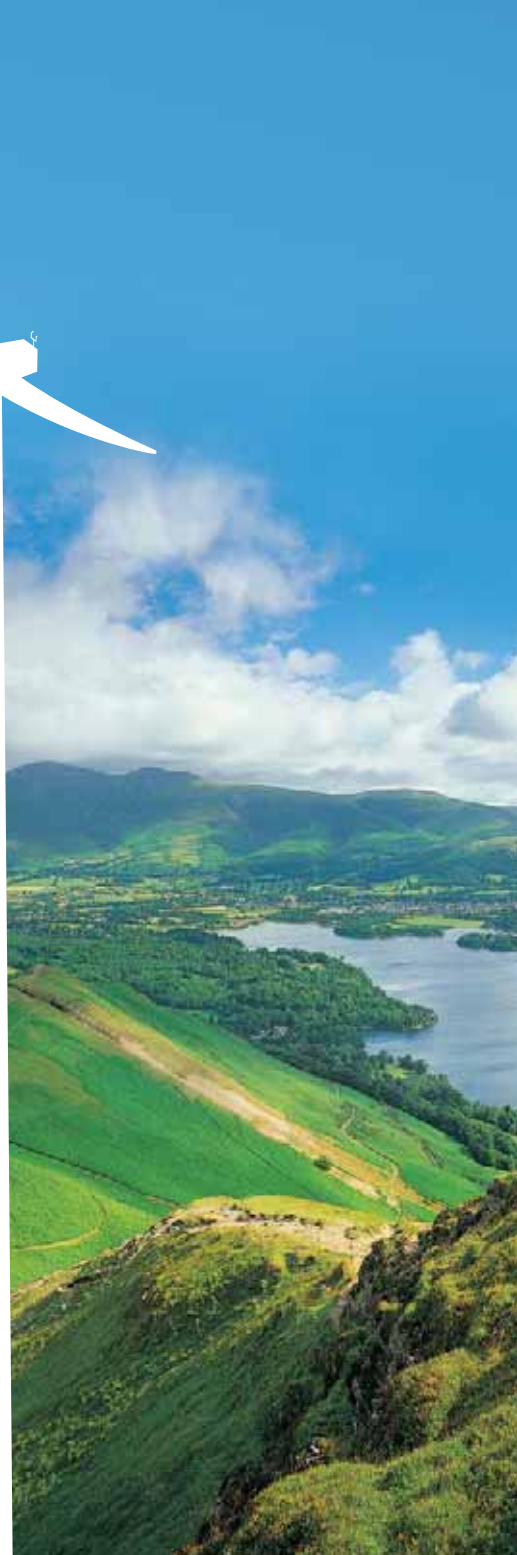
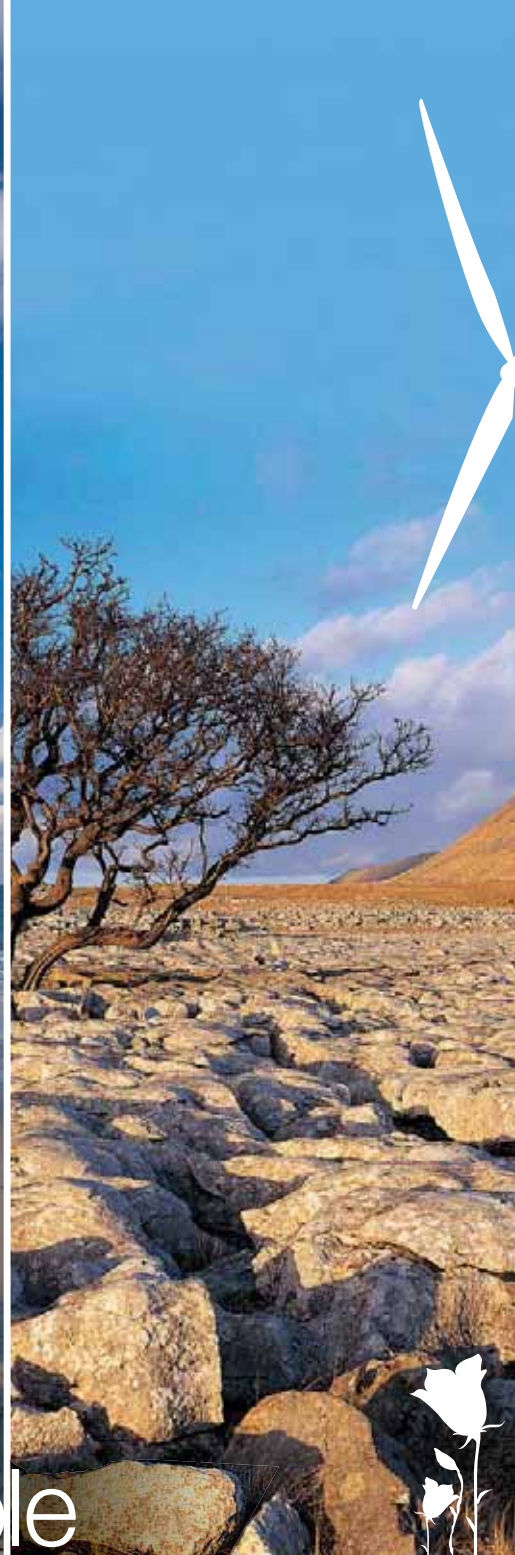


**RIO  
TINTO**  
MINERALS



Sustainable  
**Development Report**

**2005**

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Sustainable development report

# 2005



**Rio Tinto Minerals is a newly formed organization made up of three of the world's foremost industrial minerals producers.**

The organization encompasses 3,000 people working at 40 facilities on five continents to serve more than 5,000 customers worldwide. Rio Tinto Minerals:

- Supplies 43 percent of global demand for refined borates and markets its borate products under the *Borax 20 Mule Team*® brand.
- Is the world's largest salt exporter, shipping 8.5 million tonnes of salt and more than one million tonnes of gypsum under the *Dampier Salt* brand to customers in Asia and the Middle East.
- Supplies 25 percent of global demand for talc and markets its engineered talc products under the *Luzenac* brand.

The company is the acknowledged world leader in product quality, supply reliability, and technical support – the services that create value for its customers and differentiate Rio Tinto Minerals from its competitors. Rio Tinto Minerals is also the industry leader in continuously improving how its products and practices contribute to sustainable development.

This report presents 2005 performance - and 2006 targets - for each of Rio Tinto Minerals' three foundation businesses to improve the organization's contribution to sustainable development. It also represents our commitment to sustaining the value we deliver to our customers, employees and communities; protecting the safety and wellbeing of the people who work at and live near our operations; and, taking a responsible approach to product and environmental stewardship.

We present our performance according to the three pillars of sustainable development:

- Social performance covers employee health, safety, and development; community outreach and support; and product stewardship.
- Environmental performance covers regulatory compliance, pollution prevention, water and energy conservation, and site rehabilitation, along with efforts to protect and enhance biodiversity.
- Economic performance covers value creation – for customers through products and services, for employees through good jobs, and for shareholders through strong earnings.

Sustainability involves continuous improvement at both the local and global level. To progress, we need and value input from all stakeholders, whether in the market, the company, the local community, the government or the public at large. In this spirit, we thank you for your support, and welcome your feedback.



**Gary J. Goldberg**

President and Chief Operating Officer  
Rio Tinto Minerals



**Adam Parr**

President and Chief Commercial Officer  
Rio Tinto Minerals

Rio Tinto Minerals defines its contribution to sustainable development in terms of:

- Value created for customers and shareholders
- Good jobs and a safe working environment for employees
- Products and practices that make a positive contribution to health, safety and the environment
- Support for community infrastructure, health care and education programs

These contributions create value for Rio Tinto Minerals by providing rigorous decision-making processes and competitive differentiation, and by helping to maintain access to mineral and human resources, as well as markets.

Rio Tinto Minerals' sustainable development mission is to support value creation by considering social, environmental and economic risks – and leveraging social, environmental and economic opportunities – associated with key business processes:

- Safety Systems – to eliminate all occupational injuries and illnesses
- Human Resources – to build competencies among Rio Tinto Minerals leaders to facilitate a culture of corporate social responsibility
- External Affairs – to influence public policy and to generate positive perceptions about Rio Tinto Minerals' products and practices
- Product Stewardship – to conduct and communicate research that establishes the health, safety and environment benefits of borates, salt and talc
- Operations – to use resources efficiently and to minimize the impact of operations on the environment
- Business Improvement – to find new, more efficient ways of working

- Commercial – to promote product use, and to create competitive advantage for Rio Tinto Minerals

- Application Development & Technology – to balance social, environmental and economic considerations in developing new applications and technologies

- Capital Investment and Procurement – to define and consider the social and environmental aspects and opportunities of every investment and procurement decision

Rio Tinto Minerals holds individuals accountable for achieving these objectives through its performance management system. Progress is monitored quarterly by the organization's Steering Committee, comprised of key executives and senior managers from across the business.

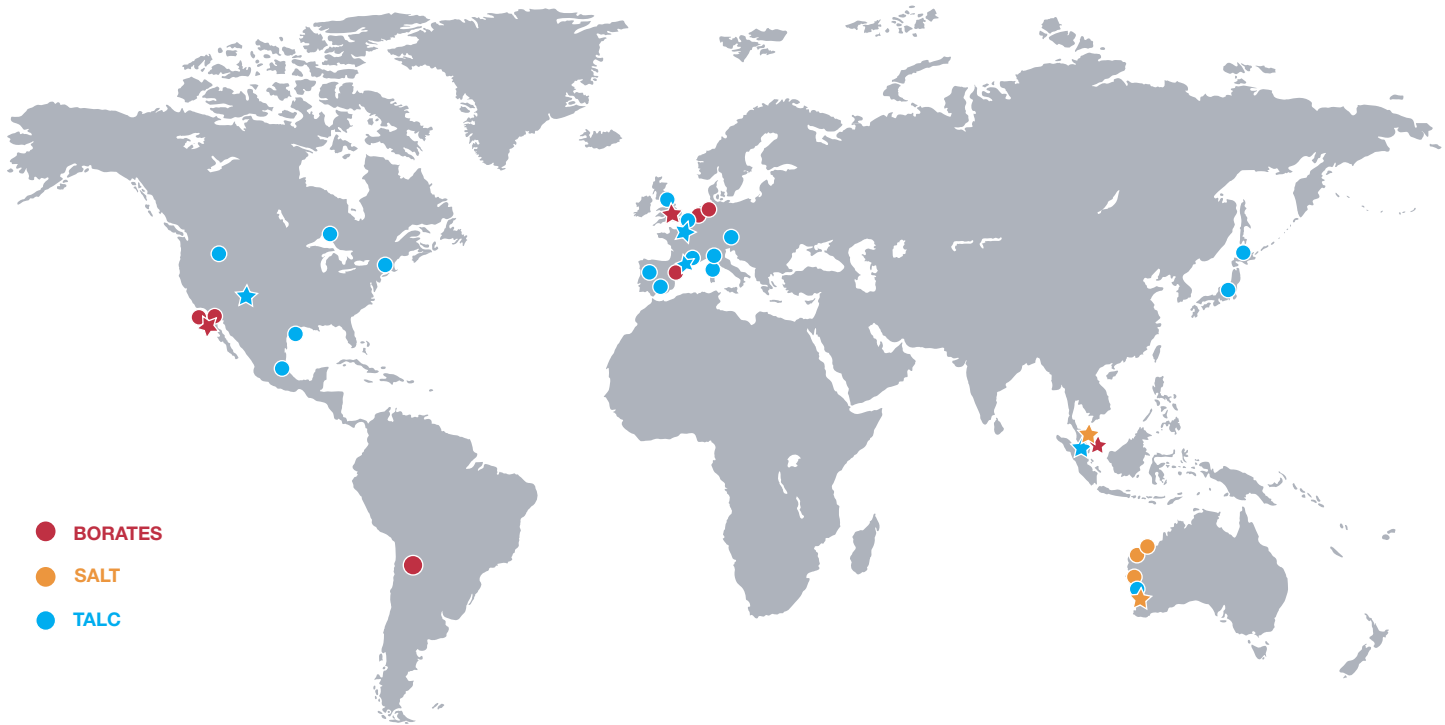
For this report, data are generated by senior managers and audited by parent company Rio Tinto. Health, safety and environmental programs and practices are audited by regional and national agencies and organizations, as well as internal experts. Rio Tinto Minerals maintains external certification of its environmental management systems through ISO 14001 registration. Financial records are subject to annual external audit. This 2005 Sustainable Development Report was not externally audited.

