

Our processes transform ilmenite into high grade synthetic rutile, a preferred feedstock for the production of titanium dioxide, a pigment used in the paint, plastics and paper industries.



# Annual Report 2004



Plastics

Paint

Paper

| A               | R         |
|-----------------|-----------|
| ERMS            | Pigment   |
| technologies    | EARS      |
| SR              | mineral   |
| manufacture     | LTR       |
| ilmenite        | brilliant |
| paints          | synthetic |
| titanium        | Plastics  |
| paper           | dioxide   |
| rutile          | global    |
| chloride        | Process   |
| value           | feedstock |
| roasting        | leaching  |
| material        | chemical  |
| competitive     | quality   |
| environmentally | global    |
| friendly        | deposi    |
| ent             | tempe     |

Annual Report 2004



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# Chairman's Review 2004

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During this year Austpac has been transformed from a company concentrating solely on the synthetic rutile industry, to a company also capable of processing minerals for other industries. This new strategy to broaden the commercial applications for our technologies has already shown promise in the iron and nickel industries, and we are continuing to evaluate further opportunities.

The Company's Newcastle pilot plant was fully utilised during the year with testwork programs for New Zealand Steel, Inco of Canada, BeMaX Resources and several other international corporations. Through these continuous activities, the plant was self sufficient during the 2004 financial year, assisted also by a Research and Development tax concession rebate.

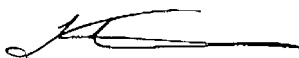
While the original time frame for the bankable feasibility study for a 30,000 tpa ERMS SR synthetic rutile plant has been extended, funds are now being secured to allow the upgrade of the Newcastle pilot plant. The objective is a pilot plant that is fully integrated and includes EARS acid regeneration and iron metallisation, with sufficient operating capacity to ensure that the scale up factor to the large plant is 25 times or less. The plant will have a capacity of around 1500 tonnes per year.

In 2005, we envisage the Company will be poised to embark on its first major commercial venture with the planned ERMS SR plant supplying high grade feedstock to the titanium pigment industry.

The construction of the Low Temperature Roaster for New Zealand Steel near Auckland clearly demonstrated the LTR technology at commercial scale. This multi-million dollar demonstration plant provided valuable experience to the Austpac team in the rapid construction and operation of industrial roaster facilities. The LTR process, which conditions iron minerals, including ilmenite, to allow their recovery, has now been proven and licensed to two groups.

On behalf of the board and management I would like to thank Mr Alf Paton and Mr Harold Hines, who both retired as directors during the year, for their dedicated efforts over the past years to commercialise Austpac's technologies.

Austpac has evolved over the last year from a group focussed on beneficiating titanium minerals, into a company whose technologies have broader industrial applications and are proven in the iron and nickel industries. Our innovative engineering team and our sophisticated pilot plant facilities continue to attract a diverse range of companies wishing to enhance their projects or operations, so creating new commercial opportunities for the benefit of our shareholders.



**T. Cuthbertson**  
*Chairman*



**AUSTPAC**  
RESOURCES N.L.

# Technology Overview and Significant Events

Austpac's innovative processes include technology to transform ilmenite into high grade synthetic rutile, a preferred feedstock for titanium dioxide pigment production. The technologies can also be used to beneficiate a range of heavy minerals, as well as process waste chloride streams from a number of industrial operations.

Austpac's patented **ERMS** (Enhanced Roasting and Magnetic Separation) process is a very efficient high temperature roasting process for upgrading ilmenite so the ore can be used in the production of either titania slag, synthetic rutile or pigment by the chloride process.

A second patented technology, **EARS** (Enhanced Acid Regeneration System), is an economical and environmentally friendly process to regenerate hydrochloric acid from iron chloride solutions. EARS has also been proven for nickel chlorides and is applicable to other metal chlorides.

The **ERMS SR** (ERMS Synthetic Rutile) process combines parts or all of Austpac's technologies and know-how to cost-competitively produce the world's highest grade synthetic rutile feedstock for the chloride TiO<sub>2</sub> pigment process.

The **LTR** (Low Temperature Roasting) process is now proven for conditioning and separating ilmenite suitable for both the chloride and sulfate pigment production processes. The LTR process can also recover and condition iron minerals for use in the steel industry.



Austpac's latest patent application covers the development of a **CLR** (Continuous Leach Reactor) for leaching ilmenite. The CLR system produces synthetic rutile more efficiently than the commonly used batch processes.

The **BTS** (Beneficiated Titania Slag) method combines Austpac's roasting, leaching and acid regeneration technologies to enhance the value of titanium dioxide slag.

