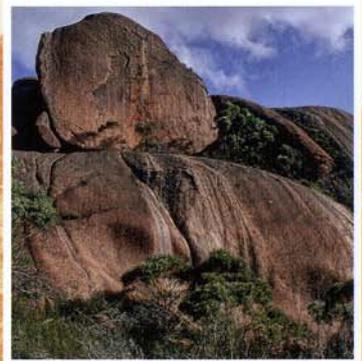
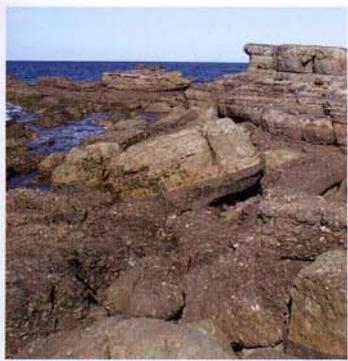


Mineral Resources Tasmania Annual Review



2006 - 2007

***A Division of the Department of
Infrastructure, Energy and Resources***

***Mineral Resources Tasmania
Annual Review
2006/2007***

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Mineral Resources Tasmania

Mineral Resources Tasmania (MRT), a Division of the Department of Infrastructure, Energy and Resources, provides services to the mineral and petroleum exploration, mining, quarrying and mineral processing industries; for infrastructure development; to land management groups for geohazards and construction materials; and to the general public.

The primary role of MRT is to ensure that Tasmania's natural mineral resources are managed in a sustainable way now and for future generations in accordance with the goals of Tasmania *Together*, and to ensure that there is a fair and sustainable return to the community when mineral or petroleum resources are developed.

— Mission —

- To contribute to the economic development of Tasmania by providing the necessary information and services to foster responsible land management, and mineral resource and infrastructure development, for the benefit of the Tasmanian community.

— Objectives —

- Benefit the Tasmanian community by an effective and co-ordinated government approach to mineral resources, infrastructure development and land management.
- Maximise the opportunities for community growth by providing timely and relevant information integrated with other government systems.
- Optimise the operational performance of MRT by developing the organisational structure to support the whole-of-government business processes.

— Activities —

Activities within the Division include:

- collection, integration, interpretation, publication and presentation of geoscientific information;
- collection, integration, interpretation, publication and presentation of information on Tasmania's land stability;
- regulation of mineral and petroleum exploration and development in Tasmania, including offshore waters administered by the State, and the promotion of vacant areas available for onshore and offshore exploration;
- setting and monitoring of standards for both the performance of exploration activities and the technical reporting of exploration records and case histories;
- environmental appraisal, monitoring and management of mining heritage and land access issues; and
- issue of legal titles for mining tenements, collation and recording of statistics relating to mining production, collection of fees and rentals, management of royalty regimes, and recording of mining tenements.

— Major issues and initiatives for 2007/2008 —

- Continue work on the TasExplore geoscientific data initiative through the interpretation of new airborne geophysical data over northeast Tasmania and commencement of upgrading of the geology of northeast Tasmania and King Island. This will enhance the information available in the three-dimensional model over areas in northeast and northwest Tasmania.
- Continue updating data for the Tasmanian Information on Geoscience and Exploration Resources (TIGER) system.
- Undertake a series of promotional activities to encourage mineral exploration in Tasmania, including the promotion of the three-dimensional model of geological structure and major mineralising pathways of Tasmania.
- Undertake promotional activities to encourage the growth in offshore petroleum exploration, including an aeromagnetic survey in the Otway Basin and other initiatives.
- Produce land stability maps of urban areas in Tasmania, in line with the guidelines developed following the Thredbo disaster.
- Continue rehabilitation of abandoned mining sites in Tasmania.

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Mineral Resources Tasmania

— Divisional overview, 2006/2007

The demand for minerals and metals continued to be high during 2006/2007 despite fluctuating prices. Consumption of an ever increasing variety and quantity of minerals and metal products has occurred world wide and some countries now feel the need to place export bans on certain metal and mineral commodities. Tasmania continues to benefit from world demand. The mineral extraction and processing sector is Tasmania's largest export industry, accounting for 49.4% of mercantile exports in 2006/2007, up from 39.7% the previous year.

Perception is a wonderful concept; it allows all kinds of misconceptions to occur in the face of counter facts. This is demonstrated by the 2006/2007 Canadian Fraser Institute Rankings for Australia in their worldwide survey which analyses twelve separate components in order to rank the overall policy framework of a region. Australia performs well in these surveys, and in 2005 Tasmania was proclaimed the top Australian location for investment in exploration, and the ninth best location worldwide. In 2007, however, Tasmania's ranking slipped to third amongst Australian States due to negative perceptions which still exist in the face of facts that prove the opposite.

In the latest Fraser Institute survey, Tasmania ranked third out of the seven States/NT in Australia for "Uncertainty Concerning Native Land Claims", despite the fact that it has been stated in numerous forums that it is most unlikely that a native title claim could succeed in Tasmania, and the fact that the Tasmanian Government has established a policy of reconciliation with the aboriginal community. This includes the passage of the *Aboriginal Lands Act 1995*, and the granting, as freehold, of parcels of land of immediate cultural significance to the aboriginal community.

Even more worrying is that Tasmania is ranked sixth out of seven for "Uncertainty over Wilderness Areas and Parks" and "Environmental Regulation", even though certainty is guaranteed through legislation under the 1997 Regional Forest Agreement and the recently concluded Community Forest Agreement (2005). Legislation within the *Nature Conservation Act 2002* also includes mineral exploration and mining as statutory objectives for various categories of public land. Over and above this, there is also the Strategic Prospectivity Zone Legislation which was enacted in 1993 and updated in 2000, specifically to remove, or at least minimise, the deterrent to mineral exploration of perceived sovereign risk.

The factual situation outlined above indicates that continued direct consultation with the industry is still required during interstate and overseas promotional visits.

On the positive side Tasmania again benefited from continued strong metal prices during the year. The outlook for 2007/2008 is also positive with the expectation that commodity prices will generally remain strong and Tasmania will benefit with strong exploration activity, the opening of the Allegiance nickel mine at Avebury, the

reopening of the Renison Bell tin mine, the upgrade of the Polymetals Hellyer project, the redevelopment of the King Island Scheelite mine, and the start of the development of the 'super-pit' at the Savage River iron ore mine.

Mineral Resources Tasmania (MRT) continues to provide a high level of service to the mineral and petroleum exploration, mining, quarrying and mineral processing industries; for infrastructure development; to land management groups for geohazards and construction materials; and to the general public, albeit under a certain amount of pressure due to a far higher work load than in the early years of the 21st century, with the same or less staff than then. As with the rest of the minerals industry, qualified staff are hard to find and retain due to the ability of the private sector to offer far higher employment benefits (packages) than government.

I extend my sincere thanks to all MRT staff for their efforts and outputs during the past year which resulted in MRT achieving all its required outcomes. Without their dedication and team work, servicing of one of the three main economic supports of the Tasmanian economy would not occur.

The Year in Review

Allegiance Mining NL has completed an agreement with Jinchuan Nickel Group, China's largest and the world's fourth largest nickel producer, for the sale of about 70 000 tonnes of nickel in concentrate. Allegiance has announced an increase in resources to 16.27 million tonnes of 0.99% nickel at a cut off grade of 0.4%, with reserves standing at 3.347 million tonnes of 1.16% nickel at a cut off grade of 0.85%. It is planned to commence mining the Avebury deposit at a rate of 900 000 tonnes per annum in late 2007, with concentrate shipments starting in early 2008. Mining has already commenced and a stockpile of ore is being developed.

The Jiangsu Shagang Group Company Ltd (Shagang) recently purchased 90% of Australian Bulk Minerals, which includes the Savage River iron ore mine and the Port Latta pelletising plant. Shagang, which is one of the largest privately owned companies in China, has indicated that it is looking at the feasibility of increasing production in Tasmania and, in documentation supplied to MRT, states that the "Way ahead is Long", indicating that the company sees itself as being involved in the iron and steel industry for some years to come.

Bluestone Tin Limited closed the Renison Bell mine in October 2005, but has announced that it is now proceeding with an assessment study into re-opening the mine in conjunction with commencing mining of the Mount Bischoff deposit at Waratah. The company is also advancing a study into recovering the substantial tin resource in the Renison Bell tailings dam through a tin fuming plant.

King Island Scheelite Limited has completed a full feasibility study into resuming scheelite mining at Grassy on King Island. The company has all approvals in place to begin mining, and is in negotiation with the Hunan Nonferrous Metals Corporation to finalise a financing and off-take agreement.

Zinifex Limited announced a 65% increase in resources at Rosebery in 2007 to 11.7 million tonnes of 13.0% zinc, 3.8% lead, 0.4% copper, 138 grams per tonne silver and 1.9 grams per tonne gold. The company considers that its goal of continuing to mine the Rosebery ore body until at least 2020 is achievable.

The Polymetals Pty Ltd–Intec Ltd Joint Venture sent its first shipment of bulk zinc-silver-lead concentrate from the Hellyer tailings to China in January 2007 and is expecting to increase production of concentrate during 2008.

Bass Metals has approval to mine at Que River and has tested a 2000 tonne bulk sample at Hellyer. Mining is expected to begin in early 2007/2008.

Production resumed at the Beaconsfield gold mine in April 2007 and the safety case for resumption of mining in the Eastern Domain of the mine has now been accepted by Workplace Standards Tasmania. Preparation of the safety case for resumption of stoping in the Western Domain is well advanced.

There are active exploration programs underway at the Mount Lyell and Henty mines and Van Dieman Mines plc has approval to begin mining alluvial tin, sapphire, gold and spinel from the Scotia deposit, near Gladstone.

Cominex Pty Ltd and Sumitomo Australia Ltd have transferred the silica flour tenements at Corinna to Tasmanian Advanced Minerals Pty Ltd. The new company intends to submit a Development Proposal and Environmental Management Plan to the Waratah–Wynyard Council in the near future seeking a change of operational status to allow the extraction of 50 000 cubic metres a year. Tasmanian Advanced Minerals Pty Ltd has also started the construction of a silica flour treatment plant near Wynyard.

The Thylacine and Yolla gasfields are both in Tasmanian waters. Thylacine is nearing production phase, while Yolla began production in October 2006. The gas from both fields will be piped to Victoria. Installation of the Thylacine platform, and development drilling including a deviated exploration well, began in late 2005. The deviated exploration well was successful, resulting in a development well and subsequent production licence application which was granted in November 2006.

MRT initiatives

The major initiatives and issues affecting MRT in 2006/2007 included:

- Commencement of the four-year TasExplore geoscientific data and promotion initiative, with acquisition of aeromagnetic and radiometric data over northeast Tasmania and the Furneaux Group, and geological data acquisition in central northern Tasmania to upgrade old geology, especially where

discrepancies with the 3-D geological model were noted. The first data sets were released in May 2007.

- Enhancing the provision of geoscientific data through the Tasmanian Information on Geoscience and Exploration Resources (TIGER) system.
- Undertaking a series of promotional activities to further encourage the current upsurge in mineral exploration in Tasmania.
- Provision of an appropriate level of resources for environmental monitoring of exploration and mining tenements, and for inspection of mines and quarries.
- From October 2006 MRT ceased any groundwater-related activities, with the Water Resources Division of the Department of Primary Industries and Water taking over parts of MRT's previous groundwater activities.

The major issues and initiatives for 2007/2008 are to:

- Continue work on the TasExplore geoscientific data initiative through the interpretation of new airborne geophysical data over northeast Tasmania and commencement of upgrading of the geology of northeast Tasmania and King Island. This will enhance the information available in the 3-D geological model over areas in northeast and northwest Tasmania.
- Continue updating data for the Tasmanian Information on Geoscience and Exploration Resources (TIGER) System.
- Undertake a series of promotional activities to encourage mineral exploration in Tasmania, including the promotion of the three-dimensional model of geological structure and major mineralising pathways of Tasmania.
- Undertake promotional activities to encourage the growth in offshore petroleum exploration, including an aeromagnetic survey in the Otway Basin and other initiatives.
- Produce land stability maps of urban areas in Tasmania, in line with the guidelines developed following the Thredbo disaster.
- Continue rehabilitation of abandoned mining sites in Tasmania.

Achievements against strategies identified for 2006/2007

New initiatives to stimulate mineral exploration in Tasmania

According to Australian Bureau of Statistics (ABS) data, expenditure on mineral exploration for the 2006 calendar year was \$27.8 million, up 119% from the previous year. Tasmania's share of Australian exploration expenditure was 1.9%, up from 1.1%. This is the highest expenditure in raw terms since 1997. The increase in expenditure is related to a number of factors, including acceptance by the mineral exploration community of the attractiveness of Tasmania as an investment destination.

Part of the recovery is due to the stimulus provided by the three-dimensional geological model of Tasmania, including

an integrated exploration database and a prospectivity analysis (the 3-D model).

Acquisition of new aeromagnetic and radiometric data was undertaken over the Furneaux Group and northeast Tasmania. The data from the Furneaux Group survey was released in May 2007, while the data from northeast Tasmania will be released in the latter part of 2007. A report and data arising from an alteration study of northeast Tasmania, using satellite data, were also released in May.

Promotion of mineral and petroleum potential

The Tasmanian Government provided \$240,000 in 2006/2007 to actively promote mineral exploration opportunities in Tasmania. Activities undertaken included presentations and displays at the Annual Meeting of the Prospectors and Developers Association of Canada (PDAC) in Toronto and visits to leading international mining companies in Tokyo, Toronto, London and Vancouver, both as part of Team Australia and as a separate Tasmanian group. A presentation was also made at an Australian Mineral Exploration Investment seminar at the Australian Embassy in Tokyo during February 2007.

Several meetings were held with companies on a one-on-one basis with DIER personnel. In addition to the PDAC meeting, displays were presented at the *Mining 2006* meeting in Brisbane in November 2006 and at the Association of Mining and Exploration Companies National Mining Congress in Perth in June 2007. Presentations were made at the *Mining 2006* meeting, to a visiting group from the Chinese Geological Survey in July 2006, to a visiting Chinese investment delegation in Hobart during November 2006, to the Tasmanian Minerals Council Exploration Group Meeting at Strahan in May 2007, and to the Association of Mining and Exploration Companies in June.

Regular two-monthly updates on exploration progress in Tasmania were provided to the international Society of Economic Geologists newsletter as part of a global review of mineral exploration. Promotional missions and functions were conducted in Perth, Sydney, Brisbane, Melbourne and Adelaide by officials from DIER. During these visits, information on the new, four-year, \$5.06 million TasExplore geoscience and promotion initiative was well received by industry. These promotions have been successful and continue to play a direct part in attracting new exploration companies to Tasmania.

On the oil and gas side, four exploration permits were granted covering five of the offshore petroleum areas released for bidding in May 2006. These areas, in the Bass Basin and southern section of the Gippsland Basin, were actively promoted at the Australian Petroleum Production and Exploration Association conference held on the Gold Coast in May 2006. This brings the total number of exploration permits in Tasmanian waters to a record eighteen, with a further permit likely to be issued in the near future.

The boom in petroleum exploration and development offshore is a welcome adjunct to the growth in mineral exploration and investment onshore. Production licences were issued over the Yolla gas field in Bass Strait and the

Thylacine gas field in the Otway Basin northwest of King Island. The Yolla development began production in October 2006, with Thylacine expecting to be in production before the end of 2007.

Collection, integration, interpretation, publication and presentation of data

Verification, upgrading and loading of information into the TIGER System continued. The TIGER System has a single geoscience data model with user interfaces for geohazards, geophysics, drilling, mineral deposits, samples and geochemistry. Once loaded, the information is made available to clients using the MRT website. Other information available includes mineral tenements and documents held by MRT, and general information for MRT and DIER clients.

During 2006/2007 downloads from the MRT website continued at a high level, with a total of 4426 gigabytes being recorded during the year with a peak of 957 gigabytes downloaded in September 2006. Development and maintenance of the TIGER System was successfully carried out using a combination of contractors and MRT staff. In addition to data being accessed from the MRT website, 229 data packages were distributed on CD to clients.

The collection and presentation of information on Tasmania's mineral wealth and geoscientific nature continues. Thirteen 1:25 000 scale map tiles were prepared for digital capture, following limited field checking, during the year and several other sheets in the Elliott Bay area were updated. Data capture/output was completed for twenty-four 1:25 000 scale map tiles.

Field work for the TasExplore project began with a team of six geologists updating the geology of central northern Tasmania. Field work was complete and map preparation was in progress at the end of the financial year.

New aeromagnetic and radiometric data for the Furneaux Group were released in May and data for mainland northeast Tasmania was being acquired. A report interpreting the mineralogy of rocks in northeast Tasmania and the Furneaux Group from satellite ASTER data was received in May.

An update to the bulletin summarising the geology and mineral deposits of Tasmania, to be used mainly for promotional and educational purposes, and based to a large extent on the advances in knowledge provided by the 3-D geological model, was published during the year.

A project investigating the origin of the Savage River iron deposit, and other iron ore deposits in the region, was begun during the year.

Land instability is a significant hazard in Tasmania, with many homes having been destroyed over the years and significant damage caused to infrastructure. By studying and understanding the landslide hazard it is often possible to minimise or avoid the effects of land instability. MRT is actively addressing this hazard in three main areas; hazard mapping, databases and monitoring.

A regional landslide hazard assessment of the North West Coast area is underway, with maps of the Launceston, Hobart and Glenorchy areas completed in previous years. This project is in partnership with local government and

has funding assistance from the Australian Government through the Natural Disaster Mitigation Programme (NDMP).

The resultant landslide maps will assist councils in making informed decisions on planning and development issues, especially given the pressure to develop marginal lands around our cities. Information has also been supplied to other stakeholders, including the geotechnical community and the State Emergency Services' Emergency GIS project.

The TIGER landslide database forms a critical data foundation for the landslide project. There are currently over 1500 records from throughout Tasmania and in time information will be made available live on the internet. Further analysis of the landslide database is being undertaken, together with improved modelling approaches to better define runout and likelihood.

A debris flow validation project, involving nationally recognised landslide experts and funded by the NDMP, is underway for the Wellington Range area. This project is in response to the debris flow maps MRT produced in 2005. A risk assessment will be the principal output, and this will provide the basis of a management plan. A compilation of historical transcripts relating to the 1872 Glenorchy landslide and debris flow was published in mid 2007.

MRT continues to liaise on an informal basis with stakeholders in regard to land stability issues. MRT is collaborating with Geoscience Australia to build a facility that will link various landslide databases throughout the country and which will be served to the public over the internet. It is also collaborating in the writing of a chapter on landslides as part of a national review document on natural hazards in Australia.

Historically, MRT has monitored a number of active landslides in Tasmania that have affected roads, railways and subdivisions. Most of these monitoring networks need to be replaced. MRT was awarded funds through the NDMP to design and install a near real-time monitoring facility for the Taroona landslide in Hobart. This will enable a better understanding of landslide performance with regard to rainfall and groundwater that in turn will be of benefit to stakeholders by allowing improved risk management options.

MRT is coordinating a project in the Hobart area to determine whether palaeotsunamis have affected the area during the last 10 000 years. The information is important if the risk of tsunamis is to be estimated. Most of the work is being contracted externally and involves collaboration with Geoscience Australia and use of their inundation modelling facility. The project is funded through the NDMP.

The series of twenty-one 1:100 000 scale groundwater maps, designed to provide information to land use planners in an easily understood format, and eight digital 1:250 000 scale groundwater prospectivity maps was completed. These maps were distributed to municipal councils, as part of the partnership process, as well as to other stakeholders.

Setting and monitoring of standards for exploration activities

MRT is responsible for ensuring that all exploration activity in Tasmania achieves the highest environmental standards and complies with the *Mineral Resources Development Act 1995* and the requirements of other legislation which protects, for example, threatened species and cultural heritage.

The fourth edition of the *Mineral Exploration Code of Practice* outlines the current requirements, the approvals process, and the controls and monitoring procedures that MRT has in place. The Code is under review at present to ensure that consistency is maintained with the *Tasmanian Reserve Management Code of Practice*.

During the year 86 exploration work programs were submitted to MRT, matching 86 in the previous year. Of these programs 78 were approved, 38 of which were in reserves derived from the Regional Forest Agreement (RFA) and required assessment by the Mineral Exploration Working Group.

To comply with the RFA, MRT has developed a system to spatially record exploration activity and attributes that chart the process of approval of individual work programs. All work programs, whether on Crown land, State Forest or private property, are entered into this system to give a complete record of all the environmental information relating to exploration.

Development of the upgraded system has been completed. This system provides an integrated textual and spatial environment to ensure that independent compliance auditing of the exploration work approval system is adhered to and that derived statistics reflect the requirements of the RFA and the recommendations of the Resource Planning and Development Commission.

Mining leases

The *Mineral Resources Development Act 1995* provides for the State to grant titles for the extraction of minerals from mines and quarries. Titles are issued for larger scale operations with appropriate rehabilitation bonds and conditions. Shorter terms are preferred for small-scale remote operations to provide for regular environmental review.

At the end of 2006/2007 there were 622 mining leases in force of which 597 were granted and 25 were still in the application stage.

A total of 25 new leases and 68 lease renewals were applied for during 2006/2007. This took the overall total of applications and renewals currently being processed to 218.

Mining development accelerated during the year, requiring assessment and approval of several operations.

At Hellyer, the Polymetals Pty Ltd–Intec Ltd JV gained approval for tailings re-treatment and began operations. This included dam construction and dredging and reprocessing zinc tailings from the former mining operation to produce a bulk concentrate for export. At Que River approval was gained for open-cut redevelopment of the former mine. At Grassy, King Island Scheelite gained approval for redevelopment of the former open-cut mine

and construction of a sea wall to protect operations from flooding. Environmental management plans were assessed for operations at Scotia near Gladstone, Mt Bischoff near Waratah, and Tasman Crown at Mt Lyell.

Town planning can be an important constraint on the development of extractive operations. Submissions, representations and appeals have been made to the West Tamar and Circular Head councils concerning planning schemes or development applications.

Resources of concrete sand approved for extraction in the Hobart Metropolitan Area for use by the construction industry continue to be depleted. Application was made to the Clarence City Council to rezone a central section of the Seven Mile Beach Protected Area where extensive sand resources exist. In June the Resource Planning and Development Commission (RPDC) determined the matter, making extractive industries a discretionary use under the planning scheme. Permit applications can now be made for extraction in this area.

MRT has been working for several years to provide geological information for planning schemes, with 1:100 000 scale mineral prospectivity and land stability maps having been produced in past years. The finalisation of groundwater prospectivity maps during the year completes this series.

Rehabilitation of Mining Lands Trust Fund

The major focus of activity during 2006/2007 was shaft safety, with 46 shafts at Lefroy being capped, fenced or protected with guard rails to provide for public safety. Minor safety programs were also carried out at Waratah, Luina and Tullah. Weed control, fertiliser application, re-seeding and minor maintenance was carried out at Storys Creek, Rocky Cape, Punched Terror at Dunorlan, and The Badger at Sheffield. A three-year water monitoring program of Storys Creek was completed.

Royalty assessment

Mineral royalties totalling \$33.8 million were collected for the 2006/2007 year which was a marked increase over the \$24 million collected in the 2005/2006 financial year. The increased royalty revenues are the result of the continued commodity price boom and the resulting high profitability of most of the major mines in Tasmania.

The reasons for the commodity price increases are well documented, with high commodity demand from China and India resulting in strong prices. These higher prices are expected to continue through 2007/2008.

Dr A V (Tony) Brown

Director, Mineral Resources Tasmania and State Chief Geologist

Financial Performance

The 2006/2007 consolidated fund appropriation to Mineral Resources Tasmania was \$7.797 million. This funding consisted of:

- ❑ \$3.72 million for salaries for 50.8 full-time-equivalent staff, plus four temporary staff;
- ❑ \$1.64 million for operating expenditure, including rent;
- ❑ \$0.15 million for the Restoration of Degraded Mineral Lands;
- ❑ \$0.24 million for the promotion of Tasmanian mineral opportunities; and
- ❑ \$2.00 million for the first year of the project for updating TIGER and the 3D model.

Of major significance to MRT for the 2006/2007 financial year was the funding, over four years, of a promotional program and for the acquisition of new data for updating TIGER and the 3D geological model.

In order to assist meeting additional funding requirements in priority areas, DIER reviewed activities and re-prioritised funding arrangements. As a result the grant to CODES was discontinued and funding for the rehabilitation of degraded mining lands program was reduced from \$350,000 to \$150,000.

Commonwealth Natural Disaster Mitigation Programme funds were received to continue the Tasmanian Landslide Mapping Program (\$142,800), for a project to investigate the occurrence of palaeotsunamis in the Hobart area (\$120,000), and for real-time monitoring of the Tarooma landslide (\$60,000).

Outputs — Application of funds, 2006/2007

Tasmanian government agencies are funded on an outputs basis. The outputs represent the goods and services delivered by MRT, and the cost of delivering those services. The government purchases these goods and services to meet policy objectives. The total output figure does not equal the consolidated fund appropriation available to the division because overheads associated with head office and carry forward funds are loaded into outputs.

MRT has two outputs as follows:

	\$'000
1. Minerals exploration and land management	5,319
2. Tenement management of the exploration and minerals industry	2,675
Total	7,994

Descriptions of Outputs and Outcomes, 2006/2007

1. Minerals exploration and land management

This output covers:

- ❑ the provision of geoscientific data and resource information on Tasmania's metallic, industrial and hydrocarbon mineral endowment;

- ❑ promotion of mineral potential for the stimulation of exploration for metallic and industrial minerals and hydrocarbons; and

- ❑ geoscientific database development, maintenance, output and marketing, including the production of digital geoscientific maps and associated databases.