# Sustainable **Development**





RIO TINTO MINERALS OPERATIONS



# Executive Summary

Sustainable development is integrated into all aspects of Rio Tinto Minerals' business. While performance varies significantly by product and even by site, the commitment to improve is universal. In 2006, Rio Tinto Minerals will focus on creating common systems – and a common culture that promotes accountability, adaptability and an ongoing drive to improve business and personal performance. Specific improvement objectives are listed in the charts opposite.

In 2005, the company's borate operations ranked among the safest of parent company Rio Tinto's 82 worldwide operations, but its salt operations scored near the bottom, while talc operations remained in the middle range. Going forward, Rio Tinto Minerals' goal is to create a culture of personal accountability for safety through training, leveraging best practices, encouraging safe behavior, and establishing fitness-for-work and wellness programs. One focal point will be to eliminate injuries resulting from trips and falls – on ice, snow, in stairways, or while using step-ladders – which have resulted in a high proportion of recent injuries.

Foundation businesses continued to build enduring relationships with neighbors, characterized by mutual respect, active partnership and long-term commitment. Following the success of similar work at other large operations, Rio Tinto Minerals will conduct a community survey at its Montana talc operations to better understand the issues of greatest concern to the community, and to use the findings to guide outreach and support programs.

Globally, Rio Tinto Minerals will contribute the equivalent of one percent of its pre-tax profits in time, money or in-kind services to programs that sustain communities surrounding its operations.

Last October, the United States' National Toxicology Program (NTP) completed a five-year review of health studies and ruled that existing scientific data are insufficient to identify talc as a cancer causing agent. In 2006, the World Health Organization's International Agency for Research on Cancer (IARC) found insufficient evidence to link occupational exposure to talc with higher incidence of cancer but did find an association between perineal (genital) use of talc-based body powder and an increased risk for ovarian cancer, although it could not rule out chance, bias or confounding factors with reasonable confidence. As context, the ruling places the perineal use of talc-based body powder in the same IARC category as many other common practices, such as drinking coffee. Rio Tinto Minerals will continue to keep employees and customers informed, and to work closely with regulatory and advisory groups to investigate this issue, and to defend its products from inappropriate regulation.

Overall, foundation businesses made progress in 2005 toward decreasing greenhouse gas emissions (GHG), water and energy consumption, but fell short of targets in the areas of land rehabilitation and regulatory compliance. Rio Tinto Minerals is currently working to meet five-year targets set for individual borate, salt and talc operations, using 2003 as the baseline.

Rehabilitating the land disturbed by mining to encourage the return of native plants and animals is another global priority. In most locations, partnerships have been formed with local academic institutions to assist in these efforts.

Economic performance fell short of targets across all three foundation businesses due to competitive and cost pressures, as well as unplanned delays in the start-up of a new processing plant. The organization continues to challenge itself to unlock its products' full potential in biological systems, by investing in research to better understand their health, safety and environmental benefits; and, in industrial systems, by taking the lead in developing new products and applications.

In 2006, Rio Tinto Minerals will focus on restoring a positive trend in earnings and identifying opportunities to increase sales by partnering with customers on sustainability projects.

## Rio Tinto Minerals Social Targets

Metric	2006 Target
LTIFR <sub>1</sub>	0.43
AIFR <sub>2</sub>	1.00
Behavior-based safety training	Complete global implementation of Sustainable Safety Culture program
Wellness	Conduct gap assessments and develop action plans to enhance employee wellness at all operations
Community contribution	Contribute 1% of pre-tax profits to programs that sustain communities
Consultation and engagement	Survey community in Montana to better understand and meet expectations
Health, safety and environmental research	Sponsor selected research projects to advance understanding of products' health, safety and environmental effects and benefits Apply Life Cycle Assessment data to two projects involving engineering, products or applications

<sup>1</sup> Lost Time Injury Frequency Rate is the number of lost time injuries per 200,000 hours worked.

<sup>2</sup> All Injury Frequency Rate is the number of all injuries (lost time and medical treatment cases) per 200,000 hours worked.

## Rio Tinto Minerals Environmental Targets

Metric	Target		
	GHG	Energy	Water
Reductions per tonne of product:	By 2008, using 2003 as the baseline:		
Borate operations	1%	0.4%	3%
Talc operations – Americas	9%	12.1%	21%
Talc operations – Europe	5%	5.0%	12%
Talc operations – Asia Pacific*	under review	under review	under review
Salt and gypsum operations	22%	12.0%	12%
Climate change	Develop three-year climate change action plan		
Energy consumption	Integrate priority sites into Rio Tinto Minerals' energy management plan		
Regulatory violations	Zero violations affecting communities		
ISO 14001	Maintain certification of environmental management systems at all sites		

\* Targets under review following commissioning of Three Springs processing plant and campaign nature of overburden removal at associated mine.

## Rio Tinto Minerals Economic Targets

Metric	2006 Target
Earnings	Restore positive trend in earnings
Customer relationships	Identify opportunities to increase sales via sustainability projects with customers
Business improvement	Ensure SD principles are considered in Business Improvement initiatives
Capital investment	Integrate SD decision-making criteria into process
Research & Development	Assess R&D projects for positive and negative SD impacts

# Minerals contributing to **a more sustainable world**

Thanks to their remarkable natural qualities, borates, gypsum, salt and talc bring benefits to essential products and processes, and contribute to a more sustainable world.

## **IN AGRICULTURE**

Borates are essential nutrients for plants, and farmers around the world add borates to their crops to increase yield and quality. Gypsum also acts as a source of nutrients for plants and conditions and improves soil structure, allowing farmers to grow crops in heavy soils. Talc provides natural UV protection for fruit ripening in the orchard and on the vine – a safe alternative to chemicals used for this purpose.



## **IN AUTOMOTIVE APPLICATIONS**

Thanks to talc-reinforced polypropylene and borate-containing textile fiberglass, automakers can produce thinner, lighter automotive parts. Less weight means greater fuel economy and fewer emissions. Talc-reinforced polypropylene also requires fewer toxic intermediaries to produce than other polymers. It is easier to recycle and does not rust. Today's cars contain on average eight kilograms – or nearly 18 pounds - of talc.

Borates are also used to control bacteria in automotive fuels and fluids. When liquid fuels are contaminated with water, organisms use the fuel itself as food, causing dangerous blockage of valves, gauges and fuel lines.

Talc saves energy by reducing compound viscosity making rubber parts easier to demold and extrude. It also improves impermeability, enabling the production of thinner and lighter tires, with better rolling and wear resistance, and lower fuel consumption.

Salt and its by-products are used in petroleum refining, – mainly to remove toxic materials generated during the process – as well as in aluminium, glass and plastics production. They are also used to neutralize acidic waste streams and “scrub” the acidic components of emissions from these and other industrial processes.

## **IN CEMENT**

Gypsum is an essential component of cement. Gypsum used for this application is recycled from by-products of a wide range of industrial processes, thereby reducing waste that goes to landfill.

## **IN CERAMICS**

Borates and talc have been key ingredients in ceramics for centuries. Borates are used in ceramic glazes to create a smooth surface, increase the luster and durability, and facilitate a good fit between the glaze and the ceramic body. Talc is a critical component in automotive catalytic converters which clean up the exhausts of petrol and diesel engines. Both talc and borates lower energy use and emissions in ceramic and brick manufacture.





## IN FOOD PROCESSING

Talc helps increase the yield of virgin olive oil – particularly from “difficult” olives – by absorbing the natural emulsifier found in the olives without affecting oil color or flavor. This allows more oil to be extracted and lowers the amount of emulsion in the waste water, often used to irrigate fields. Salt is also critical to human and animal nutrition as well as food processing. About 20 percent of global salt production is used in food processing.

## IN FUEL CELLS

Boron compounds act as safe hydrogen carriers in zero-emission fuel cells. These fuel cells are used to power some vehicles, as well as advanced portable power systems used by the military and industry as a low-cost, light-weight substitute for batteries.

## IN GEOTHERMAL HEATING AND COOLING

Due to their low toxicity and non-flammability, salt brines are used as antifreeze agents in geothermal heating and cooling systems. These systems don’t burn fuel; instead they capture heat from the ground or from surface water, concentrate it and expel it at higher temperatures through traditional ductwork.



## IN HEALTH CARE

Talc's inert nature and high purity makes it ideal for a number of medical applications, including its use as a pharmaceutical excipient – or the inactive substance used to stabilize or deliver active ingredients in medications. Talc is also used in a medical procedure called Talc Pleurodesis to treat certain respiratory conditions and prevent collapsed lung.

Borates are used in a non-invasive cancer treatment called Boron Neutron Capture Therapy. Dietary boron is also believed to help prevent prostate cancer and arthritis.

A wide range of antibiotics, pain relievers, anesthetics, antihistamines and decongestants are made from by-products of salt. In fact, 85 percent of all pharmaceuticals contain or are manufactured using chlorine derived from salt, including medications used to treat heart disease, cancer, AIDS and malaria.



## IN INSULATION

Borates lower the energy needed to melt glass and increase the ability of glass fibers to trap heat. The impacts associated with mining and refining borates are more than offset by energy savings made in the manufacture and use of insulation fiberglass. Improving insulation standards for buildings and homes is one of the most cost-effective solutions to combat climate change. Borates are also used as a pesticide and flame retardant in cellulose-based insulation, which often features recycled materials.

## IN PAINTS AND COATINGS

By increasing covering power, paint durability and longevity, talc lengthens the life-cycle of painted goods. Certain talcs reduce air emissions associated with solvent-based paints. Borates are used in paints as biocidal substitutes for lead, mercury and formaldehyde.



## IN PAPER

To reduce fresh water consumption and wastewater output, paper mills are increasingly operating with closed water circuits. In this process, talc helps eliminate the contaminants contained in wood fibers without resorting to chemical treatment systems. Talc also helps to lower water consumption by reducing the need to clean equipment.

Recycled pulp and paper mills experience similar issues but must also deal with substances such as wax, inks and adhesives which clog processing equipment. As more paper and board is recycled, talc's ability to trap detrimental substances helps papermakers optimize prime resources. Unlike chemicals, talc does not pollute receiving streams, rivers and lakes. Caustic soda, from salt, is also used in paper manufacturing.