Austpac's prime objective is to use its technologies to become a synthetic rutile producer. The Company has therefore decided to establish a **30,000 tpa ERMS SR plant** by obtaining agreements for the long term supply of ilmenite and for the sale of the synthetic rutile product. In late 2003, Austpac concluded the appropriate agreements with **Consolidated Rutile Limited** and **Iluka Resources Limited** to assist the establishment of the first ERMS SR plant.

During 2004, **New Zealand Steel Limited** constructed a 2.5 tph LTR plant at its Glenbrook Steel Works in New Zealand using Austpac's LTR process to recover and condition some of the iron minerals that are being lost in the mining operations at Waikato North Head. This proved the commercial effectiveness of Austpac's LTR technology.

Under a licence agreement with **BeMaX Resources N.L.**, Austpac's LTR roasting technology will be used to upgrade ilmenite from the Ginkgo heavy mineral deposit in south-western NSW. Final test work for BeMaX was completed as part of the detailed design phase of the LTR unit. Commencement of construction is now subject only to final project finance.





# Directors' Report on Operations

## Key Features of Austpac's Technologies

Austpac has developed six innovative processes for the treatment of heavy minerals, which have direct application to the mineral sand, the titanium dioxide and other industries. These are:

- 📌 **ERMS: Enhanced Roasting and Magnetic Separation**
- 📌 **EARS: Enhanced Acid Regeneration System**
- 📌 **ERMS SR Process**
- 📌 **LTR Process**
- 📌 **CLR Process**
- 📌 **BTS Process**



Schematic diagram of a 30,000 tpa ERMS plant (right) and its companion EARS plant

## Contaminant Removal – Upgrading Ilmenite

**ERMS** is a high temperature roasting process, which selectively magnetises ilmenite so that it can be easily separated from other minerals, such as deleterious chromite. Ilmenite is a common mineral that is composed of iron oxide and titanium dioxide. In an ERMS roast, the titanium component is converted into the rutile form, which is insoluble in acid, while the iron component remains soluble. ERMS-roasted ilmenite is suitable for the chloride process, for titania slag production, or for making high grade synthetic rutile.

## Reducing Costs by Recovering Acid

**EARS** is a process for regenerating hydrochloric acid from spent iron chloride liquors produced by leaching ilmenite. Iron chloride leach liquors that are processed in an EARS plant produce strong (super-azeotropic) acid, while the iron is converted into a metallised form suitable for use in the steel industry.

## Producing High Grade Synthetic Rutile

The **ERMS SR** process combines Austpac's technologies and know-how in a number of innovative but well-proven process steps to produce a very high grade synthetic rutile from any type of ilmenite. Ilmenite is initially conditioned with a modified ERMS roast, and then rapidly leached at atmospheric pressure in strong hydrochloric acid to remove the iron, leaving a network of rutile crystals in the former ilmenite grain. This "synthetic" rutile is then washed, filtered and heated (calcined) to make the final saleable product.

The ERMS SR process has the unique advantage of producing a very high grade product (typically 96% to 98% TiO<sub>2</sub>), significantly higher grade than most other commercially available synthetic rutiles. The ERMS SR process is the only continuous synthetic rutile process in the world, and it produces a saleable iron co-product rather than the waste iron oxide muds produced by other synthetic rutile processes. The ERMS SR process is the most environmentally friendly process for the production of synthetic rutile, and an ERMS SR plant is less capital intensive than synthetic rutile plants employing other processes.

## Applications Over Wide Range of Metal Products

The **LTR** process was developed to separate ilmenite from deleterious heavy minerals so that the ilmenite is still suitable for use in both the sulfate and the chloride pigment processes. By using a low temperature fluid bed roasting technique, the magnetic susceptibility of the ilmenite can be enhanced sufficiently to allow magnetic separation without affecting its solubility in sulfuric acid. The LTR process has also been used to upgrade iron minerals for the steel industry.

## Increasing the Efficiency of Leach Operations

The **CLR** process uses a proprietary vessel designed by Austpac to continuously leach ilmenite. It replaces the batch system still used by other synthetic rutile producers. The CLR process simplifies operations and reduces the size of the equipment, which is reflected in lower capital and operating costs for the leach section of an ERMS SR plant.

## Improving the Quality of Titania Slag

The **BTS** process was developed in conjunction with Iscor of South Africa. BTS combines the Company's roasting, leaching and acid regeneration technologies to increase the TiO<sub>2</sub> content of slag and thereby enhance its market value.