The outcome achieved is dynamic minerals exploration and land management for Tasmania and offshore waters.

2. Tenement management of the exploration and minerals industry

This output provides for:

- ❑ the provision of geoscientific information essential for the effective and sustainable management of land and mineral resources;
- ❑ provision of advice to all levels of government and the public on land management issues;
- ❑ administration of mining legislation, including the issue of legal titles for mineral tenements;
- ❑ collation and recording of statistics relating to mining production and exploration; and
- ❑ the demand and monitoring of the collection of fees, rentals and royalties.

The outcome is effective and efficient tenement management of the exploration and minerals industry.

Revenue from fees and charges

Mineral Resources Tasmania collects royalties and rents and fees from mineral lands. These revenues are forwarded directly to consolidated revenue and are not available to MRT, except for offshore petroleum revenues which are utilised to administer the *Petroleum (Submerged Lands) Act 1967*.

Mineral royalties totalling \$33.8 million were collected during the 2006/2007 financial year, a significant increase from the \$24 million collected in 2005/2006 and continuing the upward trend of previous years (\$18.5 million in 2004/2005). The increase was the result of the continued strong prices received for commodities because of strong demand from China and India, and the resulting profitability of Tasmanian mines. The Tasmanian royalty regime is structured so that companies pay a greater royalty in profitable times.

The operations of individual mines are detailed later in this review.

Mineral Resources Tasmania also collects rents and fees from mineral lands, which are forwarded directly to consolidated revenue. Rents and fees from mineral lands raised \$1.344 million in 2006/2007, which was well above budget expectation and reflects the increased mining activity in Tasmania.

	<i>Target</i> <i>06/07</i>	<i>Actual</i> <i>06/07</i>	<i>Target</i> <i>07/08</i>
Royalties (\$,000)	33,000	33,799	33,100
Rents and Fees (\$,000)	721	1,344	721
Rents and Fees — Petroleum (net of administration) (\$,000)	137	154	137
Sales of Maps and Publications (\$,000)	14	37	28

Royalty assessment

MRT is responsible for the collection of mineral royalties from Crown Land tenements. Royalty is not a tax but a payment to the community for the purchase of non-renewable resources from the State.

The Tasmanian royalty regime operates under two systems depending on the type of resource recovered. Companies producing a metallic mineral or coal pay under a two-tiered regime where royalty is paid on the net sales and on the profit from a mine. Royalty on the recovery of non-metallic minerals on Crown leases is set on a per tonne basis.

The two-tiered metallic and coal royalty consists of an ad valorem percentage payable on net sales, and a formula-based percentage of profits. This system only

requires mining companies to pay a lesser fixed minimum royalty in times of no profitability, but ramps up to a maximum of 5% of net sales as profits increase.

The ad valorem rate for net sales is 1.6%. The profit component of the royalty regime is calculated via an exponential formula which increases the percentage of profit royalty paid as the mine's profit increases.

A royalty cap of 5% of net sales has been set so that high-cost, short-life mines are not discriminated against.

Mining companies that expand into downstream processing to produce a near pure specific metal can apply to the Treasurer to receive a 20% rebate on royalties payable. Companies that produce gold doré can apply to claim a 10% rebate on royalties.

The Treasurer has the discretion to increase the gold doré rebate to 20% depending on criteria such as the magnitude of investment undertaken and the benefit to the Tasmanian economy from the investments.

MRT conducts a royalty audit program to ensure tenement holders are paying in accordance with the legislation. The audit program mainly concentrates on the metallic mines which contribute the vast majority of royalty revenue.

2006/2007 Performance Indicators

Growth in mineral exploration activity is essential for the future development of the mineral sector and for the economic well being of Tasmania. Exploration activity is underpinned by updating and providing high quality geoscientific data relating to Tasmania's mineral resources. The activities of MRT are directed at the capture, storage and promotion of such information, with the increased availability of this information being measured and correlated with exploration investment. Enhancement of geohazard information is also of high importance to stakeholders of MRT, as is the effective administration of MRT's regulatory framework.

Achievement against internal targets

<i>Action</i>	<i>Target</i>	<i>Result</i>
Provide new data in areas with inadequate geoscientific coverage.	<ol style="list-style-type: none"> 1. Collection of at least 200 km² of primary digital geoscientific coverage per year. 2. Production of digital geoscientific coverage of ten 1:25 000 scale map equivalents per year. 	<ol style="list-style-type: none"> 1. No primary digital geoscientific coverage collected; the geology of central northern Tasmania was re-evaluated as part of the TasExplore project. 2. Twenty-four new 1:25 000 scale maps were produced.
Research and promotion of exploration of Tasmanian petroleum basins.	Promote one offshore area per year.	Five offshore areas released and promoted at the APPEA and AAPG conferences.
Promote the geoscientific and mineral endowment aspects of Tasmania at various shows, industry conferences, press conferences, open days and other events.	Successful and timely presentation of promotional material at appropriate venues.	Direct promotional visits were made to companies in Japan, Canada, England and Australia. Conferences attended included PDAC in Canada, Mining 2006, and the Association of Mining and Exploration Companies National Mining Congress in Perth.
Prioritise and organise rehabilitation works on abandoned mining lands in compliance with the operation of the Abandoned Mining Lands Rehabilitation Trust Fund.	One major program to be completed each year.	The major program for the year was mine shaft capping at Lefroy in northeast Tasmania. A three-year water sampling program to assess the impact on water quality of previous remediation work at Storys Creek was concluded. Maintenance work continued in a number of areas.
Monitor environmental performance on exploration and mining tenements.	Field inspections as required.	Regular field inspections conducted. Development of compliance auditing system continued.
Digital geoscientific coverage of Tasmania's geohazards.	Completion of one map per year.	A regional landslide mapping program of the Devonport to Boat Harbour Beach area is in progress.

Achievement against external targets

<i>Target</i>	<i>2006/2007 result</i>	<i>2005/2006</i>
Increase exploration expenditure and maintain level at 2% of total Australian exploration expenditure.	Official ABS figures showed that exploration expenditure increased to \$23.9 million in 2006/2007, with Tasmania's share of Australian expenditure decreasing to 1.39%.	1.82%
Increase level of exploration expenditure to a minimum of \$30 million per financial year.		\$22.6 million
Obtain an increase in the area held under Exploration Licence.	Area held under All Minerals and Non-metallic Exploration Licences increased to 21 844 km ² . A further 86 326 km ² is held for onshore oil and geothermal exploration.	13 936 km ²
Obtain an increase in the number of Exploration Licences granted.	The number of Exploration Licences held increased to 301.	243
Obtain an increase in the area of Strategic Prospectivity Zones (SPZ) held under tenements.	The area of land in SPZ areas held under tenements increased to 10 309 km ² .	10 261 km ²

Mineral Resources Tasmania — Legislation and Committees

Legislation administered

- Mineral Resources Development Act 1995
- Mineral Resources Development Amendment Act 2006
- Mining (Strategic Prospectivity Zones) Act 1993
- Petroleum (Submerged Lands) Act 1982
- Beauty Point Landslip Act 1970
- Lawrence Vale Landslip Act 1961
- Rosetta Landslip Act 1992

Statutory bodies with MRT representation

- Nomenclature Board

Non-statutory bodies with MRT representation

- Ministerial Council for Mineral and Petroleum Resources (MCMPR) and associated Standing Committee of Officials, Task Forces and Working Groups
- ABS Mining Statistics User Advisory Group
- Australian Society of Exploration Geophysicists Data Standards Committee
- Chief Government Geologists Committee
- Government Geoscience Information Committee and associated Working Groups
- Government Geoscience Information Policy Advisory Committee and associated Working Groups
- CODES Centre of Excellence in Ore Deposits Advisory Board
- CODES Centre of Excellence in Ore Deposits Science Planning Committee
- Crown Land Services Technical Advisory Group
- Crown Land Assessment Working Group
- Inter-Departmental Oceans Policy Working Group
- Land Information Coordination Committee (LIACC)
- LIACC Sub-committee — The LIST Management Advisory Group
- Mineral Exploration Working Group
- Mining Heritage Committee
- Rehabilitation of Mining Lands Trust Fund Committee
- Tasmanian Statistical Advisory Committee

Mineral Resources Tasmania — Review of Branch activities, 2006/2007

During 2006/2007 Mineral Resources Tasmania consisted of five branches: Metallic Minerals and Geochemistry; Industrial Minerals and Land Management; Information Systems and Geophysics; Data Management; and Royalty, Finance and Administration.

Because of the integrated nature of the branches, outputs provided under the banner of the Tasmanian Geological Survey are contributed to by staff of all branches.

Metallic Minerals and Geochemistry

During 2006/2007, the Metallic Minerals and Geochemistry Branch commenced work on the government-funded initiative TIGER Geoscience (TasExplore) Project, but also continued to develop databases for delivery on the world-wide web and to verify and update existing databases.

The boom in mineral exploration in Tasmania has significantly increased work loads in processing exploration tenement applications and reviews, extracting and maintaining metadata from reports, and attending to an increased level of enquiries. This is starting to affect the capacity of the branch to adequately deal with these demands as well as achieve the time frames required by the TasExplore project, and increased resourcing must be considered.

Geoscientific data generation

As part of the TasExplore project, parties completed the field component of a re-evaluation of the geology of central northern Tasmania, focussing on improving correlation with western Tasmania. The purpose of this work is to update knowledge of the prospectivity of the region to attract more investment in mineral exploration.

Work continued on a project to understand the nature of the Savage River iron ore deposit, as part of a broader review of the mineral endowment and potential of the Arthur Lineament.

The project to systematically verify the more than 4500 entries in the Tasmanian mineral deposits database continued, but mostly with one person instead of the two people formerly occupied on this work. At year's end 73% of entries had been verified and 209 new deposits had been added to the database.

Ten 1:25 000 scale map tiles (Stanley, Fingal, Piccaninny, Elliott, Mulcahy, Rookery, Propsting, Blessington, Nunamara and Patersonia) were prepared for digital capture during the year and several other sheets in the Elliott Bay area were updated.

An update to the bulletin summarising the geology and mineral deposits of Tasmania, to be used mainly for promotional and educational purposes, and based to a large extent on the advances in knowledge provided by the 3D geological model, was completed and published during the year.

The final draft of the *Mineral Catalogue of Tasmania* was submitted for publication.

Database development

A significant part of the work of the branch for the year continued to be testing of database structures for the TIGER System and verification and capture of data for incorporation in the system.

Changes to the samples, geochemistry and mineral deposits databases were made and at year's end these were being moved to the production environment.

Core library

The increasing level of usage of the core library continued, with 169 drill core inspection days occurring during the year, a 96% increase on the previous year.

A total of 9.8 km of core was added to the library collection during the year.

During the year a team from the Centre of Excellence in Ore Deposits at the University of Tasmania (CODES) commenced using the core library as the site to determine detailed physical properties of rocks from drill core, as part of a major project aimed at improving metallurgical recovery from ores.

Mineral exploration and other promotional activities

The Tasmanian Government provided \$240,000 in 2006/2007 to actively market mineral exploration opportunities in Tasmania. Activities undertaken included presentation of a paper and holding a display at the world's leading exploration forum, the Annual Meeting of the Prospectors and Developers Association of Canada (PDAC) in Toronto and visiting leading international mining companies in Tokyo, Toronto, London and Vancouver, both as part of an Australian team and as a separate Tasmanian group. The latter also visited companies in London. A presentation was made at an Australian Mineral Exploration Investment seminar at the Australian Embassy in Tokyo.

Several meetings were also held with companies on a one-on-one basis with DIER personnel. In addition to the PDAC meeting, displays were presented at the *Mining 2006* meeting in Brisbane in November and at the Association of Mining and Exploration Companies National Mining Congress in Perth in June.

Presentations were made at the *Mining 2006* meeting, to a visiting group from the Chinese Geological Survey in July,

to a visiting Chinese investment delegation in Hobart in November, and to the Tasmanian Minerals Council Exploration Group Meeting in Strahan in May.

Regular two-monthly updates on exploration progress in Tasmania were provided to the international Society of Economic Geologists newsletter as part of a global review of mineral exploration.

Promotional missions and functions were conducted in Perth, Sydney, Brisbane, Melbourne and Adelaide by officials from DIER. During these visits, information on the new, four year, \$5.06 million TasExplore geoscience and promotion initiative was well received by industry.

These promotions have been successful and continue to play a direct part in attracting new exploration companies to Tasmania.

Articles, promotional material and information on mineral prospectivity and exploration activities in Tasmania were prepared for various specialist mining journals. Regular two-monthly summaries of exploration activities in Tasmania were provided as part of global reviews for the international Society of Economic Geologists newsletter.

In addition, the petrologist conducted displays and publication sales for the Hobart Gem and Mineral Exhibition in March and the third Zeehan Mineral Fair held in November.

Ninety-four enquiries, mostly on gem, mineral and geological matters, were answered by the petrologist during the year.

Petrology

The petrologist supervises the petrological and lapidary laboratories, which provide services for internal and external clients.

The lapidary and petrology laboratories provided a total of \$45,610 worth of analyses and services to both DIER (\$30,020) and external clients (\$15,590). Most of this external work cannot be otherwise conducted within Tasmania.

The lapidary laboratories prepared 563 standard thin sections and 152 other sections, making a total throughput of 717 samples. Our field assistant did most of these on an as-needed basis, with this work valued at \$20,985.

The technical officer for petrological services processed 365 samples by X-ray diffraction, including 99 quantitative dust analyses. He also conducted two soil and sizing tests and 99 optical asbestos identifications, for a total of 466 samples processed, valued at \$24,625.

A total of 361 external (contract) samples were received for investigation, mostly by X-ray diffraction analysis. These samples included 207 for occupational health clients, 13 soils, 21 construction materials, 21 industrial samples and 107 general rocks and other samples. This work came from a wide range of external sources, including the Transport branch of DIER, Workplace Safety Tasmania, Hydro Tasmania, DPIW and other government departments, the University of Tasmania (staff and students), various mining, mineral processing and mineral exploration companies, environmental and occupational health

consultants, the general public and miscellaneous businesses.

Samples examined include geological materials (construction materials, mineral concentrates, ore samples, rocks, soils, sands and clays) and anthropogenic materials (including concrete, asbestos sheeting, industrial materials, dusts, acid drainage).

The petrologist, as official radiation safety officer, has overseen some radiation storage, X-ray equipment safety inspections and other safety issues. Laboratory safety audits are underway.

Curatorial work has included some cataloguing, sorting, compiling and storage of rocks and thin sections, preparation and moving of displays, locating samples for internal and external users, and general supervision of the rock store. The old rock collection and storage databases continue to be updated and are being digitised and migrated into the TIGER system. The oldest samples are gradually being boxed and palletised to make space for new samples.

The mineralogist/petrologist assists with supervising the storage of radioactive, asbestos-bearing and other dangerous substances. Procedures and standards are in place for their handling.

The petrologist also handled about 74 public and commercial enquiries through MRT on all manner of mineral, mining, gem, soil and rock-related matters, particularly in regard to gem, rock and mineral locations and identification, occupational health issues, and mine locations. He also provided mineralogical and curatorial advice and assistance to the Tasmanian Museum and Art Gallery when required.

Geochemical laboratory

The laboratory was staffed for most of 2006/2007 by a senior chemist and a technical officer. A geologist/geochemist and another technical officer provided part time assistance. Following the retirement of the senior chemist in February, the geologist/geochemist has been acting as senior chemist and a second technical officer was recruited.

The laboratory generates the chemical/geochemical data necessary to maintain MRT's databases. A total of 394 samples, consisting of 43 water samples, 310 rocks and 41 minerals or products, were submitted for 13,138 individual determinations during the year.

A total of 310 samples were assayed for 6355 individual determinations. The analysed samples comprised 43 waters, 178 rocks and 89 minerals or products.

Although the five-year old rhodium X-ray tube expired, careful operation and maintenance has kept the XRF unit and AA instruments operating in a stable condition throughout the year.

Water analysis was mostly carried out by our sample preparation technician from July to December before the groundwater section was transferred to DPIW. In general, the laboratory is undermanned due to the absence of a 'specialist' chemist/technician in instrumental/wet chemistry which severely limits quality control processes.

The Leco Induction Furnace continues to function after the capacitors and resistors were replaced in 2004. However obtaining the essential components (CO₂ and S) necessary to complete major element analyses relies on effective Leco operation. The Leco is an instrument in excess of 25 years old and sourcing replacement parts is increasingly difficult.

Other activities

- ❑ The branch prepared amendments to the *Mineral Resources Development Act 1995* and the new legislation commenced on 18 December.
- ❑ Four staff members are on safety committees.
- ❑ A branch member is on a committee to prepare authority tables for the National Geodata Model, a working group established under the Government Geologists Information Policy Advisory Committee.
- ❑ Another branch member is on a committee to provide a national model for mineral deposits data.
- ❑ Site visits were made to various exploration project sites and mines during the year as a part of reviewing industry progress.
- ❑ Mineral exploration report and exploration performance assessments were carried out as needed, as was preparation of promotional leaflets for Exploration Release Areas. Particular attention was placed on monitoring performance on exploration licences.
- ❑ Many requests for information on geology, mineral resources, minerals and related matters were received and dealt with promptly.
- ❑ Two branch members attended the geological technicians conference in Albury.
- ❑ Meetings of the Tasmanian Statistical Advisory Committee were attended during the year.
- ❑ Science planning meetings of the Centre of Excellence in Ore Deposits at the University of Tasmania (CODES) were attended.
- ❑ Five geologists attended the GPS for Field Data Acquisition and GIS Integration Workshop at the Spatial Science Institute conference and two geologists attended the conference talks in Hobart in May.
- ❑ Three geologists attended parts of the CODES course on sediment-hosted deposits in November.

Industrial Minerals and Land Management

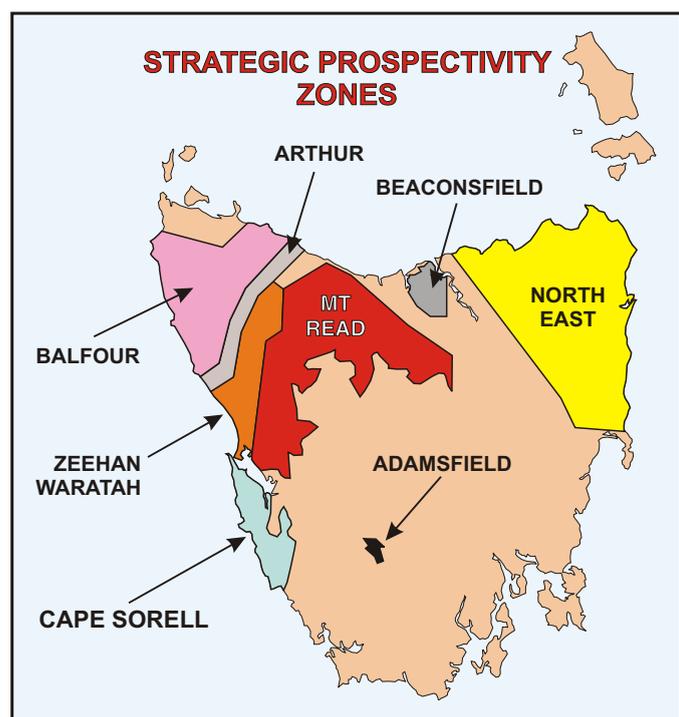
This branch is responsible for the investigation and promotion of industrial minerals, including coal and hydrocarbons; the management of mineral tenements, land access issues and environmental control of exploration activity; and the protection of mining heritage. It is also responsible for providing information for the management of geohazards, especially land stability.

Strategic Prospectivity Zones

Strategic Prospectivity Zones (SPZ) cover 25 200 km² or 37% of Tasmania. The areas in each SPZ occupied by mining tenements at the end of June 2007 are shown below.

SPZ	Metallic		Non-metallic	
	Area (km ²)	Occupied (%)	Area (km ²)	Occupied (%)
Adamsfield	69.7	94.6	3.0	4.1
Arthur	788.3	71.2	324.9	29.3
Balfour	1257.5	32.1	37.9	0.9
Beaconsfield	20.0	100.0	0.0	0.0
Cape Sorell	694.4	50.2	497.0	36.0
Mount Read	3567.6	48.9	432.7	6.0
North East	2752.2	22.1	746.4	7.6
Zeehan/Waratah	1160.1	63.2	248.1	13.5
	(10 309.8)		(2290.0)	

The resources boom is reflected in the tenement holdings for metallic minerals within the Mount Read SPZ increasing from 39.2% to 48.9% occupancy, the Balfour SPZ increasing from 12.3% to 32.1%, the Cape Sorell SPZ increasing from 31.7% to 50.2%, and the Zeehan/Waratah SPZ increasing from 48.1% to 63.2%.



Special Exploration Licences for geothermal substances have increased from one to six and they now cover 42.7% of Tasmania, with approximately 60% of the State falling under the *Mineral Resources Development Act 1995*.

Hydrocarbons

Petroleum exploration and production

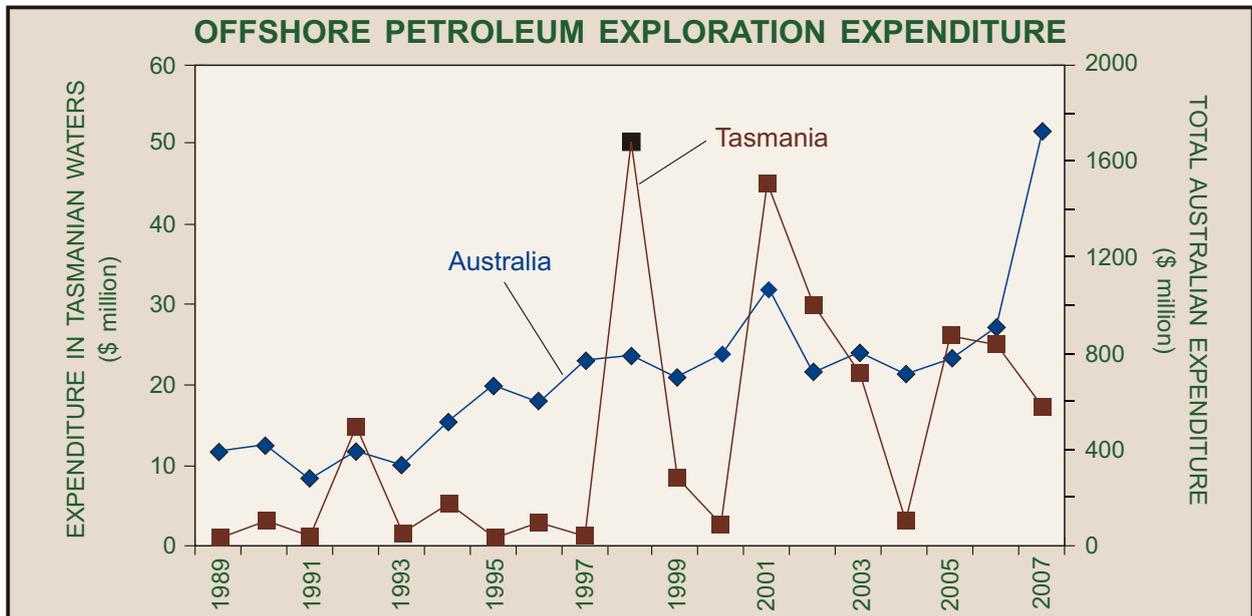
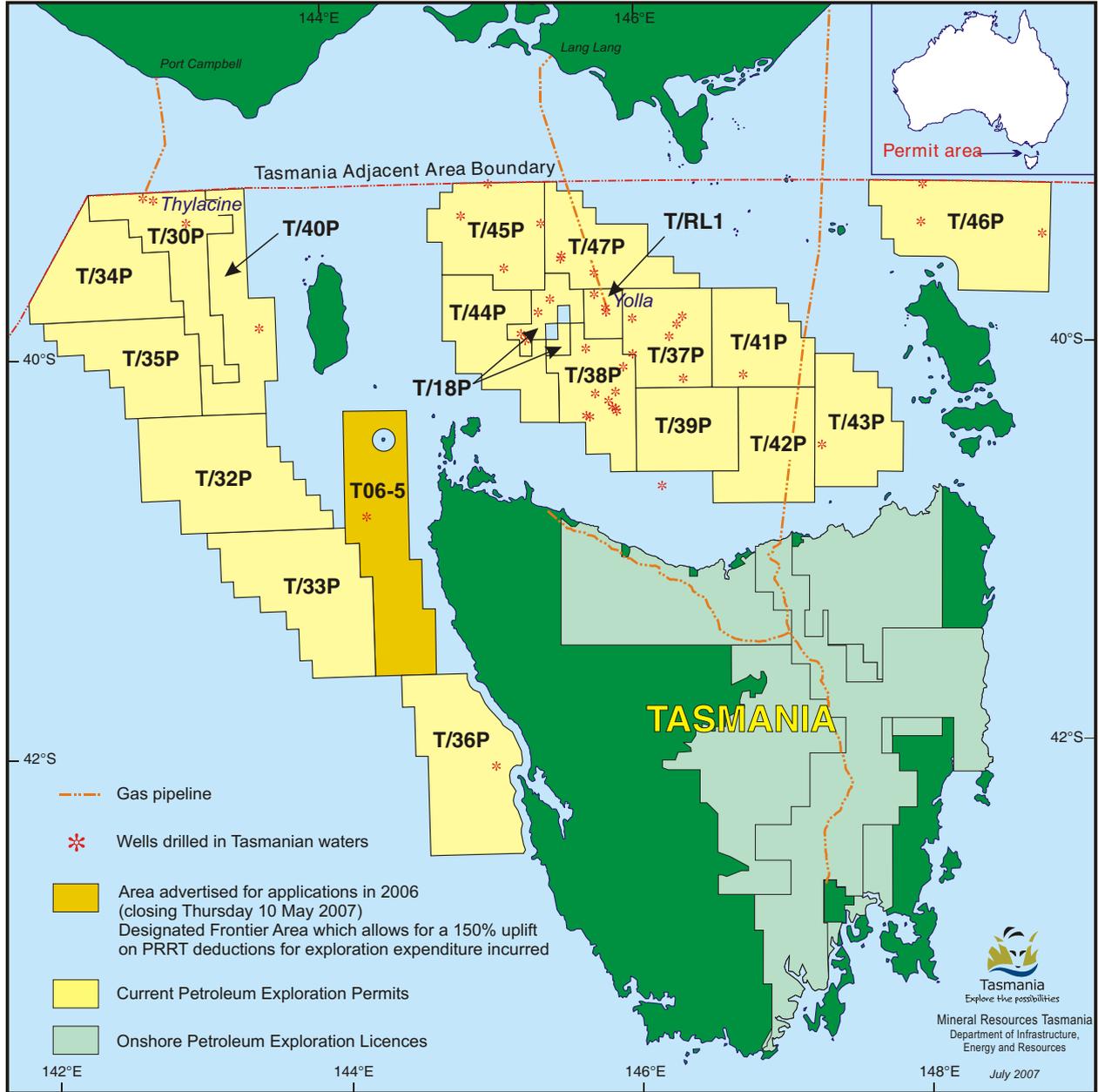
Eighteen offshore permits and two onshore permits are currently held for oil and gas exploration. Three production licences are held over the Yolla and Thylacine fields, and a retention lease is held over a small acreage adjacent to the Yolla field. Hydrocarbons are produced in Tasmanian offshore waters from the Yolla field, with production commencing from this field in the third quarter of 2006. Production is expected to commence from the Thylacine field in late 2007.