## IN WALL BOARDS

Gypsum adds structural integrity, acts as a fire retardant and enables wall board to be recycled. Borates are used in gypsum wall board to help increase board strength, reduce weight and improve fire retardancy.

## IN WATER

Salt's downstream products provide among the safest water disinfection systems – chlorination – to control micro-organisms, keep water piping clean and protect water all the way to the tap at a very low cost. Another by-product of salt – caustic soda – is used to treat polluted industrial effluents.

## IN WOOD AND COMPOSITES

Borates have been used for decades to protect wood building materials – including framing lumber and composites – against termites, decay and other wood destroying organisms



and are acknowledged as among the safest treatments available. Borates also extend the life of wood used to make furniture.

Rubberwood is a plantation tree grown for latex. After its productive life, the wood is useless unless protected against wood boring beetles. Treated with borates, however, rubberwood serves as a long-lasting substitute for tropical hardwoods.

Both talc and borates are added to wood-plastic composites – increasingly used as a green substitute for lumber in outdoor decking – to improve structural integrity and protect both the wood and the plastic from biological attack and UV degradation.





# Rio Tinto Minerals **Borate Operations**

Rio Tinto Minerals, the acknowledged world leader in borate supply and science, employs nearly 1,400 people serving customers in nearly 100 countries. The organization operates California's largest open-pit mine – one of the richest borate deposits on the planet. Borate extraction started in the Death Valley area in the 1800s. The mule teams that originally hauled borates out of the desert are long gone, but the symbol endures in Rio Tinto Minerals' *20 Mule Team Borax*® product brand.

Today, the organization's borate operations supply nearly half the world's demand for refined borates – minerals essential to life and modern living – produce more than one million tons of refined borates annually, and generate sales of around a half billion dollars per year.



## BORATE OPERATIONS IN THE AMERICAS

### Rio Tinto Minerals Boron Operations

Primary borate mining and refining operation in the Mojave Desert

### Rio Tinto Minerals Wilmington Operations

Primary North American shipping facility located in the Port of Los Angeles, and one of Borax's specialty products refining operations

### Rio Tinto Minerals Owens Lake Operations

Trona mining operation at Owens Lake, California; trona is made up of equal parts sodium carbonate and sodium bicarbonate ore and is used in borate refinery processes

### Rio Tinto Minerals Argentina Operations

Primary South American business, with mines in Tincalayu, Sijes, and Porvenir, and refinery facilities in Campo Quijano

## BORATE OPERATIONS IN EUROPE

### Rio Tinto Minerals Nules Operations

Refining, packing and distribution facility

### Rio Tinto Minerals Coudekerque Operations

Refining and distribution facility

### Rio Tinto Minerals Rotterdam Operations

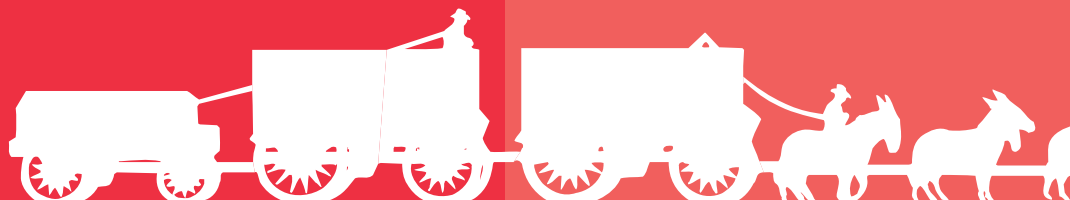
Primary European distribution facility in the Port of Rotterdam

## ABOUT BORATES

Borates are naturally occurring mineral salts containing boron – the fifth element on the Periodic Table – and other elements. Borates are a fundamental part of the natural world. Plants need them to grow and they are part of a healthy diet for people. Borates are also key ingredients in a wide variety of household and commercial products, primarily: insulation fiberglass, textile fiberglass and heat-resistant glass; ceramic and enamel frits and glazes; agricultural micronutrients; and, detergents, soaps and personal care products. Other uses include wood preservatives, flame retardants and pest control products.

## ABOUT BORAX

Rio Tinto Minerals foundation business, Borax, was among the first mining companies in the world to publish its sustainability performance and improvement targets. The company's performance toward those targets is presented on the following pages.



## BORATE OPERATIONS



## **SAFETY SYSTEMS**

Borax's workforce exceeded its safety targets in 2005 and its primary operation was acknowledged as the safest in the United States. The key to the company's success is the collective belief that responsibility for safety belongs to everyone, not just its safety professionals.

In 2005, the global workforce took part in an employee-developed training program to heighten awareness and improve how people observe and coach each other to work more safely. Borax also met its goal to keep its regulatory health and safety violations at a level that is 50 percent below the national average in the United States.

## **HUMAN RESOURCES**

Borax benchmarked its employees' health care benefits in 2005 and made adjustments to remain competitive both in the borate industry, and the employment marketplace. The company also launched a culture change initiative among its global leadership team to better align individual performance with business strategy.

Recruiting the next generation of workers in the post-baby boom era is a challenge for the entire mining industry – particularly given negative public perception of its safety and environmental record. Borax collaborates with its sister companies to create greater awareness of the industry's contributions to society, and to encourage students to pursue careers in mining.



## **EXTERNAL AFFAIRS**

Borax defines its stakeholders as people who are directly affected by, and in turn, can directly affect its success. Stakeholder consultation in 2005 included conducting focus groups with customers to better understand how its sustainable development program can deliver value, and engaging employees to meet community contribution goals. Employees doubled their previous year's contribution to the United Way, and gave generously to tsunami and hurricane relief efforts.

In 2005, the company prepared its Sustainable Development report in accordance with *Global Reporting Initiative (GRI) Sustainability Reporting Guidelines*, the leading international standard for reporting social, environmental and economic performance. This year, the company provided data to its parent company, Rio Tinto, who reported in accordance with GRI on behalf of the larger organization.

## **PRODUCT STEWARDSHIP**

In 2005, Borax engaged customers and other industry members in its ongoing efforts to defend its products from being classified as hazardous substances by the European Union. Future goals are to move from conflict to collaboration in working with regulators, and to continue to take the lead in conducting and commissioning research to better understand borates' health and environmental effects and benefits.

Borax conducts Life Cycle Assessments (LCA) to measure the long-term environmental impact of its products and practices. In 2005, the company used its LCA data to guide capacity expansion for wood preservative and flame retardant products, and to improve waste disposal and recycling practices. Borax also participated in a United States Green Building Council working group to assist with reorienting building standards to incorporate LCA data.

# Borax 2005 **Social Performance**

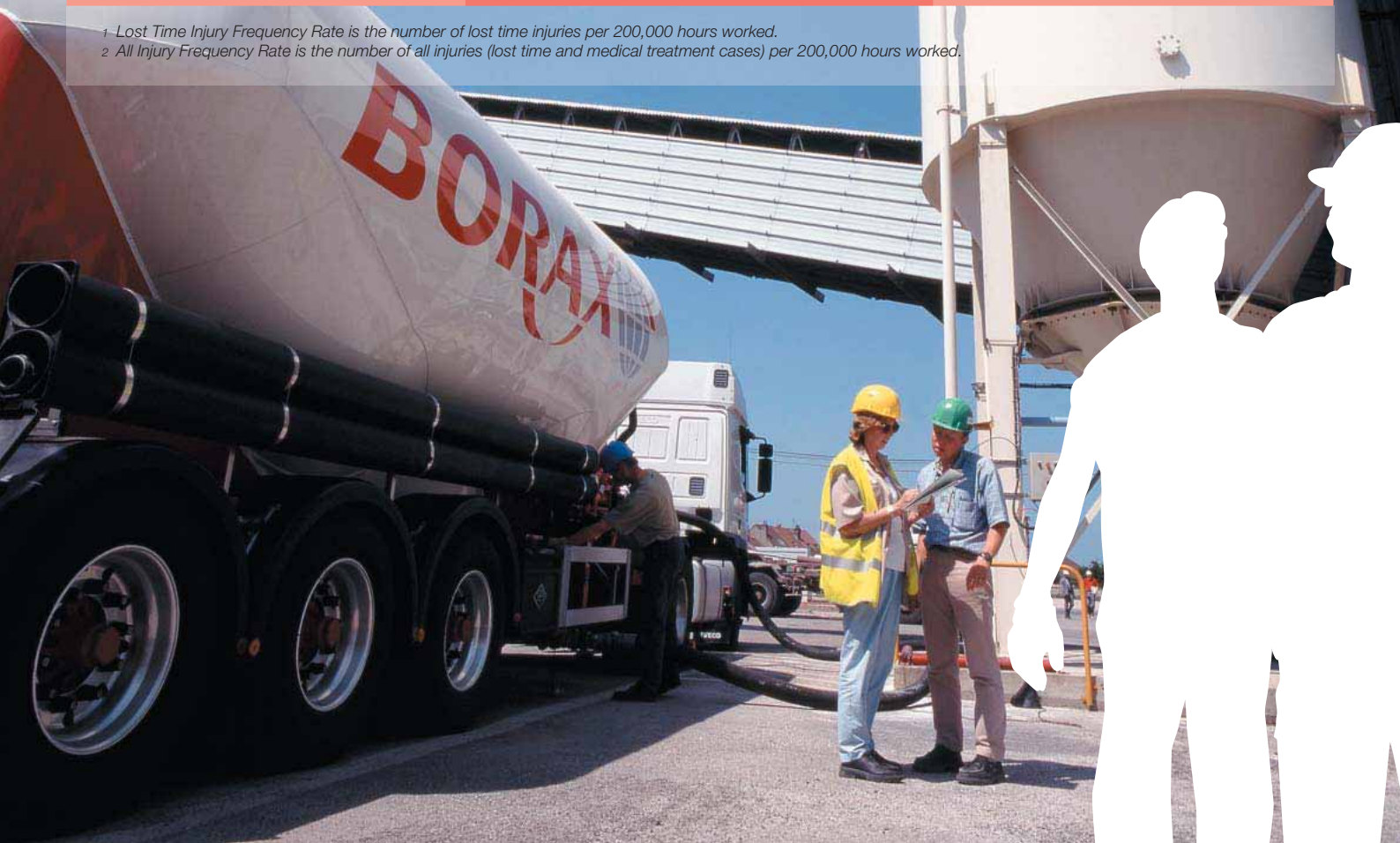
Mining and manufacturing involves a wide range of hazards – operating heavy equipment and driving automobiles, handling explosives and chemicals, and working in confined spaces and at heights, among others. Borax considers safety its primary value, and invests time and money accordingly to safeguard the people who work for the company, who live near its operations and who use its products. This investment paid off in 2005 as Borax achieved its best safety record in company history.