# Directors' Report on Operations



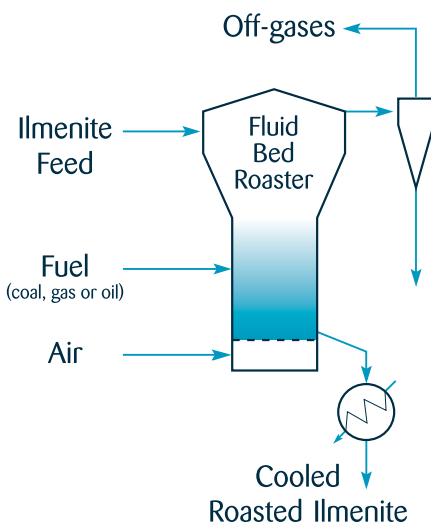
Matt Creely preparing the new reduction roaster

## Developments at the Kooragang Island Pilot Plant

The Company's facilities at its Kooragang Island pilot plant were upgraded further during the year. Many of these developments are novel and some are eligible for R&D tax rebate payments. Some innovations have arisen from the application of proprietary know-how and therefore for commercial reasons are not described in detail in this report.

Important improvements include:

- ▣ The Low Temperature Roasting (LTR) process has been developed further and optimised. Auspac's engineering team was involved in the design, commissioning and operation of the 2.5 tph LTR plant in New Zealand, and as a consequence we have developed operational procedures that will be invaluable for all future roasting operations.
- ▣ The 250mm diameter fluid bed reduction roaster (FBR) is being upgraded to a larger 350mm diameter FBR so that a more conservative scale up ratio of 25:1 or less between the pilot plant and the proposed 30,000 tpa ERMS SR plant can be achieved. The lower the scale up factor, the greater the certainty in implementing commercial operations.
- ▣ A Rare Earth roll magnet has been acquired to complete the full range of magnetic separation equipment at the pilot plant. This new magnet is an important final step in the ERMS SR flowsheet because it ensures that high grade SR is consistently achieved.
- ▣ The novel anaerobic solids cooler was built and tested at the pilot plant, and a larger version of this cooler was installed in the LTR plant in New Zealand, where it successfully operated throughout the program at design capacity. The cooler reduces the temperature of roasted minerals from more than 850°C to less than 80°C, thus avoiding re-oxidation, and facilitating magnetic separation.
- ▣ The Continuous Leach Reactor (CLR) has been improved to simplify the leach process, while reducing the capital and operating cost within the leach section of an ERMS SR plant. A full scale unit will be tested at the pilot plant as part of the bankable feasibility study. This reactor will also have applications in other industries that currently use batch processes for leaching.
- ▣ Further test work was undertaken on the direct reduction of the iron oxide pellets produced by the EARS acid regeneration process. Metallisation of the oxide yields a pelletised iron product that is suitable as a substitute for scrap iron as a feed for arc furnaces in steel making. Market analysis indicates there will be a good demand for this co-product, further enhancing the revenue from an ERMS SR plant.



Craig Ferris takes delivery of a new load of ore for commercial test work

- ▣ Single stage oxidation roasting on Stradbroke ilmenite has confirmed that acceptable ilmenite conversion can be achieved, simplifying the ERMS SR process and lowering the capital cost. Newhope coal was used for this test, thus generating data for the bankable feasibility study.
- ▣ The LTR "standard reference test" roasting procedure continued to be refined using a variety of ilmenites to verify the reliability of the test. Synthetic reducing gas is now used to ensure consistency.

# Directors' Report on Operations

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Craig Ferris taking HCl acid sample from EARS leach vessel

## The Commercialisation of Austpac's Technologies

Austpac has developed new processes that have application in the heavy mineral sand industry and in other industries. These processes evolved from Austpac's assessment of an ilmenite project at Westport, New Zealand, which led directly to the invention of the ERMS roasting process. Our engineers also investigated the manufacture of ultra-pure synthetic rutile for direct use in the pigment industry. Since 1995, we have focused primarily on synthetic rutile because we believe there is a ready market for a high grade product as a feedstock for titanium dioxide production via the chloride process. More recently, technologies such as the LTR and CLR processes were developed by our technical team in response to challenges encountered during the optimisation of the ERMS SR process.

Austpac intends to enter the synthetic rutile business as a participant rather than a technology provider and therefore the ERMS SR process will only be used in projects in which Austpac has a participating interest. During 2003, Austpac's Board decided that the fastest way to commercialise our core technology was to develop the first ERMS SR plant on its own rather than through a joint venture. The company has gained access to a supply of ilmenite and negotiated contracts for the sale of the synthetic rutile product.