The production licence over the Yolla gas-condensate field in the Bass Basin is held by a consortium headed by Origin Energy Resources Limited and AWE Petroleum Limited. The BassGas project to develop the Yolla field involved construction of a production platform, two development wells and an undersea pipeline to an onshore processing plant near Lang Lang in Victoria. The infrastructure was substantially completed by late 2004, but production of gas was delayed by technical and safety issues. Commissioning was completed in late 2006, with this project expected to supply around 10 per cent of Victoria's natural gas needs for fifteen years.

Woodside Energy Limited, on behalf of the Otway Gas consortium, was granted a production licence in July 2004 for the development of the Thylacine gas field, discovered in 2001 in the Otway Basin, northwest of King Island. The Thylacine platform and undersea pipeline were installed in late 2005, and drilling from the platform began with Thylacine South-1, a deviated exploration well that successfully proved a southern extension to the Thylacine field. An additional production licence, adjoining the existing production licence, was subsequently granted to allow production from the southern extension. The sequential drilling of four development wells then commenced, with the program being completed in October 2006. Thylacine gas will be piped to a processing plant near Port Campbell in Victoria, which is expected to be operational in October 2007. Production is expected to commence late in 2007 to supply the growing southeast Australian gas market.

No seismic surveys were carried out in offshore Tasmanian waters in 2006/2007, although a number are proposed for the following year. Four new offshore exploration permits were granted during 2006/2007. Three of these permits were in the Bass Basin whilst the remaining permit is located in the Gippsland Basin. This now brings the total number of offshore exploration permits to eighteen. Total Tasmanian offshore petroleum exploration expenditure for 2006/2007 was approximately \$17.34 million.

TASMANIAN OFFSHORE ACREAGE AND ONSHORE PETROLEUM EXPLORATION LICENCES



Cataloguing of sample collections related to offshore petroleum exploration continued during the year. Fifty reports received during the year were indexed. Most open-file exploration reports can now be viewed and downloaded from the MRT web site.

Onshore, two Special Exploration Licences are held for petroleum exploration, one by Great South Land Minerals Limited and the other by Primeline Petroleum Corporation. Seismic surveying was carried out by Great South Land Minerals Ltd in early 2007. OME Resources Australia Pty Ltd holds a Special Exploration Licence for coal bed methane.

Tasmanian Natural Gas Pipeline

Alinta DTH Pty Ltd acquired the Tasmanian Natural Gas Pipeline (TNGP) from Duke Energy International in April 2004. The TNGP transports natural gas from Longford in Victoria to Bell Bay, Hobart and Port Latta via approximately 740 km of onshore and offshore pipeline. The gas is sourced from the Gippsland Basin in Bass Strait and made available, via the TNGP, to industrial and domestic markets in Tasmania.

The TNGP project expands the gas market in southeast Australia. A total of ten permanent staff are based in Tasmania to operate the pipeline.

Environment, Land Management and Industrial Minerals

Industrial minerals

Tasmania Magnesite NL holds retention licences over the large, high-grade magnesite deposits at Arthur River and Lyons River in western Tasmania. The company recently changed ownership and it is the intention of the new owners to progress the resource definition to a stage where a Mining Lease can be applied for and the deposit developed.

Tasmanian Titanium Pty Ltd is also in the process of changing ownership. The new owners intend to initially extract ilmenite from the existing stockpile at Naracoopa, on King Island, followed by the mining of heavy mineral beach sands.

There has been active exploration for silica flour through the past year. Nolan and Sumitomo Pty Ltd have combined to form Tasmanian Advanced Minerals Pty Ltd. The new company will run the Corinna and new Blackwater mine, south of the Arthur River. This company is constructing a new silica flour treatment plant at Wynyard.

Environmental management

The number of exploration work programs submitted for approval has remained at the record levels of 2005/2006.

Compliance auditing

In 1998/1999 MRT developed a GIS-based system to record and monitor the approval process for exploration programs. A clause in the Regional Forest Agreement (RFA) states that MRT must audit compliance with the *Mineral Exploration Code of Practice*. Following the

development of the TIGER System the decision was taken in 2003/2004 to convert the auditing system to the new corporate database structure to ensure that MRT was meeting the requirements of the RFA. Functional requirements were completed in late 2004 and the in-house redevelopment was recently completed, with the system going into production in early 2007.

The new system (TEAMS II) allows the detailed recording of all exploration activities across Tasmania's many types of land tenure. The life of the activity is tracked from proposal through approval, works completed and rehabilitation. The following tables of statistics are produced as standard reports from the system. As the new system accurately records exploration details and land tenure, it is not possible to directly compare this year's statistics with those in previous years.

Eighty-six work programs were submitted to MRT during the year, a similar number to that in 2005/2006. Of those received, 74 were approved (ten were withdrawn, two have since been approved and two are still pending). Thirty work programs were within CAR Reserves and required comment from the Mineral Exploration Working Group. Members of the Mineral Exploration Working Group attended a number of on-site field inspections during the reporting period.

Table 1 summarises the types of activities approved, within a broad division of Tasmania's land tenure system.

Table 1: Activities approved

Activity	Car Reserve System	High Quality Wilderness	State Forest	Crown Land	Private Property	HEC Land
Drill site	73	32	135	33	35	3
Helipad site	2	1	4	0	0	0
Bulk sample site	6	0	24	0	0	0
Camp site	0	0	0	0	1	0
Costean (km)	0.21	0.00	0.71	0.29	0.64	0.00
Grid (km)	71.98	38.00	76.54	0.29	69.04	6.61
Track (km)	5.82	4.45	7.41	0.00	0.68	0.06

A total of 10.12 hectares of on-ground disturbance was recorded through the year. Table 2 shows the breakdown of the disturbance for the different land tenures and activity types.

Table 2: Area of disturbance (ha)

Activity (ha)	Car Reserve System	High Quality Wilderness	State Forest	Crown Land	Private Property	HEC Land
Drill site	0.64	0.30	0.63	0.17	0.21	0.01
Track	3.11	1.06	3.41	0.00	0.34	0.03
Costean	0.12	0.02	0.28	0.11	0.26	0.00
Helipad site	0.08	0.00	0.08	0.00	0.00	0.00
Bulk sample site	0.40	0.22	0.22	0.00	0.00	0.00
Camp site	0.00	0.00	0.00	0.00	0.00	0.00

Note: High Quality Wilderness is an overlay on top of Car Reserve System and State Forest tenures, so is not added in to the total area of disturbance to avoid double counting.

Of the 10.21 hectares of disturbance, 1.99 hectares were rehabilitated during the year, with the remainder to be rehabilitated through the life of the licence. It is a licence condition that all earth-moving disturbance will be rehabilitated on or before the expiry of the licence and prior to the return of the environmental bond.

In Table 3 the area that has been rehabilitated is shown for each activity and land tenure category. A percentage of the area rehabilitated against the disturbances (Table 2) is also shown. Approximately 19% of the area disturbed in the reporting period, for all land categories, has been rehabilitated.

Table 3: Area rehabilitated (ha)

Activity (ha)	Car Reserve System	High Quality Wilderness	State Forest	Crown Land	Private Property	HEC Land
Drill site	0.18	0.15	0.23	0.12	0.07	0.00
Track	0.22	0.00	1.01	0.00	0.01	0.00
Costean	0.00	0.00	0.00	0.00	0.00	0.00
Bulk sample site	0.11	0.00	0.02	0.00	0.00	0.00
Camp site	0.00	0.00	0.00	0.00	0.00	0.00

Note: High Quality Wilderness is an overlay on top of Car Reserve System and State Forest so is not added in to the total area of disturbance to avoid double counting.

A total of 271.93 line kilometres of gridding was undertaken during the year, with the division between land tenures presented in Table 4.

Table 4: Distribution of gridding (line kilometres)

Car Reserve System	High Quality Wilderness	State Forest	Crown Land	Private Property	HEC Land
122.64	37.11	71.73	0.35	71.18	6.63

Note: High Quality Wilderness is an overlay on top of Car Reserve System and State Forest so is not added in to the total area of disturbance to avoid double counting.

Table 5 presents the running totals for the last four years of the area disturbed and area rehabilitated.

Table 5: Disturbance and rehabilitation over three years

Year	Car Reserve System	State Forest	Crown Land	Private Property	HEC Land	Total
Disturbance (ha)						
2003/2004	2.94	1.20	0.09	0.17	0.01	4.41
2004/2005	3.91	1.40	1.51	0.18	0.17	7.16
2005/2006	5.66	2.04	0.79	0.07	0.25	8.81
2006/2007	4.35	4.63	0.28	0.81	0.04	10.21
Rehabilitated (ha)						
2003/2004	2.94	0.88	0.09	0.17	0.01	4.09
2004/2005	3.34	0.15	0.68	0.17	0.09	4.43
2005/2006	1.28	0.37	0.13	0.06	0.00	1.85
2006/2007	0.52	1.26	0.12	0.09	0.00	1.99

Approximately 41% of overall disturbance has been rehabilitated. Disturbances are no longer counted as such if no further rehabilitation work is required of the explorer, or if the area is taken up as a Mining Lease.

As High Quality Wilderness is an overlying layer on the above land tenures it is presented separately (Table 6).

Table 6: Disturbance and rehabilitation, High Quality Wilderness areas

Year	Disturbance (ha)	Rehabilitated (ha)	Percentage of overall disturbance rehabilitated
2003/2004	0.07	0.07	100
2004/2005	1.97	1.97	100
2005/2006	1.71	1.14	67
2006/2007	1.60	0.15	9

Codes of Practice

The fourth edition of the *Mineral Exploration Code of Practice* is a code under the *Mineral Resources Development Act 1995*. This code is due for review as specified in the Resource Planning and Development Commission Inquiry into areas to be reserved under the Tasmania–Commonwealth Regional Forest Agreement. The review is under way but the increase in exploration activity and the lack of project funding has delayed the preparation of the fifth edition of the *Mineral Exploration Code of Practice*. It is planned to have the revised code ready for public comment in 2008.

The second edition of the *Quarry Code of Practice* is a code under the *Mineral Resources Development Act 1995* and is currently under review.

Mines inspection

Mines

Mines continued to prosper during the year with the following developments taking place.

Allegiance Mining NL continued construction of surface and underground infrastructure at the Avebury mine site near Zeehan. Underground development was scaled up to permit production to commence later in 2007. Positive exploration programs resulted in applications for lease extensions at Avebury East and a Mining Lease at Melba Flats.

Following earlier decisions by Australian Bulk Minerals to cease operations at Savage River in September 2007 the company was reducing operations and carrying out rehabilitation work. Mining was completed in South Centre Pit and mining contractors reduced staff and operations. An upsurge in demand for iron ore allowed the company to plan for the long-term redevelopment of North Pit. At year end the company was looking forward to successful completion of negotiations with potential partners to help finance the redevelopment.

Intec Hellyer Metals commenced re-treatment of tailings at the former Hellyer mine. Tailings are being dredged to produce a bulk zinc concentrate in the refurbished mill, with residues being deposited in an enlarged shale quarry. Embankment construction to expand the capacity of the tailings dam for future deposition also commenced. The company continues to investigate zinc metal leaching from tailings and the re-treatment will then become a first stage for the operation.

Bluestone Mines (now Metals X Limited) made permit application for an open-cut mine at Mt Bischoff, near Waratah, to provide ore for the reopening of the tin recovery plant at the Renison mine. Copper Mines of Tasmania P/L made permit applications for a lead-zinc open cut at Tasman Crown.

King Island Scheelite Limited worked towards the reopening of the open-cut mine at Grassy. Feasibility studies and development approvals were completed and the company is negotiating with potential partners to secure financing. The proposal includes a sea wall to protect an enlarged open cut and waste dump.

Development approval was granted for Bass Metals Limited to resume mining at Que River. Trial samples were treated in the nearby Hellyer concentrator.

Van Dieman Mines plc moved closer to production with development approval for its proposed operation at Scotia near Gladstone.

Mineral Resources Tasmania made comments on the development proposal and environmental management plans (DPEMP) for the Intec Hellyer, Bluestone (Metals X), CMT, King Island Scheelite, Que River and Van Dieman Mines projects.

At Rosebery Zinifex Limited is conducting an extensive underground exploration development and resource drilling program.

The Cornwall Coal Company NL suffered only minor effects from bush fires which occurred in December, with a minor underground fire affecting the Fenton Seam in the Nicholas Colliery.

G Males, the major concrete sand producer at South Arm near Hobart, has largely depleted dune sand resources. Development of western sections of the Mining Lease was approved following the imposition of measures to limit impacts on coastal reserves.

Rehabilitation

The Savage River Remediation Program (SRRP) continued remediation works at the mine. Rehabilitation of the B Dump water shedding cover was completed. A collection dam and pipeline was constructed to take historic emissions from North Dump to South Lens for treatment. South Lens contains a considerable body of alkaline water and the work provides passive treatment of mine water before discharge. Water treatment trials of seeps from the historic Main Creek No. 1 tailings dam, using mine carbonates and limestone, were conducted and proved successful. The SRRP is a cooperative program between the Department of Tourism, Arts and the Environment (DTAE) and Australian Bulk Minerals.

Planning for remediation of historic discharges from the Mt Lyell Mining Lease was advanced by DTAE with the appointment of consultants to carry out preliminary designs and cost estimates for a proposed copper exchange treatment plant.

A report on emissions from rehabilitation works at Luina has been circulated.

Town Planning

Sand production from the Seven Mile Beach Protected Area has long been regarded as essential for the continued supply of construction material in the Hobart region. Delays in the review of the Clarence City Planning Scheme have made the potential shortage of sand critical. Mineral Resources Tasmania initiated an amendment of the planning scheme following a review of the potential impacts of sand mining on groundwater. Although the Clarence City Council received 100 representations concerning the amendment, the Resource Planning and Development Commission (RPDC) determined that the sand resource within the Protected Area is of regional significance and that sand extraction is to become a discretionary use.

The Department of Economic Development initiated a strategic plan of Seven Mile Beach in parallel with the RPDC hearings. MRT provided the consultants with resource and groundwater information for the review. The strategic plan is still to be completed.

Comments were provided on the revised draft Clarence City Planning Scheme. This revision generally incorporates RPDC requirements including MRT comments on extractive industries.

An appeal was lodged against a permit for a residence close to a potential future development of the Circular Head Dolomite resource. The matter was resolved through a Part V agreement with the landowner who recognises the importance of the dolomite. A representation was made concerning a subdivision which includes Mining Lease 1472P/M at Irishtown. This quarry has caused several concerns over dust emissions and proximity to the Smithton water supply.

The Launceston City Council approved a proposed residence near a Mining Lease at Gundagai Road, Lilydale. The lessee appealed and Mineral Resources Tasmania unsuccessfully attempted to be joined to this matter. Comments were made on residential applications on Lilydale Road, Launceston, near a Mining Lease.

Submissions were made on redrafting the West Tamar and Central Coast planning schemes.

The 1:100 000 scale planning map series was completed with the publishing of groundwater prospectivity maps for Tasmania. The maps were issued to all councils in hard copy and digital format.

Other

- Conditions for petroleum drilling on Exploration Licences were reviewed to bring them into line with good oilfield practice interstate. Noise is also considered to be of concern if there are residences within two kilometres of a drill site. Provision to include drilling for geothermal energy and coal seam gas in Schedule C of Exploration Licences was also made.
- GHD was appointed to carry out a gravel resource investigation in northern Tasmania. Councils have provided feedback in order to complete the final draft of the report.

- DTAE has commenced a review of the *Quarry Code of Practice*.
- The Mining Lease Inspection GIS system (MLIGIS) was reviewed by Insight GIS to convert the Arcmap project into MapInfo format.
- Natural Atlas and Forestry Conserve databases are being accessed to assist in assessment of lease applications.

Urban Geology

This section provides geoscientific information for the management of geohazards, especially land stability. By ensuring relevant geoscientific data are available to the public and private sectors, better land-use decisions can be made.

Land instability

Land instability is a significant hazard in Tasmania, with many homes having been destroyed over the years and significant damage caused to infrastructure. By studying and understanding the landslide hazard it is often possible to minimise or avoid the effects of land instability. MRT is actively addressing this hazard in three main areas; hazard mapping, database development and landslide monitoring.

A regional landslide mapping program of the Devonport to Boat Harbour Beach area (NW coast), incorporating recently developed risk assessment methodologies, is in progress. This area is renowned for the high incidence of landslides, particularly close to the coast where there is increasing pressure for urban development. The landslide maps, when finished, will potentially improve land use decisions by regulators and other stakeholders. This project is in partnership with local councils and with funding assistance from the Australian Government and Tasmanian State Government Natural Disaster Mitigation Programme (NDMP).

The TIGER landslide database forms a critical data foundation for the landslide project. Ongoing data entry and maintenance occurred during the year and there are now nearly 2000 records from throughout Tasmania. MRT collaborated with the Forest Practices Authority to enter over 200 records of landslides observed by the forest industry over a number of years. Such information will become a valuable research dataset for land management options on the forest estate. MRT continued to work collaboratively with Geoscience Australia and other parties to make the landslide database publicly available on the internet as part of a national landslide dataset. The Tasmanian dataset represents about one-third of all recorded landslides in the country. The internet facility is due to be completed in the next financial year.

MRT continues to coordinate the ongoing monitoring of the Tarroona landslide in Hobart and the Lawrence Vale landslide in Launceston. Regular inclinometer surveys provide information for the management of these areas and their surrounds. With funding assistance from the NDMP, MRT has begun planning a near real-time monitoring facility for the Tarroona landslide to improve our ability to understand the causal factors to landslide movement and the capability to issue timely warnings.

In addition to the three main activities outlined above, general information was provided to various stakeholders including comments on planning schemes and significant developments.

Tsunami

With funding assistance from the NDMP, MRT began an investigation of palaeotsunami deposits in the greater Hobart area in order to assist a key stakeholder, the Tasmania State Emergency Service, gain a better understanding of the risk presented by this hazard. The work program involved sampling coastal swamps in an attempt to identify deposits created by ancient tsunami events. Such information can help us predict the likelihood and size of future tsunami. The project is due for completion in the following year.

Registry

The Registry Section maintains a number of mining tenement registers in hard copy and electronic format. The section provides advice to officers within MRT, inquirers from other agencies, the mining industry, the legal profession and the general public on a wide range of matters associated with mining tenements and legislation.

The processing of applications for mining tenements and issue of tenement documentation continues to provide the majority of work for the section's officers.

Close liaison is maintained with professional geological officers of MRT, particularly in relation to maintenance of the TASXPLORE database, monitoring of exploration expenditure, circulation of company reports, and preparation and circulation of the *TasXplorer* news sheet.

The section liaises with a number of other agencies in regard to tenement applications and provides information to field staff who monitor on-ground activity on mining tenements.

Requesting and collation of production and expenditure statistics is an important activity carried out by the section. These statistics provide the basic data for collection of royalties and assessment of exploration levels.

Twenty-four Exploration Release Areas (ERA), covering 1356 km², were offered to potential explorers by way of the *TasXplorer* news sheet, which is circulated widely within the Australian mining community. The news sheet is sent to 223 clients of MRT by facsimile (69) and post (154), and is also available on the MRT website. Applications were received for areas within twelve advertised ERA's resulting in fourteen exploration licence applications covering 913 km² of ground.

Officers of the section play a key role in maintenance of the TASXPLORE and REGIS modules within the TIGER database management system.

Mining Legislation

The *Mineral Resources Development Act 1995* is the principal legislation relating to management and regulation of mining tenements in Tasmania.

Mineral Resources Tasmania provides information through Service Tasmania outlets and forms approved under the

Mineral Resources Development Act 1995 are available via MRT's web page or on disc.

The *Mineral Resources Regulations 2006*, replacing the *Mineral Resources Regulations 1996*, came into force on 28 June 2006.

Mining Tribunal

Under the *Mineral Resources Development Act 1995*, a Mining Tribunal, consisting of a magistrate, has jurisdiction to hear a wide range of mining disputes.

The Act places an obligation on the Director of Mines to attempt to resolve disputes before there is a formal hearing before the tribunal. In effect this usually consists of informal mediation, arranged by the Registrar of Mines, between the parties.

Experience to date suggests that the dispute resolution process required by the Act adequately covers most situations that would otherwise require formal determination.

Tribunal claims lodged with Mineral Resources Tasmania during the year were:

- 74295 *Tarkine National Coalition Inc. v Mineral Holdings Australia Pty Ltd — RL2/2006*
Objection lodged in regard to conservation values. Objection withdrawn after meeting of the parties.
- 74296 *Tarkine National Coalition Inc. v McDermott Mining Pty Ltd — EL24/2006*
Objection lodged in regard to conservation values. Objection withdrawn after meeting of the parties.
- 74297 *Tarkine National Coalition Inc. v McDermott Mining Pty Ltd — EL26/2006*
Objection lodged in regard to conservation values. Objection withdrawn after meeting of the parties.
- 74299 *Mount Arthur Environment Management Group v Frontier Resources Ltd — EL23/2006*
Objection lodged in regard to conservation values. Application withdrawn after meeting of the parties.
- 74301 *P & G De Burgh-Day and others and Cradle Coast Water v Zelos Resources NL, J McDougall and Southern Ocean Science Pty Ltd — EL29/2006*
Objection lodged by land owners and water authority. Objection withdrawn by Cradle Coast Water. Balance of objections dismissed by Mining Tribunal.
- 74303 *Roaring 40s Renewable Energy Pty Ltd, K Mills, Tasmatrix Pty Ltd, Future Links Incorporated and Musselroe Pty Ltd v Goldstock Mining NL — EL27/2006*
Objections lodged by landholders, wind energy company, and local interest group on ecotourism grounds. Application withdrawn after mediation.
- 74304 *Roaring 40s Renewable Energy Pty Ltd, Future Links Incorporated and Musselroe Pty Ltd v Goldstock Mining NL — EL28/2006*
Objections lodged by landholder, wind energy company, and local interest group on ecotourism grounds. Application withdrawn after mediation.
- 74306 *Tarkine National Coalition Inc. v Zinifex Australia Limited — EL33/2006*
Objection lodged in regard to conservation values. Objection withdrawn after meeting of the parties.
- 74307 *Richey Fishing Co. Pty Ltd, R Jessup, Tasmanian Scallop Fisherman's Association and Tasmanian Fishing Industry Council v Bonaparte Diamond Mines NL — EL32/2006*
Objection lodged on effects of exploration and mining on fishing grounds. Mediation to be conducted.
- 74308 *Cala Resources Pty Ltd v Minister for Economic Development, Energy and Resources — EL17/1991*
Appeal against Minister's refusal to grant an application for renewal. Appeal dismissed by Mining Tribunal.
- 74310 *Tarkine National Coalition Inc. v Rubicon Mintech Ventures Pty Ltd — EL44/2006*
Objection lodged in regard to conservation values. Application out of time.
- 74311 *C E Brown v Goldstock Mining Pty Ltd — EL 3/2007*
Objection lodged by land holder. Objection withdrawn after meeting of the parties.
- 74313 *M & P Blythe and G & W Blythe v Diatrene Resources Pty Ltd — EL6/2007*
Objection lodged by land holders. Mediation held. Waiting for response from parties.
- 74317 *Tarkine National Coalition Inc. and Tasmanian Conservation Trust Inc. v Stonehenge Metals Limited — EL12/2007*
Objection lodged in regard to conservation values. Objection withdrawn after meeting of the parties.
- 74319 *Tarkine National Coalition Inc. v Goldstream Mining NL — EL17/2007*
Objection lodged in regard to conservation values. Objection withdrawn after meeting of the parties.
- 74320 *Tarkine National Coalition Inc. and Tasmanian Conservation Trust Inc. v Pleiades Resources Pty Ltd — EL27/2007*
Objection lodged in regard to conservation values. Objection withdrawn after meeting of the parties.
- 74321 *Tarkine National Coalition Inc. v Geothermal Energy Tasmania Pty Ltd — SEL19/2007*
Objection lodged in regard to conservation values. Objection withdrawn after meeting of the parties.
- 74322 *C Schwoch v Goldstock Mining NL — EL 20/2006*
Objection lodged by operator of tourism business. Mediation to be conducted.
- 74323 *J Hepehi and A Winkel v G Smith — 1243P/M*
Objection lodged by land owner in relation to encroachment by adjoining quarry operation. Mediation held. Parties carrying out agreed course of action.
- 74324 *Tasmanian Conservation Trust Inc. v Goldstock Mining NL — EL22/2006*
Objection lodged in regard to conservation values. Objection withdrawn after meeting of the parties.
- 74325 *Tasmanian Conservation Trust Inc. v Goldstock Mining NL — EL23/2006*
Objection lodged in regard to conservation values. Objection withdrawn after meeting of the parties.

