah Granodiorite	TL
479	MT PER	Wheal Damsel mine	Cu	Pb	Zn		353500	7218410	Tenningering Granodiorite/Wonbah Gr	TL

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480	MT PER	Volca mine	Cu	Mo	Ag		359000	7222250	Wonbah Granodiorite	TL	
481	MT PER	Wonbah (Tyrconnell) mine	Mo	Cu	Pb		363480	7224840	Wonbah Granodiorite	TL	
482	MUNDUB	Emma/Philpott Ck limestone deposit; ML 3242	Ls				336200	7169200			
483	MUNDUB	Mimosa chromite prospect	Cr				339500	7134200			
484	MUNDUB	Mundubbera limestone deposit No. 1	Ls				325900	7163800			
485	MUNDUB	Mundubbera limestone deposit No. 2	Ls				327000	7170400			
486	PIALBA	Burrum Coal Field (BCF); Burbank mine	Cb				462110	7193050	BURRUM COAL MEASURES	KE	Synsed
487	PIALBA	BCF; Burgowan12/Burg'n 4 mine; ML 5373	Cb				466900	7196680	BURRUM COAL MEASURES	KE	Synsed
488	PIALBA	BCF; Burgowan 3 mine; ML 5374	Cb				469650	7193300	BURRUM COAL MEASURES	KE	Synsed
489	PIALBA	BCF; Burgowan/Bellefield mine	Cb				457480	7198460	BURRUM COAL MEASURES	KE	Synsed
490	PIALBA	BCF; Burrum mine	Cb				456710	7200370	BURRUM COAL MEASURES	KE	Synsed
491	PIALBA	BCF; Churchill 1 mine; ML 5393	Cb				471040	7190640	BURRUM COAL MEASURES	KE	Synsed
492	PIALBA	BCF; Clyde mine	Cb				456850	7199080	BURRUM COAL MEASURES	KE	Synsed
493	PIALBA	BCF; Dundee mine	Cb				456620	7198320	BURRUM COAL MEASURES	KE	Synsed
494	PIALBA	BCF; Dunstan mine	Cb				470590	7191890	BURRUM COAL MEASURES	KE	Synsed
495	PIALBA	BCF; Globe mine	Cb				470990	7191370	BURRUM COAL MEASURES	KE	Synsed
496	PIALBA	BCF; Gregory mine	Cb				457780	7196550	BURRUM COAL MEASURES	KE	Synsed
497	PIALBA	BCF; Grucaillando mine	Cb				457640	7198150	BURRUM COAL MEASURES	KE	Synsed
498	PIALBA	BCF; New Riverbank mine	Cb				458320	7198020	BURRUM COAL MEASURES	KE	Synsed
499	PIALBA	BCF; Newfield mine	Cb				464330	7199520	BURRUM COAL MEASURES	KE	Synsed
500	PIALBA	BCF; Torbanlea mine	Cb				459230	7195750	BURRUM COAL MEASURES	KE	Synsed
501	PIALBA	BCF; Troy/Churchill Extd mine; ML 5395	Cb				471290	7189550	BURRUM COAL MEASURES	KE	Synsed
502	PIALBA	BCF; Two Mile mine	Cb				460810	7194870	BURRUM COAL MEASURES	KE	Synsed
503	PIALBA	BCF; Wilston mine	Cb				461500	7193800	BURRUM COAL MEASURES	KE	Synsed
504	PIALBA	Coonarr Creek sand deposits	Sf				449700	7233600	Quaternary coastal dune sand	Q	Synsed
505	BOOND	Achilles mine	Au	Ag	Cu		332700	7102900			
506	BOOND	Allies Ck Gp; Stumers workings (CR21573)	Au	Cu			314600	7117100	Quartz-jasper reefs (GSQ Publ. 114)		
507	BOOND	Allies Ck Gp; Golden Whiptail wks (CR21573)	Au	Cu			315900	7114400	Quartz-jasper reefs (GSQ Publ. 114)		
508	BOOND	Allies Ck Gp; Welcome workings (CR21573)	Au	Cu			315900	7116100	Quartz-jasper reefs (GSQ Publ. 114)		
509	BOOND	Brilliant workings	Au				349300	7111400			
510	BOOND	Chahpingah/Lucky Strike feldspar deposit	Fs				336000	7068000			
511	BOOND	Dangarabungy Creek alluvial diggings	Au				313600	7094200			

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code	
512	BOOND	Fernbank prospect	Cr			348900	7069100				
513	BOOND	Fernlahey prospect	Au			348800	7111000				
514	BOOND	Garnet Gully ML 6602	Gs			345000	7095000				
515	BOOND	Gorge Waterhole veins (CR 17556)	Sn			325700	7119800	Garnet			
516	BOOND	Great Eastern workings	Au			348000	7110700				
517	BOOND	Kingar Creek alluvials	Au			330800	7112400				
518	BOOND	?Michalite workings	Au			347300	7112600				
519	BOOND	Rays workings	Au			349000	7110500				
520	BOOND	Rocky Creek alluv. wkgs (QGMJ 1904; p. 62)	Sn	Ti		325200	7119000				
521	BOOND	Sunray ML 1513 workings	Au			325000	7074700				
522	BOOND	Shellytop feldspar deposit	Fs			339200	7080500				
523	BOOND	Truzes prospect	Au			348600	7108300				
524	GOOME	Alluvial and eluvial cinnabar	Hg			418350	7115100		CZ		
525	GOOME	Becks Shaft (Sunnyside lease)	Cu			421400	7123550	Unnamed intrusive			
526	GOOME	Big Lode	Hg			415100	7111950	NEARA VOLCANICS	TE TM		
527	GOOME	Birthday Gift	Au			427650	7090450	GOBONGO METAMORPHICS	D C		
528	GOOME	Black Lode	Hg	Cu		417600	7117600	WONGELLA METAMORPHICS	D C		
529	GOOME	Black Snake Reef Group; MLs 3678; 3741; 374	Au	Ag	Cu	427450	7100300	BLACK SNAKE PORPHYRY	TE TM		
530	GOOME	Black Watch Reef (Cu Lode; PPA; No 3 Sh)	Au	Cu		423350	7069050				
531	GOOME	Blackfellow mine (Hopkin's PA)	Au			427600	7090700	GOBONGO METAMORPHICS	D C		
532	GOOME	Block 13/Copper Lode prospect	Cu			425950	7104100	Mount Clara beds	D C		
533	GOOME	Bloodworth	Hg			417650	7115200	COPPERMINE CREEK GRANODIORI	C		
534	GOOME	Bongmillerer's	Cu	Pb	Zn	Ag	439100	7109300	MOUNT MUCKI COMPLEX	TE TM	
535	GOOME	Buckley's Hope	Hg			417850	7115150	COPPERMINE CREEK GRANODIORI	C		
536	GOOME	Central Shaft	Hg			417900	7115100	COPPERMINE CREEK GRANODIORI	C		
537	GOOME	Cinnabar Lodes	Hg			416900	7119900	NEARA VOLCANICS	TE TM		
538	GOOME	Cirsons (QSA Lode; QSB Lode)	Hg			417350	7112200	NEARA VOLCANICS	TE TM		
539	GOOME	Cobalt Lode	Co	Ni	Mn	427550	7102150	MOUNT MIA SERPENTINITE	DL CE		
540	GOOME	Commercial Reef	Au			426800	7100100	Mount Clara beds	D C		
541	GOOME	Commotion	Hg			418000	7115000	COPPERMINE CREEK GRANODIORI	C		
542	GOOME	Copper Lode	Cu			427500	7101100	MOUNT MIA SERPENTINITE	DL CE		
543	GOOME	D.D. Mine	Au			427600	7090400	GOBONGO METAMORPHICS	D C		

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code	
544	GOOME	Daylight	Au			419600	7118800	Unnamed intrusive			
545	GOOME	Devils Mountain/Tabke`s mine	Mn			443700	7117200	Amamoor beds	D C		
546	GOOME	Divine Reef mine; ML 3699	Au			449700	7104300				
547	GOOME	German Gully	Au			426800	7113550	Undifferentiated Cainozoic	CZ		
548	GOOME	Gibraltar Rock porph. prospect (Publ. 378)	Cu			437050	7108500	Station Ck Adam. intr Neara Volcs	TE TM	PO	
549	GOOME	Godfrey and Summers	Hg			416100	7111650	NEARA VOLCANICS	TE TM		
550	GOOME	Gold Top Group mines	Au	Ag	Cu	Hg	418200	7119150	NEARA VOLCANICS	TE TM	
551	GOOME	Golden Spur/Valley of the Giants; ML 6622	Au	Ag			435100	7074600	MANUMBAR METAMORPHICS	C	
552	GOOME	Golden Sunset	Au			425100	7092700	Unnamed intrusive			
553	GOOME	Grass Tree prospect	Au	Cu	Ni		438150	7099800	MOUNT MIA SERPENTINITE	DL CE	
554	GOOME	Green Rock	Pb	Zn	Cu	Ag	438400	7102850	GREEN ROCK QUARTZ MONZONITE	TE TM	
555	GOOME	H.A. lode (Portion 2651)	Hg	Cu	Sb		415250	7114900	NEARA VOLCANICS	TE TM	
556	GOOME	Hayes Tunnel	Au			425700	7113200	Mount Clara beds	D C		
557	GOOME	Homeward Bound reef	Au	Cu			427750	7100400	BLACK SNAKE PORPHYRY	TE TM	
558	GOOME	Hungry Creek	Au	Cu			419400	7119100	NEARA VOLCANICS	TE TM	
559	GOOME	Italian Gully	Au			426750	7112250	Undifferentiated Cainozoic	CZ		
560	GOOME	Itchy Quid Mine Group	Au			444190	7119820	NEARA VOLCANICS?	TE TM		
561	GOOME	Jimmy`s Scrub mine; ML3732	Au	Cu		426500	7091700	Unnamed intrusive			
562	GOOME	Jubilee	Cu			423350	7110250	Mount Clara beds	D C		
563	GOOME	Kabunga alluvial gold workings	Au			427800	7090000	Undifferentiated Cainozoic	CZ		
564	GOOME	Kabunga prospect	Cu	Pb		427200	7089800	GOBONGO METAMORPHICS	D C		
565	GOOME	Kabunga P As 1225; 1228	Au			427800	7091000	GOBONGO METAMORPHICS	D C		
566	GOOME	Kim`s Lode	Hg			413900	7112200	NEARA VOLCANICS	TE TM		
567	GOOME	Larters prospect	Au			419550	7119150	Unnamed intrusive			
568	GOOME	Laver`s/Glastonbury	Mn			447250	7099100	Amamoor beds	D C		
569	GOOME	Livingstones prospect	Cu			424950	7109100	MOUNT MIA SERPENTINITE	DL CE		
570	GOOME	Long Tunnel surface workings	Au			425900	7112450	Unnamed intrusive			
571	GOOME	Manumbar mine; MLs 50059; 50099	Au	Cu	Ag		437000	7083300	NEARA VOLCANICS	TE TM	
572	GOOME	Mariners	Au	Ag	Cu	Pb	427923	7100450	BLACK SNAKE PORPHYRY	TE TM	
573	GOOME	Mary Creek porphyry prospect (Publ. 378)	Cu				445000	7089000	altd adamellite		PO
574	GOOME	McCarthy`s mine	Au	Ag	Cu	Ni?	438200	7099700	MOUNT MIA SERPENTINITE	DL CE	
575	GOOME	Miss Blackburn PA	Au				425900	7089700	GOBONGO METAMORPHICS	D C	

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
576	GOOME	Morning Star	Au			425200	7114200	Mount Clara beds	D C	
577	GOOME	Mount Clara	Cu	Au		427300	7102900	MOUNT MIA SERPENTINITE	DL CE	
578	GOOME	Mount Coora/Arthur's Lode	Cu	Au		428250	7102850	MOUNT MIA SERPENTINITE	DL CE	
579	GOOME	Mount Mudlo/Mt Mudloo/Spicer's Claim porph.	Cu	Au	Mo	421700	7123300	BOONARA GRANODIORITE	TE TM	PO
580	GOOME	Mount Terrible	Au	Ag	Cu	Pb	428200	7101200		D C
581	GOOME	Mount Victor	Pb	Ag	Cu	Au	436700	7093250	MOUNT MIA SERPENTINITE	DL CE
582	GOOME	Mount Widgee drill site	Cu				438350	7099800	MOUNT MIA SERPENTINITE	DL CE
583	GOOME	New PC Tunnel	Au				426400	7112300	Unnamed intrusive	
584	GOOME	New Years Reef	Au				425000	7113200	Mount Clara beds	D C
585	GOOME	New Zealand	Au				426950	7100250	Mount Clara beds	D C
586	GOOME	No 1 North Long Tunnel	Au				425750	7112750	Unnamed intrusive	
587	GOOME	No 1 South Long Tunnel	Au				426250	7112100	Unnamed intrusive	
588	GOOME	No 1 South Perserverence	Au				425650	7113500	Mount Clara beds	D C
589	GOOME	No 2 North Long Tunnel	Au				425950	7112650	Unnamed intrusive	
590	GOOME	Old Kabunga	Au				427450	7090100	GOBONGO METAMORPHICS	D C
591	GOOME	Old Man Lode	Hg				423800	7101250	MANUMBAR METAMORPHICS	C
592	GOOME	Old PC Tunnel mine	Au				426150	7112300	Unnamed intrusive	
593	GOOME	One Mile Creek alluvials	Au				424400	7113300	Undifferentiated Cainozoic	CZ
594	GOOME	One Mile Creek Group	Au	Ag			424350	7113550	Mount Clara beds	D C
595	GOOME	One Mile Creek magnesite prospect	Ms				424300	7113500	Mount Clara beds	D C
596	GOOME	Ort's	Pb	Zn	Au	Ag	429400	7109600	Mount Clara beds	D C
597	GOOME	Patron	Hg				416000	7110200	NEARA VOLCANICS	TE TM
598	GOOME	Peak/Peak Lode mine	Cu	Au	Ag		428250	7102400	MOUNT MIA SERPENTINITE	DL CE
599	GOOME	Pembroke and Forrest Reefs	Cu				427150	7100800	MOUNT MIA SERPENTINITE	DL CE
600	GOOME	Perserverence Reef	Au				425600	7113600	Mount Clara beds	D C
601	GOOME	Petersons/Mullaly's prospect	Cu				439200	7099100	MOUNT MIA SERPENTINITE	DL CE
602	GOOME	Prophet/Waldock mine; ML 50034	Au				428300	7111250	Undifferentiated Cainozoic	CZ
603	GOOME	Queen of the West	Cu				423500	7123100	BOONARA GRANODIORITE	TE TM
604	GOOME	Queensland Lode	Hg				415200	7112650	NEARA VOLCANICS	TE TM
605	GOOME	Rise and Shine	Au				425100	7114100	Mount Clara beds	D C
606	GOOME	Scrub Paddock/German Gully alluv; ML 6616	Au				423700	7070200	Undifferentiated Cainozoic	CZ
607	GOOME	Sexton	Mn				443950	7122500	Amamoor beds	D C

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
608	GOOME	Shamrock (Rose; Shamrock ;Thistle) mines	Au	Ag	Cu		427200 7099100	BLACK SNAKE PORPHYRY	TE TM	
609	GOOME	Shannon-Jon mine; ML 3731	Au	Ag			426600 7112600			
610	GOOME	Skibereen Gully	Au				427800 7110500	Undifferentiated Cainozoic	CZ	
611	GOOME	Slaty Gully	Hg				420650 7106250	Mount Clara beds	D C	
612	GOOME	South Burnett (Mount Mac, Tansey) mine	Au				403350 7123400	NEARA VOLCANICS	TE TM	
613	GOOME	South Mount Coora	Cu				429200 7101200	MOUNT MIA SERPENTINITE	DL CE	
614	GOOME	Sunnyside/Littletons Workings/Becks Shaft	Cu				421150 7123850	BOONARA GRANODIORITE	TE TM	
615	GOOME	Tableland	Au	Cu			426750 7099800	Mount Clara beds	D C	
616	GOOME	Tableland South	Au				426650 7099650	Mount Clara beds	D C	
617	GOOME	The Gap	Au	Cu			441300 7112800	MOUNT MUCKI COMPLEX	TE TM	
618	GOOME	The Prospecting Lode	Hg				415200 7111800	NEARA VOLCANICS	TE TM	
619	GOOME	Victoria East Prospect	Au				429400 7100000	MOUNT MIA SERPENTINITE	DL CE	
620	GOOME	Victoria/Victoria Reef prospect	Au	Ag	Cu	Pb	428850 7100050	BLACK SNAKE PORPHYRY	TE TM	
621	GOOME	Wallman Lode	Hg				413850 7110500	NEARA VOLCANICS	TE TM	
622	GOOME	Washpool Creek mine; ML 3727	Au	Ag			403800 7123700			
623	GOOME	Welcome Reef	Au				425200 7114100	Mount Clara beds	D C	
624	GOOME	West Black Snake	Au				427300 7100400	BLACK SNAKE PORPHYRY	TE TM	
625	GOOME	West Coast Creek Alluvials	Au				425800 7111400	Undifferentiated Cainozoic	CZ	
626	GOOME	West Coast Tunnel	Au				425950 7111150	Unnamed intrusive		
627	GOOME	Whelans	Hg				415900 7111700	NEARA VOLCANICS	TE TM	
628	GOOME	Wild Horse Reef/Three Star 1 mine; ML 6623	Au	Ag			423900 7070050	Unnamed intrusive		
629	GOOME	Wilmot's Shaft	Au				426000 7110325	Unnamed intrusive		
630	GOOME	Wolf Lode	Hg				420000 7104700	NEARA VOLCANICS	TE TM	
631	GOOME	Wongella/Kilkivan Cu-Au prospect	Au	Cu			418600 7119800	NEARA VOLCANICS	TE TM	
632	GOOME	Wongella mercury prospect; ML 108	Hg				417500 7119700	WONGELLA METAMORPHICS	D C	
633	GOOME	_Unnamed	Hg				413750 7111150	NEARA VOLCANICS	TE TM	
634	GOOME	_Unnamed	Hg?	Au?			414950 7112700	NEARA VOLCANICS	TE TM	
635	GOOME	_Unnamed	Hg				415300 7112650	NEARA VOLCANICS	TE TM	
636	GOOME	_Unnamed	Hg				415250 7114900	NEARA VOLCANICS	TE TM	
637	GOOME	_Unnamed	Hg				415800 7112100	NEARA VOLCANICS	TE TM	
638	GOOME	_Unnamed	Hg				415950 7108850	NEARA VOLCANICS	TE TM	
639	GOOME	_Unnamed	Hg				416600 7116600	NEARA VOLCANICS	TE TM	