## BORAX Social Targets and Performance

Metric	2005 Target	2005 Performance
LTIFR <sub>1</sub>	0.11	0.10
AIFR <sub>2</sub>	0.80	0.62
Health and safety violations	50% below U.S. national average	Met target
Community contribution	Contribute 1% of pre-tax profits to programs that sustain communities	Met target
Consultation and engagement	Conduct customer focus groups	Met target
Health and safety research	Sponsor three research projects involving borates' health effects and benefits	Met target
Environmental research	Apply LCA data to three projects involving engineering, products or applications	Met target

*1 Lost Time Injury Frequency Rate is the number of lost time injuries per 200,000 hours worked.*

*2 All Injury Frequency Rate is the number of all injuries (lost time and medical treatment cases) per 200,000 hours worked.*



### Case Study

## BREAKTHROUGH IN BORON'S ROLE IN CANCER PREVENTION

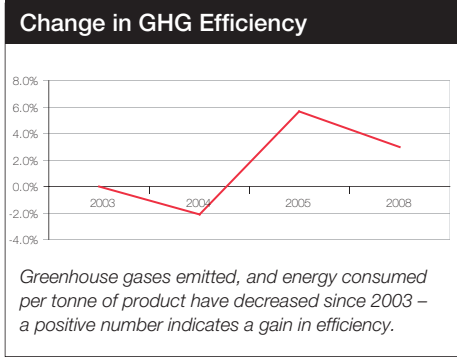
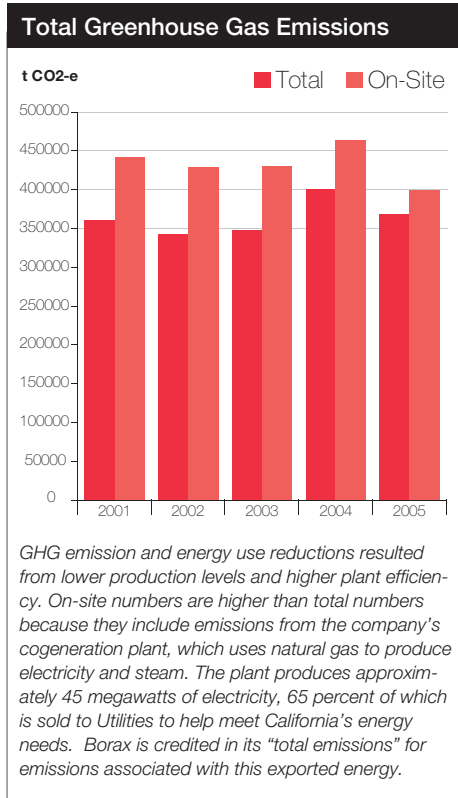
Scientific research shows a link between diets that are higher in boron content and a lower risk of prostate cancer. In a study conducted at the University of California, Los Angeles, (UCLA) that compared the diets of older men with and without the disease, researchers found that men whose diets include at least two milligrams of boron had one-third the risk of prostate cancer compared to men whose diet only contained one milligram. But this study established correlation, not cause and effect.

More recently, a U.S. National Institute of Environment Health Science study showed that boric acid inhibited the activity of prostate specific antigens (PSA), which are associated with the development of prostate cancer. As the world leader in borate supply and science, Borax is investing in learning more about the precise mechanism by which boron acts to prevent prostate cancer.

In 2005, Borax contributed funding to research looking at the changes boron induces in actual prostate cancer cells. These studies show that boron actually inhibits prostate cancer cells' ability to proliferate – a groundbreaking discovery on the path to determining boron's precise role in protecting people from prostate cancer, a disease that affects hundreds of thousands worldwide.

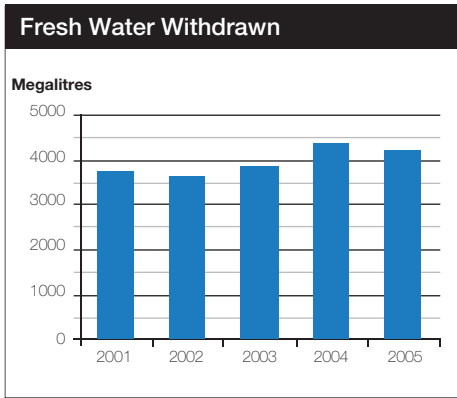
**ENERGY USE AND AIR EMISSIONS**

The term “100 year event” is used to define a rainfall that has a one percent chance of occurring in any given year. In 2005, Borax experienced two 100 year events at its primary mining and refining operation. These storms shut down the mining operation for significant periods of time, resulting in reductions in fuel use and related emissions as waste removal was deferred. At the same time, improvements in refinery design and maintenance practices contributed to lower energy use and air emissions.



**WATER USE**

Borax's primary uses of water are to refine ore and to control dust at its mining operations. The company works to transition from using fresh water to using recycled water to lower its environmental impact, and succeeded in reducing the total amount of fresh water used in 2005. Improved data collection procedures – as well as increased road watering at Borax's primary mining operation to comply with community concerns about dust – caused an overall increase in fresh water use since 2001.



**LAND REHABILITATION**

Borax set ambitious targets for land rehabilitation, but did not make significant progress toward achieving them in 2005. The company reconfigured its mine plan, which affects the amount of land available for rehabilitation. The associated permitting process – seeking and receiving approval for how land is used – was also affected. Both of these factors have resulted in slower progress toward targets. The company expects to address these issues in 2006 and return to higher acreages in 2007.

**REGULATORY COMPLIANCE**



Borax recognizes the importance of external verification. The company maintains ISO 14001 certification of its environmental management systems; certifies its greenhouse gas (GHG) emissions and commits to reduction targets through the California Climate Action Registry; and, is a long-standing member of US EPA's National Performance Track Program.

Although Borax met its target of zero regulatory violations affecting the community, there was an issue of concern. After extraordinarily heavy rainfall at the company's primary mining operation, an employee mistakenly released a large pool of water that overflowed barriers and ran onto the streets of the nearby community. The company quickly tested the water to ensure its safety and met with community members to report on its mistake. From that discussion, Borax learned that local infrastructure features faulty drainage systems, and is working with officials to solve this issue now. Procedures have also been put in place to ensure this type of mistake cannot be repeated.

**Borax 2005**  
**Environmental Performance**

Mining and processing borates are resource-intensive activities. Borax made progress toward meeting goals to lower greenhouse gas emissions, water and energy use – efforts that simultaneously reduce its footprint, its risks and its costs. But despite real efficiency advances, the company can't take credit for all of the reductions. Torrential rainfall halted mining and production at its primary operation, lowering emissions but intensifying the challenge of maintaining supply reliability and product quality – two of the service offerings that give Borax and its customers a competitive advantage.



## BORAX Environmental Targets and Performance

Metric	2005 Target	2005 Performance
Air emissions	Reduce GHG emissions from primary refineries by 3% per tonne of product by 2008	Boric Acid Plant: 13% reduction per tonne of product since 2003  Primary Process: 6% increase per tonne of product since 2003
	Reduce GHG emissions from primary mine by 2% overall by 2008	Mine: 9% decrease overall since 2003
Energy use	Reduce energy use in primary refineries by 3% per tonne of product by 2008	Boric Acid Plant: 10% reduction per tonne of product since 2003  Primary Process: 6% increase per tonne of product since 2003
	Reduce energy use in primary mine by 2% overall by 2008	Mine: 9% reduction since 2003
Water use	Reduce total fresh water use in primary mine by 3% by 2008	Mine: 7% reduction since 2003
	Reduce fresh water use in primary refineries by 3% per tonne of product by 2008	Boric Acid Plant: 3% increase per tonne of product since 2003  Primary Process: 13% reduction per tonne of product since 2003
Land rehabilitation	110 acres by 2008	2 acres in 2005, with a total of 29 since 2003
Regulatory compliance	Achieve zero regulatory violations affecting the community	Met target

All targets are based on a 2003 baseline



### Case Study

## THE TWENTY TURBINE TEAM

In 2003, Borax established a team to develop a short- and long-term energy strategy for its primary mining and refining operation. The team developed a list of 40 projects to reduce energy use at the site, one of which was to conduct a formal energy review. This review, conducted in early 2005, helped the team refine its approach to prioritizing, implementing and monitoring progress on these projects.

Projects include traditional approaches such as installing more efficient dryers in processing plants, and more innovative approaches like harnessing renewable energy sources. The company is embarking on an Architectural Wind partnership with Aerovironment Inc. Through this partnership, Borax will install 20 micro wind turbines at the Borax Visitor Center, overlooking its primary mine site.



The turbines will generate enough electricity to power the Visitor Center and – through an interactive kiosk inside the Center – serve as a demonstration project to show visitors how wind energy works and the contribution renewable energy makes to improving air quality and lowering greenhouse gas emissions.



This year, Borax will focus on identifying opportunities to promote the sustainability benefits of its products – particularly in lowering GHG emissions and raising crop yield and quality – and increase the rigor with which it measures sustainability considerations in developing new applications and technologies.

## **FINANCE**

The company's commitment to sustainable development holds business value both qualitatively, by differentiating Borax from its competitors; and, quantitatively, by providing a framework to balance the social, environmental and economic aspects of its decision-making processes.

In 2005, the company met targets to align its sustainable development targets with its business planning process, and to integrate sustainable development criteria into its business evaluation process.

In 2006, Borax will also apply these criteria to site selection and design of its new global operating headquarters in Denver, Colorado. High initial costs can create barriers to implementing cost savings projects. The company's Energy Management Team worked to expand the criteria by which capital expenditure decisions are made – to include energy efficiency and GHG reduction among other measures – giving the company sharper focus and better understanding of the full range of associated benefits. In turn, adding this dimension gives the company the means to drive progress on economic and environmental improvement projects that may not otherwise have been a priority.

## **COMMERCIAL**

Borax works to leverage the environmental benefits of its products. Refined borates lower energy use and emissions in many manufacturing processes. They are also key ingredients in insulation materials that

lower energy use and emissions associated with heating and cooling buildings.

In 2005, the company partnered with customers to exploit these advantages, and to garner recognition for them in the development of green building standards.

# Borax 2005 **Economic Performance**

Borax works to create value for Rio Tinto shareholders through its financial performance, and for its customers through its superior products and services. The company also contributes to local economies through its wages and benefits, tax contribution, payments to suppliers, community contributions and capital expenditures.

Overall, the company's 2005 earnings were negatively affected by increased competitive and cost pressures, including skyrocketing energy, distribution and raw material prices. Offsetting those challenges, Borax succeeded in developing and executing business strategies to improve operational efficiency, grow new markets and applications, and draw on competitive differentiation to maintain its position as market leader.

## BORAX Economic Targets and Performance

Metric	2005 Target	2005 Performance
Customer relationships	Launch four customer initiatives with strong SD elements	Met target
Business improvement	Ensure SD principles are considered in Business Improvement initiatives	Met target
Capital investment	Integrate SD measures into process	Met target



### Case Study

## BUILT-IN PROTECTION FOR WOODFIBER-PLASTIC COMPOSITES

Woodfiber-Plastic Composites (WPCs) are gaining popularity as safe and sustainable building materials for outdoor decks, fences and window frames. Their benefits include weather resistance, long service life and low maintenance. Because many are manufactured from recycled plastic and wood, WPCs also contribute to sustainable development.

Introduced in the early 1990s, the perceived advantage of WPCs over solid wood was the “fact” that the wood fibers were completely encapsulated in plastic – preventing

exposure to wood-destroying organisms and the moisture absorption that creates a welcoming environment for many of them. That fact turned out to be a myth. In reality, weather takes a toll on both the plastic and wood components of WPCs – particularly in the exterior applications they were designed for – leaving them susceptible to rot, decay, mold and degradation.

Borax’s *Borogard ZB* has been used successfully to protect wood composite products for more than a decade, making



it the benchmark against which other preservatives are measured. *Borogard ZB* is safe for people and the planet, the most cost-effective preservative available, and offers built in protection against rot and decay. More recently, tests show that *Borogard ZB* also enhances UV light stabilization, protecting the plastic component as well as the wood in WPCs.