Lease Applications, 2006/2007

Total number of all types of exploration rights held as at 30 June 2007

<i>Mining Tenement</i>	<i>Number</i>	<i>Area</i>
Exploration Licences —		
Category 1 (Metallic minerals)	190	12 956 km ²
Category 2 (Fuel minerals)	2	241 km ²
Category 3 (Construction minerals)	29	2 152 km ²
Category 4 (Oil — onshore)	5	60 626 km ²
Category 5(a) (Industrial minerals)	47	4 365 km ²
Category 5(b) & (c) (Gemstones)	22	2 130 km ²
Category 6 (Geothermal)	6	25 700 km ²
Retention Licences —		
Category 1 (Metallic minerals)	22	75 km ²
Category 2 (Fuel minerals)	5	170 km ²
Category 3 (Construction minerals)	17	101 km ²
Category 5 (Industrial minerals)	20	101 km ²
Category 5(b) & (c) (Gemstones)	9	55 km ²
Prospectors Licences issued	143	Not applicable
Permits to explore for petroleum under the <i>Commonwealth Petroleum (Submerged Lands) Act 1967</i>	18	945 blocks
Retention Licence under the CPSLA 1967	1	5 blocks
Pipeline licences held under the CPSLA 1967	3	
Pipeline licences held under the Tasmanian <i>Petroleum (Submerged Lands) Act 1982</i>	1	
Production licences held under the CPSLA 1967	3	6 blocks

(Note: Exploration licences and retention licences may include more than one category)

Leases applied for in 2006/2007

<i>Product</i>	<i>Number</i>	<i>Area (ha)</i>
All minerals	2	668
All minerals and stone	2	247
Dolomite	1	100
Granite	1	5
Gravel	5	213
Limestone	1	83
Magnesite	1	40
Sand	4	97
Sand and gravel	2	21
Sand and stone	1	299
Stone	3	167
Stone and gravel	1	40
Tin	1	382
Total	25	2 362

Leases granted in 2006/2007

<i>Product</i>	<i>Number</i>	<i>Area (ha)</i>
Easement	1	54
Gold	1	48
Gravel	5	225
Lime sand	1	7
Limestone	1	496
Sand	3	89
Sand and gravel	1	21
Sand and stone	2	327
Shale	1	3
Stone	6	36
Stone and gravel	2	19
Tin	1	10
Total	25	1 335

Total number of leases in force at 30 June 2007

<i>Product</i>	<i>Number</i>	<i>Area (ha)</i>
All minerals	32	20 427
All minerals and stone	7	5 969
Clay	5	87
Coal	2	6 289
Coal and stone	1	175
Copper	1	5
Dolerite	2	46
Dolomite	3	238
Easement	17	470
Gold	14	996
Granite	5	55
Gravel	165	3 053
Gravel and clay	2	34
Lime sand	4	224
Limestone	7	1 361
Magnesite	1	1 361
Magnesite, silica and talc	1	29
Nickel	1	400
Peat	1	9
Quartzite	1	191
Sand	48	1 875
Sand and gravel	26	1 418
Sand and stone	12	858
Sandstone	5	34
Shale	2	35
Silica	1	110
Silica sand	1	20
Slate	3	165
Specimens	13	89
Stone	217	5 032
Stone and gravel	24	452
Tin	10	719
Wolfram	1	544
Total	635	52 770

Information Systems and Geophysics

The main activities of the Information Systems and Geophysics Branch in the 2006/2007 year were:

- ❑ Ongoing maintenance and development of the TIGER (Tasmanian Information on Geoscience and Exploration Resources) System.
- ❑ Commencing acquisition of good quality aeromagnetic and radiometric data over the Furneaux Group and all of northeast Tasmania as part of the TasExplore Project.
- ❑ Supporting the information technology environment in MRT.
- ❑ Migrating data into the TIGER System.
- ❑ Preparing materials for and participating in MRT promotional activities.

The branch also provided geophysical services and advice to MRT and our clients.

The branch is structured to reflect the functions needed to achieve the outcomes required by MRT and provides operational and geophysical services. At 30 June there were five permanent systems support staff in the Operations Section. The systems support staff are deployed within the functional areas of PC and network operations or database and TIGER System support. Two staff members supporting the Road Information Management System (RIMS) were re-located to the RIMS Management Team work area early in the year, although the RIMS Unix development environment remains located within MRT. The Branch Manager is also responsible for MRT's geophysical activities.

Major branch achievements during the year included:

- ❑ releasing the first ever good quality aeromagnetic and radiometric data over the Furneaux Group;
- ❑ implementing the GDA94 datum in the TIGER System and on the MRT web site;
- ❑ introducing significant improvements into a number of TIGER modules;
- ❑ completing migration of all gravity datasets to the TIGER system;
- ❑ delivering presentations on the TasExplore Project at Tasmanian Minerals Council symposia in St Helens and Strahan and at the Association of Mining and Exploration Companies meeting in Perth;
- ❑ hosting the Government Geoscience Information Policy Advisory Committee meetings in Hobart;
- ❑ building an increased information skills-base for MRT staff;
- ❑ an increase in the level of use of the MRT web site; and
- ❑ participating in major national and international promotional activities.

Geophysics

The TasExplore Project is acquiring new airborne and ground geophysical data over northeast Tasmania and the Furneaux Group as part of the 2006 State election initiative to encourage mineral exploration in northeast Tasmania and parts of northwest and central northern Tasmania. Flying commenced early in 2007 but has been interrupted by extended periods of poor weather. New aeromagnetic and radiometric data from the Furneaux Group were released on May 29 and will be used to provide the first detailed insight into the geological structure of the Furneaux Group. Ground gravity data acquisition will commence in the first half of the 2007/2008 year.

The MRT web site has indexes of open-file geophysical data including gravity base stations, airborne geophysical surveys for which digital data are held, and gravity stations. Where applicable the basic digital data can also be downloaded and new open file data has been added to the web site as it is received. Open-file airborne datasets are being progressively converted to provide information in both GDA66 and GDA94 datums. Survey control point information can easily be retrieved from The LIST after carrying out a map-based search on the MRT web site. All gravity datasets were migrated into the TIGER System during the year.

During the year 3383 closed file gravity readings were added to the state database which now contains a total of 71 664 stations. Significant gaps remain in the coverage and those in northeast Tasmania are being targeted as part of the geophysical component of the TasExplore Project.

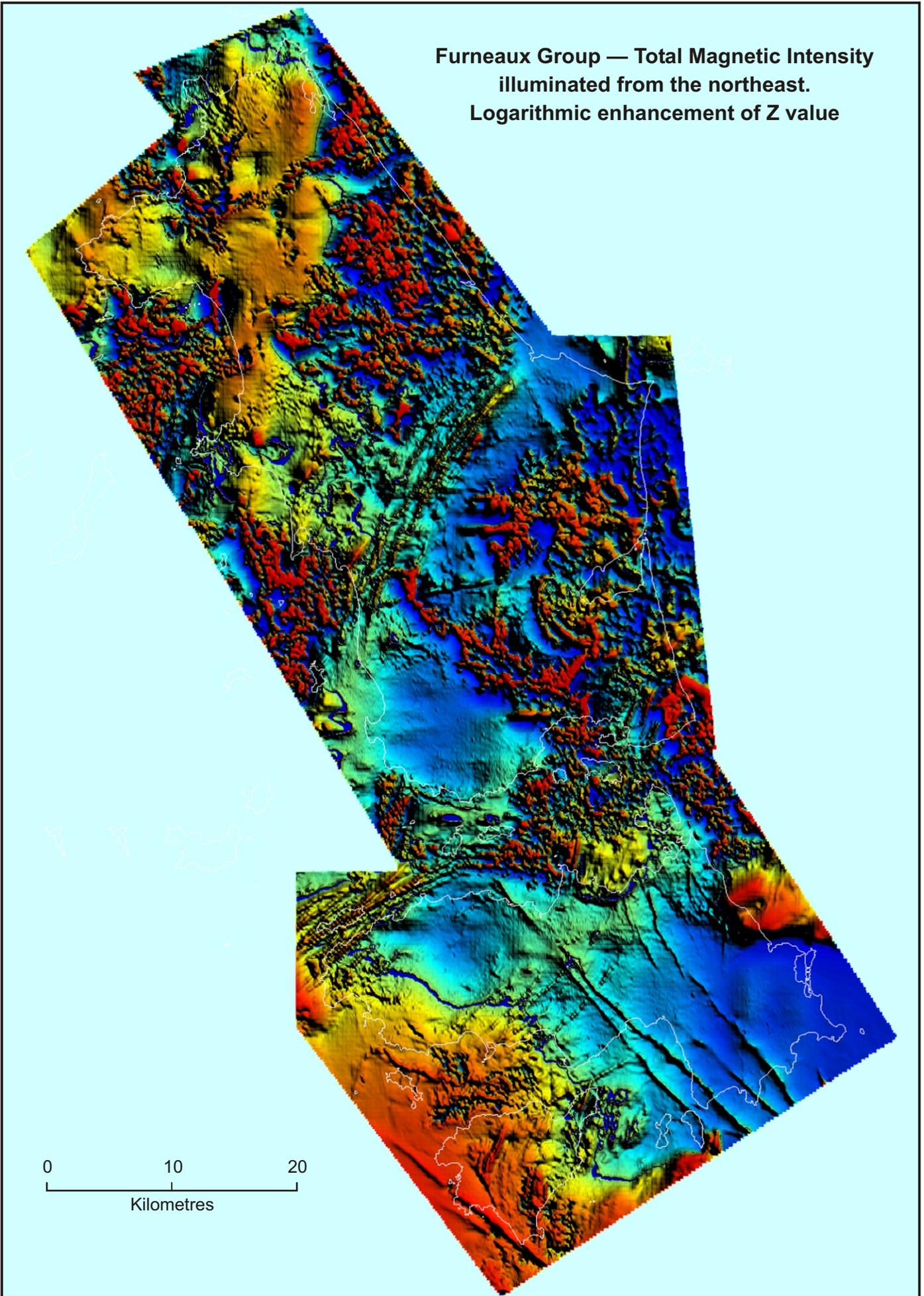
The branch has participated extensively in both the production of promotional materials and in promotional activities with MRT booths at a number of national and international conferences. Presentations on the TasExplore Project were made at Tasmanian Minerals Council symposia in St Helens and Strahan and at the Association of Mining and Exploration Companies meeting in Perth.

MRT hosted the Government Geoscience Information Policy Advisory Committee (GGIPAC) meetings in Hobart in August 2006 and February 2007. These meetings were attended by representatives from all Australian jurisdictions and observers from related organisations in Britain and Germany. GGIPAC is a committee of the Chief Government Geologists Committee and on behalf of the Chief Government Geologists promotes a coherent national strategic direction for geoscience information and knowledge management.

TIGER System

Following completion of Project TIGER on 30 June 2003 the TIGER System, which provides a single storage environment for MRT's corporate data, has been supported entirely from MRT resources. As recommended in the 2006 review by Deloitte Growth Solutions Pty Ltd, maintenance and targeted enhancement of the TIGER System has been undertaken by means of a series of small contracts, with the

**Furneaux Group — Total Magnetic Intensity
illuminated from the northeast.
Logarithmic enhancement of Z value**



contractors working closely with Information Systems and other MRT staff. This strategy has worked effectively, with a number of significant improvements being made to the TIGER intranet applications used by MRT staff including the Samples, Geochemistry and Observations module, the Geohazards module and the Deposits module. A number of changes were implemented that affect all modules.

The GDA94 datum has been implemented across the TIGER System and on the MRT web site. Spatial location information is retained with the original values as entered and a corresponding spatial data object is created with un-projected GDA94 values.

Using the TIGER System MRT staff enter, maintain and search corporate data relating to all aspects of MRT's activities including tenements, exploration reports, MRT publications, drilling, geohazards, samples and observations, mineral deposits and geophysics from a number of browser-based thin client applications accessed via the MRT intranet. The MRT web site enables access to this corporate data and associated metadata from anywhere in the world with internet access. Data are delivered to clients through the MRT web site using customised textual and spatial searches and a number of basic data sets are also available for download. A total of 4392 GB was downloaded from the MRT web site this year compared to 5620 GB last year but the number of visits per day has almost doubled to 1114 over the course of the year.

Data migration into the TIGER System has continued throughout the year. All gravity reading data has been migrated to the TIGER System and dynamic station distribution maps are now available, depending upon the map scale selected. Development of a Microsoft Excel bulk loader for loading and editing sample and geochemical data for the TIGER System recommenced following revision of the data model for the Samples, Geochemistry and Observations module. The spatial and textual interfaces to the TEAMS II application, for use in monitoring environmental performance during mineral exploration, are in the production system following the migration of the supporting data to the GDA94 datum. The spatial interface for the Mining Lease Inspection System has been converted to MapInfo and specifications prepared for the textual interface which will be forms-based.

MRT geochemical data are being delivered using a standard schema and web feature server implemented as part of the national SEEGrid Demonstrator project. Delivery of geochemical data as part of the demonstrator will cease following the proposed implementation, in conjunction with Geoscience Australia, of a web-based Geohazard Demonstrator next year using a new version of Geoserver.

IT summary

In accordance with government guidelines, MRT replaces desktop PCs every three years and transfers the original PCs to the Schools Program. New PCs are purchased with the current Microsoft enterprise operating system. Availability of MapInfo has been extended to more users and datasets have been modified to simplify use of these with MapInfo.

There are five network PC servers, four of which run Windows Server. The main PC network server is running Netware 6.5 with approximately 600 gigabytes of on-line storage. Windows servers provide anti-virus, email, intranet and image delivery services to MRT staff. Files on the corporate Unix systems are accessed from PCs using Samba software. Windows Server Update Services have been implemented throughout the Microsoft-based components of the MRT network.

Unix systems provide corporate information technology services to MRT staff. In addition there are Unix servers dedicated to development and testing for the TIGER System, for the MRT intranet, and for Samba. A further two Unix servers host the MRT web site. The MRT web site is located in the Rosny Park building to simplify maintenance and up-loading of data to the web site servers and has a 50 Mbit/sec connection to the Internet.

The MRT web site continued to be well used, although with a more uniform spread of download activity, with an average monthly download volume of 366 GB and a peak monthly download volume of 958 GB. The daily average number of visits increased over the year from 582 per day to 1114 per day. The MRT web site provides a high-speed access point for clients to access the open-file data held in the MRT corporate information management system. Oracle spatial replication is used between MRT's internal and web servers. The web site offers Web Map Service/Web Feature Service for a restricted number of data sets and MRT has made geochemical data available as part of the SEEGrid Demonstrator Project. Larger datasets stored on the file system are now automatically replicated on a daily basis as they become open file. In excess of four terabytes of network attached storage is used to accommodate these large data volumes.

Data capture

Capture of metadata summarising technical documents relating to exploration continued throughout the year, with 160 new summaries entered and 253 summaries updated. In addition to Internet searching of the summaries of open-file technical documents held by MRT, all open-file documents relating to onshore or offshore exploration and open-file MRT publications can be viewed or downloaded in full over the Internet.

All mineral exploration reports are required to be in the national standard format for digital reporting but compliance with the report format at initial lodgement has dropped to approximately 90 per cent compared to 97 per cent last year. This appears to have occurred as a result of increased activity and demand for resources within companies. Consultation with and assistance to stakeholders has ensured that non-compliant reports have been updated to conform to the data formats detailed in the national guidelines. Because of the extended time before GDA94 topographic base maps will be available for all Tasmania all incoming reports continue to be checked to ensure that the geodetic datum used is clearly specified.

Data Management

The role of the Data Management Branch includes:

- geoscientific data management;
- tenement management services;
- management of the Geographic Information System (GIS);
- management of the Computer-Aided Drafting (CAD) system; and
- provision of support drafting services.

During 2006/2007 the capture of 1:25 000 scale digital geological data continued. This work resulted in the completion of twenty-four new map areas.

- five completed 1:25 000 scale digital geological maps in southern Tasmania (Bains, Broadmarsh, Colebrook, Elderslie, Pokana);
- fifteen completed 1:25 000 scale digital geological maps in northeastern Tasmania (Ben Nevis, Binalong, Bridport, Dublin Town, Fingal, Giblin, Ironhouse, Maurice, Naturaliste, Piccaninny, Stacks, Stanhope, St Marys, St Pauls Dome and The Gardens);
- four completed 1:25 000 scale digital geological maps in northern Tasmania (Cressy, Grim, Longford, Stanley).

Work on the 'seamless' coverage of 1:25 000 scale digital geology of Tasmania continues, with maintenance being carried out on a regular basis. Maintenance of the 1:250 000 scale digital geology of Tasmania was also carried out on a regular basis.

The series of twenty-one 1:100 000 scale groundwater maps, designed to provide information to land use planners

in an easily understood format, and eight digital 1:250 000 scale groundwater prospectivity maps was completed. These maps were distributed to municipal councils, as part of the partnership process, as well as to other stakeholders.

Following on from 2005/2006, the branch, together with other staff of MRT, continued to be involved with the assessment of areas of Crown land for the Crown Land Assessment and Classification Project (CLAC). A total of 416 man hours has been spent on this project to date.

CAD continues to be used as a support tool for many projects, with 36 maps and plans and 237 tenement maps and diagrams being produced throughout the year.

Tenement administration work included:

- seventy-nine new exploration license applications processed and entered into the MRT tenement information system;
- twenty-nine Exploration Release Area plans produced and entered into the MRT tenement information system;
- twelve new mining leases processed and entered into the MRT tenement information system; and
- the production of maps and data files for 61 proposed 'on ground' work programs for exploration licenses.

A total of 1243 hardcopy output products of digital geology and tenement data were produced on demand using the agency's inkjet plotters and 229 data sets of digital geological data were produced for clients.

Royalty, Finance and Administration

This branch provides the corporate support function for Mineral Resources Tasmania, and is responsible to ensure:

- that effective royalty and fee collection systems and assessment programs are in place so that revenues are properly managed and accounted for to the satisfaction of the Auditor-General;
- the timely provision of financial, accounting and administrative advice to the division in conjunction with departmental corporate services;
- the production of publications relating to the interpretation and recording of Tasmania's geoscientific nature, geohazards and mineral wealth, in both electronic and hard copy form;
- the maintenance of the static content of the MRT web site;
- that all corporate information is kept in an orderly manner and is readily retrievable;
- that the MRT library collection is maintained and resources are provided to undertake the development

and delivery of information services to MRT staff, the mineral industry and members of the public; and

- a high level of executive support to the Director of Mineral Resources Tasmania.

Information and Access Services

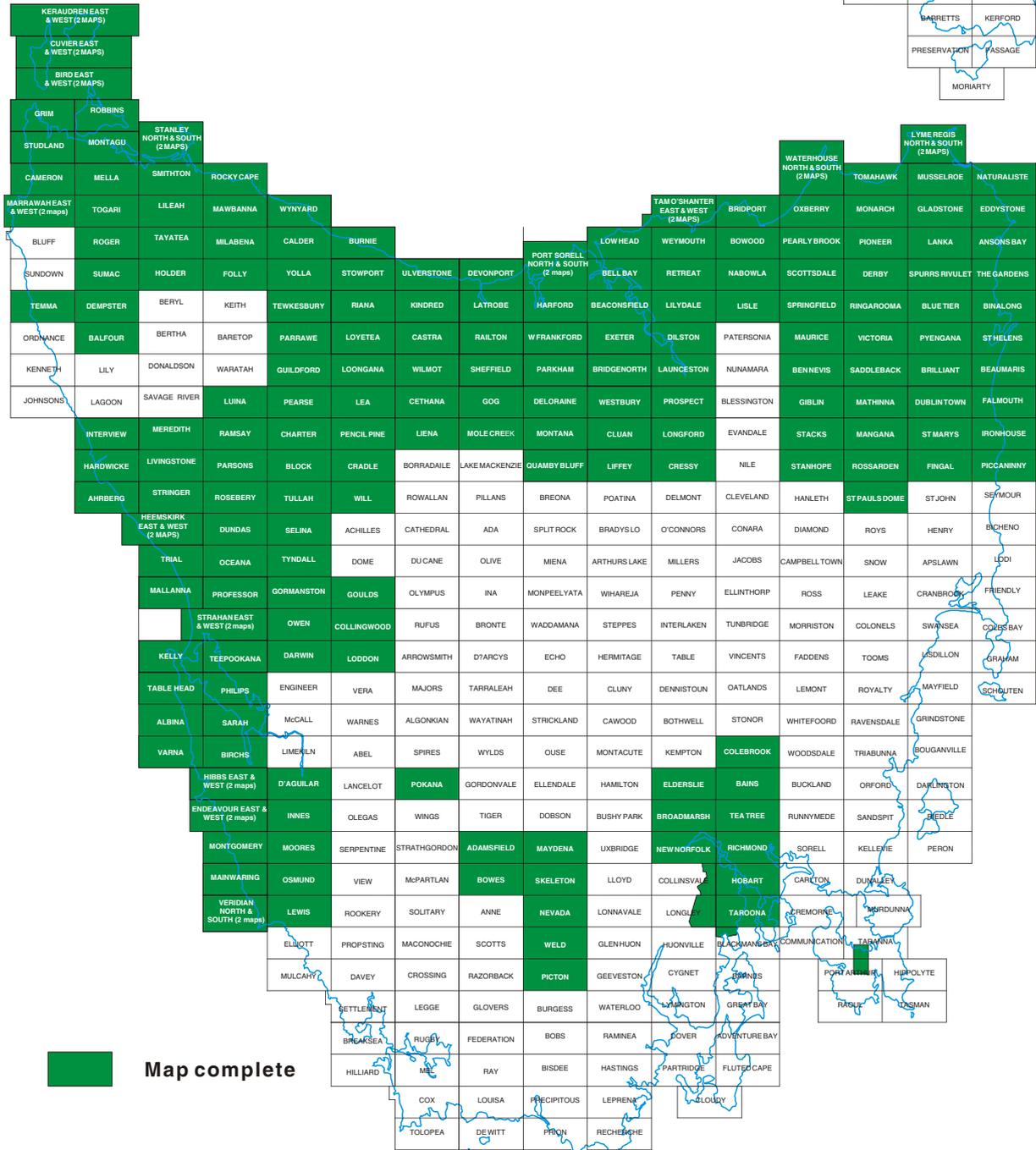
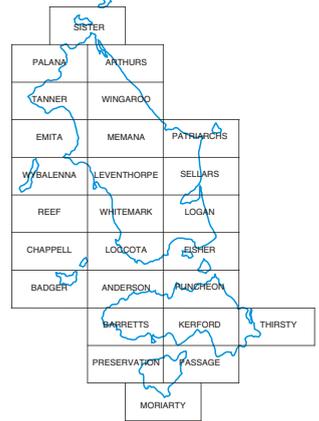
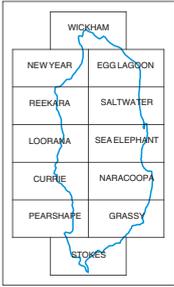
Publications

MRT produces a range of publications to support its activities, including geological reports, promotional documents, newsletters, materials for displays, Exploration Release Area flyers, and other reports and leaflets as required.

Major publications produced during the year included:

- The Mineral Resources Tasmania *Annual Review* for the year 2005/2006.
- *The geology and mineral deposits of Tasmania (second edition)*, by D. B. Seymour, G. R. Green and C. R. Calver (Geological Survey Bulletin 72).

1:25 000 SCALE DIGITAL GEOLOGICAL MAP PROGRAM As at 1 July 2007



Map complete

- *Mineral Tenements — Guidelines for reporting* (May 2007).
- *Exploration Licences — General Conditions* (May 2007).

Nineteen flyers promoting Exploration Release Areas were produced. A considerable amount of promotional and display material was produced as required.

The following reports were issued in the *Tasmanian Geological Record* series during the year:

- 2006/01 — *Re-interpretation of geological relationships in the Castra–Kindred area*, by M. Vicary.
- 2006/03 — *A review of concrete sand supplies in the Hobart region, June 2006*, by W. Grun.
- 2006/05 — *The Savage River iron deposits and other mineral deposits of the Arthur Metamorphic Complex – Part 1: A brief summary and preliminary data acquisition*, by R. S. Bottrill and J. Taheri.
- 2006/06 — *The geochemistry of Tasmanian Devonian–Carboniferous granites and implications for the composition of their source rocks*, by M. P. McClenaghan.
- 2007/01 — *A compilation of historical accounts of the 1872 Glenorchy landslide*, by C. Mazengarb, G. J. Dickens and C. R. Calver.
- 2007/02 — *Some notes on the geology of King Island*, by C. R. Calver.

