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BHP BILLITON
HEALTH SAFETY ENVIRONMENT AND COMMUNITY REPORT 2003
FULL REPORT




bhpbilliton

Our New Approach to Reporting

In early 2003, we commissioned an independent survey to find out in which formats our stakeholders would prefer to receive our Health, Safety, Environment and Community (HSEC) Report.

The object of the exercise was to enable us to report in a way that allowed stakeholders to quickly review our performance, while also having the opportunity to easily access greater amounts of detail as required.

In response to this feedback, we are providing expanded information on our website while reducing our printed report to a smaller summary version. This is the mix preferred by the great majority of our stakeholders. A brief summary of our HSEC performance is also included in the Company's Annual Report.

Global Reporting Initiative

This 2003 full HSEC Report has been prepared in accordance with the Global Reporting Initiative (GRI) 2002 Sustainability Reporting Guidelines. It should be recognised that, due to the size and complexity of our business, judgements have had to be made regarding the extent of the information that can be presented in relation to each GRI indicator. Please contact the Company if you would like further information.

A GRI content index has been independently prepared by URS Corporate Sustainable Solutions, outlining how each specific requirement of Part C of the GRI Guidelines has been addressed. A search function, the GRI Index Navigator, enables online searching of the Report, to show where each GRI indicator is addressed.

This full HSEC Report, the Summary Report and the GRI index are available in PDF format.

About this Report

Explanation of Company terms

BHP Billiton is a Dual Listed Company comprising BHP Billiton Limited and BHP Billiton Plc and their subsidiaries. The two entities continue to exist as separate companies but operate as a combined group known as BHP Billiton.

Throughout this Report, the terms BHP Billiton, the Company and the Group refer to the combined group, including both BHP Billiton Limited and subsidiary companies and BHP Billiton Plc and subsidiary companies.

The statistics in this Report cover the facilities owned and operated by BHP Billiton during the 12-month period to 30 June 2003. Joint venture projects where we are not the operator are excluded unless expressly stated. The Report identifies where information has been provided to facilitate year-to-year comparison of our performance without BHP Steel, which commenced trading on the Australian Stock Exchange as a separate listed company in July 2002.

All dollar figures in the Report are US unless otherwise indicated.

Transparency and feedback

Our aim is to provide a balanced and reasonable presentation of the Company's economic, health, safety, environmental and community performance.

We are continuously improving our reporting systems and endeavour to present useful and accurate information. While every effort has been made to ensure the accuracy of the information, including the figures, in this Report, the data are derived from our many operations around the world and, in some cases, grouped data are not strictly comparable.

Anyone seeking to rely on information in this Report or seeking to draw detailed conclusions from the data should contact the Company for verification and assistance.

Your comments on the contents of our HSEC Report would be greatly appreciated and can be noted on the Feedback Form.

Our 2001 and 2002 HSEC Reports are available at ***www.bhpbilliton.com/bb/sustainableDevelopment/reportsAndPolicies.jsp***

BHP Billiton Limited. ABN 49 004 028 077. Registered in Australia.
Registered Office (from 6 October 2003): BHP Billiton Centre, 180 Lonsdale Street, Melbourne, Victoria 3000, Australia.

BHP Billiton Plc. Registration Number 3196209. Registered in England and Wales.
Registered Office: Neathouse Place, London SW1V 1LH, United Kingdom.

Member of DJSI – 2004

BEST IN CLASS

▸ Front cover main photo: Marcelino Melo Jr., Casthouse crew member, Mozal Aluminium Smelter, Mozambique
The supporting images reflect our journey towards sustainable development – our products, our people, our stakeholders, our future

Contents

Message from the Chief Executive Officer

► *Chip Goodyear, Chief Executive Officer*

At BHP Billiton, we take a long-term view of our business. A key aspect of our strategic framework is our health, safety, environment and community (HSEC) performance – because we value our people, we respect our host communities and we believe that excellence in HSEC is good for our business.

I am very pleased to advise that we have made steady progress against many of the targets in our HSEC scorecard. However, we also recognise that there is much work to be done, and this report outlines a number of our key work programs.