# Rio Tinto Minerals

## **Salt Operations**

Rio Tinto Minerals is the world's largest exporter of solar salt. Its operations, developed in the 60s and 70s to meet increasing demand, are located in the north west region of Western Australia, an ideal site for solar salt production due to the hot dry climate, low rainfall and easy access to shipping facilities on the Indian Ocean.

At Dampier and Port Hedland Operations, salt is evaporated from seawater, harvested in 20 to 40 centimeter layers, washed to remove impurities and stockpiled near ship-loading facilities. At Lake MacLeod, brine from a natural salt-rich aquifer which lies below the surface of the lake is the feedstock for the operation, and gypsum is mined using a floating dredge.

Rio Tinto holds 64.9 percent equity in these salt operations. The other shareholders are Marubeni Corporation (20.5 percent), Nissho Iwai Corporation (10.1 percent), and Itochu Corporation (4.5 percent). Rio Tinto Minerals salt operations employ more than 400 people at the three production sites and at its regional headquarters in Perth.

## SALT OPERATIONS

### Rio Tinto Minerals Dampier Operations

Salt operation established in 1968 with a capacity of about four million tonnes

### Rio Tinto Minerals Lake MacLeod Operations

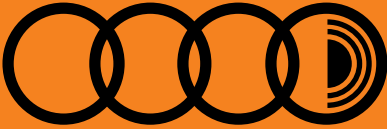
Salt operation purchased in 1978 with a capacity of about 1.4 million tonnes of salt and 1.6 million tonnes of gypsum

### Rio Tinto Minerals Port Hedland Operations

Salt operation purchased in 2001 with a current capacity of about 3.2 million tonnes



## DAMPIER SALT LIMITED



## ABOUT SALT

Salt is as essential to life as food and water. The most abundant source of salt is the ocean. The other major sources are inland waters, salt domes and sedimentary deposits located throughout the world. Salt produced by Rio Tinto Minerals is mainly used in the chemical industry for the production of plastics, glass, detergents

and a variety of chemicals. It is also used in food processing, food products and road de-icing. The major markets are in Asia, but markets in the Middle East, Africa and the United States are also very important. Gypsum produced by Rio Tinto Minerals is mainly used by the wallboard industry in Japan.

## ABOUT DAMPIER SALT LIMITED

Rio Tinto Minerals foundation business Dampier Salt Ltd. has been involved in the chemical industry's Responsible Care initiative for three years. Responsible Care is a voluntary initiative of the global chemical industry focused on improving performance, communication and accountability. Responsible Care commits the company to continuously improve the health, safety and environmental performance of its products and processes.

The guiding principles are:

- Operational Safety
- Product Stewardship
- Community Involvement
- Industry Collaboration
- Co-operation with Government
- Resource Sustainability

In 2005 the company relied on self assessments under the Plastics and Chemical Industries (PACIA) Responsible Care codes – widely respected codes that govern health, safety, community, environmental and product stewardship practices throughout a chemical's entire life cycle – to enhance its sustainability performance. PACIA self assessments completed in 2005 included Employee Health and Safety, Community Right to Know and Storage Transport and Safety. DSL completed self assessments for the remaining codes – Manufacturing Process Safety, Product Stewardship and Environment Protection – in 2004.

The company's performance toward its sustainability targets is presented on the following pages.

## SALT OPERATIONS



## HUMAN RESOURCES

In 2005 DSL saw a reduction in its absenteeism rate across its operations. In May 2005, the new North Shore wash plant at the Dampier site officially opened. Associated with this infrastructure upgrade, the company made 33 employees redundant at its Dampier site, as agreed in 2004.

Western Australia continued to experience a very tight labor market in 2005. DSL did recruit some high caliber employees, but shortages remain for specific technical skill areas. This situation will persist into 2006 due to regional iron ore producers' strong demand for skilled workers to meet demand from China.

## COMMUNITY RELATIONS

DSL held ongoing briefings with its key local government stakeholders and regulators and will roll out the new Rio Tinto Minerals structure and changes as 2006 progresses. Dampier Operations hosted an Open Day for community members in May 2005 following the official commissioning of the North Shore plant, and plans to schedule a similar event at Lake Macleod Operations in 2006. The company succeeded in advancing its Aboriginal Education Project in Carnarvon (see case study) with 23 students completing the academic year, and will increase the number of students in the coming year.

## SAFETY SYSTEMS

Despite DSL's dedication and improvements to the safety culture and systems across the operations in 2005 – as well as 10 months operating without injuries from December 2004 – the company ended the year without reaching its safety targets. However, an external audit showed that DSL has made significant improvements in its safety systems since 2004.

In 2006, the organization will focus on behavioral safety training for employees to reach its ultimate goal of zero injuries.



# DSL 2005 Social Performance

Mining and producing salt and gypsum safely requires training, equipment and systems to protect employees whether they are operating mobile and stationary equipment or simply driving to work. Safety performance showed some encouraging trends in 2005, but sustaining these trends remains a challenge for DSL. Issues specific to the region include regular cyclones that require disaster management and recovery plans that account for employees and communities, and a general shortage of skilled labor that makes both recruiting and educating the next generation of employees priorities for DSL.

## DSL Social Targets and Performance

Metric	2005 Target	2005 Performance
LTIFR <sub>1</sub>	0.68	1.85
AIFR <sub>2</sub>	1.49	3.64
Staff absenteeism	2%	1.43%
Aboriginal Education Project in Carnarvon	Students enrolled in the Partnership for Success program complete the academic year	Met target – 23 students enrolled over the year
Responsible Care assessments	Three self-assessments; complete external verification under Responsible Care code	Met target
Stakeholder engagement	Write and distribute two newsletters to employees and contractors; provide business briefings to local government and business; invite community to Open Day at Dampier	Met target
Community understanding of sustainability objectives	Complete consultation for Ramsar listing of the Northern Ponds	Consultation with more than 50 organisations and individuals
Reporting	Complete the Social & Environment Report (RC Report) and all other internal and external reporting	Met target

<sup>1</sup> Lost Time Injury Frequency Rate is the number of lost time injuries per 200,000 hours worked.

<sup>2</sup> All Injury Frequency Rate is the number of all injuries (lost time and medical treatment cases) per 200,000 hours worked.



### Case Study

## PARTNERSHIP FOR SUCCESS – CARNARVON (LAKE MACLEOD)

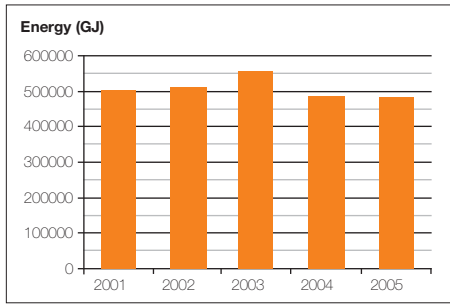
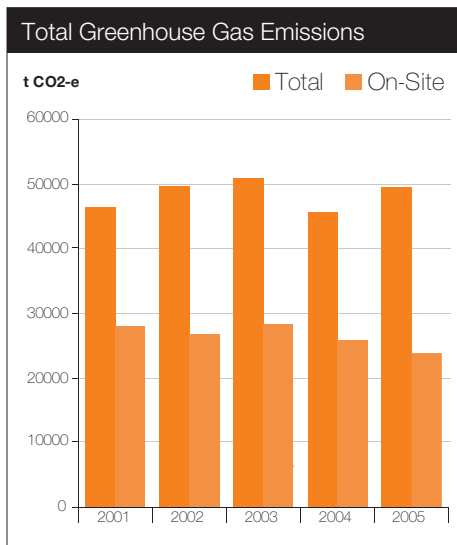
DSL established a partnership program with the Graham (Polly) Farmer Foundation, the Education Department of Western Australia including the Carnarvon Senior High School, the Commonwealth Department of Education and Training and the Rio Tinto WA Future fund. The program aims to improve Aboriginal students' retention rates, literacy and numeracy skills, thus increasing employment opportunities for Aboriginal school leavers in Carnarvon. A central element is the provision of a workroom with computers and resources, as well as a center for studying supported by after-school tutors.

In 2005 DSL made great strides, with a total of 23, year 7 – 12 students participating. Of the 23 students, three year-11 students went on to apprenticeships. Two of these have been directly employed by Rio Tinto Minerals through 'Apprenticeships Western Australia'; the third is an apprentice in the town of Carnarvon. Two of the year-12 students graduated and are now enrolled at the University of Western Australia, with one of the students receiving a Westscheme award.

Seventy members of the community, including parents and students, attended a year-end ceremony. DSL has received very positive feedback from teachers and parents, and one parent said "the girls had achieved more at the center than they did at school". Overall, the first year has been very successful and a credit to both the commitment of the students and the strong local support of the parents, teachers and all involved in the program. DSL is proud to be part of this positive initiative.

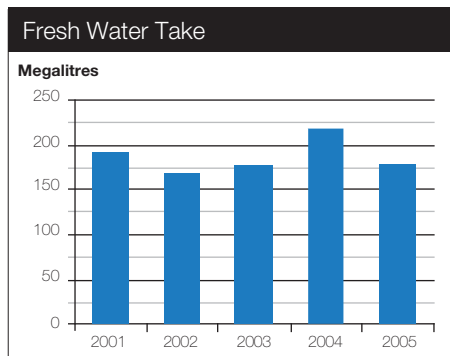
## ENERGY USE AND AIR EMISSIONS

Despite production increases in 2005, DSL made efficiency gains through its newly commissioned North Shore wash plant and conveyor, and used less energy to pump brine due to higher rainfall. Even with lower energy use in 2005, the amount of electricity imported was higher, increasing the company's overall greenhouse gas intensity, or tonnes of CO<sub>2</sub> emissions per gigajoule of energy used.



## WATER USE

While salt production increased in 2005, rainfall was higher than average, requiring less water per tonne of salt for washing. Efficiency gains were also made at DSL's Dampier Operation with the commissioning of the North Shore wash plant and conveyor. Higher rainfall at DSL sites in 2005 also led to less pumping of brine into the fields. Water use was higher than normal in 2004 as a result of a dry year in the Pilbara.



## LAND AND BIODIVERSITY

In 2005, working with government and non-governmental organizations, DSL completed a draft Management Plan for the proposed Ramsar listing of its northern ponds. The plan's goal is to protect the hundreds of thousands of migratory and non-migratory birds whose survival depends on these wetlands. More than 50 individuals and organisations were consulted through the process. As background, the 1971 Ramsar Convention is an international agreement for the protection of the ecology of wetlands. See the case study on page 23 for more information.

## REGULATORY COMPLIANCE

DSL maintained ISO 14001 certification of its environmental management systems in 2005. However, the company received eight non-conformances across its operations. Though these findings reflected a change in auditor, they also related to situations that had already been identified internally and had been included in improvement plans. Some non-conformances involved major infrastructure improvements delayed in 2005 due to the extreme difficulty in obtaining skilled workers in Western Australia.

# DSL 2005

# Environmental Performance

DSL sets challenging targets to reduce its emissions and use of natural resources, and seeks external verification of its environmental practices. Salt production requires fresh water for washdowns and processing, and energy to harvest and ship its products.

DSL operations are located in close proximity to wetlands that serve as important habitat for migrating bird species, requiring careful management and collaboration to protect native plant and animal species.