Work continued on adding and upgrading entries on the DOMINFO database.

Library Service

The library supports the core activities of MRT by providing geoscientific information to staff, mineral exploration companies, geotechnical consultants, local

authorities, researchers, students and members of the public.

The library continues to be staffed by a full-time librarian, with assistance being provided two days per week. The Workplace Standards Tasmania collection, although co-located in the Rosny Park Library, is managed separately by a permanent part-time librarian.

Technical services

The Inmagic DB/Textworks library management software was updated during the year to version 10.00.

Work was completed on cataloguing journal titles not previously entered onto the library management software and journal holdings information was updated.

A library project, cross-checking the Dominfo database with the card catalogue and making amendments to the database as required, commenced. The work was begun by temporary staff and is being continued by the librarian.

Collection

Work was completed on removing irrelevant or outdated journals from the collection. Compactus holdings were clearly labelled as part of this process to improve access to the collection.

The book collection was reviewed for relevancy and duplication.

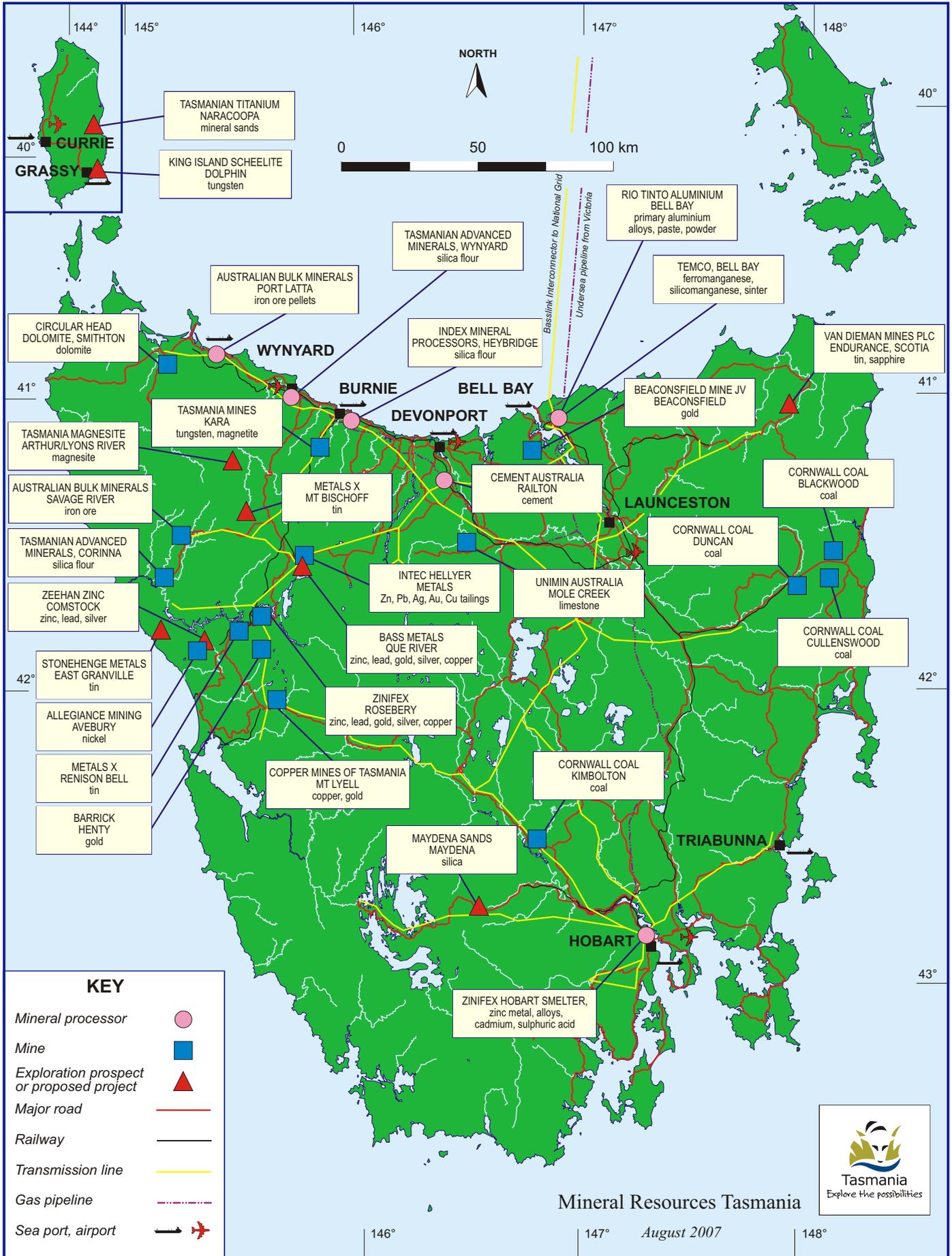
All journal subscriptions were renewed.

A stock take of Tasmanian Company Reports was undertaken.

Electronic Access

The library intranet pages were updated. Links have been provided to the contents pages of a selection of journals currently purchased for the library. Intranet access has been made available to those full-text online journals included in the cost of the print subscription.

— Tasmania — Infrastructure and Major Mining and Mineral Processing Operations



Mineral Sector Overview

Growth in mineral exploration activity is essential for the future development of the mineral sector and for the economic well-being of Tasmania. Buoyant conditions continued in the mining sector in 2006/2007, driven by strong metal prices, including recovery in tin and tungsten prices. Tasmania has been a past producer of both these metals of world significance. The mineral extraction and processing sector is Tasmania's largest export industry, accounting for 49.4% of mercantile exports, up from 39.7% the previous year. The outlook for 2007/2008 is also positive, with the expectation that commodity prices will generally remain strong.

MRT, by providing information on areas of high mineral resource potential in Tasmania, encourages private sector exploration which will lead to new operations coming on stream as the economic life of existing operations declines. By ensuring an adequate return from our mineral resources, all Tasmanians can share the benefits of our mineral wealth.

Producing mines

Australian Bulk Minerals has completed a feasibility study into extending the life of the Savage River mine by extending the North Pit and is in negotiations with potential off-take partners.

Bluestone Tin Limited closed the Renison Bell mine on 3 October 2005, but has announced that it is now proceeding with an assessment study into re-opening the Renison Bell mine in conjunction with commencing mining of the Mount Bischoff deposit at Waratah. The company is also advancing a study into recovering the substantial tin resource in the Renison Bell tailings dam through a tin fuming plant.

Zinifex Limited announced a 65% increase in resources in 2007 to 11.7 million tonnes of 13.0% zinc, 3.8% lead, 0.4% copper, 138 grams per tonne silver and 1.9 grams per tonne gold. The company considers that its goal of continuing to mine the Rosebery orebody until at least 2020 is achievable. Profit for the year before net financing costs and income tax was \$209.5 million, an increase of more than 80% on the previous year.

There are active exploration programs underway at the Mount Lyell and Henty mines.

Production recommenced at the Beaconsfield gold mine in April and at year's end the safety case for resumption of mining in the Eastern Domain of the mine had been accepted by Workplace Standards Tasmania. Preparation of the safety case for resumption of stoping in the Western Domain was well advanced.

The Polymetals Pty Ltd–Intec Ltd JV sent its first shipment of bulk zinc-silver-lead concentrate from the Hellyer tailings to China in January and at year's end some 27 000 tonnes of concentrate containing over 10 000 tonnes of zinc, 2200 tonnes of lead and 5000 kg of silver had been recovered.

New developments

Allegiance Mining NL has announced that it plans to mine the Avebury deposit at a rate of 900 000 tonnes per annum, starting in late 2007. At the end of the year, the mine was fully operational, construction of facilities was advancing well and the largest single item of equipment, the ball mill, was being installed. The company has completed an agreement with Jinchuan Nickel Group, China's largest and the world's fourth largest nickel producer, for the sale of approximately 70 000 tonnes of nickel in concentrate, currently worth over \$A3 billion. Allegiance has announced an increase in resources to 12 million tonnes of 1.11% nickel at a cut-off grade of 0.7%. Reserves stand at 3.347 million tonnes of 1.16% nickel at a cut-off grade of 0.85%.

Allegiance also applied for a mining lease over nickel-copper deposits at Melba Flats, east of Zeehan, and has identified a drill-defined open-cuttable resource of 95 000 tonnes averaging 0.8% nickel and 1.0% copper in the North Cuni–Genets area.

Bass Metals Limited has approval to mine at Que River and has tested a 2000 tonne bulk sample at Hellyer. Mining is expected to commence in early 2007/2008.

King Island Scheelite Limited has completed a full feasibility study into resuming scheelite mining at Grassy, has all approvals to commence mining in place, and is in negotiations with the Hunan Nonferrous Metals Corporation to finalise a financing and off-take agreement.

Van Dieman Mines plc has approval to commence mining alluvial tin, sapphire, gold and spinel from the Scotia deposit, near Gladstone.

Maydena Sands Pty Ltd has been actively seeking markets for the production of high quality silica flours from Pine Hill to the west of Maydena. Plans are well advanced for a quarrying operation with a dedicated treatment plant on the proposed mining lease.

The Thylacine and Yolla gas fields are both in Tasmanian waters. Production from the Yolla field commenced in late 2006, with production from Thylacine expected to commence in late 2007. The gas from both these fields will be piped to Victoria.

Mineral exploration

The growth in mineral exploration continued during the year. Although the Australian Bureau of Statistics (ABS) reported only a 5% increase in expenditure to \$23.7 million, MRT reported a much higher level of expenditure of \$36.0 million. The MRT data show that \$15.6 million (or 43% of the total) was spent on exploration licences, a similar proportion to that recorded by the ABS as being spent on the search for new deposits.

The interest in new companies being floated on Tasmanian mineral exploration assets continued during the year, with five new companies (Minemakers Limited, Stonehenge Mining Limited, Pluton Resources Limited, Zeehan Zinc Limited and Iron Mountain Mining Limited) all listing on

either the Australian Stock Exchange or on the Alternative Investment Market of the London Stock Exchange.

The high level of activity resulted in several notable delineations of new resources and drill intersections of mineralisation during the year.

Bass Metals Limited announced total resources 736 000 tonnes of 5.7% zinc, 2.9% lead, 1.1% copper, 84 g/t silver and 0.93 g/t gold in ore at the Que River mine. Bass Metals Limited has announced indicated and inferred resources of 6.1 million tonnes of 1.22 g/t gold, 25.5 g/t silver, 0.5% zinc and 9.7% barium from the Mount Charter prospect, south of Que River.

Icon Resources Ltd is conducting a \$500,000 feasibility study into mining surface zinc sulfide mineralisation at Grieves Siding near Zeehan. The proposed mining rate is 200 000 tonnes per annum of ore grading more than 4% zinc. The project will include drilling and sampling to augment resources and examination of treatment options for the underlying zinc oxide mineralisation.

Frontier Resources Ltd has announced an intersection of 91 metres at 0.29 g/t gold from four metres depth, including 16 metres at 0.93 g/t gold from 16 metres depth, in granodiorite at the Gold Crest prospect at Golconda.

Lefroy Resources Ltd has announced an open cuttable inferred resource at the Pinafore reef of 616 000 tonnes of 2.5 g/t gold, which increases the gold resource of the reef by 22% compared with the previously announced resource, to be considered for underground mining. Lefroy has also announced an inferred resource of 141 900 tonnes at 1.6 g/t gold for tailings and battery sands. Lefroy has also announced the discovery of a possible new reef, the South Pinafore, with a drill intersection of two metres of 14.5 g/t gold.

Allegiance Mining NL announced the discovery of the new Saxon deposit, south of East Averbury. A hole intersected zones of eight metres and four metres of 1.2% nickel within 19 metres of 0.8% nickel.

Allegiance also announced separate intersections with true widths of 1.6 m @ 2.38% nickel, 1.83% copper, 0.37 g/t gold, 0.41 g/t platinum and 0.79 g/t palladium and 3.0 m @ 1.29% nickel, 1.29% copper, 0.24 g/t gold, 0.34 g/t platinum and 0.49 g/t palladium in gabbro at the Nickel Reward prospect, part of the Cuni field fourteen kilometres northeast of Averbury.

Stellar Resources Ltd announced intersections of 86 metres of 0.5% copper, 41 metres of 0.48% copper, 49 metres of

0.36% copper and 182.4 metres of 0.17% copper including 39 metres at 0.39% copper, from four holes at the Alpine prospect, south of Corinna.

Beaconsfield Gold NL announced a significant gold intersection in a hole at Middle Arm Gorge. A mineralised shear assayed 0.20 g/t gold over 4.8 metres from 587.15 metres, and 0.8 metres of adjacent wall rocks up-hole analysed 4.8 g/t gold. The structure has the characteristics of the Tasmania Reef at its western end.

Gujarat NRE Resources NL has announced an inferred resource of 6.9 Mt at 38.2% magnetite at the Nelson Bay River prospect near Temma. Bulk test sampling has indicated that a bulk concentrate suitable for the heavy media market can be produced. Further drilling is planned.

Greatland Gold plc has announced that it is continuing to define high-grade gold zones with lower grade haloes at the Firetower prospect near Paradise. Better drill intercepts include eleven metres at 4.29 g/t gold, 10.1 m at 6.20 g/t gold and two metres at 8.0 g/t gold, with individual metre sections assaying up to 12.4 g/t gold. The company subsequently confirmed an analogous deposit at Firetower West, 2.5 kilometres away. The first two holes intersected anomalous gold, copper, lead, zinc and tungsten vales with a best gold intersection of three metres at 1.20 g/t gold, including one metre at 2.72 g/t gold.

Bass Metals Ltd intersected 4.3 metres of 0.1% copper, 5.03% lead, 1.14% zinc, 1.1 g/t gold and 120 g/t silver in a drill hole at Bonds Range.

Pluton Resources Limited has announced the results of assays of 144 rock chip samples of vein mineralisation collected during systematic sampling of the underground Devon mine workings in the Dove River valley. Assays averaged 1.63 g/t gold, 228 g/t silver, 0.21% copper, 6.56% lead and 0.43% zinc, with highest values of 32.8 g/t Au, 2730 g/t Ag, 4.13% Cu, 63.7% Pb and 13.1% Zn.

Jaguar Minerals Limited has announced assays from two drill holes which intersected mineralisation at the Wilson River prospect below the discovery hole announced last year. One hole intersected separate zones of 1.8 metres at 4.75% zinc, 1.75% lead and 36 g/t silver and one metre at 10.8% zinc, 1.13% lead and 29 g/t silver. The second hole hit zones including one metre at 7.6% zinc and 600 g/t silver; six metres at 3.15% zinc, 1.13% lead and 11 g/t silver; and one metre at 6.02% zinc, 1.65% lead and 6 g/t silver. The main mineralised zone appears to be widening with depth.

Value of the Tasmanian Mineral Industry

<i>Year ended</i> <i>Commodity</i>	<i>Unit</i>	<i>30 June 2006[†]</i> <i>Total Quantity</i>	<i>30 June 2007</i> <i>Total Quantity</i>
Metallic Minerals			
Copper (assayed)	(tonne)	32 788	29 322
Gold (assayed)	(kilogram)	6 989	3 780
Iron ore pellets	(tonne)	2 132 232	1 837 985
Iron (in magnetite)	(tonne)	80 924	98 507
Lead (assayed)	(tonne)	28 215	28 833
Scheelite	(tonne)	13	30
Silver (assayed)	(kilogram)	93 269	98 881
Tin (assayed)	(tonne)	937	5
Zinc (assayed)	(tonne)	87 447	96 447
Value of Metallic Minerals		\$887 223 177	\$922 133 500
Non-metallic, Industrial and Fuel Minerals			
Clay – Cement	(tonne)	nil	nil
Brick	(tonne)	25 257	22 846
Other	(tonne)	nil	1 200
Kaolin	(tonne)	12 090	9 373
Dolomite	(tonne)	6 463	5 645
Limestone – Agricultural	(tonne)	117 624	112 310
Cement	(tonne)	1 809 537	1 701 075
Chemical and metallurgical	(tonne)	56 532	49 469
Other	(tonne)	50 233	54 966
Silica (glass and other)	(tonne)	190 783	185 036
Coal (run of mine)	(tonne)	651 631	639 784
Coal (washed)	(tonne)	446 097	409 716
Peat	(m ³)	4	*
Gemstones	(kg)	‡	‡
Value of Non-metallic, Industrial and Fuel Minerals		\$49 978 969	\$48 960 674
Construction Materials			
Building stone – Freestone	(tonne)	701	167
Other	(tonne)	12 883	14 984
Sandstone	(tonne)	275	827
Crushed and broken stone –			
Basalt	(tonne)	1 154 328	1 160 407
Dolerite	(tonne)	1 325 039	1 277 517
Limestone	(tonne)	57 006	49 526
Sandstone	(tonne)	38	nil
Other	(tonne)	199 555	172 800
Gravel (aggregate)	(tonne)	40 211	38 210
Sand	(tonne)	577 554	601 467
Other road materials	(tonne)	2 141 512	2 625 109
Value of Construction Materials		\$45 475 670	\$51 683 067
Total value with Australian metal prices		\$982 677 816	1 022 777 241
Value added production from Tasmanian and other ores		\$1 211 150 595	1 800 882 479
(Aluminium, cadmium, cement, lead-copper, ferromanganese, silicomanganese, sinter, sulphuric acid, superphosphate, zinc)			
Total value of mining and metallurgical production		\$2 193 828 411	\$2 823 659 720

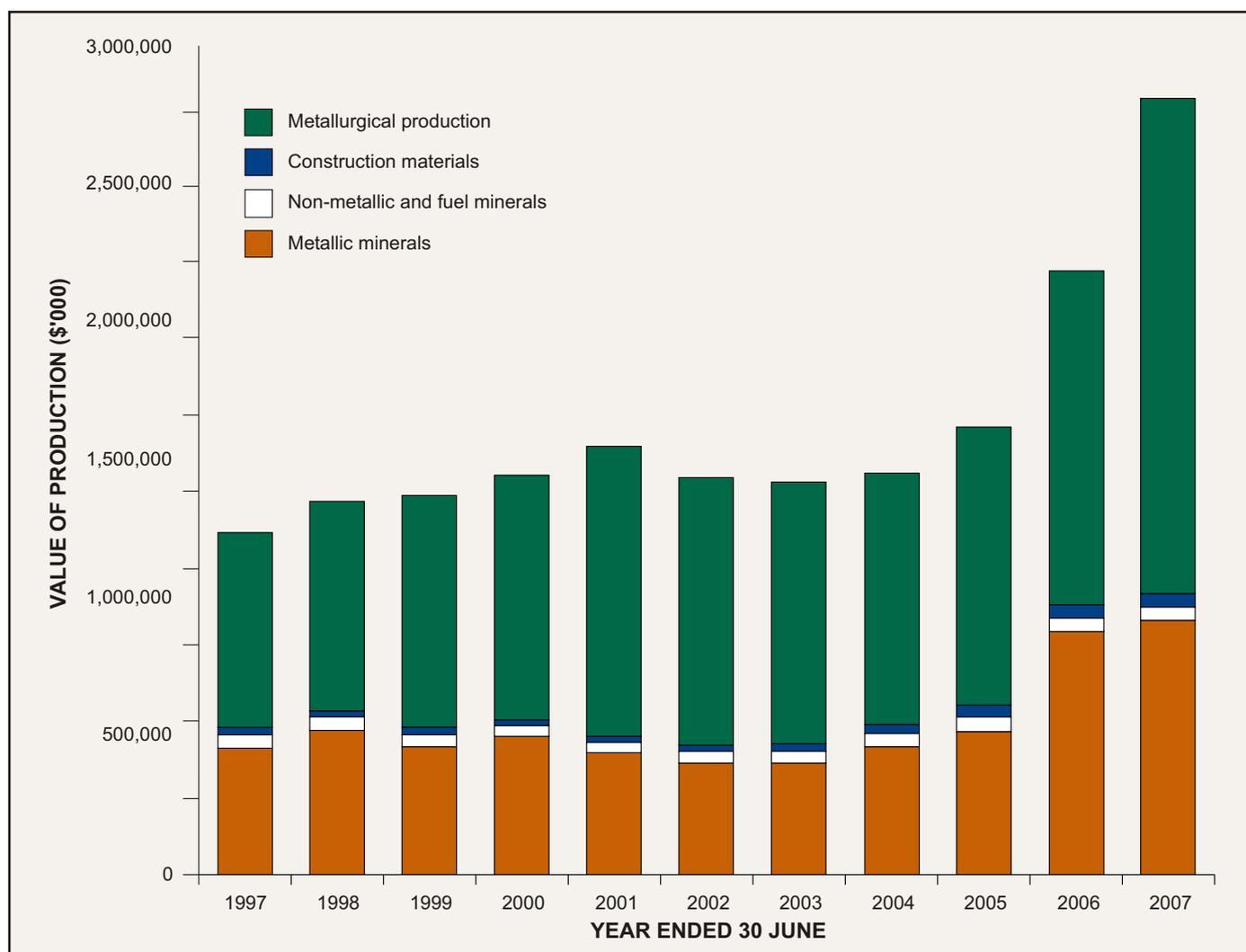
† Figures for 2006 may vary from previously published results because of late or amended returns

* Peat — production less than one tonne

‡ Gemstones — value only recorded

Value of Production, 2005/2006 and 2006/2007

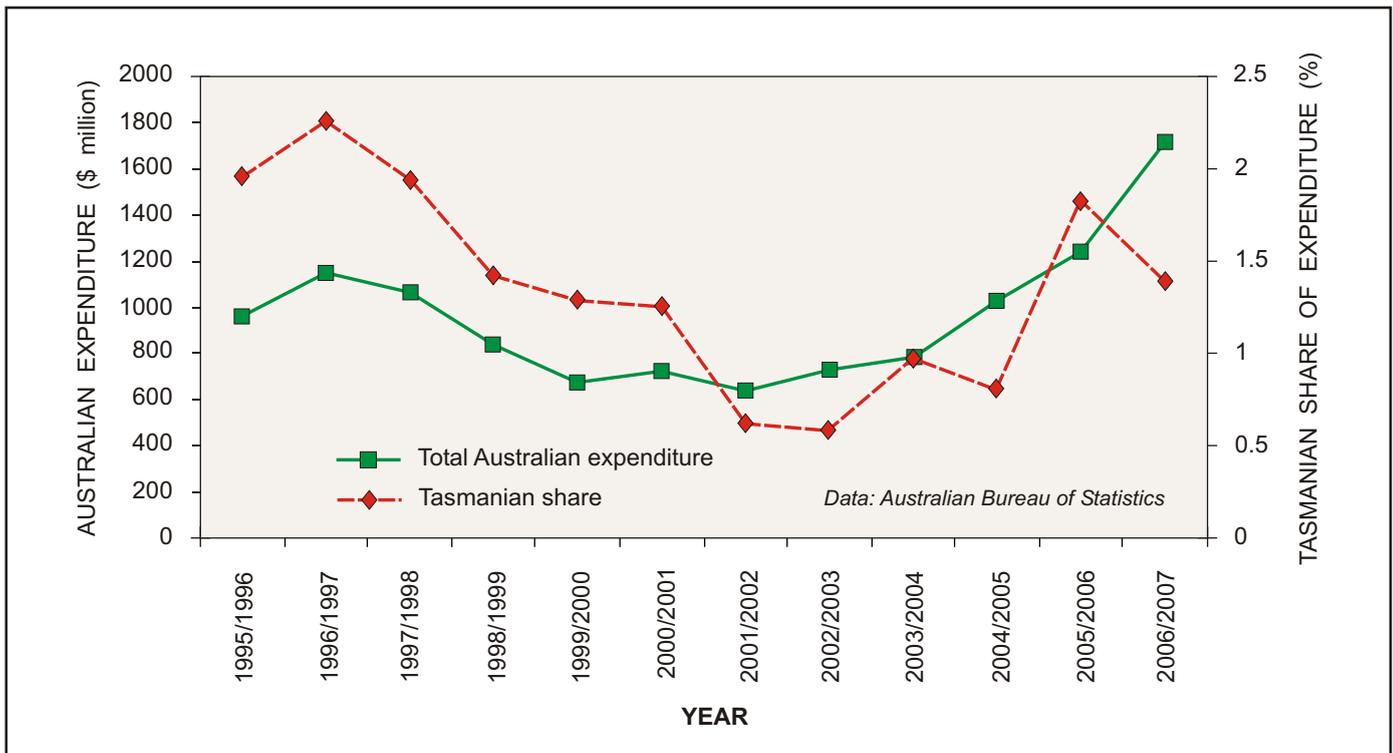
	2005/2006		2006/2007		% Change
	Tonnes	A\$'000	Tonnes	A\$'000	
Copper	32 788	-	29 322	-	-10.6
Gold	7.0	-	3.8	-	-45.7
Iron ore pellets	2 132 232	-	1 837 985	-	-13.8
Lead	28 215	-	28 833	-	2.2
Silver	93.3	-	98.9	-	6.0
Tin	937	-	5	-	-99
Zinc	87 447	-	96 447	-	10.3
Total metallic minerals	-	887 223	-	922 134	3.9
Non-metallic and fuel minerals	-	49 979	-	48 961	-2.0
Construction materials	-	45 476	-	51 683	13.6
Value added production from Tasmanian and foreign ores	-	1 211 151	-	1 800 882	48.7
Value of mining and mineral processing production	-	2 193 828	-	2 823 660	28.7



Mineral Exploration Expenditure

Year	Australian Expenditure (\$ Million)	Tasmanian Expenditure (\$ Million)	Tasmania as % of Australian Expenditure
1994/1995	893.4	14.9	1.67
1995/1996	960.2	18.8	1.96
1996/1997	1148.6	26.0	2.26
1997/1998	1066.8	20.7	1.94
1998/1999	837.8	11.9	1.42
1999/2000	676.4	8.7	1.29
2000/2001	721.3	9.1	1.26
2001/2002	640.6	4.0	0.62
2002/2003	732.5	4.3	0.59
2003/2004	786.7	7.6	0.97
2004/2005	1028.4	8.3	0.81
2005/2006	1240.7	22.6	1.82
2006/2007	1714.6	23.9	1.39

Source: Australian Bureau of Statistics — Actual and Expected Private Mineral Exploration, Australia.