While pleased about our achievements, I am deeply saddened to report that three people lost their lives in our controlled operations during the year. These people lost their lives in the course of earning a living and helping our operations achieve their objectives. But none of our achievements is worth the loss of a life, and we will continue to seek opportunities to improve our safety performance and eliminate fatalities from the workplace.

Environmental performance across the Company continued to be sound, reflecting our systematic approach to managing environmental risk. Management plans focusing upon driving eco-efficiency gains have been developed in the areas of energy usage, greenhouse gas emissions, water and waste.

In line with our HSEC Policy, efforts have continued towards improving our engagement with our host communities. Our community contributions, supporting community programs and capacity building, this year amounted to US$42 million, or 1.4 per cent of our pre-tax profit, which once again exceeded the target of 1 percent. In addition, US$12.5 billion was contributed to regional economies from expenditure associated with sustaining our operations.

During the year, we have been active in the International Council on Mining and Metals (ICMM) work program, contributing to the formulation of the Sustainable Development Framework, a guiding set of principles now endorsed by all member companies. We have also committed to implement the World Bank Guidelines on Involuntary Resettlement and the US-UK Voluntary Principles on Security and Human Rights.

We have been pleased over the past year to receive external recognition of our performance in the areas of community partnerships, sustainable development and public reporting. Internally, our HSEC Employee Awards program has been highly successful in recognising excellence in HSEC performance and transferring those improvement ideas across the organisation.

The full HSEC Report on our website has been prepared in accordance with the Global Reporting Initiative 2002 Sustainability Reporting Guidelines and represents a balanced and reasonable presentation of our organisation's economic, environmental and social performance.

The leadership team at BHP Billiton is committed to our journey towards sustainable development and Zero Harm. We understand that our leadership efforts are fundamental for success, and we will support and drive this relentlessly. This journey, however, is not ours alone. It is all about partnerships with our stakeholders – our employees, contractors, shareholders, business partners, suppliers, customers, government and non-government organisations and host communities.

Together, we have the will, the resources and the skills to be successful.

Chip Goodyear
Chief Executive Officer

HSEC Targets and Scorecard

BHP Billiton HSEC Targets (Baseline 1 July 2001 to 30 June 2002)

Legend: Target exceeded or ahead of schedule | Target achieved (≥95%) or on track | Target behind schedule | Target not achieved

MANAGEMENT SYSTEMS	
All sites[1] to undertake annual self-assessments against the BHP Billiton HSEC Management Standards.	Systems in place and audits or self-assessments completed at 99 per cent of required sites in FY03. Audits were also conducted at three non-operated sites (not required by the target).
All sites[1] to achieve and maintain ISO 14001 Certification.	All sites requiring ISO 14001 are accredited or have been recommended for accreditation by their ISO auditor.
Legal Compliance Zero fines and prosecutions.	Nine fines in FY03 totalling US$166 944.
Risk Management Risk registers to be in place at all sites and within BHP Billiton businesses and Corporate.	Risk registers in place at all required sites and at Customer Sector Group and Corporate levels. HSEC risk incorporated in Enterprise-Wide Risk Management framework.
SAFETY	
Zero fatalities.	Three fatalities in controlled activities.[2]
50 per cent reduction in Classified Injury Frequency Rate[3] (excluding First Aid treatments) at sites by 30 June 2007.	20 per cent reduction in Classified Injury Frequency Rate in FY03.
HEALTH	
All sites[1] to implement a baseline survey on occupational exposure hazards and establish occupational hygiene monitoring and health surveillance programs.	97 per cent of required sites implemented baseline surveys. In addition, 91 per cent of employees requiring medical health surveillance completed the medical examination.
Annual reduction in percentage of people potentially exposed above occupational exposure limits.[4]	FY03 was the baseline year in determining exposure data.
20 per cent reduction in incidence of occupational disease by 30 June 2007.	FY03 was the baseline year in determining incidence rates.
COMMUNITY	
All sites[5] to prepare public HSEC reports at a local level (including incidents, community complaints, and relevant site-specific emissions) on an annual basis.	HSEC reporting initiatives are in place at 97 per cent of required sites or businesses.
All sites[5] to have a community relations plan in place.	Community relations plans in place at 95 per cent of required sites and at 21 sites that were not required to meet this target.
No transgressions within the Group's activities of the principles embodied within the United Nations Universal Declaration of Human Rights.	None reported.
Aggregate contribution to community programs, including in-kind support, of a target of 1 per cent pre-tax profits, calculated on a three-year rolling average.	Expenditure totalled US$42 million, being 1.4 per cent of pre-tax profits on a three-year rolling average.