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
640	GOOME	_Unnamed	Hg			416600	7117400	NEARA VOLCANICS	TE TM	
641	GOOME	_Unnamed	Hg			416850	7115300	NEARA VOLCANICS	TE TM	
642	GOOME	_Unnamed	Hg			418900	7114950	Undifferentiated Cainozoic	CZ	
643	GOOME	_Unnamed	Hg			420450	7104800	NEARA VOLCANICS	TE TM	
644	GOOME	_Unnamed	Hg			421050	7102750	NEARA VOLCANICS	TE TM	
645	GOOME	_Unnamed	Cu			421050	7124150	BOONARA GRANODIORITE	TE TM	
646	GOOME	_Unnamed	Mn			421600	7107400	Mount Clara beds	D C	
647	GOOME	_Unnamed	Hg			422400	7102500	CLADDAGH GRANODIORITE	C	
648	GOOME	_Unnamed	Au			424350	7113900	Unnamed intrusive		
649	GOOME	_Unnamed	Ms			424500	7114800	MOUNT MIA SERPENTINITE	DL CE	
650	GOOME	_Unnamed	Au			424550	7112350	ONE MILE CREEK GRANODIORITE	TE TM	
651	GOOME	_Unnamed	Au			424800	7113500	Unnamed intrusive		
652	GOOME	_Unnamed	Au?			425150	7111900	ONE MILE CREEK GRANODIORITE	TE TM	
653	GOOME	_Unnamed	Au			425700	7110450	MOUNT MIA SERPENTINITE	DL CE	
654	GOOME	_Unnamed	Au			425900	7112850	Mount Clara beds	D C	
655	GOOME	_Unnamed	Au	Cu		426600	7099150	Mount Clara beds	D C	
656	GOOME	_Unnamed	Au?			427300	7101750	Mount Clara beds	D C	
657	GOOME	_Unnamed	Au			427400	7100650	BLACK SNAKE PORPHYRY	TE TM	
658	GOOME	_Unnamed	Ls			427450	7106600	MOUNT MIA SERPENTINITE	DL CE	
659	GOOME	_Unnamed	Cu			427700	7101150	MOUNT MIA SERPENTINITE	DL CE	
660	GOOME	_Unnamed	Au	Ag	Cu	427950	7100800	MURDERING CREEK METAMORPHIC	D C	
661	GOOME	_Unnamed	Au?			428000	7101200	Mount Clara beds	D C	
662	GOOME	_Unnamed	Cu			429000	7101150	MOUNT MIA SERPENTINITE	DL CE	
663	GOOME	_Unnamed	Cu	Au?		429250	7100750	STATION CREEK QUARTZ MONZON	TE TM	
664	GOOME	_Unnamed	Au			448400	7081400	Undifferentiated Cainozoic	CZ	
665	GOOME	_Unnamed	Ba			449100	7079000	Unnamed intrusive		
666	GOOME	_Unnamed	Cu	Ls		424900	7109300	MOUNT MIA SERPENTINITE	DL CE	
667	GYMPIE	Abyssinia; No.1 North?	Au	Ag		467380	7101410		PE	
668	GYMPIE	All Serene P.C.	Au	Ag		465022	7105514	RAMMUTT FORMATION	PE	
669	GYMPIE	Alliance and Excelsior; South	Au?			466473	7102116	RAMMUTT FORMATION	PE	
670	GYMPIE	Alliance and Sunburst; No.1 South	Au?			466420	7101980	RAMMUTT FORMATION	PE	
671	GYMPIE	Alliance No.1 S/Alliance &Sunburst	Au	Ag		466350	7102160	RAMMUTT FORMATION	PE	

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
672	GYMPIE	Alma and Great New Zealand	Au?			466785	7103455	RAMMUTT FORMATION	PE	
673	GYMPIE	Amamoor No.2/HQ/Skyring Creek	Mn			461800	7085800	AMAMOOR BEDS	D C	
674	GYMPIE	Anderleigh prospect; ML 50004	Au	Sb		459900	7121600			
675	GYMPIE	Anglo Saxon/Eastern & Oriental; No.5 S	Au?			468671	7098882	RAMMUTT FORMATION	PE	
676	GYMPIE	Araluen Pump Shaft	Au			464100	7105300			
677	GYMPIE	Arnold's Prospect	Mn			460400	7080800	AMAMOOR BEDS	D C	
678	GYMPIE	Australasian/Smithfield No.2 North/Smithfield a	Au	Ag		467615	7103231	RAMMUTT FORMATION	PE	
679	GYMPIE	Balaclava Gully	Au			468200	7107900		TECZ	
680	GYMPIE	Baldwin	Au?			467639	7099583	RAMMUTT FORMATION	PE	
681	GYMPIE	Banana	Au?			467365	7101594	RAMMUTT FORMATION	PE	
682	GYMPIE	Banks Pocket	Au?			467600	7106600	KIN KIN BEDS	TE	
683	GYMPIE	Barlow's Freehold	Au	Ag		473200	7097500	KIN KIN BEDS	TE	
684	GYMPIE	Beehive	Au?			466409	7103781	RAMMUTT FORMATION	PE	
685	GYMPIE	Beehive P.C.	Au?			466424	7103714	RAMMUTT FORMATION	PE	
686	GYMPIE	Beehive; No.1 North	Au?			466398	7103846	RAMMUTT FORMATION	PE	
687	GYMPIE	Beehive; No.2 North	Au?			466410	7103884	RAMMUTT FORMATION	PE	
688	GYMPIE	Blacks New Zealand	Au	Ag	Pb	467107	7102641	RAMMUTT FORMATION	PE	
689	GYMPIE	Blacks United/Crown and Phoenix	Au	Ag		467010	7103124	RAMMUTT FORMATION	PE	
690	GYMPIE	Blink Bonnie P.C./Blink Bonney	Au	Ag		466256	7102594	RAMMUTT FORMATION	PE	
691	GYMPIE	Block 1292/Lady Mary; No.8 South	Au	Ag		466926	7102039	RAMMUTT FORMATION	PE	
692	GYMPIE	Lady Mary 7 & 8 S/Lady Mary United	Cu	Ag	Au Sb	450800	7078500	(Unnamed serpentinite)	D C	
693	GYMPIE	Blue Bell	Cu	Ag	Au	450800	7078500			
694	GYMPIE	Bonnie Dundee	Au?			467508	7098783	RAMMUTT FORMATION	PE	
695	GYMPIE	Bonnys	Au?			464676	7105907	RAMMUTT FORMATION	PE	
696	GYMPIE	Bonnys Shallow Shafts	Au?			464480	7106310	RAMMUTT FORMATION	PE	
697	GYMPIE	Bonnys Working Shaft	Au?			464539	7106344	RAMMUTT FORMATION	PE	
698	GYMPIE	Borg's Prospect	Mn			459500	7069800	AMAMOOR BEDS	D C	
699	GYMPIE	Boulton/Bolton/Boulton Extended	Au	Ag		466194	7102491	RAMMUTT FORMATION	PE	
700	GYMPIE	Boyd's Gully	Au			467600	7070900	(Unnamed intrusives)	P T	
701	GYMPIE	Branch Gully No.2	Mn			461600	7073100	AMAMOOR BEDS	D C	
702	GYMPIE	Branch Gully/Butler's Corner	Mn			461800	7073100	AMAMOOR BEDS	D C	
703	GYMPIE	Breakneck Creek	Au	Ag		468400	7071300		CZ	

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
704	GYMPIE	Brennans Caledonia; Alma & L. Mary Tribute	Au	Ag		466676	7102731	RAMMUTT FORMATION	PE	
705	GYMPIE	Brewers	Au?			465472	7103890	RAMMUTT FORMATION	PE	
706	GYMPIE	Brickfield	Au?			466020	7104280	RAMMUTT FORMATION	PE	
707	GYMPIE	Brickfield P.C.	Au?			466081	7103930	RAMMUTT FORMATION	PE	
708	GYMPIE	Brickfield; No.1 North	Au?			466041	7104030	RAMMUTT FORMATION	PE	
709	GYMPIE	Bristol P.C.	Au	Ag		464356	7105790	RAMMUTT FORMATION	PE	
710	GYMPIE	Bristol; No.1 North	Au?			464350	7105876	RAMMUTT FORMATION	PE	
711	GYMPIE	Bristol; No.2 North	Au?			464380	7105960	RAMMUTT FORMATION	PE	
712	GYMPIE	Bristol; No.3 North	Au?			464359	7106000	RAMMUTT FORMATION	PE	
713	GYMPIE	Bristol; No.4 North	Au?			464418	7105984	RAMMUTT FORMATION	PE	
714	GYMPIE	Brittania Underlie	Au?			466602	7102675	RAMMUTT FORMATION	PE	
715	GYMPIE	Brittania/Britannia	Au?			466610	7102915	RAMMUTT FORMATION	PE	
716	GYMPIE	Brown's Gully	Au			467800	7070800	(Unnamed intrusives)	P T	
717	GYMPIE	Browns	Au	Ag		471600	7112500	KIN KIN BEDS	TE	
718	GYMPIE	Buchanan	Au?			467564	7098787	RAMMUTT FORMATION	PE	
719	GYMPIE	Burgess	Au?			467444	7098850	RAMMUTT FORMATION	PE	
720	GYMPIE	Byrnes	Au?			464187	7106115	RAMMUTT FORMATION	PE	
721	GYMPIE	Byrnes	Au?			464682	7105640	RAMMUTT FORMATION	PE	
722	GYMPIE	Byrnes	Au?			466550	7102885	RAMMUTT FORMATION	PE	
723	GYMPIE	Byrnes	Au?			466799	7102013	RAMMUTT FORMATION	PE	
724	GYMPIE	Caledonia	Au?			466730	7102540	RAMMUTT FORMATION	PE	
725	GYMPIE	Caledonia P.C./L. Mary 3S/L. Mary 2S	Au	Ag		466759	7102941	RAMMUTT FORMATION	PE	
726	GYMPIE	Caledonia United/Caledonian United/Lady Mar	Au	Ag		466736	7102962	RAMMUTT FORMATION	PE	
727	GYMPIE	Caledonia & N Z Utd/Scottish & Oriental; S	Au?			468838	7099328		PE	
728	GYMPIE	Caledonia and N Z/ Caledonia & NZ Tribute	Au	Ag		466868	7102936	RAMMUTT FORMATION	PE	
729	GYMPIE	Caledonia No.1 N/Caledonian No.1 N	Au	Ag		466707	7103011	RAMMUTT FORMATION	PE	
730	GYMPIE	Caledonia; No.3 North?	Au	Ag		466700	7103170	RAMMUTT FORMATION	PE	
731	GYMPIE	California P.C.	Au	Ag		466735	7102340	RAMMUTT FORMATION	PE	
732	GYMPIE	California; No.1 N/California United	Au	Ag		466730	7102430	RAMMUTT FORMATION	PE	
733	GYMPIE	California No.1 S/Hilton No.8 N?	Au	Ag		466818	7102329	RAMMUTT FORMATION	PE	
734	GYMPIE	California; No.2 North	Au	Ag		466730	7102480	RAMMUTT FORMATION	PE	
735	GYMPIE	California; No.3 South	Au?			466741	7102067	RAMMUTT FORMATION	PE	

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
736	GYMPIE	California; North	Au	Ag		466740	7102445	RAMMUTT FORMATION	PE	
737	GYMPIE	Callaghan's Selection	Au			456100	7100200	AMAMMOOR BEDS		
738	GYMPIE	Cameron/Upper Kandanga/Kandanga Lode	Mn			462800	7077800	AMAMMOOR BEDS	D C	
739	GYMPIE	Campbells	Au?			464426	7106483	RAMMUTT FORMATION	PE	
740	GYMPIE	Campbells	Au?			468175	7102155	RAMMUTT FORMATION	PE	
741	GYMPIE	Canadian	Au?			463856	7106683	RAMMUTT FORMATION	PE	
742	GYMPIE	Canadian P.C./Canadian Two Mile	Au	Ag		463854	7106731	RAMMUTT FORMATION	PE	
743	GYMPIE	Canadian; No.1	Au?			463852	7106786	RAMMUTT FORMATION	PE	
744	GYMPIE	Cedar Gully	Mn			458900	7084500	AMAMMOOR BEDS	D C	
745	GYMPIE	Champagne	Au?			466685	7102261	RAMMUTT FORMATION	PE	
746	GYMPIE	Chatsworth Gold/Lidgards	Au	Ag		463111	7107469	RAMMUTT FORMATION	PE	
747	GYMPIE	Chatsworth Great Northern	Au?			463310	7107630	RAMMUTT FORMATION	PE	
748	GYMPIE	Chatsworth Syndicate	Au?			464220	7106620	RAMMUTT FORMATION	PE	
749	GYMPIE	Cole's Prospect	Mn			466800	7089500	AMAMMOOR BEDS	D C	
750	GYMPIE	Colleen Bawn	Au	Ag		467251	7100307	RAMMUTT FORMATION	PE	
751	GYMPIE	Columbia Consolidated	Au	Ag	Pb	468216	7102393	RAMMUTT FORMATION	PE	
752	GYMPIE	Columbia Extd/Gympie East Gold Mines	Au	Ag		467907	7103297	RAMMUTT FORMATION	PE	
753	GYMPIE	Columbia Extended; No.1 North	Au	Ag		467699	7104030	RAMMUTT FORMATION	PE	
754	GYMPIE	Columbia Smithfield	Au	Ag		467804	7101831	RAMMUTT FORMATION	PE	
755	GYMPIE	Columbia Smithfield	Au	Ag		467784	7102024	RAMMUTT FORMATION	PE	
756	GYMPIE	Columbia Smithfield Block	Au?			468069	7102042	RAMMUTT FORMATION	PE	
757	GYMPIE	Columbia Smithfield; No.1 North	Au	Ag		467927	7102245	RAMMUTT FORMATION	PE	
758	GYMPIE	Columbia Smithfield; No.2 North	Au	Ag		467887	7102688	RAMMUTT FORMATION	PE	
759	GYMPIE	Columbia United	Au?			467947	7101420	RAMMUTT FORMATION	PE	
760	GYMPIE	Columbia; No.3 North	Au	Ag		468112	7103035	RAMMUTT FORMATION	PE	
761	GYMPIE	Corella Alluvials Group	Au			467000	7113400		CZ	
762	GYMPIE	Corella Reefs Group-Caltex	Au			466600	7116000	KIN KIN BEDS	TE	
763	GYMPIE	Corella Reefs Group-Coronation Gully/Exhibiti	Au	Ag	Pb Zn	466800	7113000	KIN KIN BEDS	TE	
764	GYMPIE	Corella Reefs Group-Dead Horse Road	Au			466700	7113500		TE	
765	GYMPIE	Corella Reefs Group-Luck's Reef (Lucky Scots	Au	Ag	Pb	466900	7114700	KIN KIN BEDS	TE	
766	GYMPIE	Corella Reefs Group-Ora(Oram)	Au	Ag	Pb	466800	7115300		TE	
767	GYMPIE	Corella Reefs Group-Sismey's Gully	Au?	Pb		466900	7111800	(Unnamed intrusives)/KIN KIN BEDS		

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
768	GYMPIE	Corella Reefs Group-Unnamed	Au	Pb	Cu	466800	7112700	(Unnamed intrusives)/KIN KIN BEDS	TE	
769	GYMPIE	Corella Reefs Group-Unnamed	Au?			467200	7112300	KIN KIN BEDS	TE	
770	GYMPIE	Cornish	Au	Ag		467862	7100418	RAMMUTT FORMATION	PE	
771	GYMPIE	Cornish Underlie	Au?			467933	7100601	RAMMUTT FORMATION	PE	
772	GYMPIE	Couldery's New Zealand	Au?			466873	7102770	RAMMUTT FORMATION	PE	
773	GYMPIE	Crown and Phoenix/Crown & Phoenix Extd	Au	Ag	Zn	467052	7102989	RAMMUTT FORMATION	PE	
774	GYMPIE	Crown and Phoenix; No.1 North	Au?			466952	7103019	RAMMUTT FORMATION	PE	
775	GYMPIE	Croziers	Au			489100	7086800	KIN KIN BEDS	TE	
776	GYMPIE	Curra limestone quarries; ML 50069	Ls			457300	7112700	SOUTH CURRA LIMESTONE	PE PM	
777	GYMPIE	Daddows	Au?			467685	7101438	RAMMUTT FORMATION	PE	
778	GYMPIE	Dagun Road prospect	Mn			466800	7087000	AMAMoor BEDS	D C	
779	GYMPIE	Dagun/Big Baldy	Mn			466900	7088700	AMAMoor BEDS	D C	
780	GYMPIE	Dead Bird/London No. 4 South	Au	Ag		464277	7105780	RAMMUTT FORMATION	PE	
781	GYMPIE	Dead Goat/Ellen Harkins & Wilmot South	Au	Ag		467367	7101234	RAMMUTT FORMATION	PE	
782	GYMPIE	Deans	Au?			467253	7101113	RAMMUTT FORMATION	PE	
783	GYMPIE	Donaldsons	Mn			459900	7096000	AMAMoor BEDS	D C	
784	GYMPIE	Donaldsons No.2	Mn			459800	7095800	AMAMoor BEDS	D C	
785	GYMPIE	Duke of Wellington	Au?			466535	7104195	RAMMUTT FORMATION	PE	
786	GYMPIE	Dunkelland P.C.	Au?			466813	7102039	RAMMUTT FORMATION	PE	
787	GYMPIE	Dunn Kelland/Dunkelland	Au	Ag		466831	7102066	RAMMUTT FORMATION	PE	
788	GYMPIE	East Lynne P.C.	Au	Ag		463828	7106742	RAMMUTT FORMATION	PE	
789	GYMPIE	East Lynne; No.1 Southwest	Au?			463816	7106717	RAMMUTT FORMATION	PE	
790	GYMPIE	East Lynne; No.3 Northeast	Au?			463981	7106846	RAMMUTT FORMATION	PE	
791	GYMPIE	East Lynne; Southwest	Au?			463832	7106671	RAMMUTT FORMATION	PE	
792	GYMPIE	Eastern Gympie	Au?			469744	7099571	RAMMUTT FORMATION	PE	
793	GYMPIE	Eastern Miners	Au	Ag		467624	7098820	RAMMUTT FORMATION	PE	
794	GYMPIE	Eaton's Northern Hibernia	Au?			464648	7106110	RAMMUTT FORMATION	PE	
795	GYMPIE	Edwards	Au?			467520	7100990	RAMMUTT FORMATION	PE	
796	GYMPIE	Eel Creek/Skyrings?/Mount Nansen?	Mn	Cu		458500	7091100	AMAMoor BEDS	D C	
797	GYMPIE	Eldorado/Gympie Eldorado mine; ML 3677	Au	Cu		466088	7102456	RAMMUTT FORMATION	PE	
798	GYMPIE	Ellen Harkins Lshd; No.1 S/Deep Lead shaft	Au?			467071	7101095	RAMMUTT FORMATION	PE	
799	GYMPIE	Ellen Harkins Leasehold; No.2 South	Au?			466915	7100860	RAMMUTT FORMATION	PE	