Commodity prices and the Australian dollar

Commodity prices generally continued their upward trend throughout 2006/2007 as the high level of demand for commodities from India and China continued, whilst supply issues remained.

Commodity prices have traditionally been tied to the United States dollar, so as prices for commodities (priced in USD) and the exchange rates rose or fell, the commodity price in Australian dollars had remained reasonably constant. During the 2004/2005 financial year the rise in commodity prices outstripped the tie and local producers saw the beginnings of unprecedented increases in AUD prices, which continued strongly throughout 2005/2006 and into 2006/2007.

The AUD rose 10 cents against the USD over the 2006/2007 financial year, with the USD/AUD exchange rate starting the year at around 75 cents and finishing above 85 cents. Whilst the increase is significant, the commodity price increases generally outran the dollars rise.

Iron ore price negotiations for 2007 ended with an agreed increase of 9.5%, representing the continued strong demand for the commodity whilst recognising the investment committed by producers to meet demand. This increase brought the price rise from 2003 up to almost 120%, with rises of 19% in 2005/2006, 71.5% in 2004/2005 and 19% in 2003/2004. Competition for iron ore remains strong, particularly between China and Japan.

Gold lost ground though 2006/2007, starting out at AUD835 after declining from a high of beyond AUD900 per ounce in May 2006, which was a 25 year high. Gold dropped to finish the year at AUD766 after briefly reaching AUD 870 in February 2007. Investor activity, rather than

physical demand for jewellery, continued to influence the price.

Zinc prices rose significantly through 2006/2007 but had lost ground by year end. The year's high of AUD5800 was a nearly five-fold price rise from the historically low levels of 2003/2004 when prices were below AUD1200. The metal started the financial year at AUD4340 per tonne and closed at around AUD3880.

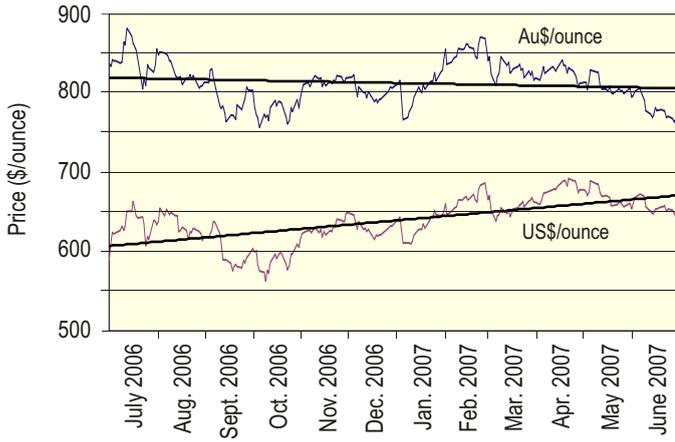
Tin made solid gains in 2006/007. The metal commenced the year at around AUD10,800 and finished just under AUD16,500 after pricing above AUD18,000 in May. The average price for the year was above \$14,400.

Copper continued to trade strongly throughout 2006/2007 but did not meet the highs of the previous year when copper peaked at AUD11,300 per tonne in May 2006. The average price for the year was AUD9025 compared to the previous year's average of AUD6760, and copper remains a strongly priced Australian dollar commodity. Copper started the year at just under AUD10,000 and ended at AUD9080, a long way in front of the May 2003 price of under AUD2500. Demand from China and India, coupled with low stocks, keeps the price buoyant.

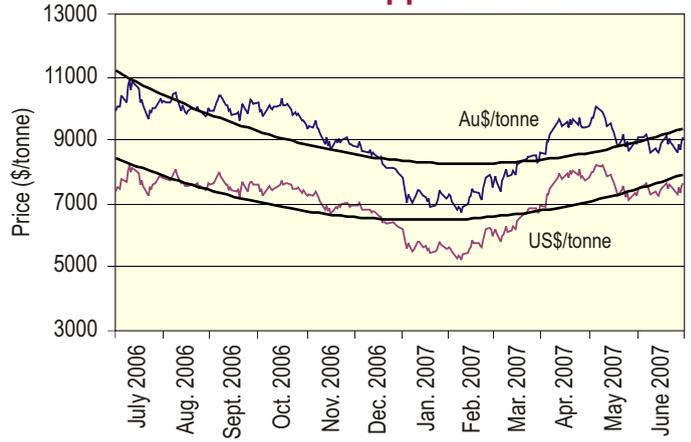
Lead was a stand-out performer for 2006/2007. The metal had a three-fold increase in price mainly due to strong demand for use in batteries. Lead started the year at AUD1310 per tonne and rose steadily to finish at around AUD3120.

Nickel continued on the record run which commenced in the previous financial year, and reached new highs above AUD65,000 in May 2007 before sliding backwards by about one-third at year end. The metal commenced the year at around AUD30,560 and finished at AUD42,230.

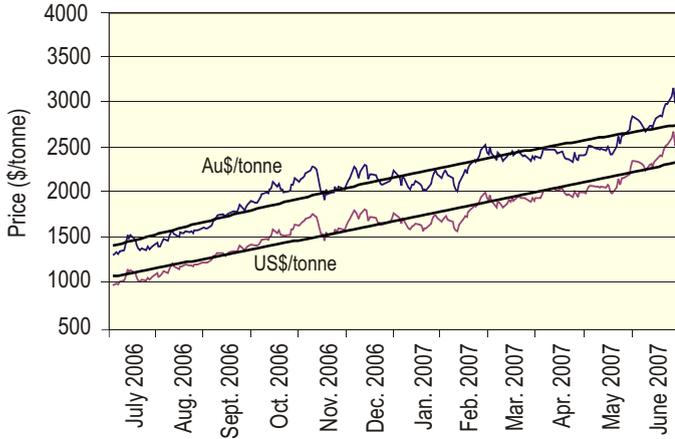
Gold



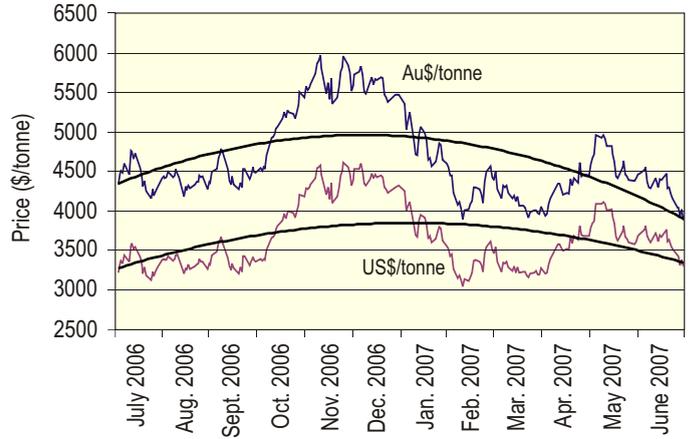
Copper



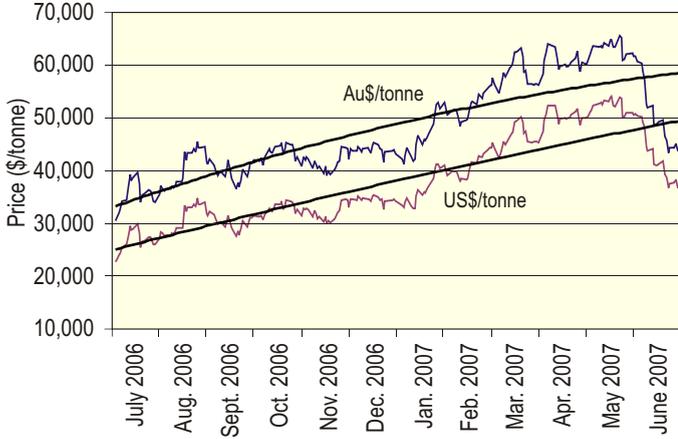
Lead



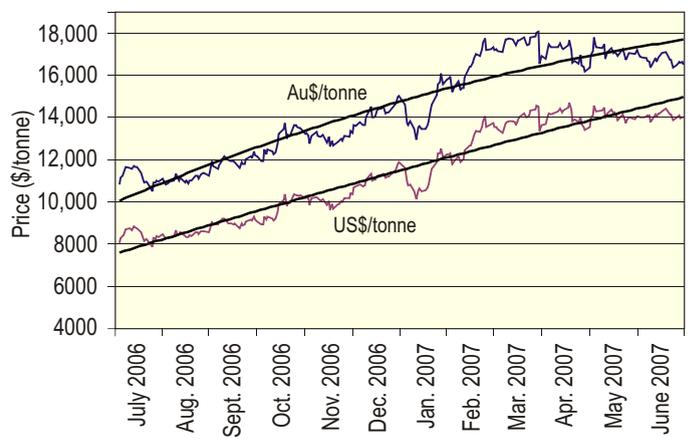
Zinc



Nickel



Tin



Australian Dollar : American Dollar



Review of Mineral Sector Operations

— Metallic Minerals

BASE METALS

Zinifex Rosebery Mine

This company operates an underground mine and concentrator at Rosebery on Tasmania's west coast.

Mining operations

Mine production totalled 651 900 tonnes at 13.02% Zn. Of this 586 000 tonnes of ore was produced from K and P lenses in the lower levels, with remnant mining in the upper levels contributing 66 000 tonnes from B south, F and G lenses.

A total of 5373 metres of development was advanced, comprising 2145 metres of capital development and 1193 metres in ore. Development produced approximately 339 800 tonnes of waste and 97 900 tonnes of ore.

Most of the capital development was required to extend the F, K, V, P and W declines to access future ore zones and provide drilling platforms for resource infill and exploration drilling. Development was also undertaken for 'Project Horizons' to significantly extend exploration drilling past known limits. The operating development was in K, P, V, Lower B, B South and F lenses.

Drilling and mineral resources

A total of 58 000 metres of drilling was carried out, comprising 19 700 metres of surface exploration, and 38 300 metres of exploration and resource infill. Although mining depleted reserves by 578 000 tonnes, total ore reserves at Rosebery have increased by 1.18 million tonnes.

The financial year saw the commencement of the Horizons Deep Exploration Project. The main areas targeted were the down-plunge and northern strike extensions of W Lens, the newly-defined Z Lens, down-plunge areas of V Lens, the newly-defined P-K Lens, down-plunge extensions of K Lens, K2 Lens delineation, X Lens delineation, and the down-plunge extensions of P Lens.

Deep surface diamond drilling of the northern strike defined the Y Lens and the upper areas of Z Lens. Southern strike deep drilling defined a discrete precious metal zone and a minor extension of T Lens.

Exploration and infill drilling of the South Hercules resource commenced during the year and the development plan for pit optimisation was initiated. Seventeen drill holes were completed along the Hercules mine grid and follow-up geotechnical drill holes were completed. Results indicate consistent grade and lateral continuity in the specified area.

The measured, indicated and inferred resource at Rosebery at March 2007 totalled 11.712 million tonnes at 3.8% Pb, 13.0% Zn, 0.42% Cu, 138 g/t Ag, 1.9 g/t Au and 8.7% Fe.

The indicated resource at South Hercules was 1.109 million tonnes at 1.4% Pb, 2.7% Zn, 0.07% Cu, 99 g/t Ag, 1.62 g/t Au and 3.7% Fe.

Identified ore reserves at March 2007 comprised:

- Proved: 3.781 million tonnes at 3.3% Pb, 12.0% Zn, 0.36% Cu, 116 g/t Ag, 1.7 g/t Au, 7.5 % Fe.
- Probable: 43 000 tonnes at 1.8% Pb, 6.8% Zn, 0.16% Cu, 44 g/t Ag, 0.6 g/t Au, 3.7% Fe.

Mill production

Changes to operational and maintenance strategies with the implementation of a dedicated asset management department resulted in improved performance including increasing output of the filter plant.

Lead concentrate production was sustained although concentrate grades were impacted by poor flotation circuit performance related to mechanical reliability of ageing cells and the presence of free diluents due to sub-optimal reagent addition strategies.

Copper concentrate production was sustained. Record doré production was achieved due to improved performance of the precious metals circuit.

Production for 2006/2007, compared to 2005/2006, was:

	2006/2007	2005/2006
Rosebery ore treated (t)	707 0367	671 661
Assaying		
Zinc (%)	13.02	13.66
Lead (%)	4.19	4.81
Copper (%)	0.35	0.36
Silver (g/t)	146	147
Gold (g/t)	1.66	1.8
Zinc concentrate (t)	150 487	147 877
Zinc (%)	55.07	56.54
Lead concentrate (t)	36 789	37 121
Lead (%)	63.84	64.81
Silver (g/t)	1128	1064
Copper concentrate (t)	7373	7935
Copper (%)	21.25	20.00
Lead (%)	9.17	7.28
Silver (g/t)	5412	4411
Gold (g/t)	59.9	77.95
Doré (kg)	559	449
Silver (%)	32.90	33.20
Gold (%)	61.60	62.86

Capital expenditure

A total of \$27.6 million was expended during 2006/2007. The major item of expenditure was \$11.3 million on mine development, with \$3.9 million being spent on continuing works at the Bobadil tailings dam.

Employment

A total of 187 people were employed at 30 June 2007.

The company recorded a Medical Referral Injury Frequency Rate of 14.7, which represents a 13.5% decrease

on the previous year. The MRIFR improvement is supported by continuation of programs focussing on injury prevention and awareness sessions, promotion of early intervention including roll out of mandatory manual handling training sessions, and continued focus on TAKE 5 and safety observations to improve site safety. The site has also commenced on-site First Aid Level 1 and Level 2 training for all Zinifex employees, with the option available to on-site contractors through their respective companies. Fatigue management presentations have also been provided to the management team and One Rosebery Leadership network to facilitate development of an on-site fatigue management program.

The Wellness Program has also continued to engage employee's, contractors and their families to promote a healthier lifestyle. The program has also assisted in rehabilitating individuals back to work following injury, as well as providing them with self management tools to prevent re-injury.

Environment

The company reported six non-compliance events to the Tasmanian Government during the 2006/2007 year, which is a 20% increase from 2005/2006. Capital works have begun for an emergency retention system at the filter plant to prevent future uncontrolled discharges from the site.

The site has continued to maintain ISO 14001 certification to the 2004 standard, and has continued to develop training and awareness programs associated with the environmental aspects and impacts of the mine.

Significant progress was made in addressing environmental legacies, with rehabilitation works continuing at the Hercules mine site. A stormwater upgrade has commenced to separate the stormwater from the acid drainage that emanates from the 7 level adit. Rehabilitation works have continued through the continuation of a revegetation plan, which involved targeted application of lime and fertiliser to promote re-growth.

A flora and fauna survey to support Project Horizons and the development of a new tailings storage facility was completed. The annual weed spraying campaign has been completed with a significant focus on English broom, gorse, montbretia and cotoneaster.

Significant works have been completed at No. 2 and 5 dams to improve water quality and commence direct discharge of water into the Stitt River. DTAE approval has been gained and discharge is expected to commence early in the coming financial year.

Toxicological testing on Lake Pieman water has continued with the use of the recently discovered local water flea to accurately determine the impacts of discharges into water on the west coast.

The final stages of the toxicity investigations are envisaged to initiate the development of appropriate water quality objectives for the Pieman River in liaison with the Tasmanian Government. A mixing zone criteria provides opportunities to measure potential impacts on the receiving environment and provides a realistic measurement of water quality.

Biological monitoring completed on the site's discharge points receiving environments showed an improving picture. Monitoring indicated that there were:

- ❑ No significant impacts on the Pieman River ecology from the discharge of the main tailings dam.
- ❑ The Stitt River continues to reap the benefits of a joint venture with the West Coast Council to operate the rehabilitated tailings dam as a sewage treatment facility. Studies showed sustained aquatic invertebrate life in the river.
- ❑ The Ring River continues to experience impacts due to historical mining operations in the region.

The eastern embankment of the Bobadil tailings dam was raised and a tailings placement strategy has been developed and implemented with additional spigot points installed.

Proposed methods for the recycling of heavy vehicle tyres and rubber have been investigated. Such tyres are now sent to a depot in Launceston where they are chipped and the rubber is then re-used in the mining industry.

Noise mitigation and monitoring has been improved with the commissioning of a new upcast fan with silencers and the purchase of two new noise monitors for the measurement of noise off site.

Community relations

A telephone Community Attitudes and Expectations Survey was conducted by McGregor Tan Research during 2006. The survey highlighted community opinion that mining is very important to the region with one-third of the respondents considering mining to be the main employer in Tasmania.

The company has appointed a Stakeholder Relations Officer for the site who will be responsible for community relations on the West Coast and in northwest Tasmania. A community consultative group has been formed to enhance links between ZRM and key stakeholders within the community and to encourage dialogue and feedback for the benefit of the community.

Zinifex Rosebery Mine, in conjunction with the Hobart Smelter, were joint sponsors of the 2007 biennial international arts festival *Ten Days on the Island*. The festival is the flagship cultural event for Tasmania, attracting audiences of over 160,000. This sponsorship assisted Zinifex in building long-term goodwill with the Tasmanian community and Tasmanian Government, as well as giving us good exposure and increased brand awareness.

Locally, Zinifex Rosebery Mine was major sponsor of the Rosebery Folk Festival. Since its inception in 1995 the festival has aimed to provide a cultural and artistic experience that would otherwise be unavailable to the members of the Rosebery community. This year it included activities such as footpath art, fireworks display, magicians, theatre music, poetry and a steam-powered organ and carousel.

Intec Ltd

Intec operates the treatment plant and tailings dam at the Hellyer mine site. Following an agreement with the

Polymetals Group, refurbishment of the concentrator was completed and re-treatment of tailings commenced. Forty-nine people are employed in the operation.

A total of 696 000 tonnes of tailings were mined during the year to produce 27 100 tonnes of zinc-lead concentrate containing 10 400 tonnes of zinc, 2365 tonnes of lead and five kilograms of silver.

Reserves

Ore reserves at November 2006 comprised 10.8 million tonnes grading 2.8% Zn, 3.0% Pb, 88 g/t Ag, 2.6 g/t Au and 0.16% Cu.

Major projects

Major projects included the construction of tailings dam embankments and removal of potentially acid-forming material from the old mine secondary ore stockpile to the tailings storage facility.

Capital expenditure

Capital expenditure included \$6 million to restart of the mill, \$2.4 million on the purchase of the dredge and \$1.2 million on optimisation projects.

Zeehan Zinc Limited

Zeehan Zinc Limited is developing a zinc prospect at Comstock and Oceana near Zeehan. Thirty-seven people are employed in management and planning. Construction contractors have also been employed on site.

Development

A total of 30 000 cubic metres of waste was stripped at the Comstock site to enable access to the ore body. Construction of the tailings dam was nearing completion at the end of the period.

Drilling

A total of 113 holes were drilled during the year. This consisted of 7500 metres of reverse circulation drilling and 3600 metres of diamond drilling, the latter on the Boss, Balstrup and Watson's targets.

Reserves

The probable ore reserve at Comstock is 99 000 tonnes at 5.7% Zn, 1.7% Pb and 42 g/t Ag.

The inferred resources are:

- Allison's Lode: 26 000 tonnes at 2.3% Zn, 0.7% Pb, 17 g/t Ag;
- Main Lode: 127 000 tonnes at 4.3% Zn, 1.7% Pb, 24 g/t Ag;
- Balstrup Fault: 4.6 million tonnes at 5.7% Zn, 3.3% Pb, 35 g/t Ag.

The updated JORC compliant resource for the Oceana deposit in May 2007 is 2.15 million tonnes at 5.2% Pb, 1.6% Zn and 46 g/t Ag.

Rehabilitation and environment

The company reports that the central waste dump has been rehabilitated. A permanent water monitoring station was installed to continuously measure and record adit water

discharge. A creek diversion was constructed which diverts Comstock Creek into one of its tributary catchments, allowing the adit water to be treated along its 300 metre course. A settling pond was constructed to treat water before discharge.

Weed and disease, archeological, traffic impact and noise surveys have been carried out at the Oceana mine in preparation for submitting a Development Proposal and Environmental Management Plan to the West Coast Council. Water monitoring surveys have been undertaken to develop a water management plan.

Capital expenditure

Expenditure at Comstock for mine development was \$4.3 million, with a further \$3.4 being spent on plant construction and purchase of floatation equipment.

COPPER

Copper Mines of Tasmania Pty Ltd

This company employs 453 people, including 360 contractors, in its copper mining operation at Mt Lyell in Queenstown.

Production

Mine production totalled 2.52 million tonnes. A total of 2100 metres of development was advanced, of which 1680 metres was in ore. Production of waste totalled 26 500 tonnes from 460 metres of development.

Mill throughput of 2.463 million tonnes of ore produced 97 630 tonnes of copper concentrate containing 27 000 tonnes of copper, 15 000 ounces of gold and 126 600 ounces of silver.

Resources

A total of 2738 metres was drilled during the year.

The in situ inferred resource in March below 1540 metres was 5.985 million tonnes at 1.37% Cu, containing 82 000 tonnes of metal.

The inferred resource in the cave 2092–1540 metres was estimated at 15.884 million tonnes at 1.16% Cu.

The Prince Lyell estimated ore reserve at 31 March 2007, at 1% cut off grade, was:

- Proved reserve in situ: 4.893 million tonnes at 1.49% Cu, 0.36 g/t Au containing 72 900 tonnes of copper.
- Probable reserve of the cave was 7.540 million tonnes at 1.16% Cu, 0.29 g/t Au containing 87 400 tonnes of copper.

Environmental management

Significant improvements in the discharge and storm water quality from the Mount Lyell site have been achieved during the year. This is the result of improved control of decant discharge from the tailings storage facility, automated shut off of mine pumps during elevated turbidity, improved maintenance of sediment retention infrastructure and increased awareness of site personnel.

Revegetation of the site continues, with good progress of natural revegetation of the historic disturbance aided by CMT's proactive land management. A bushfire during the summer impacted on some natural regrowth, and the burnt area is being used to assess the sustainability of the Queenstown natural regeneration. CMT has assisted the Department of Tourism, Arts and Environment with continuing projects for remediation of acid drainage from former operations of the Mt Lyell Mining and Railway Company at Mount Lyell.

Capital

Capital expenditure for the year was \$5.144 million. Major items included the decline and return air developments, a new pressure filter and blower, relocation of power lines, and tailings dam balance works.

Gold

Beaconsfield Mine Joint Venture

Production at the Beaconsfield gold mine was suspended after a rock fall in April 2006. Investigations into the cause of the rock fall and implications for future safe operation of the mine were ongoing throughout the year. Limited production had recommenced by 30 June 2007.

Operations

Seventy-two people were employed in mining, processing, technical and administrative services. A total of 122 kilograms of gold and 53 kilograms of silver was produced from 14 800 tonnes of ore milled. Waste mined during the year totalled 31 400 tonnes.

Major projects centered around the completion of a series of 'Case for Safety' investigations conducted by Coffey Mining and peer reviewed by SP Solutions. As a result Section 38 and 39 notices served on the joint venture were rescinded by Workplace Standards Tasmania in respect of decline development, ore sill mining and stoping in the eastern section of the mine.

Resources

Resources at 31 March 2006 were:

Measured resource	255 000 tonnes @ 20.4 g/t Au (167,000 ounces contained gold)
Indicated resource	568 000 tonnes at 13.6 g/t Au (249,000 ounces contained gold)
Inferred resource	58 000 tonnes at 14.7 g/t Au (27,000 ounces contained gold)
Total resource	881 000 tonnes at 15.6 g/t Au (443,000 ounces contained gold)

Capital expenditure

Capital expenditure was \$3,562,000. This was spent on equipment, decline development and equipping R1300 loaders for tele-remote operations.

Environment

A mine closure plan, groundwater management plan and preliminary wetlands assessment were completed, together

with a Development Proposal and Environmental Management Plan for a proposed new tailings dam. Biannual water quality sampling in Middle Arm Bay, and biological sampling of the Brandy Creek catchment, were carried out.

Barrick (Henty) Limited Henty gold mine

This company employs 180 people in its mining operation north of Queenstown.

Operations

The mine produced 2191 kilograms of gold and 1770 kilograms of silver. Underground development advance was 2836 metres which produced 102 500 tonnes of waste.

Reserves and resources

Reserves and resources as at June 2007 were:

Reserve	614 500 tonnes @ 9.4 g/t Au (185,600 ounces contained gold)
Probable	645 800 tonnes @ 8.6 g/t Au (179,300 ounces contained gold)
Indicated	87 000 tonnes @ 6.1 g/t Au (17,200 ounces contained gold)
Inferred	98 600 tonnes @ 8.6 g/t Au (27,200 ounces contained gold)
Total	800 000 tonnes @ 8.9 g/t Au (230,000 ounces contained gold)

Drilling

A total of 4000 metres of surface drilling was carried out in nine holes. Targets were Canal Extension, B-lens and Howards Road.