## DSL Environmental Targets and Performance

Metric	2005 Target	2005 Performance
Fresh water consumption	6% reduction (liters per tonne of product)	27% reduction
Fuel consumption	5% reduction in diesel consumption (kilograms per tonne of product)	19% reduction in diesel consumption
Electricity consumption	3% reduction (kilowatt hours per tonne of product)	14% increase
Land rehabilitation	22 hectares	Completed
Category II or above incidences of non-conformance with ISO 14001 standards	Zero	8



### Case Study

## RAMSAR LISTING OF THE NORTHERN PONDS

DSL has been progressing the Ramsar<sup>1</sup> listing of the Northern Ponds at Lake Macleod. The northern ponds contain an inland Mangrove community, which is one of only several in the world. The wetland is listed as a wetland of international significance for migratory bird species in Western Australia. The proposed listing is a joint initiative between DSL, Department of Conservation and Land Management (CALM) and WWF. The proposed listing has been publicly supported by the Western Australian government and is expected to be listed in early 2006.

The Northern Ponds wetland provides an important habitat for migratory and non-migratory shorebirds, with total numbers exceeding 100,000 at times. Many of the birds are listed under Australia's bilateral treaties on migratory species with Japan

and China. The ponds also host the world's largest inland community of grey mangroves.

In 2005, a draft management plan was released for public comment, describing a framework for protecting the ecology of the wetland, including the formation of a Management Advisory Group of stakeholders, with representatives of DSL, CALM, the local Indigenous people and surrounding pastoralists. The functions of the Management Advisory Group would include tracking the health of the wetland and advising on eventual control measures and corrective actions.

The consultation process for the draft management plan and the proposed Ramsar listing has involved over 50 stakeholders. The State Minister for the

Environment and most other parties have indicated support for the listing, however not all stakeholders have been supportive. The local indigenous people support protecting the ponds but worry that Ramsar listing would increase human visitation to the wetlands, resulting in degradation of the habitat. The pastoralists believe that the listing would lead to increased controls on land use, including grazing practices, which could impact on their business.

Although the formal period for submissions ended in October 2005, Rio Tinto Minerals, WWF-Australia and CALM have continued to pursue the consultation process in an effort to engage all stakeholders in the ecological management of this vital wetland area. It is expected that an agreed approach by all stakeholders can be achieved in 2006.

<sup>1</sup> The 1971 Ramsar Convention is an international agreement for the protection of the ecology of wetlands.



## DSL 2005

# Economic Performance

DSL's North Shore project – a new salt wash plant and associated dumping, conveying and stockpiling infrastructure at the Dampier site – was completed in 2005. Although the North Shore project has the potential to lower costs, water and energy use significantly, DSL experienced start-up problems that have prevented the plant from reaching its full potential and resulted in higher demurrage costs.

As a result of the delays in the North Shore project – as well as higher operating costs – DSL's 2005 earnings were slightly below target. Salt sales volumes and prices, however, were strong.

In 2006, the company will implement Operational Excellence programs to increase efficiency, and rely on innovative commercial strategies to achieve its earnings targets.



### Maximising Output - Minimising Waste – Protecting the Environment

Sound economics and sustainable development go hand-in-hand as recent experience at DSL's Port Hedland site in Western Australia has shown.

The company extracts salt from the waters of the Indian Ocean using solar energy for evaporation in large, shallow ponds until high quality sodium chloride (salt) is precipitated. 99.97% of the energy used in the process comes directly from the sun, ie solar energy.

Most of DSL's salt product is used in chemical industries for electrolytic production of chlorine and sodium hydroxide (caustic soda). The product must be highly pure and completely consistent. The company deals with potential impurities through selective crystallisation, processing the raw material through a series of ponds, with removal of different impurities along the way. This process creates a brine solution to feed the crystallisers where salt precipitates. The last pond in the system, prior to entering the crystallisers, is known as the "pickle pond".

DSL acquired Port Hedland in late 2001. An imbalanced expansion programme in the 1990s led to a situation where the site processed more than 300,000 tonnes a year more than its crystallising ponds could handle. This excess was stored in the pickle pond.

As market demand grew in 2004, DSL realized that Port Hedland needed to boost its production. The salt accumulated in the pickle pond offered a potential short term solution. A 1,000-tonne trial in early 2005 showed that the pickle pond material could be processed, then blended with 'standard' product, and still meet quality specifications. However, issues concerning large particles remained. The solution involved screening out the largest particles and using slurry pumping to abrade and break down the smaller ones. This process also provides the added advantage of an additional washing step for the salt product.

The Slurrytrak mobile slurry system, similar to one previously used at the Lake MacLeod gypsum operation, was tested and modified



for salt extraction. One million tonnes of salt have been identified for recovery from the pond over two years, and there is a possibility of more being recoverable.

DSL is thus able to recover approximately 25 percent more product and significantly reduce the potential salt loss in the system.



# Rio Tinto Minerals **Talc Operations**

Rio Tinto Minerals owns more than thirty talc mines and processing facilities worldwide. The talc group originated as a cottage industry in the mid-nineteenth century in the tiny French Pyrenean village of Luzenac. Over the years, the enterprise flourished to become the world's leading talc producing group, supplying 25 percent of global consumption. Today, Rio Tinto Minerals Talc operations employ over 1,300 people worldwide and sell 1.4 million tonnes of talc per year, totalling US\$380 million. The organization has been at the forefront in developing new uses for talc – many of which bring sustainable development benefits – and in introducing ways to extend the life-span of the minerals extraction operations through better ore utilization.



## TALC OPERATIONS IN THE AMERICAS

### Rio Tinto Minerals Yellowstone Operations

The company's primary North American talc mine in Montana

### Rio Tinto Minerals Three Forks Operations

Processing operation in Montana

### Rio Tinto Minerals Sappington Operations

Processing operation in Montana

### Rio Tinto Minerals Argonaut Operations

Open pit mine in Vermont

### Rio Tinto Minerals Ludlow Operations

Processing plant in Vermont

### Rio Tinto Minerals Penhorwood Operations

Mine in Canada

### Rio Tinto Minerals Timmins Operations

Processing facility in Canada

### Rio Tinto Minerals Houston Operations

Processing operation in Texas

### Rio Tinto Minerals Mexico City Operations

Processing operation in Mexico

## TALC OPERATIONS IN ASIA PACIFIC

### Rio Tinto Minerals Three Springs Operations

Open pit mine in Western Australia

### Rio Tinto Minerals Nihon Mistron Operations

A joint-venture covering two processing plants in Japan

## TALC OPERATIONS IN EUROPE

### Rio Tinto Minerals Trimouns Operations

The world's largest open pit talc mine in south west France, producing one third of the group's total output

### Rio Tinto Minerals Luzenac Operations

Processing facility in south west France

### Rio Tinto Minerals Rabenwald Operations

Open cast mine in Austria

### Rio Tinto Minerals Oberfeistritz Operations

Processing facility in Austria

### Rio Tinto Minerals Kleinfestritz-Katzensteiner Operations

Underground mine in Austria

### Rio Tinto Minerals Weisskirchen Operations

Processing facility in Austria

### Rio Tinto Minerals Lassing Operations

Processing facility in Austria

### Rio Tinto Minerals Ennsdorf Operations

Processing facility in Austria

### Rio Tinto Minerals Respina Operations

Open pit mine in north west Spain

### Rio Tinto Minerals Boñar Operations

Processing facility in north west Spain

### Rio Tinto Minerals Tres Amigos Operations

Open pit mine in southern Spain

### Rio Tinto Minerals Malaga Operations

Processing facility in southern Spain

### Rio Tinto Minerals Rodoretto Operations

Underground mine in Italy

### Rio Tinto Minerals Malanaggio Operations

Processing plant in Italy

### Rio Tinto Minerals Sa Matta Operations

Open pit mine in Sardinia

### Rio Tinto Minerals Monte Nieddu Operations

Processing facility in Sardinia

### Rio Tinto Minerals Gent Operations

Processing facility in Belgium

### Rio Tinto Minerals Widnes Operations

Storage, handling and processing facilities in the UK

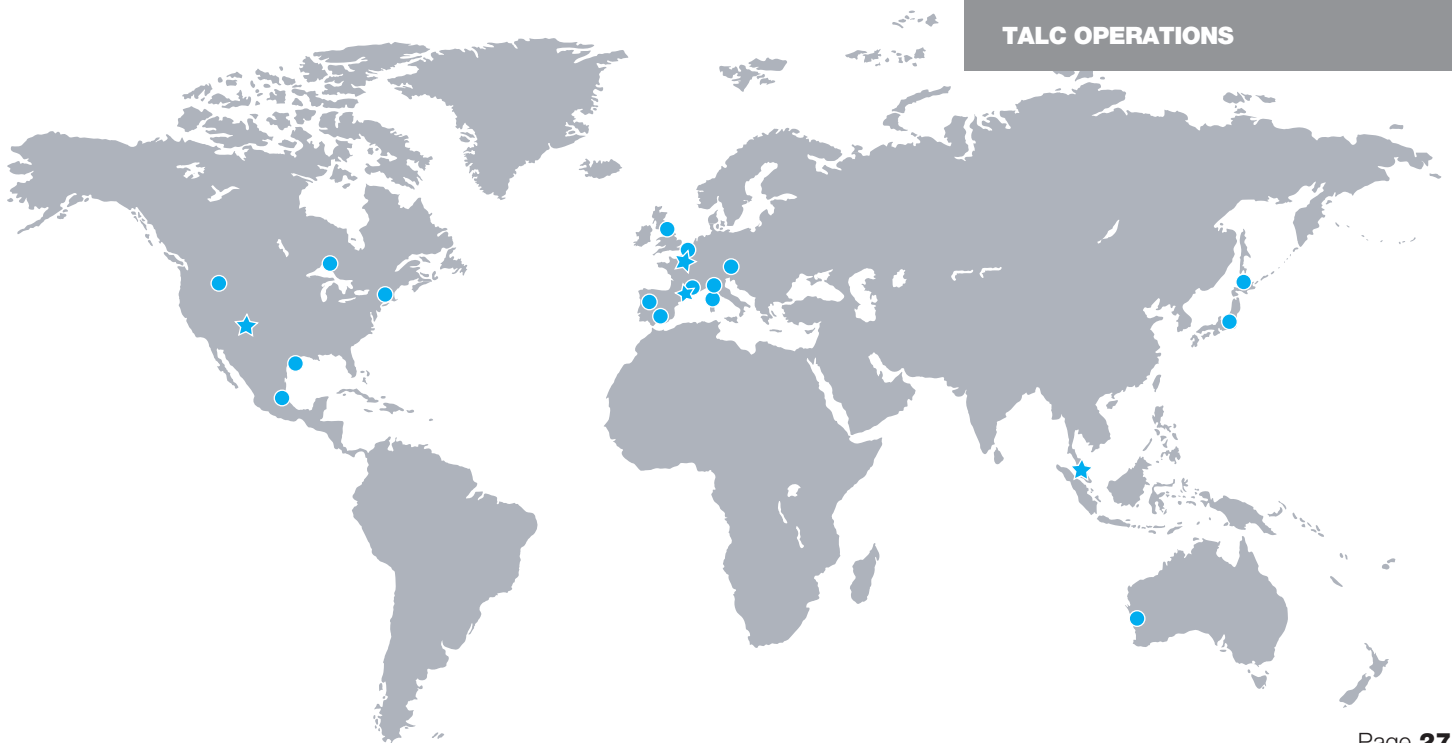
## ABOUT TALC

Talc – hydrated magnesium silicate, the softest mineral on earth – possesses a unique combination of properties. This water repellent, inert, platy mineral shows an affinity for organic substances. 'Talc' refers to a broad range of products with differences in composition, morphology and behavior. Talcs enhance performance in countless applications, including paper, paints, putties, roofing materials, plastics, automotive parts, ceramics, foundry work, rubber goods, personal care products, agriculture, food, pharmaceuticals, soap, cosmetics, and pesticides.