The Company's secondary objective is to license appropriate parts of our technologies to groups not involved in synthetic rutile production and so generate income for Austpac. Examples of this strategy are the LTR licence with BeMaX Resources to lower the chrome content in ilmenite concentrates produced from the Pooncarie project in the Murray Basin, the licence with New Zealand Steel for the use of the LTR technology in a 2.5 tph test plant for the recovery and treatment of iron minerals, and the BTS and EARS licences with Kumba Resources.



John Winter operating the Rare Earth magnetic separator



# Directors' Report on Operations

## ERMS SR Plant, East Coast Australia

Austpac's prime objective is to establish a commercial plant using the ERMS SR process and the Company plans to build a 30,000 tpa plant producing the world's highest grade synthetic rutile for export. A long term supply of ilmenite feedstock and a contract for the sale of the synthetic rutile product are essential to ensure this project is bankable.

In October 2003, Austpac entered into an agreement with Consolidated Rutile Limited (CRL) for the long term supply of ilmenite to a 30,000 tpa ERMS SR plant proposed by Austpac for the eastern seaboard of Australia. This plant will produce very high grade synthetic rutile ( $> 97\% \text{ TiO}_2$ ) which will be sold as feedstock for the manufacture of titanium dioxide pigment and/or titanium sponge, an intermediate process in the production of titanium metal. At the same time, Austpac also signed an agreement with Iluka Resources Limited (Iluka) for the sale of synthetic rutile to Iluka from the proposed ERMS SR plant. Both contracts are subject to the successful completion of a Bankable Feasibility Study (BFS) by Austpac.

The BFS will cost \$4M and these funds are presently being sought via a Shareholder Share Purchase Plan. Of this amount, \$2.5M will be used to upgrade the Kooragang Island facility to reduce the scale up factor from the pilot plant to the 30,000 tpa plant and to operate the plant for sufficient time to generate data for final engineering design. The remaining \$1.5M will be used to prepare the independent BFS report and cover financing costs.

The estimated cost of the 30,000 tpa plant is \$50M. The prefeasibility study indicates the project will be economically robust, with a before tax net operating cash flow of over \$18M p.a. and an IRR of 29%.

The BFS will take approximately six months to complete, including three months work at the Kooragang Island pilot plant on a bulk sample of ilmenite concentrate to obtain the final process parameters for the flowsheet. This will be followed by detailed engineering, design and costing of the ERMS SR plant by an independent engineering consulting group. Project financing will follow a positive outcome and a decision to commence project construction could be made as early as the second half of 2005. Construction and commissioning will take 15 months and, provided funds are in place, production will commence in 2006.



Matt Creely working on the new reduction roaster



John Winter and Ernie Walpole discuss technology design issues



Craig Ferris operating our batch roaster





# Directors' Report on Operations

## Low Temperature Roasting (LTR) Plant – New Zealand

In January 2004, New Zealand Steel completed construction of a 2.5 tonnes per hour LTR plant to test the suitability of Austpac's LTR process for the treatment of tailings from the Waikato North Head iron sand mine. This technology involves low temperature fluid bed roasting to selectively enhance the magnetic and other properties of specific minerals. LTR testwork for NZ Steel at Austpac's pilot plant had shown that rejected iron minerals could be recovered and conditioned for use in the steel making process.

The LTR plant, built at the Glenbrook Steel Works south of Auckland, comprises a series of three fluid bed roasters and a magnetic separator. Austpac engineers assisted with the final stages of construction and plant commissioning. The plant operated continuously during the second quarter of this year, in accordance with the design specifications and at or above design capacity. A trial production run was completed by the end of June, by which time the plant had processed approximately 1,500 tonnes of heavy mineral concentrate and generated large parcels of iron minerals for assessment. The extended run time has successfully eliminated any process risk associated with the technology. Additionally, the development of operating, training and safety procedures for the LTR plant, together with the ability to prepare a proven mass and energy balance for the LTR process, has further enhanced the value of the technology.

The successful operation of an LTR plant over a significant time period has proven that the technology is sound and, as we are now in a position to give process guarantees, it can be confidently used commercially by companies that require low temperature roasting for their projects. A representative of one group interested in using the LTR process visited the plant during the extended roasting run and was satisfied with the plant's performance. Discussions are underway with a second group also interested in using Austpac's now-proven LTR technology.