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
800	GYMPIE	Ellen Harkins P.C. Tribute; New	Au?			467129	7101518	RAMMUTT FORMATION	PE	
801	GYMPIE	Ellen Harkins and Colleen Bawn Syndicate	Au	Ag		467250	7100380	RAMMUTT FORMATION	PE	
802	GYMPIE	Ellen Harkins and Lone Star	Au?			467015	7099725	RAMMUTT FORMATION	PE	
803	GYMPIE	Ellen Harkins and St. Kilda/St. Kilda P.C.?	Au	Ag		467228	7101491	RAMMUTT FORMATION	PE	
804	GYMPIE	Ellen Harkins/Ellen Harkins P.C.	Au	Ag		467154	7101545	RAMMUTT FORMATION	PE	
805	GYMPIE	Ellen Harkins; New No.1 North/ Mt Pleasant/St	Au	Ag		467077	7101707	RAMMUTT FORMATION	PE	
806	GYMPIE	Ellen Harkins; No.1 South	Au	Ag		467138	7101292		PE	
807	GYMPIE	Ellen Harkins; No.2 South	Au?			467075	7100704	RAMMUTT FORMATION	PE	
808	GYMPIE	Ellen Harkins; No.4 South	Au?			467059	7100348	RAMMUTT FORMATION	PE	
809	GYMPIE	Ellen Harkins; South	Au	Ag		467160	7101355	RAMMUTT FORMATION	PE	
810	GYMPIE	Ellen Harkins; West	Au	Ag		467042	7101346	RAMMUTT FORMATION	PE	
811	GYMPIE	Elmer's Prospect	Mn			465500	7085000	AMAMOOR BEDS	D C	
812	GYMPIE	Enterprise	Au	Ag	Pb Zn	472000	7107800	KIN KIN BEDS	TE	
813	GYMPIE	Excelsior P.C.	Au	Ag		466540	7102370	RAMMUTT FORMATION	PE	
814	GYMPIE	Finlayson and Byrne	Au?			471060	7101150	RAMMUTT FORMATION		
815	GYMPIE	Frenchmans	Au?			467498	7101193	RAMMUTT FORMATION	PE	
816	GYMPIE	Gardiner and Hansens	Au	Ag		462500	7123600	TIARO COAL MEASURES	T JM	
817	GYMPIE	Gardiners	Au?			468975	7097805	RAMMUTT FORMATION	PE	
818	GYMPIE	Gate's Show Surprise	Au	Ag	Pb	471900	7112400	KIN KIN BEDS	TE	
819	GYMPIE	General Jackson	Au	Ag		467006	7101873	RAMMUTT FORMATION	PE	
820	GYMPIE	German Extended	Au	Ag		464518	7106312	RAMMUTT FORMATION	PE	
821	GYMPIE	German P.C.	Au	Ag		464535	7106273	RAMMUTT FORMATION	PE	
822	GYMPIE	Gills	Au?			466936	7101982	RAMMUTT FORMATION	PE	
823	GYMPIE	Glanmire P.C.	Au	Ag		467976	7100890	RAMMUTT FORMATION	PE	
824	GYMPIE	Glanmire P.C.; New/Monkland; No.4 S	Au	Ag		467966	7100840	RAMMUTT FORMATION	PE	
825	GYMPIE	Glanmire & Monkland/Monkland 6 S	Au	Ag		468000	7100770	RAMMUTT FORMATION	PE	
826	GYMPIE	Glanmire and Monkland S/Gt E Extd S	Au	Ag		468309	7100628	RAMMUTT FORMATION	PE	
827	GYMPIE	Glanmire and Monkland; South/Monkland; We	Au	Ag		468085	7100485	RAMMUTT FORMATION	PE	
828	GYMPIE	Glanmire; Eastern	Au	Ag		468744	7100657		PE	
829	GYMPIE	Glanmire; No.1 North; eastern	Au	Ag		468133	7100989	RAMMUTT FORMATION	PE	
830	GYMPIE	Glanmire; No.1 North; western	Au	Ag	Pb	467984	7100941	RAMMUTT FORMATION	PE	
831	GYMPIE	Glanmire N/Amalg Mkland & Glanmire Deep	Au	Ag	Pb	467934	7100961	RAMMUTT FORMATION	PE	

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
832	GYMPIE	Glanmire 3 & 4 N/Cullinanes/Gt E & Orient	Au	Ag		468062	7101241	RAMMUTT FORMATION	PE	
833	GYMPIE	Glanmire; Nos 3 & 4 North	Au	Ag		467937	7101066	RAMMUTT FORMATION	PE	
834	GYMPIE	Glastonbury Gp-Divine King/Give It a Go	Au	Ag	Zn Pb	450150	7104100	AMAMoor BEDS		
835	GYMPIE	Glastonbury Group-Golden Hope?	Au	Ag		450050	7104070	AMAMoor BEDS		
836	GYMPIE	Glast Gp-King Extd/Blk Shft/Try Again	Au	Ag	Pb	450250	7103800	AMAMoor BEDS		
837	GYMPIE	Glast Gp-King/Try Again/King Extd	Au	Ag	Zn Pb	450180	7104000	AMAMoor BEDS		
838	GYMPIE	Glast Group-Little Glastonbury?	Au	Ag		450050	7103850	(Unnamed intrusives)		
839	GYMPIE	Glastonbury Group-Pioneer/Dawn?	Au	Ag		450050	7104150	AMAMoor BEDS		
840	GYMPIE	Glastonbury Group-Pioneer?	Au	Ag		450120	7103800	AMAMoor BEDS		
841	GYMPIE	Glastonbury Group-Stony Gully	Au	Ag		450400	7104000		CZ	
842	GYMPIE	Glastonbury Group-Surprise	Au?			450350	7103800	AMAMoor BEDS		
843	GYMPIE	Glastonbury Group-Tombine	Au	Ag		450300	7104120	AMAMoor BEDS		
844	GYMPIE	Glastonbury Group-Tomboyne/Tombine Extd/M	Au	Ag		450250	7104120	AMAMoor BEDS		
845	GYMPIE	Glast Gp-Try Again Extd/Pioneer Extd	Au			450200	7103900			
846	GYMPIE	Glastonbury Group-Unnamed	Au?			450150	7104550	AMAMoor BEDS		
847	GYMPIE	Glastonbury Group-Unnamed	Au?			451100	7104650	AMAMoor BEDS		
848	GYMPIE	Godbars	Au?			463338	7107078	RAMMUTT FORMATION	PE	
849	GYMPIE	Golden Bar/Golden Bar 1 N/Beehive	Au	Ag		466363	7103871	RAMMUTT FORMATION	PE	
850	GYMPIE	Golden Crown/Gympie Golden Crown/ Phoenix	Au	Ag		467165	7102210	RAMMUTT FORMATION	PE	
851	GYMPIE	Golden Crown; No.1 North	Au	Ag		465076	7105871		PE	
852	GYMPIE	Golden Crown; No.2 North	Au?			465033	7106111	RAMMUTT FORMATION	PE	
853	GYMPIE	Golden Currie Leasehold	Au	Ag		466065	7102660	RAMMUTT FORMATION	PE	
854	GYMPIE	Golden Currie P.C.	Au	Ag		466099	7102671	RAMMUTT FORMATION	PE	
855	GYMPIE	Golden Currie; No.1 South	Au	Ag		466130	7102615	RAMMUTT FORMATION	PE	
856	GYMPIE	Golden Currie; No.2 South	Au	Ag		466135	7102595	RAMMUTT FORMATION	PE	
857	GYMPIE	Golden Curry and Victoria/Chinamans	Au?			465975	7102853	RAMMUTT FORMATION	PE	
858	GYMPIE	Golden Dawn	Au	Ag		468750	7097270	RAMMUTT FORMATION	PE	
859	GYMPIE	Golden Fleece/Scottish South	Au	Ag		468040	7099080	RAMMUTT FORMATION	PE	
860	GYMPIE	Golden Harp?/Golden Bar?	Au	Ag		466650	7102490	RAMMUTT FORMATION	PE	
861	GYMPIE	Golden North	Au?			464490	7105730	RAMMUTT FORMATION	PE	
862	GYMPIE	Golden Pile/Gillespies/Shultzs?	Au	Ag	Pb	471370	7101130	RAMMUTT FORMATION	PE	
863	GYMPIE	Golden Valley	Au	Ag		471325	7101200	RAMMUTT FORMATION	PE	

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
864	GYMPIE	Good Luck?	Sb	Ag		461200	7110200	SOUTH CURRA LIMESTONE	PE PM	
865	GYMPIE	Great Eastn & Orient/Oriental and Glanmire; N	Au	Ag		468309	7101285	RAMMUTT FORMATION	PE	
866	GYMPIE	Grt Eastern/Gympie Grt Eastn/A'sian	Au	Ag		468067	7100805		PE	
867	GYMPIE	Great Eastern; No.1 North	Au	Ag		468238	7101015	RAMMUTT FORMATION	PE	
868	GYMPIE	Great Eastern; No.1 South	Au	Ag		468175	7100719	RAMMUTT FORMATION	PE	
869	GYMPIE	Great Eastern; No.2 North	Au	Ag		468098	7101604	RAMMUTT FORMATION	PE	
870	GYMPIE	Great Eastern; No.2 South	Au	Ag	Te Mo	468522	7100338	RAMMUTT FORMATION	PE	
871	GYMPIE	Great Eastern; No.2/Caledonia	Au	Ag		468274	7099945	RAMMUTT FORMATION	PE	
872	GYMPIE	Great Eastern; No.2/Monkland; No.10	Au	Ag	Pb	468176	7100341	RAMMUTT FORMATION	PE	
873	GYMPIE	Great Eastern; 3 N/Columbia Smithfield	Au			467961	7101919	RAMMUTT FORMATION	PE	
874	GYMPIE	Great Eastern; No.3 South	Au?			468493	7099975	RAMMUTT FORMATION	PE	
875	GYMPIE	Great Eastern; No.4 South	Au?			468520	7099615	RAMMUTT FORMATION	PE	
876	GYMPIE	Great Gorge	Au	Ag		458200	7111200	RAMMUTT FORMATION	PE	
877	GYMPIE	Great Hibernia	Au	Ag		464620	7105480	RAMMUTT FORMATION	PE	
878	GYMPIE	Great Monkland/Aurelia	Au	Ag		467920	7100741	RAMMUTT FORMATION	PE	
879	GYMPIE	Great New Zealand/Great New Zealand 2 N	Au	Ag		466938	7102781	RAMMUTT FORMATION	PE	
880	GYMPIE	Great New Zealand; No.1 North	Au	Ag	Te	466902	7103009	RAMMUTT FORMATION	PE	
881	GYMPIE	Great Nthn Extd/Cartwrights Paddock	Au?			465973	7104362	RAMMUTT FORMATION	PE	
882	GYMPIE	Great Northern Underlie/Kitts	Au	Ag		463120	7107470	RAMMUTT FORMATION	PE	
883	GYMPIE	Great Northern/Grt N Tribute/Gympie Gold	Au	Ag		465409	7104262	RAMMUTT FORMATION	PE	
884	GYMPIE	Great Northern; No.2 S/Stanley	Au	Ag		465480	7103561	RAMMUTT FORMATION	PE	
885	GYMPIE	Great Southern	Au?			470400	7096400	RAMMUTT FORMATION	PE	
886	GYMPIE	Great Southern Inglewood	Au	Ag	Zn	467920	7100625	RAMMUTT FORMATION	PE	
887	GYMPIE	Great Victoria Syndicate	Au?			465987	7102737	RAMMUTT FORMATION	PE	
888	GYMPIE	Great Western	Au?			465035	7104299	RAMMUTT FORMATION	PE	
889	GYMPIE	Gympie Antimony?	Sb	Au		461600	7110100	SOUTH CURRA LIMESTONE	PE PM	
890	GYMPIE	Gympie Brilliant	Au?			466885	7103680	RAMMUTT FORMATION	PE	
891	GYMPIE	Gympie Gold Field Alluvial Group	Au	Ag	Pt	465860	7102890		CZ	
892	GYMPIE	Gympie G F Alluvial Gp-Araluen Pump Shaft	Au			464078	7105324		CZ	
893	GYMPIE	Gympie Golden Crown east	Au?			465124	7105692	RAMMUTT FORMATION	PE	
894	GYMPIE	Gympie Golden Crown west	Au?			464996	7105597	RAMMUTT FORMATION	PE	
895	GYMPIE	Gympie Homeward Bound 2/Hibernia 1 N	Au?			464670	7105510	RAMMUTT FORMATION	PE	

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
896	GYMPIE	Gympie Homeward Bound No.3	Au?			464549	7105566	RAMMUTT FORMATION	PE	
897	GYMPIE	Gympie Sovereign	Au?	Zn Pb		468165	7100250	RAMMUTT FORMATION	PE	
898	GYMPIE	Gympie Town Blocks	Au?			466845	7102840	RAMMUTT FORMATION	PE	
899	GYMPIE	Halls Lease/Dodd P.C./Alliance & Sunburst	Au	Ag		466371	7102304	RAMMUTT FORMATION	PE	
900	GYMPIE	Hamburg; No.1 North	Au	Ag		466815	7102290	RAMMUTT FORMATION	PE	
901	GYMPIE	Hart	Au?			468900	7097050	RAMMUTT FORMATION	PE	
902	GYMPIE	Hibernia P.C./Gympie Homeward Bound 1/Gyr	Au	Ag		464686	7105282	RAMMUTT FORMATION	PE	
903	GYMPIE	Hicksons	Au?			464121	7105829		PE	
904	GYMPIE	Hidden	Mn			460800	7082300	AMAMoor BEDS	D C	
905	GYMPIE	Hilton Extended/New Home Rule No. 1/Gympie	Au	Ag		466802	7102174	RAMMUTT FORMATION	PE	
906	GYMPIE	Hilton; No.1 North?	Au	Ag		466960	7101960		PE	
907	GYMPIE	Hilton; No.1 South?	Au	Ag		466995	7101685	RAMMUTT FORMATION	PE	
908	GYMPIE	Hilton; No.2 North	Au	Ag		466890	7102029	RAMMUTT FORMATION	PE	
909	GYMPIE	Hilton; No.4 North	Au	Ag		466859	7102152	RAMMUTT FORMATION	PE	
910	GYMPIE	Hilton; No.5 North?	Au	Ag		466852	7102183	RAMMUTT FORMATION	PE	
911	GYMPIE	Hilton; No.6 North	Au	Ag		466850	7102235	RAMMUTT FORMATION	PE	
912	GYMPIE	Hilton; North	Au	Ag		466940	7102200	RAMMUTT FORMATION	PE	
913	GYMPIE	Hilton; Nos 2 & 3 North	Au	Ag		466869	7102054	RAMMUTT FORMATION	PE	
914	GYMPIE	Home Rule & Hilton Extd/Great Hibernia	Au	Ag		464537	7105368	RAMMUTT FORMATION	PE	
915	GYMPIE	Home Rule & Hilton 1N/Home Rule; No.1 N?	Au	Ag		466798	7102345	RAMMUTT FORMATION	PE	
916	GYMPIE	Home Rule and Hilton; South	Au?			464548	7105327	RAMMUTT FORMATION	PE	
917	GYMPIE	Home Rule/Caledonia; No.10 South	Au	Ag		466670	7102390	RAMMUTT FORMATION	PE	
918	GYMPIE	Homeward Bound	Au	Ag		464556	7105464	RAMMUTT FORMATION	PE	
919	GYMPIE	Homeward Bound P.C.	Au?			464560	7105498	RAMMUTT FORMATION	PE	
920	GYMPIE	Homeward Bound and Hibernian	Au	Ag		464740	7105117	RAMMUTT FORMATION	PE	
921	GYMPIE	Homeward Bound; New No.1 North	Au	Ag		464572	7105711	RAMMUTT FORMATION	PE	
922	GYMPIE	Homeward Bound; No.1 North	Au?			464546	7105517	RAMMUTT FORMATION	PE	
923	GYMPIE	Homeward Bound; No.12 South	Au?			464631	7105080	RAMMUTT FORMATION	PE	
924	GYMPIE	Homeward Bound; No.5 South	Au	Ag		464560	7105280	RAMMUTT FORMATION	PE	
925	GYMPIE	Imbil No.2	Mn			465300	7073700	AMAMoor BEDS	D C	
926	GYMPIE	Imbil Rail Cut Prospect	Mn			466900	7073800	AMAMoor BEDS	D C	
927	GYMPIE	Imbil West	Mn			465300	7074000	AMAMoor BEDS	D C	

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
928	GYMPIE	Inglewood P.C.	Au	Ag		467514	7100939	RAMMUTT FORMATION	PE	
929	GYMPIE	Inglewood United/Inglewood No. 2SE/ Inglewood	Au	Ag		467662	7100811	RAMMUTT FORMATION	PE	
930	GYMPIE	Inglewood; No.1 North/Day Dawn	Au	Ag		467350	7101059		PE	
931	GYMPIE	Inglewood; No.1 SE/Inglewood; 1 E	Au	Ag		467577	7100881	RAMMUTT FORMATION	PE	
932	GYMPIE	Inglewood; No.3 Southeast	Au?			467697	7100810	RAMMUTT FORMATION	PE	
933	GYMPIE	Inglewood; No.3 West	Au	Ag		467422	7101011	RAMMUTT FORMATION	PE	
934	GYMPIE	Inglewood; No.4 Southeast	Au?			467736	7100768	RAMMUTT FORMATION	PE	
935	GYMPIE	Jerry Creek	Mn			457400	7088200	AMAMoor BEDS	D C	
936	GYMPIE	Jones Caledonian?	Au	Ag		466702	7102960	RAMMUTT FORMATION	PE	
937	GYMPIE	Jones P.C.	Au	Ag		467330	7098928	RAMMUTT FORMATION	PE	
938	GYMPIE	Jones; No.1 North	Au?			467331	7098968	RAMMUTT FORMATION	PE	
939	GYMPIE	Jones; No.1 South	Au	Ag		467337	7098864	RAMMUTT FORMATION	PE	
940	GYMPIE	Jones; No.5 South	Au	Ag		467322	7098717	RAMMUTT FORMATION	PE	
941	GYMPIE	Jones; No.7 South	Au?			467342	7098603	RAMMUTT FORMATION	PE	
942	GYMPIE	Jones; North	Au	Ag		467267	7099136	RAMMUTT FORMATION	PE	
943	GYMPIE	Jones; Nos 3 & 4 South	Au	Ag		467336	7098760	RAMMUTT FORMATION	PE	
944	GYMPIE	Jones; Nos 5 & 6 South	Au?			467361	7098658	RAMMUTT FORMATION	PE	
945	GYMPIE	Joy of Gympie/Hart and Roberts	Au?			468915	7097340	RAMMUTT FORMATION	PE	
946	GYMPIE	Kandanga Town Prospect	Mn			467800	7080500	AMAMoor BEDS	D C	
947	GYMPIE	Kitts	Au?			464581	7105185	RAMMUTT FORMATION	PE	
948	GYMPIE	Kitts	Au?			465985	7102638	RAMMUTT FORMATION	PE	
949	GYMPIE	Kitts	Au?			466580	7102038	RAMMUTT FORMATION	PE	
950	GYMPIE	Krogh's Dam	Au	Ag		467700	7109500	(Unnamed intrusives)	P CZ	
951	GYMPIE	Lady Flora	Au	Ag	Cu	465593	7103810	RAMMUTT FORMATION	PE	
952	GYMPIE	Lady Franklin	Au	Ag		465360	7103055	RAMMUTT FORMATION	PE	
953	GYMPIE	Lady Mary Blk 7 S/Brittania/Calton Hill	Au	Ag		466640	7102660	RAMMUTT FORMATION	PE	
954	GYMPIE	Lady Mary Leasehold N/Lady Mary Leashd	Au	Ag		466816	7104024	RAMMUTT FORMATION	PE	
955	GYMPIE	Lady Mary P.C.	Au	Ag		466785	7103150	RAMMUTT FORMATION	PE	
956	GYMPIE	Lady Mary Tribute; Nos 6;7;8 & 9 Amalgamate	Au	Ag		466764	7102716	RAMMUTT FORMATION	PE	
957	GYMPIE	Lady Mary and Alma	Au?			466755	7103630		PE	
958	GYMPIE	Lady Mary and New Zealand	Au	Ag		466755	7103130	RAMMUTT FORMATION	PE	
959	GYMPIE	Lady Mary and New Zealand/ Alma?/Caledonia	Au	Ag		466765	7103060	RAMMUTT FORMATION	PE	