HSEC Targets and Scorecard continued

BHP Billiton HSEC Targets (Baseline 1 July 2001 to 30 June 2002) continued

Legend: Target exceeded or ahead of schedule | Target achieved (≥95%) or on track | Target behind schedule | Target not achieved

ENVIRONMENT	
Zero significant incidents (i.e., rated 3 and above on the BHP Billiton Consequence Severity Table).	Zero significant environmental incidents.
Energy and Greenhouse All sites with emissions greater than 100 000 tonnes per year of carbon dioxide equivalent[6] are required to have energy conservation plans with specific targets in place.	Energy conservation plans in place at 88 per cent of required sites and at nine sites that were below the emissions threshold.
All sites with emissions greater than 100 000 tonnes per year of carbon dioxide equivalent[6] are required to have greenhouse gas management programs.	Greenhouse gas management programs in place at 85 per cent of required sites and at eight sites that were below the emissions threshold.
Aggregate Group target for reduction in greenhouse gas emissions per unit of production of 5 per cent by 30 June 2007.	FY03 intensity reduction achieved was 6 per cent, which exceeded the long-range target (although data can fluctuate on an annual basis).
Water All sites with fresh water consumption greater than 500 ML per annum[7] to have water management plans in place.	Water management plans in place at 98 per cent of required sites and at 24 sites that were below the threshold.
Aggregate Group target of 10 per cent reduction in fresh water consumption per unit of production by 30 June 2007.	FY03 intensity reduction achieved was 1 per cent.
Waste All sites[1] to have waste minimisation programs in place.	Waste minimisation programs in place at 100 per cent of required sites and at 18 sites that were not required to meet this target.
Aggregate Group target of 20 per cent reduction in waste (excluding recycled and mining-related materials, such as waste rock, tailings, coal reject and slag) per unit of production by 30 June 2007.	Increases in waste intensity reported in both general waste and hazardous waste categories. The level of new project development impacted the amount of general waste generated.
Land Management All sites[5] to have land management plans in place to protect and enhance agreed beneficial uses.	Land management plans in place at 96 per cent of required sites and at 21 sites that were not required to meet this target.
Product Stewardship Life cycle assessments prepared for all major BHP Billiton minerals products by 30 June 2004 (incorporating participation in industry programs as appropriate).	This target is being monitored at the commodity level and is on track.

Notes

1. Excludes exploration and development projects, sites being divested, closed sites and offices (numbering 57 sites in total).
2. Controlled activities are work-related activities where BHP Billiton directly supervises and enforces HSEC standards.
3. A classified injury is any workplace injury that has resulted in the person not returning to their unrestricted normal duties after the day on which the injury was received.
4. Target modified to reflect adoption of BHP Billiton exposure standards (see Health Performance Summary).
5. Excludes petroleum platforms, exploration and development projects, closed sites, and offices with no significant community or land management issues.
6. Forty sites have emissions greater than 100 000 tpa carbon dioxide equivalent and, combined, account for 98 per cent of the Group's greenhouse gas emissions.
7. Forty-one sites have freshwater consumption greater than 500 ML per annum and, combined, account for greater than 91 per cent of the Group's consumption.

BHP BILLITON CHARTER

WE ARE BHP BILLITON, A LEADING GLOBAL RESOURCES COMPANY.

Our purpose is to create value through the discovery, development and conversion of natural resources, and the provision of innovative customer and market-focused solutions.