The first commercial agreement for LTR was concluded with BeMaX Resources in 2002, and fees for the use of the process are payable once the technology is used. BeMaX plans to install an 18 tph LTR roaster to beneficiate chrome-rich ilmenite as part of the second stage of the development of the Pooncarie Project, which includes the establishment of the full scale mineral separation plant at Broken Hill. The Company is confident that additional applications for the technology will be recognised within the coming year and that the LTR process is on track for further commercialisation.



LTR roaster construction in New Zealand



John Winter monitoring LTR process control computer



# Directors' Report on Operations

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## Testwork Proves that EARS is Applicable to Nickel Chlorides

In November 2003, Inco Limited (Inco, formerly International Nickel) commenced an evaluation of Austpac's EARS hydrochloric acid regeneration process for use in the Goro nickel project in New Caledonia.

Austpac patented the EARS process in 1992 and since that time has refined the technology, primarily for the processing of iron chloride solutions generated by leaching ilmenite in the Company's ERMS SR synthetic rutile process. Inco's aim was to use the EARS process to convert nickel chloride solutions into pure nickel oxides and hydrochloric acid, and to establish whether EARS had potential to significantly reduce the capital and operating costs of the acid regeneration section of the Goro project.

An EARS testwork program using a nickel chloride was successfully completed at the Kooragang Island pilot plant early in 2004. The work proved that the EARS process is able to treat nickel chlorides and so is applicable to the nickel industry.

## Opportunities for Austpac's Technologies in India

India has ilmenite resources totalling around 300 million tonnes, or almost 20% of the world's known ilmenite. It is estimated that approximately half of this is available for mining and that the deposits generally contain 20-30% heavy minerals which is high grade by world standards. Austpac's ERMS SR process is ideally suited for upgrading Indian ilmenites.

Austpac evaluated a number of projects several years ago and believes in the long term potential for the ERMS SR process in India's heavy mineral sand industry. The Company has a representative in Mumbai and continues to evaluate opportunities on a low-key basis. However, as described earlier in this report, the immediate focus for ERMS SR is the 30,000 tpa plant in Australia, which will demonstrate the technology to the Indian market.

## Further Opportunities for Austpac's Technologies

Austpac's technologies were developed for upgrading ilmenite. However new applications have been recognised and are being evaluated to broaden the scope for the Company. As demonstrated by the work with Inco, the EARS process has been shown to have applications in the nickel industry. It also has broad application in the steel industry where large volumes of waste iron chlorides are generated by steel pickling plants, and in the galvanising industry, which produces iron and zinc chloride waste. Both the steel pickling and the galvanising industries could use the EARS process not only to efficiently recycle acid, but also to recover metal units now being lost with the waste chloride solutions.

## Heavy Mineral Sand Investigations, Exploration Licence 4521, Victoria

Austpac and its joint venture partners have conducted a diverse program of work within Exploration Licence 4521 which contains the very large, fine grained WIM 150 heavy mineral deposit. E.L. 4521 is located immediately south of Horsham in western Victoria.

An air core drilling program of 483 holes was completed to test for coarse grained heavy mineral strandlines. No economic strand line was found. A bulk sample was excavated from the mineralised sand horizon in the southern portion of the WIM 150 deposit and the pit was rehabilitated for use by the landowner as a farm dam. Parcels of WIM 150 ore were shipped to the Kooragang Island pilot plant for preparation of an ilmenite concentrate. Other samples were shipped to Roche MT's facilities in Queensland for fine grained heavy mineral separation testwork using spirals, tables and WHIMS. A series of bench scale roasting and leaching tests have been undertaken, yielding progressively better products, culminating in a synthetic rutile product containing more than 95% TiO<sub>2</sub> and very low levels of chrome, radio-nuclides and other deleterious elements. We are confident that with optimisation the TiO<sub>2</sub> level could be increased, but thus far have mainly focused on the fine grained nature of the product.

Synthetic rutile made from WIM 150 ilmenite is too fine to be used in the chloride process to make TiO<sub>2</sub> pigment. Following initial encouraging work on agglomerating this fine grained material at bench scale to produce acceptably sized, hard synthetic rutile pellets, we are continuing with agglomeration testwork on a low-key basis. Our objective is to produce synthetic rutile pellets with optimum size, hardness and density characteristics for performance in the chlorinator of a pigment plant. This work is relevant to other fine grained mineral products.



# Directors' Report on Operations

## Farm-In Agreement with Southern Titanium

In February 2004, Auspac and Southern Titanium N.L. signed a farm-in agreement to investigate the potential for the development of Auspac's WIM 150 heavy mineral deposit.