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
960	GYMPIE	Lady Mary; No.1 North	Au	Ag		466778	7103228		PE	
961	GYMPIE	Lady Mary; 2 N/Caledonian; 5 N	Au	Ag		466690	7103300	RAMMUTT FORMATION	PE	
962	GYMPIE	Lady Mary 5N/Wm Hastings; 3S	Au	Ag	Cu	466760	7103610	RAMMUTT FORMATION	PE	
963	GYMPIE	Lady Mary; No.5 South	Au	Ag		466762	7102808	RAMMUTT FORMATION	PE	
964	GYMPIE	Lady Mary 6 S/Caledonia; 4 S	Au	Ag		466739	7102745	RAMMUTT FORMATION	PE	
965	GYMPIE	Lady Mary 7 S/Lady Mary Extd; No.7 S	Au	Ag		466821	7102610	RAMMUTT FORMATION	PE	
966	GYMPIE	Lady Mary 7 S/Lady Mary 7 & 8 S	Au	Ag		466735	7102665	RAMMUTT FORMATION	PE	
967	GYMPIE	Lady Mary; No.7 South/Nelson	Au	Ag		466907	7102632	RAMMUTT FORMATION	PE	
968	GYMPIE	Lady Mary; No.8 South	Au	Ag		466751	7102622	RAMMUTT FORMATION	PE	
969	GYMPIE	Lady Mary; No.9 South	Au	Ag		466769	7102650	RAMMUTT FORMATION	PE	
970	GYMPIE	Lady Mary North/Warren Hasting P.C./Lady Mary	Au	Ag	Pt Pb	466760	7103770	RAMMUTT FORMATION	PE	
971	GYMPIE	Lady Mary 3 & 4 N/Great N Z 2 N	Au	Ag		466735	7103368		PE	
972	GYMPIE	Laings/Eldorado?	Au			466074	7102333	RAMMUTT FORMATION	PE	
973	GYMPIE	Langshaw	Mn			460200	7084100	AMAMoor BEDS	D C	
974	GYMPIE	Letherans	Au?			468760	7097240	RAMMUTT FORMATION	PE	
975	GYMPIE	Lewis	Au?			466500	7102480	RAMMUTT FORMATION	PE	
976	GYMPIE	Lidgards	Au?			463881	7106626	RAMMUTT FORMATION	PE	
977	GYMPIE	Lidgards Yard	Au?			465603	7104010	RAMMUTT FORMATION	PE	
978	GYMPIE	Little Brickfield	Au?			466110	7103958	RAMMUTT FORMATION	PE	
979	GYMPIE	Liverpool P.C.	Au?			463415	7107080	RAMMUTT FORMATION	PE	
980	GYMPIE	Liverpool; No.1 North	Au?			463395	7107110	RAMMUTT FORMATION	PE	
981	GYMPIE	London P.C.	Au	Ag		464303	7106010	RAMMUTT FORMATION	PE	
982	GYMPIE	London and Brighton Syndicate	Au?			464200	7106730	RAMMUTT FORMATION	PE	
983	GYMPIE	London & Bristol Syndicate/London 1 S	Au	Ag		464291	7105949	RAMMUTT FORMATION	PE	
984	GYMPIE	London/London Deep	Au	Ag		464299	7106214	RAMMUTT FORMATION	PE	
985	GYMPIE	London/London Eastern	Au?			464498	7106104	RAMMUTT FORMATION	PE	
986	GYMPIE	London; New No.1 North	Au?			464319	7106053	RAMMUTT FORMATION	PE	
987	GYMPIE	London; No.1 North	Au	Ag		464283	7106119	RAMMUTT FORMATION	PE	
988	GYMPIE	London; No.2 North	Au?			464293	7106078	RAMMUTT FORMATION	PE	
989	GYMPIE	London; No.2 South	Au	Ag		464289	7105920	RAMMUTT FORMATION	PE	
990	GYMPIE	London; No.3 South	Au?			464292	7105902	RAMMUTT FORMATION	PE	
991	GYMPIE	London; No.4 South	Au?			464286	7105863	RAMMUTT FORMATION	PE	

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
992	GYMPIE	Lone Star	Au	Ag		466939	7099838	RAMMUTT FORMATION	PE	
993	GYMPIE	Louisa P.C./Louisa Extended P.C.	Au	Ag		466466	7103420	RAMMUTT FORMATION	PE	
994	GYMPIE	Louisa Syndicate/Louisa; No.1 South	Au?			466451	7103287	RAMMUTT FORMATION	PE	
995	GYMPIE	Louisa; New No.2 South	Au	Ag		466444	7103106	RAMMUTT FORMATION	PE	
996	GYMPIE	Louisa; No.1 South/Louisa South/Louisa; New/	Au	Ag		466478	7103290	RAMMUTT FORMATION	PE	
997	GYMPIE	Louisa; No.2 South	Au?			466503	7103102		PE	
998	GYMPIE	Louisa; No.3 North	Au?			466489	7103553	RAMMUTT FORMATION	PE	
999	GYMPIE	Lowe's Prospect	Mn			471900	7075300	AMAMoor BEDS	D C	
1000	GYMPIE	Lucknow	Au	Ag	Cu Te	466140	7103720	RAMMUTT FORMATION	PE	
1001	GYMPIE	Lucknow Freehold	Au?			466209	7103521	RAMMUTT FORMATION	PE	
1002	GYMPIE	Lucknow P.C.	Au	Ag		466193	7103956	RAMMUTT FORMATION	PE	
1003	GYMPIE	Lucknow Surprise	Au	Ag		466150	7103995	RAMMUTT FORMATION	PE	
1004	GYMPIE	Lucknow; No.1 North	Au	Ag		466177	7104090	RAMMUTT FORMATION	PE	
1005	GYMPIE	Lucknow; No.2 North	Au?			466160	7104315	RAMMUTT FORMATION	PE	
1006	GYMPIE	Lucknow; No.3 North	Au?			466158	7104450	RAMMUTT FORMATION	PE	
1007	GYMPIE	Lucknow; No.4 North	Au?			466165	7104615	RAMMUTT FORMATION	PE	
1008	GYMPIE	Lymburners	Au	Ag		465510	7103650	RAMMUTT FORMATION	PE	
1009	GYMPIE	Maid of Gypmie/Longs?	Au	Ag		465425	7103710	RAMMUTT FORMATION	PE	
1010	GYMPIE	Maiden City	Au?			467364	7099890	RAMMUTT FORMATION	PE	
1011	GYMPIE	March and Crown Consolidated/O' Donohue ar	Au	Ag		467156	7102472	RAMMUTT FORMATION	PE	
1012	GYMPIE	Mary River Alluvial Group	Au	Ag		466300	7102000		CZ	
1013	GYMPIE	Mary R Alluv Gp-Deep Lead Junction	Au?			466001	7102206		CZ	
1014	GYMPIE	Mary River Alluvial Group-Deep Lead Junct/Ell	Au	Ag		466880	7101160		CZ	
1015	GYMPIE	Mary River Alluvial Group-Deep Lead P.C./Cha	Au	Ag		465540	7102564		CZ	
1016	GYMPIE	Mary River Alluvial Group-Unnamed	Au	Ag		465290	7102860		CZ	
1017	GYMPIE	McMahons	Sb			473000	7121600	KIN KIN BEDS	TE	
1018	GYMPIE	Milne's Prospect	Mn			456800	7097000	AMAMoor BEDS	D C	
1019	GYMPIE	Monkland P.C.	Au	Ag		467865	7100975	RAMMUTT FORMATION	PE	
1020	GYMPIE	Monkland and Abyssinia/Abyssinia P.C./ Monk	Au	Ag		467488	7101331	RAMMUTT FORMATION	PE	
1021	GYMPIE	Monkland and Abyssinia; No.1 South	Au	Ag		467549	7101167		PE	
1022	GYMPIE	Monkland; No.1 North	Au	Ag		467805	7101020	RAMMUTT FORMATION	PE	
1023	GYMPIE	Monkland; No.1 South	Au	Ag		467890	7100935	RAMMUTT FORMATION	PE	

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1024	GYMPIE	Monkland; No.4 North	Au	Ag		467740	7101070	RAMMUTT FORMATION	PE	
1025	GYMPIE	Monkland; No.40B?	Au	Ag		468884	7099533	RAMMUTT FORMATION	PE	
1026	GYMPIE	Monkland; No.5 North	Au	Ag		467715	7101095	RAMMUTT FORMATION	PE	
1027	GYMPIE	Monkland; No.5 South	Au	Ag		468050	7100825	RAMMUTT FORMATION	PE	
1028	GYMPIE	Monkland; No.6 North	Au	Ag		467700	7101115	RAMMUTT FORMATION	PE	
1029	GYMPIE	Monkland; No.8	Au?			468047	7100693	RAMMUTT FORMATION	PE	
1030	GYMPIE	Monkland; North	Au	Ag		467755	7101010	RAMMUTT FORMATION	PE	
1031	GYMPIE	Monkland; Nos 2 & 3	Au	Ag		467910	7100887	RAMMUTT FORMATION	PE	
1032	GYMPIE	Monkland; Nos 2 & 3 North	Au	Ag		467770	7101045	RAMMUTT FORMATION	PE	
1033	GYMPIE	Monkland; Nos 7 & 8 South	Au	Ag	Pb	468004	7100720	RAMMUTT FORMATION	PE	
1034	GYMPIE	Mooloo T.O. Prospect	Mn			461900	7091400	AMAMoor BEDS	D C	
1035	GYMPIE	Mount Kelly	Au			471800	7087100	AMAMoor BEDS		
1036	GYMPIE	Mount Mooloo	Mn			459500	7090100	AMAMoor BEDS	D C	
1037	GYMPIE	Mount Mothar	Au?			479100	7095500	WOONDUM GRANITE	TM	
1038	GYMPIE	Mount Skyring	Au			459900	7092800	AMAMoor BEDS		
1039	GYMPIE	Mount Smyth/Traveston Prospect	Au	Ag		471900	7089200	AMAMoor BEDS		
1040	GYMPIE	Mount Teitsel	Au			482500	7099700	WOONDUM GRANITE	TM	
1041	GYMPIE	Mount Wonga	Au	Ag		471500	7096700	KIN KIN BEDS	TE	
1042	GYMPIE	Muir's Prospect	Mn			471000	7075600	AMAMoor BEDS	D C	
1043	GYMPIE	Myall/Sultan/Sultan Extended	Au	Ag		465958	7104001	RAMMUTT FORMATION	PE	
1044	GYMPIE	Napoleon	Au	Ag		463956	7106555	RAMMUTT FORMATION	PE	
1045	GYMPIE	Napoleon North	Au?			463960	7106755	RAMMUTT FORMATION	PE	
1046	GYMPIE	Napoleon P.C	Au?			463984	7106606	RAMMUTT FORMATION	PE	
1047	GYMPIE	Narcol	Au?			484900	7094500	KIN KIN BEDS	TE	
1048	GYMPIE	Native Youth P.C.	Au?			464372	7105462	RAMMUTT FORMATION	PE	
1049	GYMPIE	Native Youth; No.1 North	Au?			464372	7105554	RAMMUTT FORMATION	PE	
1050	GYMPIE	Native Youth; No.2 North	Au?			464373	7105574	RAMMUTT FORMATION	PE	
1051	GYMPIE	Native Youth; Nos 1 & 2 South	Au?			464371	7105402	RAMMUTT FORMATION	PE	
1052	GYMPIE	Neardie	Sb	Zn	Hg Ag	473300	7122500	KIN KIN BEDS	TE	
1053	GYMPIE	Neilsens	Au			476400	7079600	KIN KIN BEDS	TE	
1054	GYMPIE	Nelson/Lady Mary; No.7 South	Au	Ag		466882	7102427	RAMMUTT FORMATION	PE	
1055	GYMPIE	Never Mind/Never Mind and Russell	Au	Ag		467590	7101414	RAMMUTT FORMATION	PE	

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1056	GYMPIE	New Bollier; eastern/McNabbs	Mn			470800	7075300	AMAMOOR BEDS	D C	
1057	GYMPIE	New Bollier; western/McNabbs	Mn			470600	7075300	AMAMOOR BEDS	D C	
1058	GYMPIE	New Caledonian	Au	Ag		466680	7102510	RAMMUTT FORMATION	PE	
1059	GYMPIE	New Dawn 1 S/Dawn 1 S?	Au	Ag		468018	7096914	RAMMUTT FORMATION	PE	
1060	GYMPIE	New Dawn; No.1/Dawn; No.1 North?	Au	Ag	Pb Zn	467957	7097139	RAMMUTT FORMATION	PE	
1061	GYMPIE	New Dawn; No.2/Dawn; No.2 North?	Au	Ag	Pb Zn	468011	7097012	RAMMUTT FORMATION	PE	
1062	GYMPIE	New Glanmire Syndicate	Au?			467970	7100835	RAMMUTT FORMATION	PE	
1063	GYMPIE	New Gympie	Au	Ag		465050	7104550	RAMMUTT FORMATION	PE	
1064	GYMPIE	New Hope/Two Mile/Gympie Golden Crown	Au			465062	7105610	RAMMUTT FORMATION	PE	
1065	GYMPIE	New London Syndicate	Au	Ag		464275	7106400	RAMMUTT FORMATION	PE	
1066	GYMPIE	New London and Bristol Syndicate/Napier	Au?			464246	7106488	RAMMUTT FORMATION	PE	
1067	GYMPIE	New Otago/New Otago P.C.	Au?			467571	7098828	RAMMUTT FORMATION	PE	
1068	GYMPIE	New Wilmot/Macleods New Wilmot	Au	Ag		467313	7101188	RAMMUTT FORMATION	PE	
1069	GYMPIE	New Year/New Veteran/Lucky Hit/Kerridge and	Au	Ag	Pb	472200	7111900	KIN KIN BEDS	TE	
1070	GYMPIE	New Zealand Junction; South	Au	Ag		467197	7102099		PE	
1071	GYMPIE	New Zealand P.C./Maori Tribute/O' Donohues	Au	Ag		466996	7102631	RAMMUTT FORMATION	PE	
1072	GYMPIE	New Zealand; No.1 North	Au	Ag		466983	7102708		PE	
1073	GYMPIE	New Zealand; No.1 South	Au	Ag		467007	7102575	RAMMUTT FORMATION	PE	
1074	GYMPIE	New Zealand S/N Z 2 & 3 South	Au	Ag		467067	7102493	RAMMUTT FORMATION	PE	
1075	GYMPIE	Nicholls/New Nicholls	Au	Ag	Pb	468064	7100604	RAMMUTT FORMATION	PE	
1076	GYMPIE	Nil Desperandum P.C.?	Au	Ag		466740	7102195	RAMMUTT FORMATION	PE	
1077	GYMPIE	Nil Desperandum; No.1 North?	Au	Ag		466764	7102257	RAMMUTT FORMATION	PE	
1078	GYMPIE	Nil Desperandum; No.3 South	Au?			466712	7102095	RAMMUTT FORMATION	PE	
1079	GYMPIE	Northern Extended/Homeward Bound	Au?			464546	7105939	RAMMUTT FORMATION	PE	
1080	GYMPIE	O'Connell P.C.	Au	Ag		466416	7103746	RAMMUTT FORMATION	PE	
1081	GYMPIE	O'Connell; North	Au	Ag		466530	7103800	RAMMUTT FORMATION	PE	
1082	GYMPIE	O'Connell 1 & 2 S/Louisa 4;5 & 6 N/ Louisa Ex	Au	Ag		466492	7103613	RAMMUTT FORMATION	PE	
1083	GYMPIE	O'Connell; Nos 1;2;3 & 4 North	Au	Ag		466481	7103814		PE	
1084	GYMPIE	Occidental	Au?			463082	7107437	RAMMUTT FORMATION	PE	
1085	GYMPIE	Old Bollier/Sander 4	Mn			472850	7073600	AMAMOOR BEDS	D C	
1086	GYMPIE	Old England	Au	Ag		466275	7102320	RAMMUTT FORMATION	PE	
1087	GYMPIE	Old New Zealand Tribute/New Zealand; No.2 N	Au	Ag		467000	7102668	RAMMUTT FORMATION	PE	

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1088	GYMPIE	Oriental Consols	Au	Ag		469116	7100386		PE	
1089	GYMPIE	Oriental Consols E/Scottish Gympie Consols	Au?			469617	7100086	RAMMUTT FORMATION	PE	
1090	GYMPIE	Oriental Extended	Au	Ag		468489	7101749	RAMMUTT FORMATION	PE	
1091	GYMPIE	Oriental Surprise	Au	Ag		468516	7101156	RAMMUTT FORMATION	PE	
1092	GYMPIE	Oriental and Glanmire Eastern	Au	Ag		468920	7100690	RAMMUTT FORMATION	PE	
1093	GYMPIE	Oriental and Glanmire Western	Au	Ag		468407	7100776	RAMMUTT FORMATION	PE	
1094	GYMPIE	Oriental and Glanmire; East	Au	Ag		468612	7100764	RAMMUTT FORMATION	PE	
1095	GYMPIE	Oriental and Glanmire; No.1 East	Au?			469349	7100714	RAMMUTT FORMATION	PE	
1096	GYMPIE	Oriental and Glanmire; No.1 North	Au	Ag	Pb	468530	7101009	RAMMUTT FORMATION	PE	
1097	GYMPIE	Oriental and Glanmire; No.1 South	Au	Ag	Pb	468775	7100532	RAMMUTT FORMATION	PE	
1098	GYMPIE	Oriental and Glanmire; North	Au	Ag		468803	7101153	RAMMUTT FORMATION	PE	
1099	GYMPIE	Oriental and Queenslander	Au?			469683	7099985	RAMMUTT FORMATION	PE	
1100	GYMPIE	Osman Pasha	Au?			464570	7106140	RAMMUTT FORMATION	PE	
1101	GYMPIE	Otago P.C.	Au	Ag		467510	7098840	RAMMUTT FORMATION	PE	
1102	GYMPIE	Otago; No.1 North	Au	Ag		467533	7098860	RAMMUTT FORMATION	PE	
1103	GYMPIE	Otago; No.1 South	Au?			467494	7098681	RAMMUTT FORMATION	PE	
1104	GYMPIE	Ottosens/Cedar Pocket	Au			487800	7098200	KIN KIN BEDS	TE	
1105	GYMPIE	Pascoes/Homeward Bound United	Au?			464557	7105670	RAMMUTT FORMATION	PE	
1106	GYMPIE	Paul and Mary's Patch	Au	Ag		468500	7109200	KIN KIN BEDS	TE	
1107	GYMPIE	Perseverance/Perseverance P.C/Perseverance	Au	Ag		466631	7102149	RAMMUTT FORMATION	PE	
1108	GYMPIE	Perseverance; No.1 North	Au	Ag		466657	7102232		PE	
1109	GYMPIE	Perseverance; No.1 South	Au	Ag		466640	7102107	RAMMUTT FORMATION	PE	
1110	GYMPIE	Peter and Paul	Au	Ag		465143	7105150	RAMMUTT FORMATION	PE	
1111	GYMPIE	Phillips	Au?			468855	7097075	RAMMUTT FORMATION	PE	
1112	GYMPIE	Phoenix Extended	Au?			466911	7103888	RAMMUTT FORMATION	PE	
1113	GYMPIE	Phoenix Extended; South	Au?			466904	7103507	RAMMUTT FORMATION	PE	
1114	GYMPIE	Phoenix Freehold; North	Au	Ag		467077	7103258	RAMMUTT FORMATION	PE	
1115	GYMPIE	Phoenix Golden Pile/Golden Pile	Au	Ag		467337	7102433	RAMMUTT FORMATION	PE	
1116	GYMPIE	Phoenix P.C.	Au	Ag		467355	7101955	RAMMUTT FORMATION	PE	
1117	GYMPIE	Phoenix P.C. East/Phoenix East Tribute	Au	Ag	Pb Cu	467599	7101911	RAMMUTT FORMATION	PE	
1118	GYMPIE	Phoenix Reborn	Au?			466940	7103690	RAMMUTT FORMATION	PE	
1119	GYMPIE	Phoenix Reserve/Phoenix E Tribute	Au?			467411	7102035	RAMMUTT FORMATION	PE	