To prosper and achieve real growth, we must:

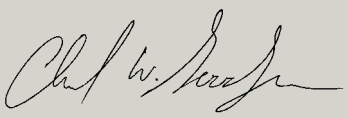
- actively manage and build our portfolio of high-quality assets and services,
- continue the drive towards a high-performance organisation in which every individual accepts responsibility and is rewarded for results,
- earn the trust of employees, customers, suppliers, communities and shareholders by being forthright in our communications and consistently delivering on commitments.

We value:

- **Safety and the Environment** – An overriding commitment to health, safety, environmental responsibility and sustainable development.
- **Integrity** – Doing what we say we will do.
- **High Performance** – The excitement and fulfilment of achieving superior business results and stretching our capabilities.
- **Win-Win Relationships** – Having relationships which focus on the creation of value for all parties.
- **The Courage to Lead Change** – Accepting the responsibility to inspire and deliver positive change in the face of adversity.
- **Respect for Each Other** – The embracing of diversity, enriched by openness, sharing, trust, teamwork and involvement.

We are successful in creating value when:

- our shareholders are realising a superior return on their investment
- our customers and suppliers are benefiting from our business relationships
- the communities in which we operate value our citizenship
- every employee starts each day with a sense of purpose and ends each day with a sense of accomplishment.



Chip Goodyear
Chief Executive Officer

January 2003

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WORKING RESPONSIBLY AT BHP BILLITON: OUR HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY POLICY

At BHP Billiton, we are committed to sustainable development. Health, safety, environment and community responsibilities are integral to the way we do business.

We commit to continual improvement in our performance, efficient use of natural resources and aspire to zero harm to people and the environment.

Wherever we operate we will:

Develop, implement and maintain management systems for health, safety, environment and the community that are consistent with internationally recognised standards and enable us to:

- identify, assess and manage risks to employees, contractors, the environment and communities
- strive to achieve leading industry practice
- meet and, where appropriate, exceed applicable legal and other requirements
- set and achieve targets that include reducing and preventing pollution
- develop our people and provide resources to meet our targets
- support the fundamental human rights of employees, contractors and the communities in which we operate
- respect the traditional rights of indigenous peoples
- care for the environment and value cultural heritage
- advise on the responsible use of our products.

Seek opportunities to share our success by:

- working with communities to contribute to social infrastructure needs through the development and use of appropriate skills and technologies
- developing partnerships that focus on creating sustainable value for everyone.

Communicate with, and engage, employees, contractors, business partners, suppliers, customers, visitors and communities to:

- build relationships based on honesty, openness, mutual trust and involvement
- share responsibility for meeting the requirements of this Policy.

We will review regularly and report publicly our progress and ensure this Policy remains relevant to the needs of our stakeholders. We will be successful when we achieve our targets towards our goal of zero harm and we are valued by the communities in which we work.

Chip Goodyear
Chief Executive Officer

January 2003

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Executive Summary

BHP Billiton is the world's largest diversified resources company. The long-term, stable nature of our business affords a number of advantages. Within the HSEC arena, this stability translates into a capacity to plan for the longer term, while our diversification allows us to transfer improvement and innovation across the organisation.

Central to our business, as our Charter states, is our 'overriding commitment to health, safety, environmental responsibility and sustainable development'. Supporting this value is our HSEC Policy, providing the framework for our aspiration towards Zero Harm. In practice, the Policy and Charter are implemented via detailed HSEC Management Standards and Protocols, the requirements of which must be met at all our operations.

The implementation of the HSEC Management Standards continues to progress well, with understanding and conformance to the Standards improving. The associated audit process for the Standards is proving invaluable in accelerating the rate of improvement in all aspects of HSEC management through the identification and communication of leading practices.

During the year, the Health, Safety and Environment Committee of the Board continued to provide guidance in relation to the effectiveness of HSEC management systems and strategies. Members participated in a number of site reviews and audits, as well as acting in an advisory capacity for significant incident reviews.

To better understand and manage HSEC risks that are critical to our business, risk registers are now in place at all required operations and development sites and at Customer Sector Group and Corporate levels. With the implementation of the Enterprise-Wide Risk Management process, HSEC risks are now being embedded into core business systems and processes.