Southern Titanium will earn an 80% participating interest by completing a bankable feasibility study on WIM 150, after which Auspac may elect to maintain a 20% working interest or convert to a 10% net profit interest.

This alliance draws on the significant expertise of both parties. From its work at Mindarie in South Australia, Southern Titanium has experience in the testing and design of processes for the recovery of relatively fine grained heavy mineral sands. Southern Titanium believes advances in gravity separation processes and subsequent mineral separation of heavy minerals at fine sizes will lead to the design of a viable project around the WIM 150 resource. Auspac has already tested the upgrading of WIM 150 ilmenite, using its own proprietary processes. The deposit contains approximately 12.5 million tonnes of ilmenite. The results on ilmenites from WIM 150 and from other Murray Basin deposits have been encouraging and, through Auspac, Southern Titanium plans to undertake larger scale pilot plant work.

Southern Titanium believes that the WIM deposits in Victoria represent the most concentrated and rich sources of zircon worldwide. Given the rapidly declining ratio of zircon to ilmenite in the known but as yet undeveloped deposits there is little doubt that these deposits should become increasingly valuable. The joint venture will be able to draw on the experience gained from the production and marketing of Southern Titanium's zircon-rich Mindarie Project. The WIM 150 deposit contains approximately five million tonnes of zircon and preliminary analysis suggests that production of 140,000 tonnes of zircon per annum could be possible, which would make Southern Titanium a major supplier of zircon in the world.

Southern Titanium has collected a 5 tonne heavy mineral sand sample which will be processed to yield a zircon concentrate for market appraisal.

## Base Metal Exploration within Exploration Licence 4521

An Australian company is currently undertaking studies on samples from the base of holes drilled in E.L. 4521 during 2002/2003. This may lead to a new joint venture to explore for base metals within E.L. 4521, which Auspac has been evaluating for heavy minerals. The exploration program would target volcanic complexes in the basement rocks located at shallow depth beneath the sedimentary cover which hosts the fine grained WIM-type heavy minerals.

## Schedule of Mining Tenements Victoria at 30 October 2004

| Nature of Title                                     | EXPLORATION LICENCE 4521    | EXPLORATION LICENCE APPLICATION 4532                      |
|---|-----------------------------|---|
| Area  | 614 km <sup>2</sup>         | 614 km <sup>2</sup>                                       |
| Name  | Horsham                     | Horsham   |
| Status  | Granted 1/12/00 for 5 years | Application pending processing under the Native Title Act |
| Registered Holder                                   | Auspac Resources N.L.       | Auspac Resources N.L.                                     |
| Beneficial Interests of Auspac Resources N.L. Group | 100%                        | 100%  |

# Directors' Report

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The directors of Austpac Resources N.L., ('the Company') A.C.N. 002 264 057, present their report together with the financial report of the Company and the consolidated financial report of the consolidated entity, being the Company and its controlled entities, for the year ended 30 June 2004 and the auditors' report thereon.

The Company was incorporated as Absolajur N.L. on 12 October 1981 and changed its name to Austpac Resources N.L. on 22 May 1985, to Austpac Gold N.L. on 17 March 1986 and finally back to Austpac Resources N.L. on 20 November 1997.

## Directors

The directors of the Company at any time during or since the end of the financial year are:



**TERRY CUTHBERTSON** ACA

Age 54

**Chairman**

Mr Cuthbertson is currently Chairman of Montec International Limited and a non-executive Director of Open Telecommunications Limited. He was previously Group Finance Director for Tech Pacific Holdings Pty Ltd which generated over \$2 billion in revenues from operations throughout the Asia-Pacific Region. From 1986 to 1995 he was a Senior Partner of KPMG, specialising in strategic and corporate advice to major corporations. Mr Cuthbertson brings extensive international corporate experience to Austpac including a practical operating knowledge of business practices and structures in India, China and Southeast Asia.

Mr Cuthbertson was appointed a Director of Austpac Resources N.L. on 27 March 2001 and Chairman of Austpac Resources N.L. on 31 May 2004.



**MICHAEL J. TURBOTT** BSc (Hons), FAusIMM, MAIG

Age 60

**Managing Director**

Mr Turbott was formerly a Director and Vice President of Kennecott Explorations (Australia) Ltd, and was in charge of the exploration programs that led to the discovery of the Lihir gold deposit in Papua New Guinea and to the acquisition and initial development of the Gordonstone coal mine in the Bowen Basin, Queensland. His 36 years' experience in the mining industry has encompassed a wide variety of exploration and development projects in Australia, New Zealand, Papua New Guinea, Indonesia, Philippines, Canada and the USA.