## ABOUT LUZENAC

Since 2002, Rio Tinto Minerals foundation business Luzenac has played a leading role in shaping and voluntarily reporting sustainable development indicators (SDI) developed by the European Commission. The company's sustainable development performance is presented on the following pages.

## TALC OPERATIONS



### **RIO TINTO HSE STANDARDS IN JAPAN**

Luzenac began applying its HSE Standards when it took management control of Nihon Mistron Company in September 2003—a real challenge in terms of language and resources. NMC has successfully implemented positive changes over the last two years: introducing a safety induction for site visitors; documenting previously verbal processes; ensuring systematic use of personal protective equipment; and requiring safety harnesses when working at heights. The efforts progressed quickly and effectively as NMC and Luzenac share the same underlying philosophy.

### **NOISE REDUCTION EFFORTS**

In 2005 Luzenac's Montana operations joined with the National Institute of Occupational Safety and Health to evaluate and reduce noise levels at its Three Forks Mill. Sound levels were measured throughout the plant and intensity was measured on machinery. Corrective measures included wrapping ducts; using noise-absorbing paint or curtains around equipment; balancing milling machines and mounting them on rubber pads; and, retrofitting the air classifier mills with absorptive materials. This reduced noise by 10 to 12 decibels in the milling room to below regulatory limits, enabling the facility to perform full shift maintenance in the milling areas. The project will be expanded to other zones in 2006, such as the packaging unit.



### **2005 AWARDS AND CERTIFICATION**

Luzenac's Austrian operations, nominated for the Austrian Safety Award in May, subsequently received the "Silver Securitas" (on-the-job safety award), and went on to earn a commendation from the European Agency for Safety and Health at Work at the end of 2005. As Austria's leading mining company, Luzenac was certified according to OHSAS (organisational health and safety audit system) ISO 18001. The auditors commended the different audit types in place, the HSEQ-database, the crisis management system, communication in shift meetings, the company safety calendar and the overall commitment to safety as a basic business value.

Luzenac's operations in Spain also received commendation for their 2005 performance. As part of its 1999-2005 Mining Safety Plan, the Spanish government ran a nationwide program to promote sharing good safety practices, which involved visiting companies to interview HSE, plant and mine managers. Management systems were broken down into worker participation; risk identification and assessment; prevention plan follow up and control; training and information; incident investigation; and emergency procedures. Fourteen good practices were identified from the companies visited. Luzenac's operation in León was elected as a benchmark in two categories: risk identification and assessment, and incident investigation. A guideline featuring the site's practices in these areas has been published.

### **CORNERSTONE OF THE COMMUNITY CELEBRATES CENTENARY**

Luzenac's largest talc operation (Talc de Luzenac France), in the French Pyrenean village of Luzenac, celebrated its 100th anniversary in 2005. In September, award-winning employees from the group's operations worldwide joined staff, residents of the surrounding communities, customers, community and government leaders to celebrate the centenary in a gala event culminating a year of competitions, photo exhibits, tours, and the publication of a book celebrating Luzenac's rich history and its contribution over several generations to the life of this mountain valley.

For a century, the company has provided employment to the residents of Luzenac village and nearby Garanou, but its influence also extends to the "group of communities" in the Vallées d'Ax, of which Luzenac village is the administrative seat, representing 39 municipalities and nearly 6,000 inhabitants. Luzenac is one of the cornerstones of the local economy through direct jobs — 58 percent of its employees live within 10 kilometers of the company facilities — as well as through subcontracting, and related stimulus of local commerce. The company plays a determining role in the budget of the "group of communities", contributing nearly a third of the tax revenues. Trimouns, the mountain-top talc mine, is a local landmark, open for public tours, and boosting tourism in the region. On average, 10,000 people visit the site every year.

In recent years, Luzenac has made important efforts to consult and communicate with local stakeholders. Opinion surveys show that 93 percent of the population has a positive image of the company. The recent centenary events, involving current and retired employees, helped to consolidate that image and to remind residents of the company's deep roots in the community, as well as its prospects for the future, as the Trimouns mine has sufficient reserves for another century or more of operations.

# Luzenac 2005 **Social Performance**

Safety continued to transition from being the company's first priority to its key value in 2005. Although performance fell short of targets in reducing injuries, several Luzenac operations earned commendation for benchmark performance. Last year was also a milestone for the company's French operation whose centenary celebrations afforded an excellent opportunity to strengthen ties with the local community, including government.

## LUZENAC Social Targets and Performance

Metric	2005 Target	2005 Performance
LTIFR <sub>1</sub>	0.47	0.92
AIFR <sub>2</sub>	0.95	1.51
Occupational health and safety	Achieve ISO 18001 certification at at least one site  Assess impact of EU vibration legislation on equipment and identify corrective action  Introduce crystalline silica monitoring for staff at all sites  Establish baseline and noise exposure reduction program consistent with Rio Tinto requirements  Start discussions on musculo-skeletal disease / workplace stress reduction in line with Rio Tinto requirements	Met target at Austrian Operations  Met target  Met target – exposure levels well below legal Threshold Limits  On track to reduce noise exposure by 20% from 2003 levels by 2008  Met target on musculo-skeletal disease; did not meet target on workplace stress
Compliance Assurance Training	Relevant employees worldwide complete training	Met target in Americas and Asia Pacific; provided feedback to improve program in Europe
Stakeholder engagement	Conduct group-wide employee satisfaction survey	Did not meet target
Community consultation	Conduct socio-economic baseline studies in Montana and Italy	Met target for Italy. Did not meet target for Montana

<sup>1</sup> Lost Time Injury Frequency Rate is the number of lost time injuries per 200,000 hours worked.

<sup>2</sup> All Injury Frequency Rate is the number of all injuries (lost time and medical treatment cases) per 200,000 hours worked.

### ... on the open day

*"Bravo for the centenary commemorations which cannot leave our community feeling indifferent, given all the memories we share. Bravo also for the excellent book relating our joint history. 2005 which will be "carved in the talc stone of our memories" as a symbol of the quality of our relationship."* (Christian Loubet, Mayor of Luzenac).

### ... on the photo exhibition

*"A wonderful centenary! This magnificent photo exhibition must live on and be seen elsewhere. A superb achievement by a dedicated company."* (A local historian)

### ... on the book

#### "The Epic of Luzenac Talc"

*"This book is a fantastic record of our industrial and social past."* (Research Scientist).

## PIEDMONT SATISFACTION SURVEY - LOCAL COMMUNITIES AND PERSONNEL

In 2005, Luzenac's operations in Italy conducted a community survey to determine how it is perceived by its neighbors. The survey was one of a series of baseline community studies Luzenac kicked off in 2003. There were no major findings, and results were generally positive. More information was requested on the operation, so an open day for neighbors has been slated for Spring 2006. Staff was also surveyed for the second time in two years. Results showed a general upward trend since 2004. Both surveys provide ideas for continuous improvement.

## COMMITTED TO SOCIAL RESPONSIBILITY

Luzenac's operation in Mexico City is acting to improve the neighborhood around its plant. Its actions include helping the community repair the fence around a basketball court used by local children and donating desks to a nearby school. The immediate environment around the plant was improved by cleaning and levelling the streets, installing a sidewalk, painting exterior walls, planting trees, and donating electrical cable for street lighting. By setting the example as a company, Luzenac has seen positive changes in its employees' attitudes too.





### **WIND POWER AT YELLOWSTONE**

Luzenac's Yellowstone operation plans to fund a feasibility study of the potential for wind-powered generators on the mine property. The area's windiness suggests that suitable conditions exist, but a scientific study is needed to test this. The likely plan would involve erecting a fifty-meter meteorological tower to collect data for a minimum of six months. This information would then be fed into a software package to predict the energy potential of a variety of wind vanes and generators. This project promises a long term "green" power supply with economic and environmental benefits for the region.

### **BIODIVERSITY OF RECLAIMED LANDS**

Luzenac's Rabenwald mine in Austria initiated a biodiversity study in the mining area in 2003. Thirty-three researchers have investigated the nature park area. Because traditional methods of reforestation tend to result in biotopes of lower ecological value, the research team recommends leaving more room for natural processes, such as the introduction of pioneer plants which prepare the soil for more demanding forest trees. This concept leads to more ecological value, higher biodiversity and more stability.

The results of the study were presented May-October 2005 in an exhibition in cooperation with Pöllauer Tal Nature Park. Schools, communities and tourists learned about reclamation concepts and the sustainable approach of Luzenac's Austrian operations. Students were invited to put forward ideas on a future concept for the nature park. The winning team received an award from Luzenac in December 2005.

### **FROM DISCHARGE WATER TO WATER OF LIFE**



Luzenac operates the Three Springs talc mine north of Perth. Since it opened in 1961, it has discharged water to a nearby

claypan (an area of dense, compact subsoil), which is now permanently inundated. Surveys of the water and sediment quality, the fringing flora, micro-algae, aquatic invertebrates and avian fauna began in 2000 in order to understand the ecosystem that has developed and any impacts from this operation. The discharge claypan supports a typical permanent community of aquatic invertebrates such as seed and brine shrimps. In drier months, evaporation causes higher salinity, triggering lifecycle changes in the aquatic invertebrates. With additional water from the mine discharge, the lower salinity allows any dormant eggs to hatch, resulting in more abundance.

### **REPLANTING WHILE SAVING TOPSOIL**

Luzenac has begun a trial on a 1,000-square-meter site to revegetate mine overburden without importing additional earth at its Trimouns mountain-top mine 1,500 to 1,800 meters high in the French Pyrenees. The three-year trial involves using a spray mixture of seeds, water and guano over a 50-centimeter thick substratum of overburden rock. If successful, this will reduce the need to import topsoil.

### **RE STOCKING PIEDMONT RIVERS**

Luzenac's operations in northern Italy authorized the local municipality to build a fish nursery on land adjacent to the company's Malanaggio plant last year to raise native fish species such as trout and pike to restock rivers throughout the province of Turin. The Piedmont Region, the Province of Turin and the Municipality of Porte support this project in an area which lies within a protected hydro-geological belt. The complex will include a visitor center and meeting room for educational purposes.