The Canal Zone Extension, which is the postulated continuation of the main Henty A-Zone to depth to the south, was tested with six holes totalling some 3400 metres of drilling. Findings from these holes indicate that the zone becomes much more acid in nature with continuance at depth and to the south, and that the gold content drops off dramatically to the immediate south of the Darwin South and Canal ore bodies such that no economic material has been identified south of that location.

The B-Lens is a new target that was identified in two of the holes drilled into the Canal Zone extension target. The target was then followed up with a separate 500 metre hole from surface. The target consists of intense QSP alteration with associated sulfide content in a stratigraphically similar position to that of the upper Henty mine workings. Although minimal gold grade has been intersected, the geochemistry and significant silver enrichment of the material in question are very promising. Further drilling on this target will commence in July 2007 with the aim of pinpointing economic intersections of gold-bearing rock.

The Howards Road target arose from surface mapping work conducted in early March 2007. Mapping identified a section of surface outcrop displaying relatively intense QSP alteration. Pyrite and galena were found in wisps, blebs and as massive blocks with pods of massive quartz alteration. Two short holes were drilled from surface.

Further drilling on this target is planned for September 2007.

A total of 6480 metres of underground drilling was carried out in 100 holes. The bulk of the drilling was conducted for resource development with the aim of converting known indicated and inferred resources into probable reserves. Much of this activity took place on the Darwin Mid, Zone 15 and Tyndall Zone drill targets. The balance of the underground drilling was conducted for mine delineation, where additional information was necessary for mining of material already contained within probable reserves. The bulk of this drilling was conducted in the Darwin South and Darwin Mid zones, where varying geometry, especially within peripheral areas, had highlighted the need for increased drilling density. No pure exploration drilling was conducted in the Henty underground between July 2006 and June 2007.

Environmental programs

There was a significant focus on water and tailings management at the Henty gold mine during 2006/2007. Following significant review of the tailings pipeline infrastructure, a number of changes were made. These include:

- Replacing an 800 metre section of the pipeline between the processing plant and the tailings dam. The steel section was replaced by a welded poly pipeline.
- Re-routed pipeline to remove sharp bends (potential wear points).
- Upgraded high point breather, and installed secondary containment tank in case of breather malfunction.
- Replaced pipeline secondary containment membrane.
- Reviewed and updated the tailings Operations, Surveillance and Maintenance (OMS) manual.

These works have significantly reduced the risk of a tailings spill due to pipeline breach or breather malfunction.

The following water treatment works have been undertaken:

- Modified tailings dam water treatment system to further reduce solids loading in discharge to the Henty canal.
- Carried out maintenance works on mine water treatment wetlands (removal of settled solids from wetland filter C).

Further improvements to Henty's water treatment processes are currently under consideration. These include:

- Reviewing water requirements in plant and underground with a view to modifying supply infrastructure to make better use of available recycled resource from underground.
- Investigating potential settling process underground to minimise pumping requirements.

There was a continued focus on energy use at Henty during the year. The pitch of the blades in the main underground fan was again reduced in order to minimise energy consumption while maintaining appropriate levels of ventilation underground. Work being undertaken on the water pumping infrastructure across the site will also have a

beneficial impact on energy consumption as a result of expected reduced pumping requirements.

The annual biological monitoring survey of the Henty River upstream and downstream of operations continued to confirm that the mine operation is having no impact on stream fauna. This was the fourteenth year that the mine has carried out this survey, which is a good indicator of the mine's performance with respect to managing pollutant levels in discharge water.

Capital expenditure

A total of \$1.798 million of capital expenditure was made during the year. Major items included mine development (\$1.4 million), MT436B truck tray, renovations to company housing, mill discharge 64 standby pump, cynoprobe installation and vehicle replacement.

Iron ore

Australian Bulk Minerals (Savage River mine)

Australian Bulk Minerals operates an open-cut iron ore mine at Savage River and a pelletising plant and ship loading facility at Port Latta, employing 413 people in these operations.

Prior to 2007 ABM was planning to close the open-cut mine in 2009. During 2006 a feasibility study into extending the mine's life was completed and in early 2007 an investor was identified to complete the mine life extension project, extending mine life to 2018 with closure of the project in 2022. In April 2007 a sales purchase agreement was signed with Shagang Mining Australia Pty Ltd, with the sale being completed in August 2007.

Operations

Mine production at Savage River was 1.423 million cubic metres of ore and 4.851 million cubic metres of waste. The total volume mined was 6.274 million cubic metres.

The concentrator crushed 4.196 million tonnes of ore and milled 4.112 million (wet) tonnes, for the production of 1.903 million tonnes of concentrate.

Production at Port Latta totalled 1.838 million tonnes of pellets, with 13 500 tonnes of concentrate and 174 800 tonnes of pellets being stockpiled.

Sales comprised 1.787 million tonnes of pellets, 14 800 tonnes of concentrate and 60 000 tonnes of iron ore chips.

Mineral resources and ore reserves

Estimated mineral resources and ore reserves for the Savage River magnetite deposit, at the end of June 2007, are:

Total mineral resources, measured, indicated and inferred

North pit	169 610 000 tonnes @ 53.6% DTR
South deposit	29 110 000 tonnes @ 42.9% DTR
Centre pit south	54 930 000 tonnes @ 46.6% DTR
Centre pit north	66 470 tonnes @ 51.3% DTR
Centre pit south ext.	3 670 000 tonnes @ 45.5% DTR
Total	323 790 000 tonnes @ 50.9% DTR

Total ore reserves proven and probable

North pit	69 940 000 tonnes @ 51.4% DTR
Centre pit south	13 720 000 tonnes @ 43.4% DTR
South deposit	9 450 000 tonnes @ 40.0% DTR
Total (including stocks)	99 050 000 tonnes @ 48.1% DTR

DTR (Davis Tube Recovery) is a measure of the percentage of magnetite mineral that will be recovered into concentrate from magnetite ore.

The increase in overall reserve is due to the completion of the feasibility study for the Mine Life Extension Project, focussing on the expansion of North Pit.

Employment

A total of 413 people were employed in the operation, including contractors. At Savage River 221 people were employed in the mine, concentrator and in the township, while 192 people were employed in operations and administration at Port Latta and Burnie.

Environmental programs

Contract weed management continued within the former Savage River township on behalf of the Savage River Remediation Program (SRRP). This contract was renewed for another three years and is now due for completion/renewal in September 2009.

The in situ classification and segregation of waste rock from pits has continued. Waste from North Pit went to the Broderick Creek dump. Final placements of waste rock and cover material were being placed on the Broderick Creek dump with the dump continued to the north and west.

Remediation at Port Latta has continued, with ABM funding a Coastcare program from Rocky Cape to East Stanley. A joint project was developed with the Circular Head Council, Parks and Wildlife Service, and the Cradle Coast Authority at The Nut at Stanley.

Monitoring

Dust deposition at Cowrie Point and Crayfish Creek is measured by high volume air sampling with selective PM¹⁰ inlets. The annual averages were 38.69 µg/m³ at Cowrie Point and 42.52 µg/m³ at Crayfish Creek. Strong easterly weather during the first quarter of 2007 impacted on the Cowrie Point readings. Water quality in the Savage River resulting from ABM's operations was satisfactory.

Capital expenditure

Capital expenditure for the year was \$5.906 million. Larger items included clay pre-stripping, mill refurbishment and the purchase of two graders.

A mobile equipment fleet (valued at approximately \$100 million) was ordered in June 2007 and planning for a pit workshop (approximate value \$20 million) had commenced.

Tasmania Mines NL

Tasmania Mines NL operates an open-cut mine and processing plant at Kara, 30 kilometres southwest of Burnie, producing magnetite with scheelite as a by product.

Operations

A total of 169 900 tonnes of magnetite ore and 102 000 tonnes of waste was mined, to produce 77 000 tonnes of magnetite concentrate and 32 400 kilograms of scheelite concentrate from the ore treated.

Reserves

Total proven reserves at July 2007 were:

- Fresh magnetite-bearing ore: 2 054 800 tonnes >30% Fe, including 141 000 tonnes >30% Fe, 0.55% WO₃
- Oxidised magnetite-bearing ore: 414 000 tonnes >30% Fe, including 38 000 tonnes >30% Fe, 0.55% WO₃

Total probable reserves were:

- Fresh magnetite-bearing ore: 516 000 tonnes >30% Fe, including 5000 tonnes >30% Fe, 0.55% WO₃
- Oxidised magnetite-bearing ore: 92 000 tonnes >30% Fe, including 8000 tonnes >30% Fe, 0.55% WO₃

The indicated mineral resource at Kara North 266 was:

- Fresh magnetite-bearing ore: 425 000 tonnes >30% Fe, including 175 000 tonnes >30% Fe, 1.1% WO₃
- Oxidised magnetite-bearing ore: 275 000 tonnes >30% Fe, including 55 000 tonnes >30% Fe, 0.9% WO₃

The probable reserve at Eastern Ridge is 43 300 tonnes >30% Fe, 0.45% WO₃.

Exploration

During the year a total of 316 metres of diamond drilling in six holes was drilled at Kara North 266 as part of an infill/confirmation program for that deposit. Standard assays and ore microscopy studies were conducted on the core produced to determine the grade and characteristics of minerals present at Kara North. It was concluded that there were no significant differences between the mineral characteristics of the ore in Kara No. 1 and at Kara North.

Employment

There are a total of 17 full-time persons employed by Tasmania Mines in operations and three full-time and two part-time employees in administration. Full time earth-moving contractors required three to five operators, with various part-time contractors required on demand.

Environmental control

Operations adhere to the 2006 Environmental Management Plan. The majority of the waste overburden mined is placed at the south end of the Kara No. 1 open cut as permanent rehabilitation/storage. Run off is monitored and directed away from the placed overburden. Stability is further maintained by limiting the height of overburden slopes with bench horizons.

Major projects completed or in progress

The most significant project conducted in the period has been completion of Stage 2 of the mine tailings dam, which in conjunction with Stage 1 will provide up to ten years operating storage capacity at current production rates.

Capital expenditure and new developments

Additional screening capacity (two new screens) was introduced to the processing plant at a cost of \$100,000.

The acquisition of a new mill to support planned production levels with improved capacity is in progress and is planned to be incorporated into the operations within the next twelve months. This will allow campaign processing or higher rates of production.

Nickel

Allegiance Mining NL

This company is developing a nickel mine at Avebury near Zeehan. The workforce is 202 people.

Mining development

Full scale underground mining commenced in December 2006. At the end of the year 10 300 tonnes of underground development ore at a grade of 1.19% Ni had been mined. Development had resulted in 1170 metres of advance, with 90 000 tonnes of waste hauled to surface.

The Viking ventilation shaft (180 m) and services (secondary egress) shaft (180 m) were completed. The underground permanent pump station, secondary egress equipment and grid power reticulation to the underground mine were completed.

Geology/Reserves

A total of 23 400 metres of diamond core drilling was completed over the year.

At the end of June there were five drill rigs operating on site, with two rigs being used for underground infill drilling of currently 'inferred' resources, and three rigs continuing to drill near the mine and on regional exploration. These rigs are focussed on extensions to the east and west of Avebury, parallel mineralisation to the east of Avebury ('Bison' and 'Saxon'), and northern repetitions of Avebury-style mineralisation at 'Pontiac'.

A critical review and update of resources and reserves in March 2007 resulted in the following:

- ❑ Resources of 11.93 million tonnes @ 1.11% Ni, at 0.7% Ni cut-off grade, containing 131 000 tonnes of nickel metal.
- ❑ Reserves of 3.347 million tonnes @ 1.16% Ni, at 0.85% Ni cut-off grade, containing 38 900 tonnes of nickel metal.

Current reserves provide enough ore sufficient for initial production at the rate of 900 000 tpa until 2011.

Process plant construction

At the end of June the construction project was 47% complete. Completed items were major infrastructure, the tailings dam and ore stockpile area.

Employment

A total of 27 people were directly employed by the company. The mining contractor, Barmenco, employed 70 people and construction contractors employed 84. Drilling, surveying contractors and consultants employed 21 people.

Environmental management

An environmental management audit was completed during the year, together with establishment of the

environmental compliance register, comparing current compliance with the current DPEMP Stage 2 and EPN conditions.

The year saw the commissioning of the water settlement, wetland and water storage system for full-scale mine production, and the decommissioning and rehabilitation of the Stage 1 mine dewatering system.

Tin

Bluestone Mines Tasmania Pty Ltd

This company employs fourteen people, including contractors, at their mine site at Renison Bell.

Operations

In October 2005 Bluestone Tin Limited announced the temporary closure of the Renison tin mine due to the drop in the tin price to US\$6335, an appreciation of the US:AUD exchange rate, and insufficient production rates from Renison underground. The operations were placed under care and maintenance.

In March 2006, a Tasmanian Tin Projects review was conducted and planning commenced for the restart of the Renison Bell operations and the commencement of operations at Mt Bischoff. The planned Mt Bischoff operations were recognised as critical to achieving short-term economies of scale in ore processing because of the lack of development in the Renison underground operations. Development activities at Renison are planned to commence with ore production from remaining developed areas in the southern end of the mine.

A Development Proposal and Environmental Management Plan for Mt Bischoff was lodged with the Waratah–Wynyard Council on 28 August 2006. Approval for the Mt Bischoff DPEMP and granting of a Mining Lease over application MLA12/2006 had not been obtained by 30 June 2007, with the result that no significant site activity occurred over the 2006/2007 year.

Production

No ore or waste was mined during the year, with no tin-in-concentrates produced for sale during the year.

Environmental program

Monitoring programs and frequency were maintained throughout the year to ensure continuity of data for point source and ambient water quality monitoring. Core activity focussed on development of environmental management systems and the revised EMP-2006 was approved by DTAE. Closure and decommissioning plans (DRP) were nearing completion in June 2007. Demolition of the old crusher building was completed in August 2006, and a DRP model was developed from the process and submitted to DTAE. Weed and pathogen control measures were implemented across the Renison mining lease and in Renison Bell township over the summer of 2006/2007, specifically targeting gorse, montpellier broom and blackberry. A site dam surveillance report was undertaken at Renison by GHD Engineers in June 2007, in expectation

of completion of the final two metre lift on tailings storage facility Dam C over the 2007/2008 summer period.

Reserves and resources

The identified mineral resource estimate, consolidated as at 30 June 2007, comprised:

Measured

Renison Bell	625 000 tonnes @ 1.86% Sn
Mt Bischoff	537 000 tonnes @ 0.79% Sn
Rentails	18 176 000 tonnes @ 0.42% Sn
Sub-total	19 338 000 tonnes @ 0.48% Sn

Indicated

Renison Bell	1 395 800 tonnes @ 2.02% Sn
Mt Bischoff	1 139 000 tonnes @ 1.06% Sn
Sub-total	2 610 000 tonnes @ 1.59% Sn

Inferred

Renison Bell	2 351 000 tonnes @ 2.04% Sn
Mt Bischoff	227 000 tonnes @ 0.86% Sn
Sub-total	2 733 000 tonnes @ 1.94% Sn

Totals

Renison Bell	4 371 900 tonnes @ 2.01% Sn
Mt Bischoff	1 903 000 tonnes @ 0.96% Sn
Rentails	18 176 000 tonnes @ 0.42% Sn
Total IMR	24 450 900 tonnes @ 0.75% Sn

Major projects completed or in progress

In March 2006, a review of Tasmanian operations was conducted and a systematic totally integrated feasibility process was developed under the name *Project New Blue*. Project New Blue encompasses all facets of the Tasmanian operations including Renison and Mt Bischoff in order to provide a clear operation plan for re-commencement of operations.

Dewatering of the North Renison (Rendeeep) areas has advanced down to 1468 mL.

The Mt Bischoff capital mine pre-development has commenced.

Capital expenditure

A total of \$1.95 million was expended on capital at the Tasmanian operations. This comprised plant and equipment, Rentails feasibility test work, Renison mine development and Mt Bischoff pre-development.

New developments

Rentails project

- The Renison tailings (Rentails) study pre-feasibility advances, pilot plant testing, and financial modelling suggests a sound project, delivering an average of 6900 tpa of Sn metal over a nine-year period.
- The Rentails project is based upon the re-treatment of 18.2 million tonnes, averaging 0.43% Sn, of historical

tailings produced from the Renison project over the past 40 years. Drilling of the C tailings dam was conducted in August 2006 to obtain a bulk sample for test work, with grades obtained from drill core confirming the October 2004 drilling results.

- Bluestone intends to continue to advance Rentails towards completing a definitive feasibility study and design in the first quarter of 2008, as well as continuing to refine and optimise test work and opportunities for the project. During the year test work success was achieved in attaining the target 55% tin recovery into a 15% tin concentrate prior to pyrometallurgical production of a 70% Sn fume. Pilot plant testing commenced in June 2007 to produce five tonnes of tin flotation concentrate for tin fuming pilot test work planned for October 2007.

Mount Bischoff

- Mt Bischoff is integral to the Renison Project and will provide the ore feed to enable the Renison tin concentrator to operate at full capacity for three to four years while additional development and production capacity from the Renison Bell mine is implemented.
- The mining concept is a simple open-cast operation whereby ore is stockpiled and carted to the Renison tin concentrator at a rate of approximately 200 000 to 250 000 tonnes per annum.
- Mt Bischoff is currently a retention licence that is being converted back to its original status as a mining lease. The mining lease application was re-submitted in December 2006. It is anticipated that this process will be completed in the first quarter of 2007/2008 and that mining can recommence in late 2007 pending environmental approval.
- Bluestone has performed mining studies based upon mining the White, Greisen and Gossan Face zones at Mt Bischoff. These are only a sub-set of the overall mineralised system and as such it is anticipated that in the fullness of time considerably more economic ore can be accessed. The Mt Bischoff mine is a substantial mineralised system and excellent potential for the discovery and exploitation of more tin mineralisation exists from both open pit and underground mining. An in-fill resource drilling program is planned for August 2007 to improve measured resource estimates and mine planning.
- The draft DPEMP document for the Mt Bischoff mine was submitted to DTAE in August 2006. A supplementary DPEMP document for the Mt Bischoff mine was submitted to DTAE in April 2007. Environmental approval was finally expected for the project based on consultation with the Environment Division in June 2007.

Industrial Minerals

Limestone and dolomite

Beams Bros Pty Ltd

This company operates a limestone quarry at Flowery Gully and a dolomite quarry at Cressy in northern Tasmania.

Circular Head Dolomite and Trading Co. Pty Ltd

This company operates a dolomite quarry near Smithton. Fourteen people are employed including contractors. Production for the year comprised 58 000 tonnes of screenings, 32 000 tonnes of dolomite powder and 9000 cubic metres of readymix concrete.

The concrete batch plant was upgraded. Capital works included an excavator, cement tanker and concrete truck and bowl.

Unimin Australia Limited

This company operates a limestone quarry and lime kiln at Mole Creek in northern Tasmania. Twenty-eight people were employed throughout the financial year, with 18 of these in the quarry and lime plant operation, one in maintenance, two in administration and seven in management and sales.

Limestone production totalled of 139 000 tonnes, with overburden removal of 182 000 tonnes.

Resources

Kiln feed is a blend of medium and low quality limestone to maximise resource and meet quality targets. Whole-of-life stripping ratio and reserves of high, medium and low quality limestone are expected to last the operation's requirements for more than twenty years.

Major projects/Environmental

Baghouse improvements costing \$3.5 million were completed during the year, with the baghouse comfortably achieving emission standards set by DTAE. Work has commenced to reduce the use of water around the site and the further introduction of dust minimisation systems. Upgrading the apron feeder conveyors and bringing walkways to Australian Standards were also completed.

Silica

Cominex Pty Ltd

This company operates a sand pit for high purity silica flour at Corinna. Seventeen people are employed including road haulage contractors for transport to Burnie.

Production for the year totalled 81 000 tonnes of silica flour and 5500 tonnes of gravel for road base, with 175 000 tonnes of overburden being stripped.

The company has an indicated resource of 400 000 tonnes including a probable reserve of 270 000 tonnes.

Cominex has entered into a joint venture and will operate as Tasmanian Advanced Minerals Pty Ltd. This company is constructing a treatment plant at Wynyard to prepare material for export.

Index Mineral Processors

This company employs 27 people in its silica sand processing plant at Burnie. Production was 9500 tonnes of fine product and 28 700 tonnes of coarse product.

A plan to expand production to 60 000 tpa over five years, commencing in 2006/2007, has been developed and a permit was subsequently approved by the Burnie City Council in November 2006.

Environmental

The site environmental management plan was approved by the Burnie City Council in January 2007. Actions to comply with requirements have been initiated. Index Mineral Processors seeks accreditation to ISO 14001:2004 as part of its commitments. A CleanBiz Tasmania grant application has been submitted to assist in funding environmental improvement control initiatives, pollution reduction and energy efficiency using ISO 14001 as the catalyst.

Capital expenditure

Expenditure over the past year has upgraded the beneficiation process to give improved control and the ability to handle feedstock variances, as well as to enhance recovery efficiencies. Expenditure on improvements in environmental emission control and reliability associated with the expansion development application is estimated at \$550,000.

New developments

The development application includes the sale of a third product that is presently deemed a waste material. This R & D work demonstrates a potential to significantly enhance the business viability. This will allow sales from the site to match the full 60 000 tonnes nominated in the permit.

Ceramics

Austral Bricks Tasmania

This company operates a brick factory at Longford in northern Tasmania.

K&D Bricks & Pavers

This company continues to manufacture clay products in the Hobart suburb of New Town.

Fuel Minerals

Cornwall Coal Company NL

Cornwall Coal operates coal mines in the Fingal Valley on the east coast and at Hamilton in southeast Tasmania, and a coal washing plant at Fingal.

Duncan Colliery

Production continued throughout the year using a combination of both pillar development and pillar extraction techniques. All underground production by Cornwall Coal from the Fingal Valley was concentrated within the Duncan Colliery.

The new widehead continuous miner with onboard bolting rigs was commissioned and commenced production finishing the Miniwall development. Installation of the Miniwall system of mining was commenced towards the end of the year with production from this equipment due to commence in the third quarter of 2007. Duncan is nearing the end of its economic life with underground production being gradually phased to Blackwood No. 4 Entry over the next eighteen months.

Blackwood Colliery No. 3 Entry

The rehabilitation has been monitored throughout the year and is progressing.

Blackwood Colliery No. 4 Entry

The highwall of the box cut was stabilised, meshed and shotcreted in preparation for entry and portal development. Electrical distribution services were installed and commissioned together with air and water supply.

Huntsman No. 2 open cut

The rehabilitation has been monitored throughout the year and is progressing favourably.

Cullenswood open cut

Cullenswood produced coal throughout the period using contractors to remove overburden and stockpile the coal on site prior to transport to the Fingal washery. The Cullenswood reserve is being used to augment the supply from Duncan to satisfy customer requirements in the absence for the majority of the year of Kimbolton coal.

Kimbolton Coal

The difficulties associated with the raw product from Kimbolton have precluded its use at any of our customer sites without the need for beneficiation of the raw coal at the Fingal washery. The distance between the Fingal and Kimbolton sites renders the transport of the raw product, together with the cost of production, uneconomic unless a backload arrangement is entered into. Negotiations with one of our customers to accept deliveries by road continued.

Production

Sales for the year totalled 433 618 tonnes.

Production of raw coal for 2006/2007 totalled 538 602 tonnes. This coal was sourced from the Duncan (393 450 tonnes), Cullenswood (61 214 tonnes) and Kimbolton (83 938 tonnes) mines.

Washery throughput of raw coal totalled 635 935 tonnes to produce 406 346 tonnes of saleable coal at a washery yield of 63.9%. Coal sales totalled 418 400 tonnes.

Approximately 235 378 tonnes of reject materials were deposited at the Duncan reject dump.

Reserves

The company has sufficient reserves of coal for the foreseeable future.

Exploration

No surface exploration for coal was undertaken. Several areas of the Duncan mine were investigated using a continuous miner to assess the suitability of the coal and conditions for economic extraction.

Capital expenditure

A total of \$1.3 million was expended throughout the year. The major expenditure undertaken was for the preparation for underground operations to commence at Blackwood No. 4 entry. The upgrade of some conveyors was undertaken within the Duncan mine to install voice and remote isolation facilities along the conveyors. Purchases of minor plant and equipment (e.g. underground personnel transport) were also completed.

Rehabilitation

The Huntsman and Blackwood 2 and 3 areas continued to be monitored throughout the year.

Employment

The company employed 66 people in its operations, with 47 employed underground, ten in processing and nine in administration. Twenty contractors were employed in open-cut operations and road transport.

Safety

No lost time injuries occurred during the period. Cornwall Coal was awarded Cement Australia's Award for Outstanding Safety Commitment.

Cornwall Coal's Mines Rescue Team competed in the National Coal Mines Rescue Competition in October 2006 and gained their best result by being placed third. The team also competed in the Tasmanian Mines Rescue Competition in November and were placed second, with the captain achieving the Best Captain's award for the fourth year in a row.

Other

The instability in regard to transport distribution from the Fingal Washery site was cause for serious concern throughout the year.

Construction Materials

Boral Resources (Tasmania) Limited

Boral operates hard-rock quarries at Bridgewater, Launceston, Flowery Gully and Nook. A sand operation is located at South Arm. The company employs 25 people in the quarry business.

During the year the business experienced strong demand for concrete sand and aggregates, although the market for road base products was depressed, especially in southern Tasmania.

The business produced in excess of one million tonnes for the year, one third of which was aggregates for the concrete, asphalt and spray seal markets. This includes 150 000 tonnes of sand.