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1120	GYMPIE	Phoenix Two Mile 1/Phoenix 1 N	Au	Ag		465117	7105357	RAMMUTT FORMATION	PE	
1121	GYMPIE	Phoenix; No.1 North	Au	Ag		467289	7102136	RAMMUTT FORMATION	PE	
1122	GYMPIE	Phoenix; No.1 South/Welcome	Au	Ag		467330	7101790	RAMMUTT FORMATION	PE	
1123	GYMPIE	Phoenix 2 N/Phoenix Golden Pile	Au	Ag		467278	7102455	RAMMUTT FORMATION	PE	
1124	GYMPIE	Phoenix; No.2 South	Au	Ag	Pb	467341	7101512	RAMMUTT FORMATION	PE	
1125	GYMPIE	Phoenix 3 N/Phoenix & Victory Trib 3 N	Au			467254	7102676	RAMMUTT FORMATION		
1126	GYMPIE	Phoenix; No. 3A North	Au?			467258	7102843	RAMMUTT FORMATION	PE	
1127	GYMPIE	Phoenix; No. 4 North	Au	Ag		467488	7103089	RAMMUTT FORMATION	PE	
1128	GYMPIE	Phoenix; No. 5 North	Au	Ag		467115	7103140	RAMMUTT FORMATION	PE	
1129	GYMPIE	Phoenix; No. 6 North	Au	Ag		467051	7103591	RAMMUTT FORMATION	PE	
1130	GYMPIE	Plate`s Prospect/McDougall/Homewd Bound	Mn	Co		459400	7091300	AMAMoor BEDS	D C	
1131	GYMPIE	Porters	Au?			467960	7097080	RAMMUTT FORMATION	PE	
1132	GYMPIE	Powells	Au?			464548	7106241	RAMMUTT FORMATION	PE	
1133	GYMPIE	Prussian P.C.	Au?			464818	7105536	RAMMUTT FORMATION	PE	
1134	GYMPIE	Prussian/Golden Crown; No.1 West	Au?			464803	7105582	RAMMUTT FORMATION	PE	
1135	GYMPIE	Quarry	Mn			471100	7075900	AMAMoor BEDS	D C	
1136	GYMPIE	Queen Mary	Mn			456000	7096400	AMAMoor BEDS	D C	
1137	GYMPIE	Ragget	Au?			468089	7100542	RAMMUTT FORMATION	PE	
1138	GYMPIE	Red Lion	Au	Ag		466630	7102020	RAMMUTT FORMATION	PE	
1139	GYMPIE	Reeve`s Prospect	Mn			469300	7077600	AMAMoor BEDS	D C	
1140	GYMPIE	Rendells/Happy Valley	Mn			460600	7081600	AMAMoor BEDS	D C	
1141	GYMPIE	Reweses	Au?			467461	7103233	RAMMUTT FORMATION	PE	
1142	GYMPIE	Robert`s Prospect	Mn			459800	7077500	AMAMoor BEDS	D C	
1143	GYMPIE	Robertson`s Find/Lucky Hit/Bonser/Smedley`s	Au			484500	7096300	KIN KIN BEDS	TE	
1144	GYMPIE	Royal Standard P.C.	Au	Ag		467449	7098965		PE	
1145	GYMPIE	Russell P.C.	Au	Ag		467524	7101574	RAMMUTT FORMATION	PE	
1146	GYMPIE	Russell/Hit or Miss/Phoenix E; 1 S	Au?			467519	7101788	RAMMUTT FORMATION	PE	
1147	GYMPIE	Sadowa No. 2/Sadowa; No. 2 North?	Au?			464137	7105899	RAMMUTT FORMATION	PE	
1148	GYMPIE	Sadowa P.C.	Au	Ag		464156	7105824	RAMMUTT FORMATION	PE	
1149	GYMPIE	Sadowa/Two Mile Consols	Au	Ag	Pb	464111	7105852	RAMMUTT FORMATION	PE	
1150	GYMPIE	Sadowa; No. 3 North	Au?			464125	7105975	RAMMUTT FORMATION	PE	
1151	GYMPIE	Sadowa; South/Lewis` South Sadowa	Au?			464230	7105626	RAMMUTT FORMATION	PE	

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1152	GYMPIE	Saunders	Au?			468925	7097010	RAMMUTT FORMATION	PE	
1153	GYMPIE	Scottish Freehold	Au?			469824	7099253	RAMMUTT FORMATION	PE	
1154	GYMPIE	Scottish Gympie/Gympie Gold Mines 1 S	Au	Ag		468683	7100227	RAMMUTT FORMATION	PE	
1155	GYMPIE	Scottish G. No. 1/Monkland Deepes; ML 3771	Au	Ag		468700	7100200			
1156	GYMPIE	Scottish Gympie No. 2; ML 6824	Au	Ag		469100	7099900			
1157	GYMPIE	Scottish and Oriental	Au?			469400	7101175	RAMMUTT FORMATION	PE	
1158	GYMPIE	Scrubby Creek	Mn			457300	7099100	AMAMoor BEDS	D C	
1159	GYMPIE	Shannon	Au?	Pb		467335	7101490	RAMMUTT FORMATION	PE	
1160	GYMPIE	Shaun O'Farrell and South New Zealand	Au?			466972	7101811	RAMMUTT FORMATION	PE	
1161	GYMPIE	Simpsons/Sandy Creek	Sb	Ag		473200	7121700	KIN KIN BEDS	TE	
1162	GYMPIE	Skyring Creek	Mn			462300	7085900	AMAMoor BEDS	D C	
1163	GYMPIE	Smith's Prospect	Mn			453400	7098900	AMAMoor BEDS	D C	
1164	GYMPIE	Smithfield Extended	Au	Ag		467653	7101551	RAMMUTT FORMATION	PE	
1165	GYMPIE	Smithfield United Tribute	Au?			467794	7101748	RAMMUTT FORMATION	PE	
1166	GYMPIE	Smithfield United/United Smithfield/Smithfield f	Au	Ag		467663	7101648	RAMMUTT FORMATION	PE	
1167	GYMPIE	Smithfield and Glanmire/South Glanmire 5N/Si	Au	Ag		467739	7101337		PE	
1168	GYMPIE	Smithfield; No.1 North	Au	Ag		467632	7102477		PE	
1169	GYMPIE	Smithfield; No.1 South	Au	Ag		467686	7101603	RAMMUTT FORMATION	PE	
1170	GYMPIE	Smithfield; No.2 North	Au	Ag		467668	7101809	RAMMUTT FORMATION	PE	
1171	GYMPIE	Smithfield; No.2 South	Au	Ag		467725	7101543	RAMMUTT FORMATION	PE	
1172	GYMPIE	Smithfield 3 N/Smithfield and Victory	Au?			467450	7103772	RAMMUTT FORMATION	PE	
1173	GYMPIE	Smithfield; No.3 South	Au	Ag		467722	7101495	RAMMUTT FORMATION	PE	
1174	GYMPIE	Smithfield; No.4 North	Au?			467478	7104126	RAMMUTT FORMATION	PE	
1175	GYMPIE	Smithfield; No.4 South	Au	Ag		467689	7101321	RAMMUTT FORMATION	PE	
1176	GYMPIE	Smithfld 7 S/Granite City Reef	Au	Ag		467770	7101090	RAMMUTT FORMATION	PE	
1177	GYMPIE	Smithfield; North/Craiglea	Au	Ag		467625	7102255	RAMMUTT FORMATION	PE	
1178	GYMPIE	Smithfield; Nos 2 & 3 South	Au	Ag		467862	7101609	RAMMUTT FORMATION	PE	
1179	GYMPIE	Smithfield; Old No.1 North	Au?			467659	7101722	RAMMUTT FORMATION	PE	
1180	GYMPIE	Smithfield; Old No.3 North	Au?			467646	7101855	RAMMUTT FORMATION	PE	
1181	GYMPIE	Smithfield; Phoenix Golden Pile	Au	Ag		467541	7102826	RAMMUTT FORMATION	PE	
1182	GYMPIE	Southern Extd/Ellen Harkins 2A S	Au?			466928	7100046	RAMMUTT FORMATION	PE	
1183	GYMPIE	Spring Creek	Au	Ag		451100	7106600	AMAMoor BEDS		

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1184	GYMPIE	St. Patrick Eastern/St. Patrick 1 N/St. Patrick L	Au	Ag		467859	7100738	RAMMUTT FORMATION	PE	
1185	GYMPIE	St. Patrick P.C.	Au	Ag		467834	7100665		PE	
1186	GYMPIE	Steel's Gully	Au?			484500	7095200	KIN KIN BEDS	TE	
1187	GYMPIE	Stephens Surprise	Au	Ag		468750	7097330	RAMMUTT FORMATION	PE	
1188	GYMPIE	Sultan Block	Au?			465840	7103881	RAMMUTT FORMATION	PE	
1189	GYMPIE	Sultan P.C.	Au?			466080	7103740	RAMMUTT FORMATION	PE	
1190	GYMPIE	Sultan 1 N/Sultan & Lucknow/Myall 1 S	Au	Ag		465970	7103890	RAMMUTT FORMATION	PE	
1191	GYMPIE	Sultan; No.1 South	Au?			466090	7103700	RAMMUTT FORMATION	PE	
1192	GYMPIE	Sunburst	Au?			466439	7102149	RAMMUTT FORMATION	PE	
1193	GYMPIE	Surface Hill	Au?			465517	7103144	RAMMUTT FORMATION	PE	
1194	GYMPIE	Surface Hill Freehold	Au?			465706	7103131	RAMMUTT FORMATION	PE	
1195	GYMPIE	Sydney	Au	Ag		466821	7101569	RAMMUTT FORMATION	PE	
1196	GYMPIE	Tamaree Limestone (Ambrose's Quarry)	Ls			466800	7109600	SOUTH CURRA LIMESTONE	PE PM	
1197	GYMPIE	Thomas' Prospect	Mn			458600	7076300	AMAMOOR BEDS	D C	
1198	GYMPIE	Threuckles	Au?			466090	7102515	RAMMUTT FORMATION	PE	
1199	GYMPIE	Thunder Egg Farm ; ML 7127	Gs			493200	7069700	amethyst; agate		
1200	GYMPIE	Tombyne/Glastnb'y/Stony Water 1; ML 3739	Au			450300	7086000	Thunder eggs		
1201	GYMPIE	Treloars	Au?			468930	7097675	RAMMUTT FORMATION	PE	
1202	GYMPIE	True Blue	Au?			468719	7100809	RAMMUTT FORMATION	PE	
1203	GYMPIE	Two Mile South East/New Hope?	Au?			465205	7105549	RAMMUTT FORMATION	PE	
1204	GYMPIE	Umbrella	Au?			465578	7103952	RAMMUTT FORMATION	PE	
1205	GYMPIE	Union Extended/Wilmot Extended; South	Au	Ag		467457	7101270	RAMMUTT FORMATION	PE	
1206	GYMPIE	Unnamed	Sb			473300	7123300	KIN KIN BEDS	TE	
1207	GYMPIE	Venture	Au?			465091	7102114	RAMMUTT FORMATION	PE	
1208	GYMPIE	Veteran	Au	Ag	Pb	471800	7112100	KIN KIN BEDS	TE	
1209	GYMPIE	Victoria P.C.	Au?			466970	7104707	RAMMUTT FORMATION	PE	
1210	GYMPIE	Victory and Smithfield; No.3 North	Au?			467170	7104200	RAMMUTT FORMATION	PE	
1211	GYMPIE	Victory and Smithfield; No.4 North	Au?			466970	7104701	RAMMUTT FORMATION	PE	
1212	GYMPIE	Victory 1 N/Columbia Extd W	Au	Ag	Pb	467490	7103490	RAMMUTT FORMATION	PE	
1213	GYMPIE	Victory; No.2 North	Au	Ag		467220	7103897	RAMMUTT FORMATION	PE	
1214	GYMPIE	Wagners	Au?			483300	7087300	KIN KIN BEDS	TE	
1215	GYMPIE	Walkers	Au?			466836	7101934	RAMMUTT FORMATION	PE	

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1216	GYMPIE	Walton/Walton Extended	Au			467015	7101454	RAMMUTT FORMATION	PE	
1217	GYMPIE	Warren Hastings; No.2 South?	Au	Ag		466765	7103745	RAMMUTT FORMATION	PE	
1218	GYMPIE	Warren Hastings; No.4 South	Au?			466770	7103560	RAMMUTT FORMATION	PE	
1219	GYMPIE	Waugh's Prospect	Mn			457700	7098300	AMAMoor BEDS	D C	
1220	GYMPIE	Wellington	Au?			466885	7103330	RAMMUTT FORMATION	PE	
1221	GYMPIE	West Coast	Au	Ag		466138	7103435	RAMMUTT FORMATION	PE	
1222	GYMPIE	West of Scotland	Au	Ag	Pb Cu	469307	7099636	RAMMUTT FM/(Inglewood microdiorite	PE	
1223	GYMPIE	White Elephant/Amamoor/Black Magic/Skyring	Mn			461600	7085900	AMAMoor BEDS	D C	
1224	GYMPIE	Widgee Gully prospect; ML 3772	Au			470200	7001500			
1225	GYMPIE	Willies/Silver M	Au?			472050	7111600	KIN KIN BEDS	TE	
1226	GYMPIE	Wilmot Extended	Au	Ag		467508	7101556	RAMMUTT FORMATION	PE	
1227	GYMPIE	Wilmot; No.1 North	Au	Ag		467492	7101773	RAMMUTT FORMATION	PE	
1228	GYMPIE	Wilmot; No.1 South	Au	Ag		467417	7101479	RAMMUTT FORMATION	PE	
1229	GYMPIE	Wilmot; No.2 South?	Au?			467630	7100915	RAMMUTT FORMATION	PE	
1230	GYMPIE	Wiltshire/Witshire/Wilshire	Au	Ag		467746	7100792	RAMMUTT FORMATION	PE	
1231	GYMPIE	Woolgar and Currie/Oswin and Mitchell	Au			466110	7102460	RAMMUTT FORMATION	PE	
1232	GYMPIE	Woolgar/Woods?	Au	Ag		466122	7102479	RAMMUTT FORMATION	PE	
1233	GYMPIE	Yabba Creek Ford	Mn			459200	7069600	AMAMoor BEDS	D C	
1234	GYMPIE	Yellow Gully/Cedar Pocket	Au			488000	7099000		CZ	
1235	GYMPIE	Youcudder/Fullertons	Au?			463570	7101940	RAMMUTT FORMATION	PE	
1236	GYMPIE	Young Ireland	Au?			467080	7099950	RAMMUTT FORMATION	PE	
1237	GYMPIE	Youngs	Au?			464185	7106079	RAMMUTT FORMATION	PE	
1238	GYMPIE	Zachariah Creek/Rewa/Cooks	Mn			461000	7086900	AMAMoor BEDS	D C	
1239	GYMPIE	Zealand Junction 1 S/New ZInd No.1 S	Au	Ag		467214	7101828	RAMMUTT FORMATION	PE	
1240	GYMPIE	_Unnamed	Au?			455500	7099700	AMAMoor BEDS	D C	
1241	GYMPIE	_Unnamed	Au?			456400	7100000	AMAMoor BEDS	D C	
1242	GYMPIE	_Unnamed	Au			463700	7121700	KIN KIN BEDS/MYRTLE CREEK SST	TE JM	
1243	GYMPIE	_Unnamed	Ba			466000	7094000	RAMMUTT FORMATION	P	
1244	GYMPIE	_Unnamed	Ls			466200	7110200	SOUTH CURRA LIMESTONE	PE PM	
1245	GYMPIE	_Unnamed	Mn			466200	7085100	AMAMoor BEDS	D C	
1246	GYMPIE	_Unnamed	Au?			466705	7103550	RAMMUTT FORMATION	PE	
1247	GYMPIE	_Unnamed	Au?			467315	7099330	RAMMUTT FORMATION	PE	