Mr Turbott has been the Managing Director of Austpac Resources N.L. since its formation as an epithermal gold explorer in 1985. In 1988 Austpac became involved in the Westport ilmenite sand deposits in New Zealand. This led to the development of Austpac's proprietary ERMS roasting process to separate refractory ilmenite and, subsequently, to the patented EARS acid regeneration process. Under Mr Turbott's direction, since the mid 1990s Austpac has solely focused on its mineral sand technologies and has developed a proprietary continuous leaching process and specialist know-how in low temperature roasting and in the treatment of iron minerals as well as the ERMS SR process for the production of high grade synthetic rutile. Austpac's technologies are applicable to a wide range of mineral sand deposits and are now being commercialised.



**ROBERT J. HARRISON** FAICD

Age 65

**Non-Executive Director**

Mr Harrison has over 20 years' experience in the marketing of titanium minerals and zircon. He was Managing Director of Consolidated Rutile Limited's marketing subsidiary Minerals Pty Limited for a number of years before forming the mineral sands marketing consultancy Mineralex Agencies Pty Limited, of which he is Managing Director. Since 1986 Mr Harrison has provided marketing support, market surveys, statistical analyses and product reviews for titanium dioxide feedstocks, titanium dioxide pigments and zircon to a range of significant producers and consumers of those products in Australia, India, Africa, Europe and the United States.

Mr Harrison was appointed a Director of Austpac Resources N.L. on 1 September 2004.

# Directors' Report

Mr Alfred Paton and Mr Harold Hines retired as directors of Austpac Resources N.L. on 31 May 2004.

Mr Charles A. MacDonald was appointed a director on 31 May 2004 and resigned as a director on 31 August 2004.

## Directors' Interests and Benefits

The relevant interest of each director in the share capital of the Company at the date of the report and as notified by the directors to the Australian Stock Exchange in accordance with Section 205G(1) of the Corporations Act 2001 was:

|                    | ORDINARY SHARES |           |
|--------------------|-----------------|-----------|
|                    | DIRECT          | INDIRECT  |
| Terry Cuthbertson  | -               | 600,000   |
| Michael J. Turbott | 4,701,118       | 3,283,333 |
| Robert J. Harrison | -               | -         |

In accordance with the Company's articles of association, Mr Robert Harrison retires from the Board of Directors and, being eligible, offers himself for re-election.

## Directors' Meetings

The number of meetings held and attended by each of the directors of the Company during the financial year are:

|                      | Board Meetings attended | Board Meetings held during the time the director held office | Audit Committee Meetings attended | Remuneration Committee Meetings attended |
|----------------------|-------------------------|--|-----------------------------------|--|
| Terry Cuthbertson    | 14                      | 14   | 2                                 | 1  |
| Michael J. Turbott   | 14                      | 14   | 2                                 | 1  |
| Alfred L. Paton      | 12                      | 12   | 2                                 | 1  |
| Harold Hines         | 11                      | 11   | 2                                 | 1  |
| Charles A. MacDonald | 1                       | 1  | -                                 | -  |
| Robert J. Harrison   | -                       | -  | -                                 | -  |

## Principal Activities

The principal activity of the consolidated entity is the development of mineral processing technology and exploration and development of mineral sands deposits.

## Review and Results of Operations

A review of the operations of the consolidated entity for the year and the results of those operations are contained in the section entitled *Directors' Report on Operations* commencing in the front section of this Annual Report.

## Dividends

The directors do not recommend the payment of a dividend.

## State of Affairs

In the opinion of the directors there were no significant changes in the state of affairs of the consolidated entity that occurred during the financial year which are not disclosed in the Annual Report.

## Events Subsequent to the end of the Financial Year

### International Financial Reporting Standards

For reporting periods beginning on or after 1 January 2005, the consolidated entity must comply with International Financial Reporting Standards (IFRS) as issued by the Australian Accounting Standards Board. At balance date, the effect of the convergence to IFRS has not been quantified. Refer to Note 19 for further details.

# Directors' Report

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## Placement

Since 30 June 2004, 3,254,285 ordinary shares being the balance of the placement of 21,428,571 ordinary Austpac Resources N.L. shares at 3.5 cents each was completed, banking \$113,900.