All quarries have extensive reserves at current levels of demand. It is proposed to open up a new area of the Launceston quarry during the current year.

The Launceston primary crusher is being upgraded to accommodate the hard dolerite stone, and it is hoped that the new crusher will reduce the downtime and maintenance associated with the old crusher. A new tertiary crusher is proposed for the Bridgewater quarry.

Environmental management plans are in the process of being upgraded for each of the quarry operations and it is hoped these will be complete by the end of the year. Rehabilitation is underway at a number of redundant operations around Tasmania.

BIS Industrial Logistics

This company operates five quarries in northern Tasmania, at Ridgley, Western Junction, Talisker and Birralee, mining basalt, dolerite and quartzite. Eighteen people were employed. Overall production was 647 000 tonnes, with 20 000 cubic metres of overburden being removed.

Ongoing progressive rehabilitation is continuing at all sites. Changes in operating procedures and updating dust suppression equipment have reduced the emission of airborne dust from fixed plant.

The company maintained certification to 9001, AS48001 and ISO14001. This incorporates compliance to DIER specifications and Australian Standards for pavement materials and aggregates. It also encompasses occupational health and safety and environmental compliance which is controlled by the application of standard operating procedures within the scope of the certification.

The operations have exceeded twelve years without lost time injury.

Caroline Quarries

This company employs two people to produce 12 400 tonnes of silica at its quarry at Railton. The quarry

continued to be worked on its westerly bench with no new developments.

An area containing large unusable rock was landscaped and covered with sand ready for topsoil application in the future. Drainage controls were improved by increasing capacity of the settling ponds and installing two new ponds.

Duggans Pty Ltd

This company operates a quarrying and contracting operation in the Huon Valley and manufactures precast concrete in the south and north of the State. Nine people are employed in quarrying, transport, administration and maintenance.

Production comprised 38 000 tonnes of construction material, 72 000 tonnes of road material, and 6000 tonnes of construction sand.

Major projects supplied were the Meander Dam, Aurora Operations Centre at Cambridge, a reactor tank for Norske Skog at Boyer, Huon Aquaculture freshwater hatchery at Lonnavele, and Bay Renaissance Apartments at Burnie.

Ongoing maintenance of sediment ponds, vegetation screening, and recycling of concrete waste was carried out during the year.

Fieldwicks

This company employs 64 people in a variety of quarries across the northwest and east coast of Tasmania.

Production for the year totalled 169 000 tonnes of gravel materials, 31 000 tonnes of sand and fill, and 21 000 tonnes of sealing and drainage aggregates.

Gaspersic Contracting P/L

This company operates three quarries, at Halls Creek, Newall Creek and Tullah on Tasmania's west coast. Twenty people are employed. Production for the year was 22 000 tonnes of road making and concrete product.

Gunns Forest Products P/L

Gunns manages and intermittently operates 45 licensed quarries across Tasmania for the purpose of providing road construction and maintenance materials for a forest road network of approximately 6000 kilometres.

New construction of gravelled forest roads in 2006/2007 totalled 190 kilometres. The total direct cost of the road construction and maintenance programs for the year was \$10.7 million.

Seven full-time staff manage the quarrying and road construction programs, with quarrying and road construction being performed by contractors under the supervision of company staff. In the peak of the

construction period there were approximately 64 people engaged in quarrying and road work. This reduced to approximately 20 people during the winter months when most activity was road maintenance. Approximately nine full-time equivalents would have been engaged in quarrying.

Approximately 120 000 tonnes of material was mined and removed from licensed quarries. All licensed quarries are subject to the provisions of a management plan which includes a requirement to progressively rehabilitate and restore mined-out sections of quarries.

Gunns Forest Products Pty Ltd has a certified Environment Management System compliant with ISO 14001. In addition, the company's forestry operations and forest management system is certified compliant with the Australian Forestry Standard, which includes quarrying and road activities. All forestry activities, including quarrying and road works, are subject to annual independent third party surveillance audits.

Hanson Construction Materials Pty Ltd

This company employs 13 people in its Hobart quarry at Flagstaff Gully and two in its sand pit at Calder.

The Hobart quarry produced 180 000 tonnes of aggregates and 100 000 tonnes of road materials. With no major road developments in southern Tasmania the Hobart quarry continues to rely on aggregate and stone sales to small subdivisions, and concrete and block businesses.

Sand production at Calder totalled 75 000 tonnes. Calder quarry sales are reliant on concrete production and production from Hanson Building Products.

Reserves and resources

Ongoing studies and discussions with the Clarence City Council and DIER are being undertaken to establish the most appropriate extension application for the Hobart quarry.

Rehabilitation and pollution control

Overburden stripping has been stockpiled for future rehabilitation work at the Hobart quarry. Rehabilitation continues in all areas at the Hobart quarry with a focus on eliminating pampas grass, with successful results. Enclosure of the primary crusher was undertaken in 2007 to further reduce noise and dust emissions.

The Calder quarry rehabilitation plan has been completed and work is progressing, with the SW Pits 1 and 2 80% rehabilitated and West Central Pit 100% rehabilitated.

HBMI Pty Ltd

HBMI operates a dolerite quarry at Leslie Vale, fourteen kilometres south of Hobart. Twenty-two people are employed at the operation, with a further thirty subcontractors in delivery and maintenance as required.

Production for the year totalled 590 000 tonnes, with 535 000 tonnes of road base material and 55 000 tonnes of

concrete and asphalt aggregates. The largest percentage of these materials was for the road construction and housing industries.

During the year a resource management plan was developed up to 2040. This takes into account overburden management, new haul roads required for expansion and production requirements over this period.

Rehabilitation is ongoing, with significant tree planting taking place in selected areas and a five-year maintenance contract being undertaken for the eradication and management of pampas grass, broom and other noxious weeds as recognised.

A 50 tonne Hyundai excavator was purchased for the Leslie Vale quarry and a WA 430 wheel loader was purchased for the mobile plant division. An upgrade of the secondary plant was designed.

Industrial Sands & Silica Pty Ltd

This company operates quarries at Marshalls Creek (Port Sorell) and Northdown in northern Tasmania. Two people are employed. Production from the quarries totalled 6100 cubic metres of road gravel, 6300 tonnes of silica, and 1100 tonnes of sand.

Island Resources Pty Ltd

This company operates a quarry near Scottsdale, in northeast Tasmania, producing a range of sand and gravel products.

Lloyds North

This company employs nine people in its quarries at Kimberleys Road and Riggs Road near Ulverstone.

At Kimberleys Road production comprised 67 000 tonnes of aggregate and 45 000 tonnes of base course material. Compliance with the environmental protection notice continued. Plant safety was upgraded and processes improvements were carried out.

At Riggs Road production was 92 000 tonnes of basalt. The Riggs Road environmental management plan is under review. Capital expenditure included oversize rock reduction and excavator replacement.

Males Sand

A sand pit and washing plant are operated at South Arm in southeast Tasmania. Up to ten people, including casual staff, are employed. The pit also supplies sand to RNB Trading Pty Ltd.

Sand production totalled 127 000 tonnes, of which 13 000 tonnes were washed. About 3500 tonnes of stripping was required, with 500 tonnes of silt reclaimed from the settling ponds.

Resources of coarse sand are dependent on the salinity of groundwater as pits are developed below the water table,

but it is estimated that 10 to 20 years supply of material remains to be extracted.

Significant projects supplied were Hydro Engineering, Aurora, Harvey Norman construction and Hobart Airport upgrades at Cambridge.

In conjunction with RNB Trading an application was made to extend sand extraction at the western end of the Mining Lease where resources of dune sand are nearing exhaustion. Approval has extended the life of the operation by approximately nine months.

Norske Skog

Norske Skog operates a newsprint mill at Boyer in southern Tasmania. The company is responsible for a road network in State forest and private roads which are used primarily for timber harvesting and transport. Approximately twelve kilometres of new forestry roads were built during the year with upgrading and maintenance of existing roads continuing. Twelve people were employed in quarrying operations.

Production for the year totalled 32 000 tonnes of raw, crushed and screened material for road making throughout the forestry operations, using combinations of raw, crushed and screened material from 25 mm to 150 mm. The majority of material is won by dozer/excavator operation with minimal drilling and firing. Reserves in the existing quarries are unknown but should be sufficient for ten years.

Approximately \$25,000 was spent on partial rehabilitation of two operational quarries. Two quarries were

rehabilitated and are being monitored for surrender, while three quarries were officially handed over to Forestry Tasmania.

RNB Trading Pty Ltd

Five people are employed in sand extraction in conjunction with GL & DH Males and London Marsh Pty Ltd.

Production from Potato Hill near George Town was 19 000 tonnes.

The company is planning to develop sand resources at Seven Mile Beach near Hobart. Environmental management plans are being drafted for this proposal.

Stornoway Quarries Pty Ltd

This company operates quarries at Frankford, Raeburn and Birralee in northern Tasmania. Four people are employed in the operations. Production for the year was 200 000 tonnes, with sales of 188 000 tonnes. The company mainly supplies pavement materials to forestry and council operations.

Treloar Transport

This company operates from a quarry at Shackley Hill near Sheffield and from five other sites in northern Tasmania. Major products are crushed stone and gravel.

Mineral Processing Operations

Cement Australia Holdings Pty Ltd

This company manufactures cement from limestone quarried at Railton. Market conditions remained buoyant throughout the year, providing strong demand for product in both mainland and local markets.

Production

Total production of cement clinker from the plant's kiln was 1.06 million tonnes for the year. This clinker was used to produce 1.27 million tonnes of cement, the majority (1.17 million tonnes) of which was shipped to Victoria and NSW via the Port of Devonport. Of the remaining production 115 152 tonnes was used for the local Tasmanian bulk and bag markets. Total dispatches from the Railton factory were 1 176 357 tonnes.

Employment

A total of 146 people are employed full time at the mine and plant, including 11 contractors.

Capital expenditure

Capital expenditure for the period totalled \$14.5 million.

The upgrade of cement mill No. 4 was completed in February at a cost of \$7.5 million. The upgrade included the replacement of the mill precipitator with a dust collector which will dramatically reduce dust emissions from the mill.

Browns Creek, which runs through the mine, has been lined with plastic at a cost of \$3.5 million. This will help reduce turbidity in the water leaving the mine site.

Other projects approved before June 2007 are a kiln precipitator replacement with a bag filter (\$19.2 million), high viscosity fuel plant (\$2.8 million), and advanced mine de-watering (\$1.3 million).

Rehabilitation and environmental control

Rehabilitation of the Old Mine continued with revegetation of the Old Mine buttress occurring in April using hydromulch and native seed mix collected locally. Annual weed control programs, including slashing and spraying of declared weeds, was conducted in early 2007. Monthly groundwater bore checks and water quality testing was ongoing throughout the year.

A total of 2.451 million cubic metres of topsoil was stripped and stockpiled for future rehabilitation. All of the material came from the East Cutback Stage 2 area.

Work on the Site Water Management Plan continues. This plan will address issues surrounding the management of groundwater and surface water from mining and cement manufacturing operations. Stage 1 – Surface Water Management involved the lining of over two kilometres of the Browns Creek drain to improve water quality. The project is expected to be completed in late 2007. Design and feasibility of stages 2 and 3 water treatment and groundwater bores is under consideration.

Development

About 201 000 cubic metres of clay were stripped from the eastern cutback stages 1 and 2, with most of the material coming from stage 2. Eastern Cutback 1 still has pinnacle zone material exposed as well as some fresher material, particularly in the north. Eastern Cutback 2 is still predominantly clay with pinnacle stone exposed in some areas. Further expansion of the pit in the 2007/2008 financial year is planned for Eastern Cutback Stage 2.

Rio Tinto Aluminium (Bell Bay) Ltd

This company operates an aluminium smelter at Bell Bay. A total of 558 direct employees and 70 contractors are employed in the operation.

Production for the year totalled 179 000 tonnes of metal which is a record for the smelter.

Capital expenditure for the operation was \$22 million. Major items included:

- back-up rectifier for potlines 2 and 3;
- alumina unloading system;
- dross processing facility;
- hot metal road;
- oil containment for a substation transformer;
- coke blending facilities;
- cell tending machine automation.

The company has reported on several environmental programs recently carried out.

Reducing fugitive fluoride emissions

Work practices and procedures were reviewed and the installation of a Boreal laser fluoride monitoring measurement system has enabled operators to gain direct 'real time' feedback on the environmental performance of the potlines.

Improved air quality monitoring

A new state-of-the-art sulfur dioxide (SO₂) air monitoring station was established near the smelter's wetlands during 2006. The results are used to determine if the level of SO₂ emissions comply with the limits of the environmental permit. The results are also of value when determining ambient SO₂ levels in the overall Bell Bay air shed.

Another significant step towards understanding air quality in George Town and its surrounding environment was taken in 2006. A number of local industries, including Rio Tinto Aluminium Bell Bay, signed a partnership with the Tasmanian Department of Tourism, Arts and the Environment to establish a George Town air monitoring station. The station will be funded by industry and operated by the Department. The data collected will be validated by environmental experts with results reported regularly to the local community. The station will continuously measure

airborne dust, particulates PM¹⁰ and PM^{2.5}, nitrogen oxides, sulfur dioxide and polycyclic aromatic carbons.

Spent potline cell lining

The management and disposal of spent cell lining (SCL) material is a major challenge for the global aluminium industry. The potential for SCL to be used in cement manufacturing is being investigated. Cement Australia agreed to a trial at their Railton plant using SCL as a feed stock in their process. A number of performance indicators were closely monitored during the trial to assess the technical and commercial viability of the experimentation.

Red mud trial

The King River Action Group, based on Tasmania's West Coast, is using an historic waste product referred to as 'red mud' to assess its potential to remediate an area affected by acid mine drainage. Red mud is alkaline with a high pH value and was a by-product from the production of alumina, an activity that ceased at the Bell Bay smelter in the 1970s. The volunteer group has spent many hours revegetating a number of trial plots along the river and reported encouraging results with at least fifteen species of plants growing well.

Tasmanian Electro Metallurgical Co Pty Ltd (TEMCO)

This company operates an electro-metallurgical smelter making ferro-alloys at Bell Bay. The company employs 274 people, with 238 in production and 36 in administration.

Production for the year comprised 133 816 tonnes of ferro-manganese, 105 800 tonnes of silicon-manganese and 199 012 tonnes of sinter. Sales totalled 123 747 tonnes of ferro-manganese, 109 239 tonnes of silicon-manganese and 47 464 tonnes of sinter.

Environmental controls

The company has reported on several environmental programs recently currently carried out:

- Accreditation to ISO 14001 has been maintained.
- Land care of the TEMCO site has focussed on improving visual amenity and increasing native plant diversity.
- Research has been carried out into reduction of furnace trip emissions.
- A regional air quality monitoring station is an initiative between Bell Bay industries and state and local governments.
- Continued support was provided of the rare and threatened species partnership with the Royal Tasmanian Botanical Gardens. The RTBG has propagated and grown rare plant species and established a valuable data base.
- The installation and commissioning of an optimised wet scrubber system was completed.
- On-going research into fume dam mud recycling was carried out.

Major projects

A total of \$13.7 million of capital was spent on major projects completed or in progress. This included:

<input type="checkbox"/> New Loader	\$1,130,000
<input type="checkbox"/> Wet scrubber sinter plant completion	\$957,000
<input type="checkbox"/> Spare transformer for furnace 1	\$584,000
<input type="checkbox"/> Replacement of product crushing and secondary screening crusher	\$402,000

Zinifex Hobart Smelter

This company employs 612 people at its electrolytic zinc refinery in the Hobart suburb of Risdon. Production for the year totalled 255 000 tonnes of zinc, 436 500 tonnes of sulphuric acid and 1450 tonnes of copper sulphate.

Safety performance

During the year the site achieved a third consecutive record safety achievement with a medically referred injury frequency rate of 5, a fall of 58% over the previous year. The site recorded a lost time injury frequency rate of 2.5, which was in line with the previous year.

Environmental initiatives

The stormwater collection capacity was increased with the construction of a twelve megalitre stormwater retention pond and a bio-treatment system at a cost of \$2 million. Water from the stormwater collection pond will be recycled and used as a replacement for potable water in some sections of the plant, to reduce external consumption.

The groundwater recovery program is being extended with the aim of halving heavy metal flows into the Derwent Estuary via groundwater. Progress was made with the design works on installation of horizontal bores below the Electrolysis Department to passively drain contaminated groundwater. Preliminary drilling works and installation of test bores have been completed. This investigation has provided data for modelling and design of the recovery bore configuration. This work will continue in 2007/2008 and future years.

Two agreements were finalised that will see the recycling of 500 000 tonnes of a zinc-bearing by-product from earlier operations, known as HLP1, from August 2007. The sale of HLP1 is in line with the company's goal to address historical environmental issues and eliminate site stockpiles.

A total area of 15 000 m² of land at two strategic locations was planted with native trees, plants and shrubs. The southern wharf foreshore area has been revegetated to soften the view from the River Derwent and Eastern Shore. Revegetation as part of the car park upgrade will provide screening along the southwestern boundary to improve the vista for residents in Lutana.

Capital projects

This financial year \$31.4 million of capital was expended on over 180 separate projects.

The largest expenditure was on process equipment, services infrastructure and structural refurbishment or replacements.

A key project, valued at more than \$5 million, was to automate zinc ingot handling using robots and to introduce an automated labelling machine. The automated zinc stacker/strapper has brought occupational health and safety benefits by removing the need to manually stack ingots.

An auxiliary rectifier and electrical infrastructure worth \$4 million was installed to improve the security and flexibility of power supply options into one of the cell-house units

Other developments

In December 2006 Zinifex announced its intention to merge its zinc and lead smelting and alloying businesses with those of Belgian-based materials technology company

Umicore, to create the world's pre-eminent zinc metal producer with operations on four continents.

This joint venture, Nyrstar, was officially formed on 1 September 2007. At this time ownership of the Hobart Zinc Works transferred from Zinifex to Nyrstar. The new company is incorporated in Belgium and headquartered in London, with regional support centres in Melbourne (Australia) and Balen (Belgium).

Nyrstar has a presence in both the world's largest and fastest growing zinc markets and the strategic focus to pursue significant growth opportunities. The company will produce approximately 1.2 million tonnes of zinc and quarter of a million tonnes of lead per year and employ some 4,500 people.

ANNUAL REPORT

Rehabilitation of Mining Lands Trust Fund

Mineral Resources Tasmania administers the Rehabilitation of Abandoned Mining Lands Trust Fund which is used to carry out rehabilitation of abandoned mining lands in Tasmania. The Trust was established following the proclamation of the *Mineral Resources Development Act 1995*. The State agreed with the mining and quarrying industries to use part of mining royalty raised by the Act for the rehabilitation of Crown land affected by historic mining disturbance. A total of approximately \$182,000 was spent from the fund during the past year, with the major program being mine shaft capping at Lefroy in northeast Tasmania.

Shaft Safety

- ❑ A program to address safety risks posed by abandoned mine shafts on the Lefroy goldfield continued this year. Safety work was carried out on a total of forty-six shafts during this period by either capping open shafts with concrete panels, fencing around shafts, or installing guard rails. Expenditure totalled \$78,500.
- ❑ Six water race shafts adjacent to Waratah Road at Waratah were capped with concrete panels. Expenditure totalled \$18,400.
- ❑ Pre-cast concrete panels were fabricated for an upcoming safety program at the Golden Mara mine site near Warrentinna. Expenditure totalled \$17,500.

Other minor safety work encompassed:

- ❑ Backfill of a small roadside shaft at Luina.
- ❑ Several collapsed stopes at Tullah were backfilled.
- ❑ Hazard signage was erected at Tunnel Hill, south of Renison Bell, and Royal George.
- ❑ A safety fence around the Queen No. 4 shaft at Zeehan was repaired and fitted with hazard signs.

Expenditure for these four items totalled \$1,500.

Storys Creek

A three-year water sampling program to assess the impact on water quality of previous remediation work at Storys Creek was concluded this year. Results suggest a general improvement in water quality following the completion of the remediation works.

Expenditure totalled \$3,200.

Program maintenance and monitoring

Site maintenance, including infill seeding, fertilising, weed management and erosion control, was carried out at four

revegetation sites established in previous years. The aim of maintenance is to ensure the ongoing value of benefits derived from rehabilitation programs.

Monitoring and maintenance during 2006/20 07 was carried out at:

- ❑ Storys Creek — weed management on the revegetated tailings repository. Repair of erosion control and surface water diversion features at the old precipitate dam site, removal of sediment from precipitate ponds and repair of pond spillway. Preparatory work was also carried out for a revegetation program at the precipitate ponds site to commence during late winter of 2007 (\$13,400).
- ❑ Badger quarry, Sheffield — fertilising and weed management (\$5,200).
- ❑ Balfour — site monitoring and spreading of slash over vulnerable areas to enhance emergent vegetation (\$10,200).
- ❑ Argonaut mine site at St Helens — site monitoring, erosion control and revegetation maintenance (\$3,100).
- ❑ Oonah Mine, Zeehan — weed control and water quality monitoring of mine drainage diversion program carried out during 2005/2006 (\$3,400).

Expenditure totalled \$36,300.

Quarry rehabilitation

The program to revegetate Punched Terror quarry at Dunorlan continued. Activities during the year involved spreading local provenance native plant seeds, slash laying and weed management.

Expenditure totalled \$8,300

Funding was provided to the Parks and Wildlife Service for maintenance of the Rocky Cape quarries rehabilitation program carried out during 2005.

Expenditure totalled \$10,000

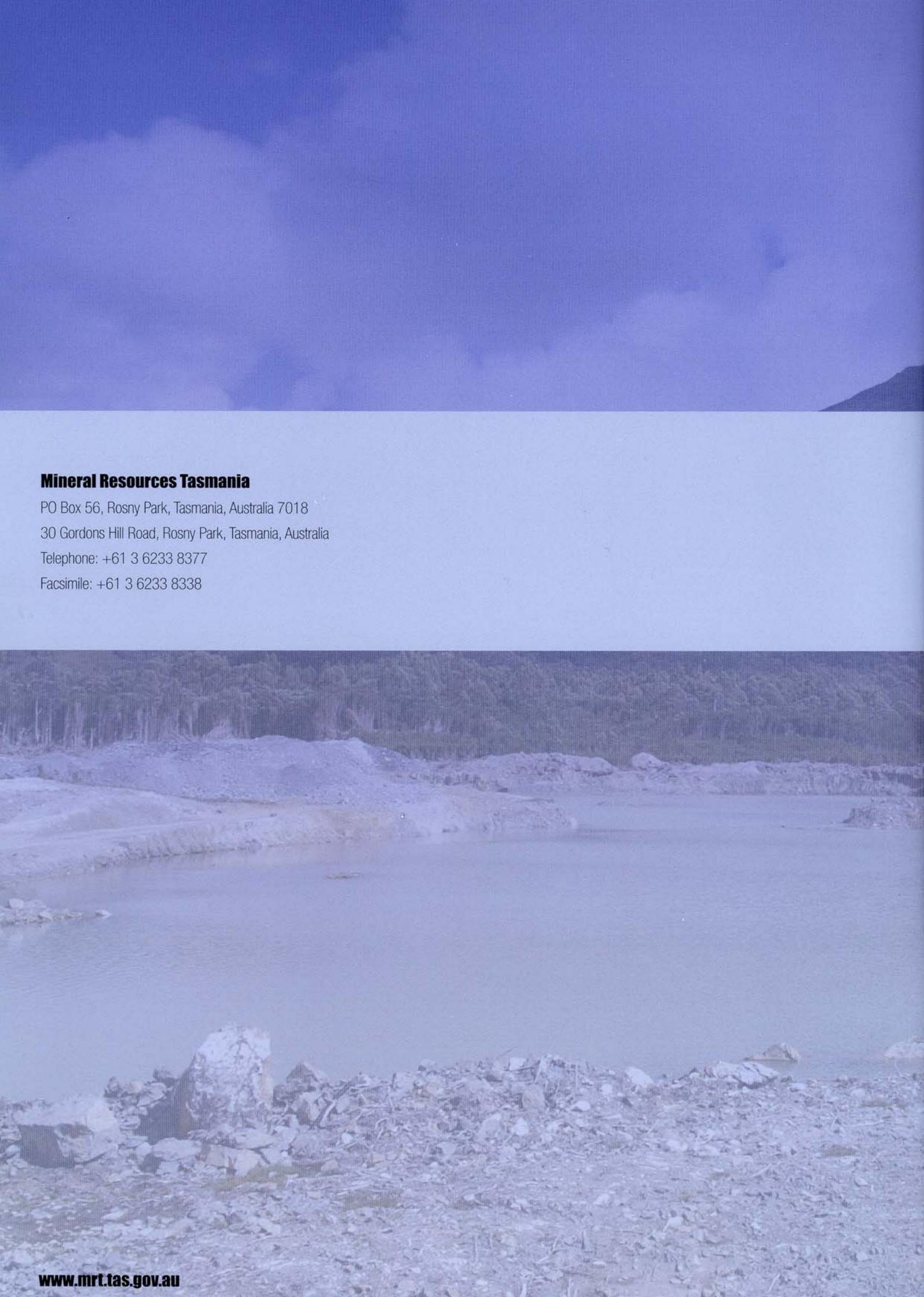
Queensberry Track gorse control

An on-going program of weed control at the abandoned Queensberry mine, managed by the Parks and Wildlife Service, again received funding.

Expenditure totalled \$5,000.

Incidental costs

Incidental costs (salaries, catering, vehicle registration, equipment maintenance) totalled approximately \$3,300.



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