# Luzenac 2005

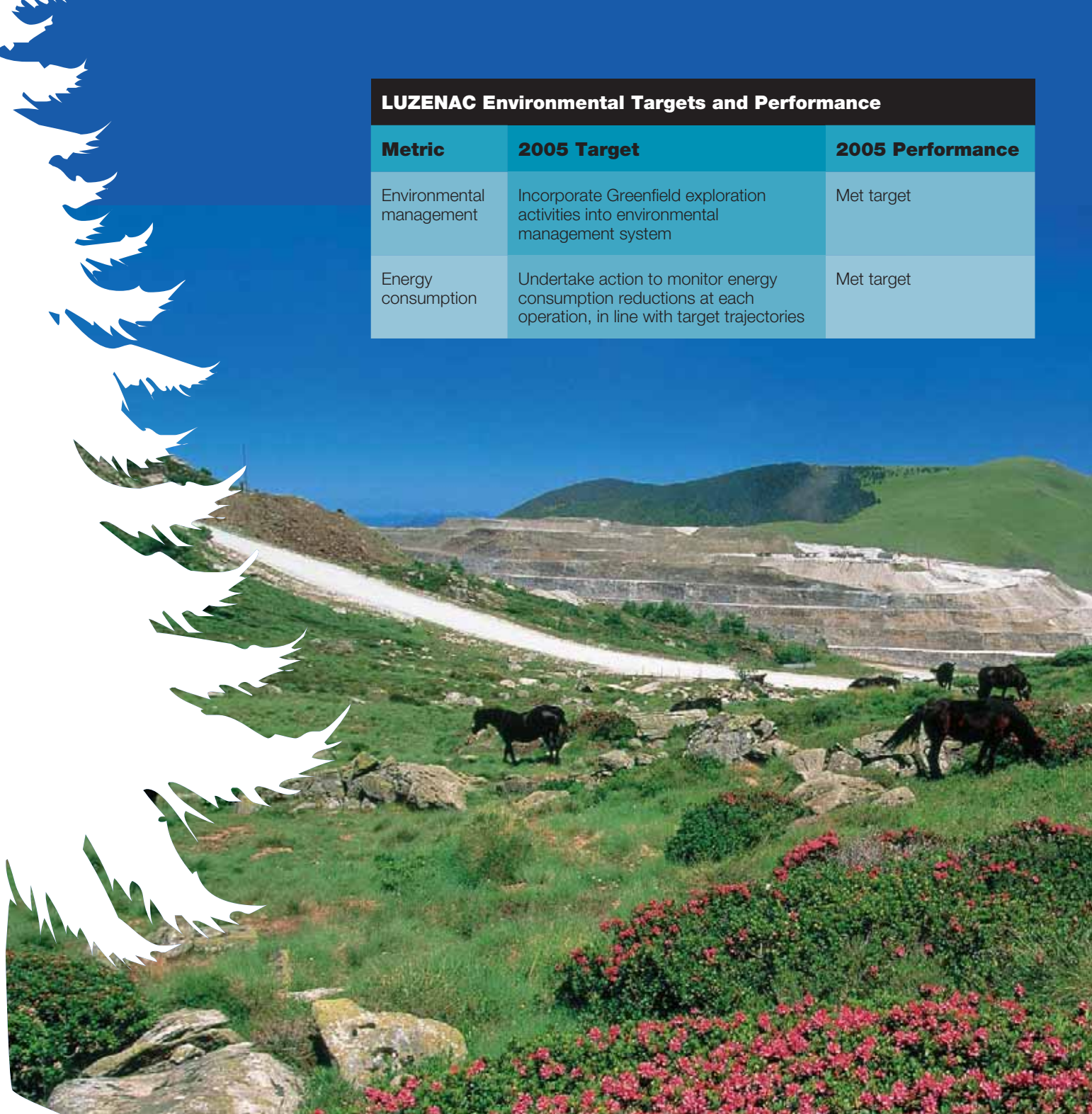
# Environmental Performance

In 2005 Luzenac pursued efforts on its five-year total energy reduction targets and kicked off some exciting new projects including plans to harness wind power at its Montana site and a topsoil-efficient revegetation scheme at its French deposit in the Pyrenees.



## LUZENAC Environmental Targets and Performance

Metric	2005 Target	2005 Performance
Environmental management	Incorporate Greenfield exploration activities into environmental management system	Met target
Energy consumption	Undertake action to monitor energy consumption reductions at each operation, in line with target trajectories	Met target



### RECYCLING WATER

Luzenac's Boñar talc processing plant in the province of León has significantly improved its closed-circuit system to reduce fresh water consumption in the plant's ore washing facility. A new pumping installation recovers water from decantation ponds and recycles it into the washing system, preventing the discharge of water with suspended solids, completely eliminating external discharge, and saving 80 percent of the fresh water required by the installation. The company's Respina mine, 45 kilometers north of the Boñar plant, will have a similar system in the coming months. It will reduce fresh water demand by an estimated

80 cubic meters per hour. The €30,000 investment is expected to generate yearly savings of €7,500, thus yielding a four year pay-back.

### METRICS FOR SUSTAINABLE DEVELOPMENT

The Institute for Resources and Sustainable Development of Graz Technical University and Denkstatt consulting agency, along with the Austrian Ministry for the Environment and six companies, including Luzenac, developed specific guidelines to help define sustainable development indicators for businesses. The guidelines

contain a list of SD indicators, applicable to all industries and locations. Step-by-step, these guidelines also help to identify the most significant indicators for each business. Several managers from Luzenac's Austrian operations played a leading role in establishing the metrics and at the same time learned a lot from the project itself. This follows Luzenac having taken the lead in the European minerals industry in 2003 to develop the SD Indicators Reporting Scheme for the extractive industry with the European Commission's Directorates General Enterprise and Industry.



### **OPTIMIZING ORE – SAVING ENERGY**

Luzenac can now reprocess coarse fractions containing usable amounts of high-quality white ore, previously marketed as lower grade, “grey” ore. Following a series of brain-storming sessions, the laboratory in Toulouse validated reprocessing this coarse fraction using micronization to manufacture talc products suitable for polymers. In its first full year of operation, this recycling process saved eight percent of white ore, valued at around €300,000, reducing overall extraction by about 23,000 tonnes and extending the life of the ore body. It has the added benefit of significantly decreasing overburden removal and related fuel consumption, thus releasing fewer greenhouse gases.

### **RECYCLING USABLE RAW MATERIAL**

In 2003, Luzenac’s Widnes Operation introduced a system to rework material which previously ended up as waste product. The addition of a new SkipVac in January 2005 made the system fully operational. Over a two-year period, waste was reduced by 24 percent, meaning that money was saved first by sending 76 fewer tonnes to landfill, and secondly by recycling some 50 tonnes of usable raw material for processing and sale.



*To recycle usable raw material, the contents of SkipVacs and dust collectors goes into “rework” bags to be returned to the relevant stockpile.*

### **CUSTOMER FEEDBACK ENHANCING OUR RESPONSE**

In 2005, to orient our communications strategy to better meet customer needs, our Paint & Coatings Business Unit asked European customers in five countries to take part in an image survey similar to one carried out in 1997. Two hundred people in both technical and commercial roles filled in an on-line questionnaire. Their feedback, fleshed out by 20 in-depth telephone interviews, revealed that Luzenac, although generally perceived as a serious and reliable group providing good quality products, can appear somewhat inflexible. In 2006, the company will focus on enhancing its response efforts so that customers see Luzenac as a more reactive, caring partner.

### **IMPROVING OPERATIONAL EFFICIENCY AND SAFETY**

Getting a moist mineral product out of a silo poses a challenge. At Luzenac’s Gent Operations, an operator had to knock the product loose with a sledge hammer, until the company found the solution – installing two rotating drums with small paddles in the bottom of the silo. To prevent bridging of the product just above the drums, the paddles are programmed to make a quarter turn whenever the conveyor belt gives a low-level alarm, thus inducing a downward flow towards the silo outlet, which has been changed from conic to rectangular. This solution produces more regular flow, increases productivity, prevents deterioration of the silo, and eliminates a deafening, muscle-straining chore in a tight, uncomfortable space. The investment to change the silo outlet and install the drums and paddles totalled €110,000.



### **NEW LEASE ON LIFE FOR LUZENAC AUSTRIA’S SMALLEST MINE**

Leucophyllite, a natural coalescence of mica, chlorite and quartz, prompted a rare event in Europe – the opening of a new underground mine. For over 90 years, this scarce mineral has been profitably extracted from the Kleinfestritz mine and processed into a high-value filler and additive for

# Luzenac 2005 **Economic Performance**

When a company owns a large proportion of the world’s talc bodies, optimizing that resource doesn’t just make economic sense, it becomes a duty. Last year, Luzenac continued introducing processes that make the most of every tonne of ore extracted, and pursued plans to open a new deposit to replace its Kleinfestritz mine in Austria, which is approaching depletion.



## LUZENAC Economic Targets and Performance

Metric	2005 Target	2005 Performance
Efficiency	Install equipment to raise efficiency and product purity Install Small Particle Sorter at Australian operation	Met targets
Acquisitions	Continue to apply SD criteria to all acquisition and project opportunities	Met target
Customer partnerships	Deliver presentations on SD program to key customers	Met target



coatings, paints, putties and adhesives, marketed as *Plastorit*<sup>®</sup>.

But Kleinfestritz is nearly depleted. Like many small mining operations in rural settings, this mine and the Weisskirchen plant it supplies play a vital community role in the local economy. Residents appreciate its effective noise management and community-related initiatives, such as converting energy from the plant into heat for local households.

Fortunately, geologists discovered a new deposit on the other side of the valley, with reserves to give the local industry another 60-year lease on life. When the new mine,

Katzensteiner, comes on line in mid-2007, it will use similar production methods, including drilling and blasting the rock face, then removing ore and waste rock via load-haul-dump trucks. The waste material, mixed with aggregates and concrete, will fill excavations, limiting collapse and preventing subsidence, thus allowing safe extraction of a maximum volume of ore.

### SHARING BEST SD PRACTICE

In 2005, Luzenac continued to present its sustainable development approach to customers world-wide, who showed great interest in the Rio Tinto approach to building the value chain through SD.

Notably, Borealis, a leading, innovative provider of plastics solutions based on polyethylene and polypropylene has been working on a new environmental strategy to cover their entire supply chain.

Roger Van der Linden, Manager Environmental Affairs of the Borealis Group said he was “impressed with Luzenac’s sophisticated work in developing their environmental key performance indicators. This will facilitate the establishment of our own environmental KPIs for the Supply Chain and for our products and markets.”



# Future **Focus**

Rio Tinto Minerals has begun the process of integrating its approach to sustainable development, as well as its performance targets, and will present a single report in 2006. These efforts will be led by a global Steering Committee made up of executives and managers across the business.

Major areas of focus include engaging employees at every operation in raising safety standards and sharing best practices to meet global energy, water and greenhouse gas emission reduction targets. Rio Tinto Minerals will also work to improve how it leverages the health, safety and environmental benefits of its products to create value for its customers. Excellent employee recruitment and retention, community relations and product stewardship practices will also continue to be priorities.

Actions to achieve these and other improvement goals are expressed in the 2006 performance targets and elsewhere throughout this report.

Thank you for reading Rio Tinto Minerals' 2005 Sustainable Development Report. We welcome your comments and questions, as well as your ideas to make this report better. For more information, or to give us your feedback, please fill out the form on the opposite page.

# We care **what you think**

We welcome your feedback to help us improve future reports

<b>Please score the report for:</b>	<b>Poor</b>				<b>Excellent</b>
Providing relevant information	1	2	3	4	5
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This form can be returned to us via email or fax to:

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Introduction
Executive Summary
2006 Targets
Sustainable products section
Foundation business sections

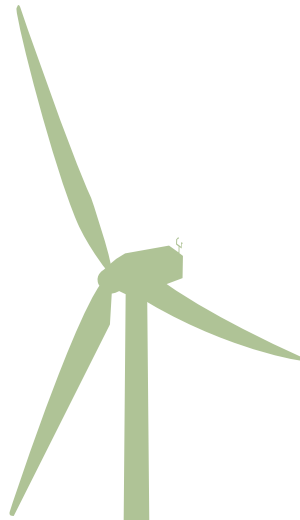
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More social information
More environmental information
More economic information
Electronic version distributed via internet

### **Do you have any further comments about the report or Rio Tinto Minerals' performance?**


### **I am interested in this report mainly as:**

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**for your time**

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