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1248	GYMPIE	_Unnamed	Au?			468845	7098975	RAMMUTT FORMATION	PE	
1249	GYMPIE	_Unnamed	Au?			468910	7097540	RAMMUTT FORMATION	PE	
1250	GYMPIE	_Unnamed	Au?			470800	7103200	KIN KIN BEDS	TE	
1251	GYMPIE	_Unnamed	Au?			471300	7096500	KEEFTON FORMATION	TE	
1252	GYMPIE	_Unnamed	Au?			471400	7096700	KEEFTON FORMATION	TE	
1253	GYMPIE	_Unnamed	Au?			471400	7096800	KIN KIN BEDS	TE	
1254	GYMPIE	_Unnamed	Au?			471600	7112300	KIN KIN BEDS	TE	
1255	GYMPIE	_Unnamed	Au?			471800	7112300	KIN KIN BEDS	TE	
1256	GYMPIE	_Unnamed	Au?			472100	7112300	KIN KIN BEDS	TE	
1257	GYMPIE	_Unnamed	Au?			473900	7109400	KIN KIN BEDS	TE	
1258	GYMPIE	_Unnamed	Mn			473900	7073300	AMAMOOR BEDS	D C	
1259	GYMPIE	_Unnamed	Au?	Pb?		475000	7099500	KIN KIN BEDS	TE	
1260	GYMPIE	_Unnamed opal prospect	Gs			482000	7089500	(Unnamed volcanics)	CZ	
1261	GYMPIE	_Unnamed	Mo			482200	7094500	WOONDUM GRANITE	TM	
1262	GYMPIE	_Unnamed	Au			482300	7089200	WOONDUM GRANITE	TL	
1263	GYMPIE	_Unnamed	Mo			483100	7083800	KIN KIN BEDS	TECZ	
1264	GYMPIE	_Unnamed	Cu			483900	7091200	KIN KIN BEDS	TE	
1265	GYMPIE	_Unnamed	Au?			485500	7079900	KIN KIN BEDS	TE	
1266	GYMPIE	_Unnamed	Au			488900	7086400		CZ	
1267	GYMPIE	_Unnamed	Au			491100	7096700	KIN KIN BEDS	TE	
1268	GYMPIE	_Unnamed	?Au			495600	7073400	NORTH ARM VOLCANICS	TL	
1269	GYMPIE	_Unnamed	Au	Cu		495700	7071900	NORTH ARM VOLCANICS	TL	
1270	GYMPIE	_Unnamed	Cu			495200	7073500	NORTH ARM VOLCANICS	TL	
1271	KINGAR	Boyne River sapphire prospect	Gs			360400	7060300			
1272	KINGAR	Brooklands feldspar deposit	Fs			378500	7040700			
1273	KINGAR	Brooklands feldspar deposit	Fs			381000	7040800			
1274	KINGAR	Cooyar East copper prospect	Cu			391900	7013200			
1275	KINGAR	Cooyar kaolinite prospect	Ck			384000	7019300			
1276	KINGAR	Dangore rutile & ilmenite deposits	R	Im		356700	7062100			
1277	KINGAR	Dangore rutile & ilmenite deposits	R	Im		357600	7062000			
1278	KINGAR	Goodyer pits; ML5677; 79; 80; 84; 6621	Ck			386400	7048000			
1279	KINGAR	Jumna Creek rutile deposit	R			355100	7059600			

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1280	KINGAR	Kingaroy bauxite deposits	Bx			375300	7044200			
1281	KINGAR	Kingaroy bauxite deposits	Bx			377900	7045700			
1282	KINGAR	Kingaroy bauxite deposits	Bx			381100	7065500			
1283	KINGAR	Kingaroy bauxite deposits	Bx			382900	7048200			
1284	KINGAR	Kingaroy bauxite deposits	Bx			387000	7058000			
1285	KINGAR	Kingaroy bauxite deposits	Bx			387600	7067400			
1286	KINGAR	Kingaroy bauxite deposits	Bx			388000	7067100			
1287	KINGAR	Kingaroy bauxite deposits	Bx			388100	7057600			
1288	KINGAR	Kingaroy bauxite deposits	Bx			388600	7055000			
1289	KINGAR	Kingaroy bauxite deposits	Bx			389200	7062200			
1290	KINGAR	Kingaroy bauxite deposits	Bx			390200	7054500			
1291	KINGAR	Kingaroy bauxite deposits	Bx			390900	7063900			
1292	KINGAR	Kingaroy bauxite deposits	Bx			393900	7057200			
1293	KINGAR	Kooralgin copper prospect	Cu			395100	7021600			
1294	KINGAR	Kumbia bauxite deposits	Bx			369800	7057000			
1295	KINGAR	Kumbia bauxite deposits	Bx			373600	7053300			
1296	KINGAR	Kumbia bauxite deposits	Bx			361500	7046400			
1297	KINGAR	Kumbia bauxite deposits	Bx			374100	7053200			
1298	KINGAR	Kumbia bauxite deposits	Bx			375600	7044100			
1299	KINGAR	Kunioon coal deposit; MDL 201	Cb			385300	7056300			
1300	KINGAR	Maidenwell bentonite (CR 8204; 25660)	Ci			377000	7032500			
1301	KINGAR	The Cedars bentonite mine, ML 6610	Ci			389400	7025900			
1302	KINGAR	Nancy mine	Mn			393900	7045500			
1303	KINGAR	Resurrection prospect	Au			400800	7037800			
1304	KINGAR	Snow Queen prospect; ML 5674	Ck			384400	7018500			
1305	KINGAR	Taabinga kaolin prospect; ML 5675	Ck			385600	7058900			
1306	KINGAR	Taabinga South kaolin prospect; ML 5680	Ck			382300	7055800			
1307	KINGAR	Tarong/Meandu mine; ML 6674	Cb			391500	7033500			
1308	KINGAR	Tarong molybdenum prospect	Mo			380700	7045100			
1309	KINGAR	Tarong South prospect; MDL 200	Cb			392600	7028200			
1310	KINGAR	Upper Yarraman bentonite deposit	Ci			389600	7023500			
1311	KINGAR	Ushers Hill prospect	Ck			386300	7057300			

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1312	KINGAR	Yarraman bauxite deposit	Bx			395900	7031100			
1313	MURGO	Bar 23 prospect	Au			374900	7118000			
1314	MURGO	Barambah quarries; ML 5673; 6611; 50111	Ls			397900	7091800			
1315	MURGO	Barambah limestone deposit	Ls			398300	7090300			
1316	MURGO	Big Wonder mine	Au			374800	7116300			
1317	MURGO	Blue Gums dolomite deposit; ML 6608	Do			372900	7102500			
1318	MURGO	Blue Moon dolomite deposit; ML 6598	Do			372300	7101500			
1319	MURGO	Blues Rocks dolomite deposit; ML 6618	Do			372600	7100300			
1320	MURGO	Boat Mountain bauxite deposit	Bx			397700	7106300			
1321	MURGO	Broadwater prospect; CR 15340	Au	As		395500	7126600	Qtz brecc. in andesite intr. by rhyolite		
1322	MURGO	Cherbourg limestone quarry; ML 6626	Ls			398700	7086200			
1323	MURGO	Cumbanga Creek deposit	Ls			353000	7107500			
1324	MURGO	Golden Spur mine; ML 3784	Au	Ag		373400	7116400			
1325	MURGO	Lord Nelson workings; CR 15340	Au	Cu	As	396400	7128600	QV at sheared contact; mica sch & me	QV	
1326	MURGO	Lord Nelson NW workings; CR 15340	Au	Cu	As	395300	7129200	QV at sheared contact; mica sch & me	QV	
1327	MURGO	ML 238 dolomite deposit	Do			384600	7079400			
1328	MURGO	ML 249 dolomite deposit	Do			385200	7069100			
1329	MURGO	Proston/Abbeywood kaolin clay deposit	Ck			385200	7071900			
1330	MURGO	Red Rock mine; ML 3691; CR 20929	Au			373900	7114300	Chalcedonic quartz veins		
1331	MURGO	Ronald John prospect	Pb	Ag		360900	7088600			
1332	MURGO	White Hill (ML 6689); Whitebank (ML 6609)	Ls			372900	7101900			
1333	MURGO	Winderagah deposit	Gs			361800	7088500			
1334	MURGO	Woroom earthy lime deposit	Ls			384100	7117700			
1335	MURGO	Wonder Extended mine	Au			353400	7108100			
1336	NAMBO	Adam's prospect	Mn			462100	7053730		D C	
1337	NAMBO	Agricola mine	Au			460800	7045800	Booloumba beds	D C	
1338	NAMBO	Allan's/Allan's Shaft mine	Au			472350	7053100	Cambroon beds	P	
1339	NAMBO	Allan's prospect	Mn			464600	7045700	Booloumba beds	D C	
1340	NAMBO	Blunt Pick prospect	Mn			461600	7053300	Booloumba beds	D C	
1341	NAMBO	Booloumba Creek area (Johnson's; Russell's;	Au			461500	7045500	Booloumba beds	D C	
1342	NAMBO	Borgam South area/Borgam area	Au			462950	7051750		D C	
1343	NAMBO	Borumba Manganese No. 1	Mn			459370	7061395	Cambroon beds	P	

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1344	NAMBO	Borumba Manganese No. 2	Mn			459900	7060800	Cambroon beds	P	
1345	NAMBO	Borumba Manganese No. 3	Mn			460350	7060250	Cambroon beds	P	
1346	NAMBO	Breakneck Ck Group (Bowen & Goldworthy's;	Au	Ag		467800	7068700	Amamoor beds	D C	
1347	NAMBO	Brilliant/Jimna/Weir's claim	Au			453700	7045650		D C	
1348	NAMBO	Broadfoot and Illing's prospect	Mn			455650	7039630	JIMNA PHYLLITE	D C	
1349	NAMBO	Bundaroo Creek	Au			460500	7046300	Booloumba beds	D C	
1350	NAMBO	Chinaman Creek (Alluvials; Busy Bee Mine; Ch	Au			472150	7051750	Cambroon beds	P	
1351	NAMBO	Comet/Kevinski 1 mine	Au	Ag		471950	7052950		P	
1352	NAMBO	Craig's Lease/Craig's Yabba Creek	Mn			456800	7066050	Amamoor beds	D C	
1353	NAMBO	Currymore/Curramore	Au			473500	7048400	Cambroon beds	P	
1354	NAMBO	Donovan's Knob workings	Au			470400	7050700	Unnamed intrusive		
1355	NAMBO	Dulcie mine	Au			471800	7052750	Cambroon beds	P	
1356	NAMBO	Dwyer's lease (Yabba Creek)	Mn			456700	7067800	Amamoor beds	D C	
1357	NAMBO	Empress Mine/Mortimore's Reef/ Old Jimna D	Au			453700	7046300	Unnamed intrusive		
1358	NAMBO	Gavin and Foley's PA	Au			456050	7045900		D C	
1359	NAMBO	Gill's (GMLA 1739)	Au			471100	7056200	Cambroon beds	P	
1360	NAMBO	Glittering Hills/Maleny Copper mine	Au	Ag	Cu	477600	7037450	CEDARTON VOLCANICS	P	
1361	NAMBO	Golden Jackass	Au			472350	7052850	Cambroon beds	P	
1362	NAMBO	Golden Slipper	Au			453650	7046150	Unnamed intrusive	T	
1363	NAMBO	Green's prospect.	Au			454650	7046150	NORTH ARM VOLCANICS	D C	
1364	NAMBO	Grigor's/McGregor's/Scrubby Creek	Mn			464340	7042570	Booloumba beds	D C	
1365	NAMBO	Jessie's Dream	Zn			479200	7036500	CEDARTON VOLCANICS	P	
1366	NAMBO	Jimna Diggings (Yabba Creek; Queen; Sultana	Au			453800	7045800	JIMNA PHYLLITE	D C	
1367	NAMBO	Kane's P/Goldenstein's PA mine	Au			471300	7049800		P	
1368	NAMBO	Kennedy & O'Doherty/O'Dohertys/Cambroon	Au	Ag		470700	7055050	Cambroon beds	P	
1369	NAMBO	Kidaman Creek diggings (Mount Ubi; Brown's	Au	Ag		477250	7051350	Cambroon beds	P	
1370	NAMBO	Lady May	Au	Ag		459000	7046400		D C	
1371	NAMBO	Little Yabba Creek (Rising Sun; Wonder; Horse	Au			463500	7057000	Cambroon beds	P	
1372	NAMBO	Martin's workings	Au			454300	7046000			
1373	NAMBO	Marshall No. 2; ML 3702	Peat			499800	7048700			
1374	NAMBO	McAuliffe's workings (Borgam area)	Au	Ag		451000	7065230	Unnamed intrusive		
1375	NAMBO	Mileage Traverse prospect; ML 3679	Fe			470200	7052800			

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1376	NAMBO	Mt Allan/Black Hawk/Passlow's/Mt Allen	Mn			463550	7053250	Booloumba beds	D C	
1377	NAMBO	Mount Rollman/Rollmann's/Rollmann's PA/Go	Au			455100	7046700	JIMNA PHYLLITE	D C	
1378	NAMBO	Mount Rollman South	Au			455000	7046900		D C	
1379	NAMBO	Mount Walli/The Charles/Mount Ubi	Mn			472630	7054500	Cambroon beds	P	
1380	NAMBO	Mount Walli No. 2 (Mount Walli Group)	Mn			473750	7054150	Cambroon beds	P	
1381	NAMBO	Mount Walli South	Mn			472000	7051720	Cambroon beds	P	
1382	NAMBO	Near O'Doherty's mine	Au			470400	7054950	Cambroon beds	P	
1383	NAMBO	Nielsen's Mine (Chinaman Creek)	Au			472000	7052400	Cambroon beds	P	
1384	NAMBO	No 1 Claypan (Peter Creek)	Au			456050	7046570	JIMNA PHYLLITE	D C	
1385	NAMBO	No 3 Claypan/Peter Ck/Durkin & Millar's	Au			456020	7046220	JIMNA PHYLLITE	D C	
1386	NAMBO	North Arm Gp (Golden Surprise; 'Grice's; Mc	Au	Ag		496650	7067750	NORTH ARM VOLCANICS	TL	
1387	NAMBO	Nuggety Gully	Au			472150	7051800		P	
1388	NAMBO	Passlow's Prospect/Mount Allan	Mn			463350	7053200	Booloumba beds	D C	
1389	NAMBO	Peters Creek/The Blow/Sunday Camp/Durkin's	Au			458500	7047500	JIMNA PHYLLITE	D C	
1390	NAMBO	Rees Gully	Au	Ag	Pb	478800	7042100		P	
1391	NAMBO	Rodger's PA/Rodger's & Kennedy PA (Peter C	Au			456850	7046350	Booloumba beds	D C	
1392	NAMBO	Sandy Creek workings (Borgam)	Au	Ag		451400	7062400		D C	
1393	NAMBO	Sandy Creek prospect (Borgam)	Ni			450700	7065400	Amamoor beds	D C	
1394	NAMBO	Sawtell's prospect (Chinaman Ck)	Au	Bi	Ag	471150	7049450	Unnamed intrusive		
1395	NAMBO	Scrubby Creek manganese prospect	Mn			473660	7034420	NEURUM TONALITE	TL	
1396	NAMBO	Scrubby Creek prospect	Au	Ag		466000	7024400	NEURUM TONALITE	TL	
1397	NAMBO	Smith's/W.H.Smith's PA/Snake Ck/Chinaman	Au			472050	7051600	Unnamed intrusive		
1398	NAMBO	Snake Creek/Kane's	Au			471200	7050000		P	
1399	NAMBO	Soanes/Soame's/Soanes/Yabba Ck	Mn			456500	7067700	Amamoor beds	D C	
1400	NAMBO	Stanton's prospect	Au	Cu	Ag	456600	7037000	NEURUM TONALITE/Booloumba beds	TL	
1401	NAMBO	Sultana Mine Gp (Sultana United; Sultana Ext	Au			453200	7045850	JIMNA PHYLLITE	D C	
1402	NAMBO	Summer Creek prospect	Mn			461380	7054500		D C	
1403	NAMBO	Sunday Ck/Sunday Ck Sawmill mine	Bi			453900	7044350	JIMNA PHYLLITE	D C	
1404	NAMBO	Tamlyn Creek alluvials	Au			473700	7056000	Undifferentiated Cainozoic	CZ	
1405	NAMBO	Three Cedars	Au			470900	7050050	Unnamed intrusive		
1406	NAMBO	Veitch's (Yabba Creek)	Au			465000	7055000	Cambroon beds	P	
1407	NAMBO	Victory Reef	Au			453650	7046400	JIMNA PHYLLITE	D C	

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code	
1408	NAMBO	Walli Creek alluvials	Au			471800	7054300	Undifferentiated Cainozoic	CZ		
1409	NAMBO	Walli Creek/Booker's	Au			473000	7052450	Cambroon beds	P		
1410	NAMBO	Wielands/Casey's Gully/ Little Bella Creek/Wh	Au			465200	7067100	Unnamed intrusive			
1411	NAMBO	Yabba Creek (Yabba Creek Prospecting Tunnel)	Au			451250	7049950		D C		
1412	NAMBO	Yabba Creek ML 158/Lucky Star	Mn			457150	7065600		D C		
1413	NAMBO	Yours and Mine workings (Borgam)	Au			451280	7065150	Amamoor beds/Unnamed intrusive	D C		
1414	NAMBO	_Unnamed	Au			453450	7046300	JIMNA PHYLLITE	D C		
1415	NAMBO	_Unnamed	Au			453700	7045700	JIMNA PHYLLITE	D C		
1416	NAMBO	_Unnamed	Au			453750	7046050	Unnamed intrusive			
1417	NAMBO	_Unnamed	Au			454800	7046950	JIMNA PHYLLITE	D C		
1418	NAMBO	_Unnamed	Au			469500	7055650	CEDARTON VOLCANICS	P		
1419	NAMBO	_Unnamed	Au			470200	7055800	Cambroon beds	P		
1420	NAMBO	_Unnamed	Au			470250	7054750	CEDARTON VOLCANICS	P		
1421	NAMBO	_Unnamed	Au			471000	7049850	Unnamed intrusive			
1422	NAMBO	_Unnamed	Au	Ag	Pb	478800	7039950	JIMNA PHYLLITE	D C		
1423	NANANG	Ashington mine	Au	Ag	Cu	Zn	407150	7030750		P T	
1424	NANANG	Big Hill	Au	Ag	Pb	Zn	440500	7043050	Marumba beds	P	
1425	NANANG	Bismuth prospect	Au	Ag	Bi		405200	7040100	TAROMELO TONALITE	P T	
1426	NANANG	Cooyar Creek prospect	Pb	Ag			413900	7040900	Maronghi Creek beds	D C	
1427	NANANG	Emu Creek prospects; No. 1	Au	Ag	Pb		415550	7017050	Maronghi Creek beds	D C	
1428	NANANG	Emu Creek prospects; No. 2	Pb	Ag			415550	7017000	TAROMELO TONALITE/Maronghi Cree	C T	
1429	NANANG	Emu Creek vermiculite prospect	Ve				412800	7017700	TAROMELO TONALITE	P T	
1430	NANANG	General Jim	Au	Ag	Pb	Zn	415650	7016900	TAROMELO TONALITE	P T	
1431	NANANG	Golden Bird Group mines	Au	Ag	Co		408850	7030700	TAROMELO TONALITE	P T	
1432	NANANG	Grehan's A1 Prospect/Big Cut	Au				413000	7014850	Maronghi Creek beds	D C	
1433	NANANG	Hellhole Creek mine; ML 6655	Au				434200	7047550	Marumba beds	P	
1434	NANANG	Hollyborne/Stanton Reef mine	Au	Ag	Pb	Zn	438800	7047050	MONSILDALE GRANODIORITE	P T	
1435	NANANG	Kingsley's Racecourse	Pb	Ag			413500	7041400	Maronghi Creek beds	D C	
1436	NANANG	Lucky Friday	Fe				415450	7021150	Maronghi Creek beds	D C	
1437	NANANG	Marcasite Prospect	Au				413950	7015300	Maronghi Creek beds	D C	
1438	NANANG	McNamara and Powers Shaft mine	Au	Ag	Pb	Hg	413600	7040750	Maronghi Creek beds	D C	
1439	NANANG	Monsildale cinnabar prospect	Hg				442650	7038000	Marumba beds	P	