## Share Purchase Plan

On 1 September 2004 Austpac Resources N.L. announced a Shareholder Share Purchase Plan allowing each shareholder to participate in a capital raising of up to \$4,000,000. Each shareholder appearing on the Company Share Register as at 6 September 2004 being eligible to take up between \$500 and \$5,000 of ordinary Austpac Resources N.L. shares at 3 cents each. The terms and conditions of the plan were mailed to all shareholders.

Other than as identified above, there has not arisen in the interval between the end of the financial year and the date of this report, any item, transaction or event of a material and unusual nature likely, in the opinion of the Directors of the Company, to affect significantly the operations of the consolidated entity in future financial years.

## Likely Developments

Except as described elsewhere in this Annual Report, further information about likely developments in the operations of the consolidated entity and the expected results of those operations has not been included as disclosure of such information would likely result in unreasonable prejudice to the consolidated entity.

## Environmental Regulation

The consolidated entity's operations are subject to significant environmental regulations under both Commonwealth and State legislation in relation to its technology development.

The directors are not aware of any breach during the period covered by this report.

## Directors' and Senior Executives' Emoluments

The broad remuneration policy is to ensure the remuneration package properly reflects the duties and responsibilities of the director. Details of the nature and amount of each major element of the emoluments of each director of the company are:

|                   | Base   | Non Cash Benefits | Super  | Total   |
|-------------------|--------|-------------------|--------|---------|
|                   | \$     | \$                | \$     | \$      |
| Mr M.J. Turbott   | 88,188 | 20,700            | 12,000 | 120,888 |
| Mr A.L. Paton     | 25,000 | -                 | -      | 25,000  |
| Mr H. Hines       | 15,000 | -                 | -      | 15,000  |
| Mr T. Cuthbertson | 15,000 | -                 | -      | 15,000  |
| Mr C.A. MacDonald | 1,250  | -                 | -      | 1,250   |
| Mr R. Harrison    | -      | -                 | -      | -       |

The Company is managed by the Managing Director, supported by the Board of Directors. The Company does not have a senior executive staff. The Company has no employees that are specified executives.

Notsag Pty Limited, a company which provides corporate, financial, underwriting and guarantee services, employs Mr N. Gaston and provides his services as company secretary. Notsag Pty Limited received fees of \$120,000 during the financial year ended 30 June 2004.

## Options

During or since the end of the financial year no options have been granted by the company.



# Directors' Report

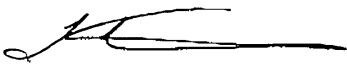
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## Indemnification and Insurance

The Company does not have a Directors' and Officers' insurance against liability which may arise from holding the position of Director or Officer.

The Company has not, during or since the end of the financial year, in respect of any person who is or has been an officer or auditor of the Company or related body corporate, indemnified or made any relevant agreement for indemnifying against a liability incurred as an officer, including costs and expenses in successfully defending legal proceedings.

Signed at Sydney this thirtieth day of September 2004 in accordance with a resolution of the Board of Directors of Austpac Resources N.L.



**T. Cuthbertson**  
Chairman



**M.J. Turbott**  
Managing Director



# Corporate Directory

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## MEMBERS OF THE BOARD

Mr Terry Cuthbertson *ACA*  
*Chairman*

Mr Michael J. Turbott *BSc (Hons), FAusIMM, MAIG*  
*Managing Director*

Mr Robert J. Harrison *FAICD*  
*Director*

## SECRETARIES

*Company Secretary*  
Mr Nicholas J. Gaston *ACIS*

## GENERAL MANAGERS

Mr John C. Downie *MIE, MAusIMM*  
*General Manager, Project and Technology Development*

Mr Michael J. Smith *BSc, MSc, RPGeo, FAIG, MGSA, MASEG*  
*General Manager Exploration*

## PRINCIPAL OFFICE

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Fax: (02) 9223 1975  
Email: [apgtio2@ozemail.com.au](mailto:apgtio2@ozemail.com.au)  
Website: [www.austpacresources.com](http://www.austpacresources.com)

## AUDITORS

KPMG, The KPMG Centre  
10 Shelley Street, King Street Wharf, Sydney, NSW 2000

## SOLICITORS

Allen Allen & Hemsley  
Level 23, The Chifley Tower  
2 Chifley Square, Sydney, NSW 2000

## SHARE REGISTRY

ASX Perpetual Registrars Limited  
Securities Registration Services  
580 George Street, Sydney, NSW 2000

## BANKERS

ANZ Bank  
68 Pitt Street, Sydney, NSW 2000

## STOCK EXCHANGE LISTING

Australian Stock Exchange Limited (Melbourne)



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AUSTPAC RESOURCES N.L.

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