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code	
1440	NANANG	Monsildale/Golden Plover 2 mine; ML 50092	Au	Ag	Pb	Zn	438400	7047800	Marumba beds	P	
1441	NANANG	Mt Franey/Mt Powers/Golden Gull PA	Au	Ag			406300	7045400	Maronghi Creek beds	D C	
1442	NANANG	Mount Langan/Mystery/Dattu Dattu mine	Au	Ag	Pb	Zn	415100	7017250	TAROME0 TONALITE	P T	
1443	NANANG	Mount Miner	Au				438900	7029600	Unnamed intrusive		
1444	NANANG	Mount Monsildale	Pb	Ag			435950	7050200	KIMBALA GRANODIORITE	P T	
1445	NANANG	Murrell`s Shaft	Pb	Ag			413900	7040200	Maronghi Creek beds	D C	
1446	NANANG	Neilsen`s Adit	Au	Ag	Pb		413250	7040500	Maronghi Creek beds	D C	
1447	NANANG	Nellie Grant/Seibs mine	Au	Ag	Pb	Zn	412500	7041950	Maronghi Creek beds	D C	
1448	NANANG	Nethercotes Mmne	Au				416650	7035800	Maronghi Creek beds	D C	
1449	NANANG	Nukinenda/Water Gully prospect	Au	Ag	Pb	As	413500	7015400	TAROME0 TONALITE/Maronghi Cree	P? C?	
1450	NANANG	Ollenburg`s prospect	Cu				425950	7065050	Unnamed intrusive		
1451	NANANG	One Mile Diggings Group	Au				402350	7049700	Maronghi Creek beds	D C	
1452	NANANG	Opossum Creek prospect	Au	Ag			416350	7018500	Maronghi Creek beds?	D C	
1453	NANANG	Pickles workings	Au	Ag	Pb		413240	7040500	Maronghi Creek beds	D C	
1454	NANANG	Pollocks	Au	Ag			440400	7042600	Marumba beds	P	
1455	NANANG	Purdons	Au				432200	7050550	Marumba beds	P	
1456	NANANG	Resurrection mine	Au				401200	7038450	Undifferentiated Cainozoic	CZ	
1457	NANANG	Seven Mile (Nanango) diggings	Au				405650	7040100	Undifferentiated Cainozoic	CZ	
1458	NANANG	Squirrel Ck/Purdon/Dunbar alluv; ML 6617	Au				433100	7050600	Marumba beds	P CZ	
1459	NANANG	Taromeo Group; Black Diamond mine	Au	Cu			416950	7034750	TAROME0 TONALITE	P T	
1460	NANANG	Taromeo Group; New Year mine	Au	Ag	Cu		408900	7032450	TAROME0 TONALITE	P T	
1461	NANANG	Taromeo Group; Red Queen mine	Au	Ag	Cu		416700	7035400	TAROME0 TONALITE/Maronghi Cree	P C	
1462	NANANG	The Gold Show	Au	Ag	Pb		413600	7041500	Maronghi Creek beds	D C	
1463	NANANG	The Sunshine	Pb	Ag			414000	7040350	Maronghi Creek beds	D C	
1464	NANANG	Urquarts	Au	Ag	Pb	Zn	440400	7043400	MONSILDALE GRANODIORITE/Maru	P T	
1465	NANANG	Wombi Creek prospect	Au				423150	7068600	NEARA VOLCANICS	TE TM	
1466	NANANG	Yarraman Creek alluvial workings	Au				406700	7039350	Undifferentiated Cainozoic	CZ	
1467	NANANG	Yellow Ore	Au	Ag	Pb		415200	7017300	TAROME0 TONALITE	P T	
1468	BEENLEI	Beaudesert cemetery prosp. (Matheson1993)	Cb				501000	6904700		M-U J	synsed
1469	BEENLEI	Beenleigh gold prospect	Au				518000	6933600			
1470	BEENLEI	Beenleigh manganese prospect	Mn				518300	6933300			
1471	BEENLEI	Canaipa Passage silica sand deposits	Sd				541600	6942000	Quaternary dune sand	Q	synsed

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1472	BEENLEI	Canaipa Passage silica sand deposits	Sd			539500	6935600	Quaternary dune sand	Q	synsed
1473	BEENLEI	Canaipa Passage silica sand deposits	Sd			539700	6933700	Quaternary dune sand	Q	synsed
1474	BEENLEI	Gold Coast HM sand deposits	R	Im	Zr Mz	542600	6922000	Quaternary coastal sand	Q	placer
1475	BEENLEI	Gold Coast HM sand deposits	R	Im	Zr Mz	546000	6942800	Quaternary coastal sand	Q	placer
1476	BEENLEI	Thornlands gold prospect	Au			524000	6952000			
1477	BEENLEI	Cleveland gold prospect	Au			526500	6954700			
1478	BEENLEI	Nerang West manganese prospect	Mn			528200	6906200			
1479	BEENLEI	Mt Cotton gold prospect	Au			516200	6946100			
1480	BEENLEI	Mt Petrie iron-silver prospect	Ag	Fe		512100	6955600			
1481	BEENLEI	Mt Taylor/Kingston mine	Au			511900	6941600			
1482	BEENLEI	North Tamborine bauxite deposit	Bx			517800	6911100			
1483	BEENLEI	Ormeau/Witty's mine	Au			525000	6927100			
1484	BEENLEI	Oxenford manganese deposit	Mn			528600	6911300			
1485	BEENLEI	Pimpama gold prospect	Au			521100	6924100			
1486	BEENLEI	Pine Mountain gold prospect	Au			508400	6956800			
1487	BEENLEI	N Stradbroke Is HM sand deposits; ML 1105	R	Zr	Im Mz	548200	6952600	Quaternary coastal dunes	Q	placer
1488	BEENLEI	N Stradbroke Is HM sand deposits; ML 1117	R	Zr	Im Mz	545000	6948700	Quaternary coastal dunes	Q	placer
1489	BEENLEI	N Stradbroke Is HM sand deposits; ML 1121	R	Zr	Im Mz	544500	6941500	Quaternary coastal dunes	Q	placer
1490	BEENLEI	Tarragindi gold prospect	Au			503500	6954700			
1491	BEENLEI	Upper Coomera/Wongawallan jasper deposit	Gs			524200	6916500			
1492	BEENLEI	Veresdale inf. resource (Matheson; 1993)	Cb			501000	6913300	Walloon CM	M-U J	synsed
1493	BEENLEI	Wongawallan Creek gold prospect	Au			524200	6912800			
1494	BRISBAN	Bulimba Ck (Por. 132) gold prospect	Au			511400	6958900			
1495	BRISBAN	Boondall bentonite prospect	Ci			506800	6975700			
1496	BRISBAN	Bracken Ridge bentonite prospect	Ci			502800	6977900			
1497	BRISBAN	Green Island coralline limestone deposit	Ls			523700	6966900			
1498	BRISBAN	Moreton Island HM sands	R	Zr	Im Si	543200	6999800	Quaternary beach sands	Q	placer
1499	BRISBAN	Moreton Island HM sands	R	Zr	Im Si	544900	7005900	Quaternary beach sands	Q	placer
1500	BRISBAN	Mud Island coralline limestone deposit	Ls			524800	6975500			
1501	BRISBAN	Norman Park antimony prospect	Sb			506000	6959700			
1502	BRISBAN	North Stradbroke Island HM sands	R	Zr	Im Si	551700	6961700	Quaternary beach sands	Q	placer
1503	BRISBAN	North Stradbroke Island HM sands	R	Zr	Im Si	551000	6964000	Quaternary dune sands	Q	placer

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code	
1504	BRISBAN	North Stradbroke Island HM sands ML 1109	R	Zr	Im	Si	546700	6958700	Quaternary dune sands	Q	placer
1505	BRISBAN	North Stradbroke Is silica sands ML 1124	Si				546500	6965000	Quaternary dune sands	Q	synsed
1506	BRISBAN	St Helena Island coralline limestone deposit	Ls				524000	6971100			
1507	BRISBAN	Wynnum antimony prospect	Sb				514500	6964100			
1508	CABOOL	Albany Creek prospect	Au				496300	6974300			
1509	CABOOL	Armstrong Ck; Dayboro prospect	As				477200	6886900	Gossan; Neranleigh-Fernvale beds		
1510	CABOOL	Banks Creek/Cabbage Tree Range prospect	Au				475000	6968100	Neranleigh-Fernvale beds		QV
1511	CABOOL	Blanchard & Party mine	Au	As	Ag		490900	6969000	in Bunya Phyll nr sml diorite intrusion		QV
1512	CABOOL	Dayboro/Armstrong Creek ironstone deposit	Fe				476800	6986900	Neranleigh-Fernvale beds		QV
1513	CABOOL	Dayboro School prospect (CR 22920)	Au	As			481900	6991700			
1514	CABOOL	Dayboro talc-asbestos prospect	T	A			480200	7002000	veins in talc sch; Rocksberg Greenst		
1515	CABOOL	Dundas chromite prospect	Cr				464500	6974500	Neranleigh-Fernvale beds		
1516	CABOOL	Enoggera porphyry Mo prospect (Pub. 378)	Mo				483500	6963600	in altd Enoggera Granite	M TR	PO
1517	CABOOL	England Creek/Fernvale prospect	Mn				466700	6970000	Neranleigh-Fernvale beds		
1518	CABOOL	Fernvale chromite prospect	Cr				471600	6962000	in serpentine		
1519	CABOOL	Golden Boulder; Durkins Never Beat mines	Au	As	Ag		490000	6966300	Bunya Phyllite		QV
1520	CABOOL	Dandys Range/Dandys Knob prospect	Mn				480100	6958100	Neranleigh-Fernvale beds		
1521	CABOOL	Dandys Range prospect No. 1	Mn				477700	6958800			
1522	CABOOL	Dandys Range prospect No. 2	Mn				478200	6958800			
1523	CABOOL	Dandys Range prospect No. 3	Mn				479200	6958900			
1524	CABOOL	Double D mines	Au	As	Ag		490100	6966400	Bunya Phyllite		QV
1525	CABOOL	Gold Ck Gp; Butlers Hope; Butlers Paddock; D	Au				491300	6962100	Neranleigh-Fernvale beds		QV
1526	CABOOL	Gold Ck Gp; Centenary mine	Au				491200	6961700			QV
1527	CABOOL	Gold Ck Gp; Eclipse; Old Ladder; Wilson	Au	Ag	Pb	Cu	491300	6961200	Neranleigh-Fernvale beds		QV
1528	CABOOL	Gold Ck Gp; Gold Creek alluvial workings	Au				490700	6961000			
1529	CABOOL	Gold Ck Gp; Liebwert mine	Au	Ag			485400	6959200	Silicified schists		
1530	CABOOL	Gold Ck Gp; Little Wonder; Dorothy R; Ruby	Au	As			490700	6962400			QV
1531	CABOOL	Gold Ck Gp; McCulkins; Bretts; Windsor	Au				491000	6961600			QV
1532	CABOOL	Gold Ck Gp; Prince of Wales/Acme mine	Au	Cu			490800	6962500	Bunya Phyllite		QV
1533	CABOOL	Gold Ck Gp; Surprise; Mays B'day; Lantana	Au	Cu	Pb		491600	6961000	Neranleigh-Fernvale beds		QV
1534	CABOOL	Golden Spur group; Centenary mine	Au				490900	6961900	Bunya Phyllite; nr edge Samford Gd		
1535	CABOOL	Golden Spur Gp; Camp Mtn prospect No. 1	Au				490900	6969000	Bunya Phyllite; nr edge Samford Gd		

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No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1536	CABOOL	Golden Spur Gp; Camp Mtn prospect No. 2	Au			490200	6969300	Bunya Phyllite; nr edge Samford Gd		
1537	CABOOL	Golden Spur Gp; Ellis/McLeans/Samford GM	Au	As	Ag	489900	6969600	Bunya Phyllite; nr edge Samford Gd		
1538	CABOOL	Golden Spur Gp; SW workings	Au	As	Ag	490300	6969100	Bunya Phyllite; nr edge Samford Gd		
1539	CABOOL	Grovely-Bunya prospect	As	Pb	Ag	Au	495700	6969600	gossan; Bunya Phyllite	
1540	CABOOL	Highland Estate/Golden Ridge mine	Au	Ag	Cu		479200	6970800	in altd metaseds; nr contact with Samford Gd	
1541	CABOOL	Highlands pyrite deposit	Py				479200	6970700		
1542	CABOOL	Kobble Creek prospect	As				477300	6987200		
1543	CABOOL	Laceys Creek; Dayboro prospect	Cu				471000	6987000	Neranleigh-Fernvale beds	
1544	CABOOL	Little Wonder mine	Au				490500	6962200		
1545	CABOOL	Lord Kitchener/Defiance/Mountain Maid	Au				488700	6968200		
1546	CABOOL	Mountain Maid Gp; Fitzgeralds/Olivers	Au	As	Ag	Zn	488600	6967700	Bunya Phyllite	QV
1547	CABOOL	Mountain Maid Gp; Kitchener East mine	Au	As	Ag	An	488400	6968100	Bunya Phyllite	QV
1548	CABOOL	Mountain Maid Gp; Mountain Maid mine	Au	As	Ag	Zn	488500	6968400	Bunya Phyllite	QV
1549	CABOOL	Mountain Maid Gp; un-named mine	Au	As	Ag	Zn	489000	6967300	Bunya Phyllite	QV
1550	CABOOL	Mount Aurum/Golden Rainbow mine	Au	As	Ag		489800	6964500	Qtz veins in Bunya Phyllite	QV
1551	CABOOL	Mt Cootha Gp; Ghost; Golden lode; Litchfields	Au	Ag	Cu		494700	6960900	Neranleigh-Fernvale beds nr Enoggera Gt	QV
1552	CABOOL	New Eclipse mine	Au				491300	6961700		
1553	CABOOL	Perserverance mine	Au				487200	6966800		QV
1554	CABOOL	Perserverance/Neurum Creek prospect	Au				470100	7011500	Mount Byron Volcanics	
1555	CABOOL	Perseverance/Independent mines; Jubilee, rf	Au	As	Ag		487200	6966800	Qtz reefs in Neranleigh-Fernvale beds	QV
1556	CABOOL	Reedy Creek (Bodalla; Cananea) mines	Zn	Ag	Pb	Au	466800	6987300	Neranleigh-Fernvale beds	
1557	CABOOL	Rush Creek; Dayboro prospect	Cu	Ag			485900	6992900	Rocksberg Greenstone	
1558	CABOOL	Scrubby Knob variscite deposit	Gs				476600	6987800	variscite	
1559	CABOOL	Strathpine antimony; One Mile Ck prospect	Sb				492000	6979100	Qtz brecc. lode in Bunya Phyllite	QV
1560	CABOOL	Strathpine antimony; Four Mile Ck prospect	Sb				492800	6978100	Fissure lode in Bunya Phyllite	QV
1561	CABOOL	Surprise mine	Au				491500	6961000		
1562	CABOOL	Wamuran mine	Sb				482400	7005500	phyllitic Kurwongbah beds	QV
1563	CABOOL	Wyangy Creek prospect	Au				463000	7005000	Northbrook beds	
1564	ESK	Alice Creek/Discovery mine; MLs 5969-72	Au	As	Ag		414100	6959000		QV
1565	ESK	Anduramba porphyry Mo prospect (P. 378)	Mo				411600	6997400	QV stockwork in altd Eskdale Granodite	P-TR
1566	ESK	Blue Hills No. 2 mine (CR 24285)	Pb	As			429400	6988000	Pinecliffe Formation	
1567	ESK	Blue Hills No.3 mine (CR 24285)	Pb	As			430700	6982900	Pinecliffe Formation	

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1568	ESK	Blue Hills No. 3 North (CR 24285)	Pb	Ag		430800	6983800	Hampton Road Rhyolite		
1569	ESK	Bunkers Hill mine 1	Au			421000	6976500	Pinecliffe Formation		
1570	ESK	Bunkers Hill mine 2	Au			421500	6976800	Pinecliffe Formation		
1571	ESK	Bunkers Hill mine 3	Au			421500	6978100	Pinecliffe Formation		
1572	ESK	Bunkers Hill mine 4	Au			421900	6977300	Pinecliffe Formation		
1573	ESK	Cattle Pens prospect (CR 18995)	Au	As		414800	7010700	Qtz por. intr chi-jasper of Maronghi Ck Bds		
1574	ESK	Crows Nest tin-tungsten prospects	Sn	W		413400	6983300	in greisen		
1575	ESK	Crows Nest alluvial tin workings	Sn			410900	6983500			
1576	ESK	Crows Nest kaolin deposit; ML 5973	Ck			405600	6992400			
1577	ESK	Emu Creek feldspar deposit	Fs			401100	7009300			
1578	ESK	Eskdale mine	Sb	Au		416400	6996700	E-W QV in granite		QV
1579	ESK	Galena Lode mine (CR 24285)	Cu			429100	6993400	Pinecliffe Formation		
1580	ESK	Great Pyramid mine	Cu			427100	6990800			
1581	ESK	Kipper Creek mine (CR 24285)	Pb	Ag	Au	429900	6987800			
1582	ESK	Milford Rocks workings	Au			420900	7005900	QV in granite		QV
1583	ESK	Mountain Maid mine (CR 24285)	Cu	Pb	Ag	427100	6990100	Pinecliffe Formation		
1584	ESK	Murphys Creek prospect	Cu			410400	6968400			
1585	ESK	North Star mine (CR 24285)	Cu	Zn		429100	6992900	Pinecliffe Formation		
1586	ESK	Nukinenda Dyke workings (CR 18995)	Au	As		416800	7010600	QV in a diorite dyke		QV
1587	ESK	Ottaba limestone deposit	Ls			438500	6994900	Lenses of calcite in tuff; agglom; rhy	L TR	
1588	ESK	Paradise Creek mine (CR 18598)	Cu			414300	6963600			
1589	ESK	Pyramid mine (CR 24285)	Cu			426500	6988600	Pinecliffe Formation		
1590	ESK	Ravensbourne kaolin deposit; ML 5977	Ck			418500	6977300			
1591	ESK	Rising Star & North Star mines	Cu			429500	6992700			
1592	ESK	Saxon mine (CR 24285)	Pb	As		428300	6988700			
1593	ESK	Silver Crown prospect	Pb	Zn	Ag	410100	6968500			
1594	ESK	Sylvesters/Teagle prospect (CR17005)	Zn	Cu	Pb	Ag	423100	6979500		
1595	ESK	Toogoolawah tungsten prospect	W			442400	7005500			
1596	ESK	Toowoomba-Crows Nest bauxite deposits	Bx			401000	6970400			
1597	ESK	Toowoomba-Crows Nest bauxite deposits	Bx			401300	6965900			
1598	ESK	Toowoomba-Crows Nest bauxite deposits	Bx			403300	6968100			
1599	ESK	Toowoomba-Crows Nest bauxite deposits	Bx			404100	6971600			

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1600	ESK	Toowoomba-Crows Nest bauxite deposits	Bx			404500	6971600			
1601	ESK	Toowoomba-Crows Nest bauxite deposits	Bx			405100	6972800			
1602	ESK	Toowoomba-Crows Nest bauxite deposits	Bx			405700	6971900			
1603	ESK	Toowoomba-Crows Nest bauxite deposits	Bx			406400	6972400			
1604	ESK	Toowoomba-Crows Nest bauxite deposits	Bx			406900	6980400			
1605	ESK	Toowoomba-Crows Nest bauxite deposits	Bx			408200	6975000			
1606	ESK	Toowoomba-Crows Nest bauxite deposits	Bx			409700	6977800			
1607	HELIDON	Black Duck Creek diatomite	Dt			417000	6922100			
1608	HELIDON	Blackfellow Ck prospect (Matheson; 1993)	Cb			422800	6919800	Walloon CM	M-U J	synsed
1609	HELIDON	Budgie Gap bauxite	Bx			404800	6928000			
1610	HELIDON	Budgie Gap bauxite	Bx			405300	6928500			
1611	HELIDON	Mt Davidson prospect	Ms	Mn		404500	6947000			
1612	HELIDON	Mt Mort resource; MDL 172 (Matheson; 1993)	Cb			443800	6922600	Walloon CM	M-U J	synsed
1613	HELIDON	Mt Sylvia diatomite; MLs 5954-6; 5957	Dt			417500	6922200			
1614	HELIDON	South Laidley prospect (Matheson; 1993)	Cb			436800	6920900	Walloon CM	M-U J	synsed
1615	HELIDON	West Haldon diatomite	Dt			408500	6925400			
1616	HELIDON	West Helidon prospect (Matheson; 1993)	Cb			413400	6927200	Walloon CM	M-U J	synsed
1617	IPSWICH	Dandy's Knob mine	Mn			479900	6958300			
1618	IPSWICH	Flinders dolomite quarry; N wkgs; ML 4548; 45	Do			471200	6923600			
1619	IPSWICH	Flinders dolomite quarry; S wkgs; ML 4549; 46	Do			472500	6921800			
1620	IPSWICH	Fraserview ilmenite prospect	Im			457900	6908100			
1621	IPSWICH	Indooroopilly Ag-Pb mine	Pb	Ag		496600	6957900			
1622	IPSWICH	Ipswich Coal Field; Haighmoor Extd	Cb			479500	6949500	Ipswich Coal Measures	L TR	synsed
1623	IPSWICH	Ipswich Coal Field; Moggill	Cb			486700	6948900	Ipswich Coal Measures	L TR	synsed
1624	IPSWICH	Ipswich Coal Field; Westfalen No. 2	Cb			482800	6948600	Ipswich Coal Measures	L TR	synsed
1625	IPSWICH	Ipswich Coal Field; Rylance Abermain No. 2	Cb			477600	6947900	Ipswich Coal Measures	L TR	synsed
1626	IPSWICH	Ipswich Coal Field; Moreton Extd	Cb			476800	6947600	Ipswich Coal Measures	L TR	synsed
1627	IPSWICH	Ipswich Coal Field; Westfalen No. 3	Cb			485800	6945700	Ipswich Coal Measures	L TR	synsed
1628	IPSWICH	Ipswich Coal Field; Whitwood No. 3	Cb			483600	6945500	Ipswich Coal Measures	L TR	synsed
1629	IPSWICH	Ipswich Coal Field; Aberdare No. 8	Cb			481200	6945200	Ipswich Coal Measures	L TR	synsed
1630	IPSWICH	Ipswich Coal Field; Jones No. 1	Cb			483200	6944500	Ipswich Coal Measures	L TR	synsed
1631	IPSWICH	Ipswich Coal Field; Rhondda No. 1	Cb			483300	6944000	Ipswich Coal Measures	L TR	synsed

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1632	IPSWICH	Ipswich Coal Field; Wm Haenke	Cb			482100	6943600	Ipswich Coal Measures	L TR	synsed
1633	IPSWICH	Ipswich Coal Field; Edward S. Cornwall	Cb			482800	6942500	Ipswich Coal Measures	L TR	synsed
1634	IPSWICH	Ipswich Coal Field; Bogside No. 3	Cb			481500	6942300	Ipswich Coal Measures	L TR	synsed
1635	IPSWICH	Ipswich Coal Field; Blackheath No. 6	Cb			482400	6941300	Ipswich Coal Measures	L TR	synsed
1636	IPSWICH	Ipswich Coal Field; Southern Cross No. 10	Cb			480900	6940900	Ipswich Coal Measures	L TR	synsed
1637	IPSWICH	Ipswich Coal Field; Box Flat Extd No. 9	Cb			480500	6940600	Ipswich Coal Measures	L TR	synsed
1638	IPSWICH	Ipswich Coal Field; Box Flat Extd No. 5	Cb			481000	6940600	Ipswich Coal Measures	L TR	synsed
1639	IPSWICH	Ipswich Coal Field; Box Flat Extd No. 7	Cb			481100	6940500	Ipswich Coal Measures	L TR	synsed
1640	IPSWICH	Ipswich Coal Field; New Hope No. 7	Cb			482200	6939300	Ipswich Coal Measures	L TR	synsed
1641	IPSWICH	Ipswich Coal Field; Southern Cross No. 12	Cb			482900	6939300	Ipswich Coal Measures	L TR	synsed
1642	IPSWICH	Ipswich Coal Field; Southern Cross No. 9	Cb			482300	6939300	Ipswich Coal Measures	L TR	synsed
1643	IPSWICH	Ipswich Coal Field; Southern Cross No. 11	Cb			481700	6939200	Ipswich Coal Measures	L TR	synsed
1644	IPSWICH	Ipswich C F; Spring Mtn/MDL 148 resource	Cb			489000	6936000	Ipswich Coal Measures	L TR	synsed
1645	IPSWICH	Ipswich Coal Field; New Hope Nos 5 & 6	Cb			482500	6939000	Ipswich Coal Measures	L TR	synsed
1646	IPSWICH	Kholo arsenic prospect	As			482900	6956600			
1647	IPSWICH	Limestone Hill magnesian limestone	Ms			477200	6945300			
1648	IPSWICH	Moggill manganese prospect	Mn			491700	6954200			
1649	IPSWICH	Mt Crosby manganese prospect	Mn			477900	6957200			
1650	IPSWICH	Mt Crosby manganese prospect	Mn			478700	6956200			
1651	IPSWICH	Mt Crosby manganese prospect	Mn			479500	6957000			
1652	IPSWICH	Mt Crosby manganese prospect	Mn			479700	6955400			
1653	IPSWICH	Mt Crosby manganese prospect	Mn			480200	6954600			
1654	IPSWICH	Mt Crosby manganese prospect	Mn			480300	6958000			
1655	IPSWICH	Mt Crosby porphyry Cu prospect (Pub. 378)	Cu			483600	6956600	Neraneigh-F vale; intr by Karana Q D	M TR	PO
1656	IPSWICH	Mt Flinders alum occurrences	Bx			481300	6923600			
1657	IPSWICH	Pine Mtn magnesia-nickel prospect	Ms	Ni		471400	6953500			
1658	IPSWICH	Pine Mtn magnesia-nickel prospect	Ms	Ni		471000	6953900			
1659	IPSWICH	Pine Mtn asbestos-chromite-Ni-Ist prospect	A	Ni	Cr	Ls	471400	6955600		
1660	IPSWICH	Pine Mtn asbestos-chromite-Ni-Ist prospect	A	Ni	Cr	Ls	472100	6952900		
1661	IPSWICH	Pullenvale manganese prospect	Mn				486200	6957000		
1662	IPSWICH	Raceview magnesian limestone	Ms	Ls			478300	6942400		
1663	IPSWICH	Redbank Plains magnesian Ist/polygorskite	Ms	Ls	Cy		487000	6941300		

Sheet1

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products		GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1664	IPSWICH	Redbank Plains magnesian lst/polygorskite	Ms	Ls	Cy	487200	6942500			
1665	IPSWICH	Redbank Plains magnesian lst/polygorskite	Ms	Ls	Cy	487600	6942100			
1666	IPSWICH	Rosewood diatomite prospect	Dt			451700	6945400			
1667	IPSWICH	Rosewood-Walloon C F; Bremer View East	Cb			453300	6932100	WCM; resour. 60 Mt (Matheson 1993)		
1668	IPSWICH	Rosewood-Walloon C F; Bremer View West	Cb			451700	6933000	Walloon C M (Matheson; 1993)	M J	synsed
1669	IPSWICH	RWCF; Cedar Grove prospect	Cb			495800	6917700	Walloon C M (Matheson; 1993)	M J	synsed
1670	IPSWICH	Rosewood-Walloon C F; Ebenezer mine	Cb			464500	6939300	WCM; resour 45.5 Mt (Matheson 1993)	M J	synsed
1671	IPSWICH	Rosewood-Walloon C F; Ebenezer E resour	Cb			466500	6938900	Walloon Coal Measures	M J	synsed
1672	IPSWICH	Rosewood-Walloon C F; Ebenezer Extd reso	Cb			463100	6937800	Walloon Coal Measures	M J	synsed
1673	IPSWICH	Rosewood-Walloon C F; Caledonian No. 6	Cb			463500	6948500	Walloon Coal Measures	M J	synsed
1674	IPSWICH	Rosewood-Walloon C F; Caledonian No. 5	Cb			463600	6947400	Walloon Coal Measures	M J	synsed
1675	IPSWICH	Rosewood-Walloon C F; Glencoe Extd No. 1	Cb			459400	6944000	Walloon Coal Measures	M J	synsed
1676	IPSWICH	RWCF; Haigslea resource	Cb			462700	6949600	Walloon C M; 9.1 Mt (Matheson 1993)	M J	synsed
1677	IPSWICH	Rosewood-Walloon C F; Jeebropilly mine	Cb			466200	6941100	W C M; resour 47 Mt (Matheson 1993)	M J	synsed
1678	IPSWICH	Rosewood-Walloon C F; Lanefield No. 5	Cb			458000	6943200	Walloon Coal Measures	M J	synsed
1679	IPSWICH	RWCF; Malabar/New M bar No. 1 resource	Cb			460700	6947600	Walloon CM; 4.2 Mt (Matheson; 1993)	M J	synsed
1680	IPSWICH	Rosewood-Walloon C F; Moomba resource	Cb			473500	6918500	WCM; res. 8.2 Mt (Matheson; 1993)		
1681	IPSWICH	Rosewood-Walloon C F; Mt Elliot No. 1 Extd	Cb			468300	6941800	Walloon Coal Measures	M J	synsed
1682	IPSWICH	RWCF; Mt Forbes resource	Cb			459900	6930200	Walloon CM; (Matheson; 1993)	M J	synsed
1683	IPSWICH	RWCF; New Mtn View No. 3/Kunkala resour	Cb			457500	6946500	Walloon CM; 15.2 Mt (Matheson 1993)	M J	synsed
1684	IPSWICH	Rosewood-Walloon C F; Normanton No. 1	Cb			460300	6943900	Walloon Coal Measures	M J	synsed
1685	IPSWICH	Rosewood-Walloon C F; Oakleigh No. 4	Cb			458800	6945100	WCM; res. 4.5 Mt (Matheson; 1993)	M J	synsed
1686	IPSWICH	RWCF; Purga Central inf. resource	Cb			472000	6934600	Walloon CM; (Matheson; 1993)	M J	synsed
1687	IPSWICH	RWCF; Purga East inf. resource	Cb			474000	6932300	Walloon CM; (Matheson; 1993)	M J	synsed
1688	IPSWICH	RWCF; Purga West inf. resource	Cb			467500	6938000	Walloon CM; 24 Mt (Matheson; 1993)	M J	synsed
1689	IPSWICH	Rosewood-Walloon C F; Rosemount No. 4	Cb			458600	6943600	Walloon Coal Measures	M J	synsed
1690	IPSWICH	RWCF; Rosemount resource	Cb			460300	6936800	Walloon CM; (Matheson; 1993)	M J	synsed
1691	IPSWICH	Rosewood-Walloon C F; Rosewood No. 2	Cb			461200	6943000	Walloon Coal Measures	M J	synsed
1692	IPSWICH	Rosewood-Walloon C F; Roughrigg No. 5	Cb			459400	6947500	Walloon Coal Measures	M J	synsed
1693	IPSWICH	Rosewood-Walloon C F; Roughrigg No. 7	Cb			459500	6946600	Walloon Coal Measures	M J	synsed
1694	IPSWICH	Rosewood-Walloon C F; Smithfield No. 3	Cb			460700	6942900	Walloon Coal Measures	M J	synsed
1695	IPSWICH	RWCF; Strathnaver mine	Cb			492600	6903100	Walloon CM (Matheson; 1993)	M J	synsed

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products	GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1696	IPSWICH	Rosewood-Walloon C F; United No. 7	Cb		458300	6946600	Walloon Coal Measures	M J	synsed
1697	IPSWICH	Rosewood-Walloon C F; United No. 8	Cb		458200	6945200	Walloon Coal Measures	M J	synsed
1698	IPSWICH	Rosewood-Walloon C F; Westvale No. 5	Cb		456700	6942800	Walloon Coal Measures	M J	synsed
1699	IPSWICH	Rosewood-Walloon C F; Woodhill prospect	Cb		496800	6913800	Walloon CM (Matheson; 1993)	M J	synsed
1700	Oakey	Pinelands bauxite prospects	Bx		398400	6989200			
1701	Oakey	Pinelands bauxite prospects	Bx		398800	6987100			
1702	Oakey	Pinelands bauxite prospects	Bx		399600	6987400			
1703	Oakey	Toowoomba-Crows Nest bauxite	Bx		400100	6964100			
1704	Oakey	Toowoomba-Crows Nest bauxite	Bx		400400	6964200			
1705	Oakey	Toowoomba-Crows Nest bauxite	Bx		400800	6964500			
1706	Oakey	Toowoomba-Crows Nest bauxite	Bx		401200	6965600			
1707	Oakey	Toowoomba-Crows Nest bauxite	Bx		394800	6961200			
1708	Oakey	Toowoomba-Crows Nest bauxite	Bx		396100	6964200			
1709	Oakey	Toowoomba-Crows Nest bauxite	Bx		397100	6963000			
1710	Oakey	Toowoomba-Crows Nest bauxite	Bx		399000	6964300			
1711	Oakey	Toowoomba-Crows Nest bauxite	Bx		399800	6964500			
1712	Oakey	Toowoomba-Crows Nest bauxite	Bx		399900	6964100			
1713	TOOWO	Hodgson Vale prospect (Matheson; 1993)	Cb		395500	6940000		M-U J	synsed
1714	TOOWO	Pittsworth copper-manganese prospect	Cu	Mn	367200	6939300			
1715	TOOWO	Pittsworth ironstone prospect	Fe		367500	6936300			
1716	TOOWO	Pittsworth ironstone prospect	Fe		370600	6935300			
1717	TOOWO	Pittsworth ironstone prospect	Fe		370700	6937000			
1718	TOOWO	Toowoomba-Crows Nest bauxite	Bx		400700	6935800			
1719	TOOWO	Toowoomba-Crows Nest bauxite	Bx		397700	6952800			
1720	TOOWO	Toowoomba-Crows Nest bauxite	Bx		398300	6950200			
1721	TOOWO	Wellcamp inf. resource (Matheson; 1993)	Cb		382000	6949700	Walloon CM; 261 Mt	M-U J	synsed
1722	MT LIND	Barney View prospect	Cb		478900	6875000	Walloon CM	M-U J	synsed
1723	MT LIND	Crofty prospect	Cb		454500	6883500	Walloon CM	M-U J	synsed
1724	MT LIND	Laravale resource	Cb		494500	6894200	Walloon CM	M-U J	synsed
1725	MT LIND	Mintovale resource/MDL138	Cb		464000	6888000	Walloon CM; 12 Mt	M-U J	synsed
1726	MT LIND	Palen Creek prospect	Cb		476500	6865600	Walloon CM	M-U J	synsed
1727	MT LIND	Tarome (C 120) prospect	Cb		451000	6902500	Walloon CM	M-U J	synsed

No.	100 000 Sheet	Name of Deposit	Main Prod	Minor Products				GridrefE	GridrefN	Host Formation	Host Age	Genetic Code
1728	MT LIND	West Minto (C 24) prospect	Cb					460300	6888400	Walloon CM	M-U J	synsed
1729	MURWIL	Albert River prospect (Matheson; 1993)	Cb					507000	6876300	Walloon CM	M-U J	synsed
1730	MURWIL	Back Creek amethyst prospect	Gs					520600	6894100	Walloon CM		
1731	MURWIL	Canungra agate deposit	Gs					518700	6900400	Walloon CM		
1732	MURWIL	Canungra diatomite	Dt					517400	6894100	Walloon CM		
1733	MURWIL	Canungra Range prospect (Matheson; 1993)	Cb					508400	6894700	Walloon CM	M-U J	synsed
1734	MURWIL	Gold Coast H.M. beach sands	Rp	Im	Zr	Mt		548600	6887000	Coastal sands	Q	synsed
1735	MURWIL	Numinbah diatomite	Dt					519500	6888900			
1736	MURWIL	Numinbah diatomite	Dt					519700	6888100			
1737	MURWIL	Numinbah diatomite	Dt					520500	6883800			
1738	MURWIL	Numinbah diatomite	Dt					521400	6890500			
1739	MURWIL	Numinbah perlite	Pe					519700	6887300			
1740	MURWIL	Numinbah perlite	Pe					519800	6887400			
1741	MURWIL	Numinbah perlite	Pe	WU				519900	6883200			
1742	MURWIL	Numinbah perlite	Pe					521400	6890000			
1743	MURWIL	Numinbah perlite/Perlite 1; ML 50025	Pe					523000	6884300			
1744	MURWIL	Numinbah perlite; ML 5915	Pe					524100	6879800			
1745	MURWIL	Numinbah perlite	Pe					524400	6880700			
1746	MURWIL	Tabletop/Darlington Range diatomite	Dt					515300	6897300			
1747	MURWIL	Tallebudgera Creek manganese deposit	Mn					531000	6877700			
1748	MURWIL	Tallebudgera perlite deposit	Pe					534600	6880500			
1749	MURWIL	Wunburra perlite deposit	Pe					525800	6885100			
1750	WARWIC	Cherribah prospect	Mp	W				410600	6851700			
1751	WARWIC	Copper Valley mine (CR 22875)	Cu					403600	6862300			
1752	WARWIC	Coulson Ck prosp. (C122; Matheson; 1993)	Cb					446200	6892200	Walloon CM	M-U J	synsed
1753	WARWIC	Coulson Ck E prosp. (C125; Matheson; 1993)	Cb					448200	6895900	Walloon CM	M-U J	synsed
1754	WARWIC	Elbow (Lucky) Valley iron prospect	Fe					414000	6859100			
1755	WARWIC	Elbow (Lucky) Valley 1st-marble deposits	Ma	Ls				414600	6859400			
1756	WARWIC	Elbow (Lucky) Valley 1st-marble deposits	Ma	Ls				413200	6859600			
1757	WARWIC	Freestone prospect (Matheson; 1993)	Cb					419100	6894000	Walloon CM	M-U J	synsed
1758	WARWIC	Golden Bush/ML 48 mine	Cu	Zn	Au			404800	6861000	andesite of Main Range Volcs		
1759	WARWIC	Grievess copper deposit	Cu	Pb	Zn	Ag		402250	6857300			

[illegible]