Improving health and safety performance continued to be a critical focus for the organisation. Baseline health surveys were completed at a majority of sites, incorporating the establishment of occupational hygiene monitoring and health surveillance programs. A 20 per cent reduction in our injury frequency rate was an excellent achievement during the year, reflecting efforts dedicated to safety improvement. However, we deeply regret that three people lost their lives in our controlled operations during the year.

While the number of fatalities (3) in our controlled operations was significantly lower than last year (13), each death that occurs has a profound impact on our people and their families. Our resolve to attain our goal of zero fatalities is stronger than ever, and we will continue to seek opportunities to improve. The development of Fatal Risk Control Protocols for nine key areas is a significant step towards achieving this goal. The Protocols, written by experienced teams drawn from across BHP Billiton, establish minimum performance requirements for managing risk in areas associated with the majority of our past fatalities. We are also monitoring significant incidents, including fatalities, that occur from activities related to our business but are not under our management control. We have established processes to learn from these incidents.

Environmental performance across the Company continued to be sound, reflecting our systematic approach to managing environmental risk. No significant environmental incidents (i.e. incidents rated 3 or above on the BHP Billiton Consequence Severity Table) were recorded during the period. Furthermore, in line with our target for sites to achieve certification against the international standard for environmental management ISO 14001, all sites requiring certification are now certified or have been recommended for certification by their ISO auditor. Recognising that improving environmental performance will, in many cases, improve our financial returns, plans focusing upon driving eco-efficiency gains have been developed at a majority of sites.

In line with our Policy, efforts have continued towards improving our engagement with our host communities. Community relations plans are in place at 95 per cent of the required sites around the world. Our community contributions of 1.4 per cent of our pre-tax profit, based on a rolling three-year average, once again exceeded the target of 1 per cent. Many of these contributions support programs that focus on delivering sustained benefits in areas such as health, education and training. No transgressions of the principles embodied within the United Nations Declaration of Human Rights were reported to have occurred within the Group during the year.

Some of our improvements in HSEC performance have been realised through the application of the Operating Excellence business improvement methodology. Many of these projects have not only demonstrated HSEC gains, but also importantly delivered sustainable business outcomes. For example, an energy efficiency project at EKATI has saved over one million litres of diesel usage per annum and contributed to a 21 per cent reduction in greenhouse gas intensity at that site. Incorporation of HSEC into our strategic framework recognises that good HSEC performance delivers good business performance.

During the year, we have been active in the International Council on Mining and Metals (ICMM) work program. The ICMM was established in 2001 as a global leadership body on sustainable development. An important part of the establishment process of the ICMM has been the development of the Sustainable Development Framework, a guiding set of principles, which all member companies have now endorsed. A gap analysis of our HSEC Management Standards and the Framework identified strong alignment in the majority of areas, with the exception of community relocation and human rights training and guidance. As a result, we have since committed to implement the World Bank Guidelines on Involuntary Resettlement and the US-UK Voluntary Principles on Security and Human Rights.

In June 2003, we reaffirmed our commitment to the United Nations Global Compact and associated principles (a copy of our letter to the United Nations is available on our website at ***www.bhpbilliton.com/bb/sustainableDevelopment/reportsAndPolicies.jsp***). While fully recognising the right of our employees to freely associate and join trade unions, we have a number of locations where we have a mix of collective and individual arrangements. Prospective employees are made aware of employment arrangements prior to joining the Company. At all times, our businesses comply with local employment law requirements and treat employees in accordance with the values expressed in our Charter.

We have been delighted over the past year to receive external recognition for our performance in the areas of community partnerships, sustainable development and public reporting. Notable events have included our inclusion in the Dow Jones Sustainability Index and the FTSE4Good Index, and receipt of the Special Award in Environmental Reporting at the Australasian Reporting Awards, the Banksia Award for Leadership in Sustainability in the Australian Minerals Industry, the Australian Prime Minister's Award for Excellence in Community and Business Partnerships, and the 'Corporate Partnership of the Year Award 2003' at *The Australian Financial Review Magazine* Partnership Awards.

Internally, our Employee HSEC Awards program has been highly successful, with an increased number of applications received from across the Company. The awards have proved to be invaluable in recognising excellence in HSEC and transferring those improvement ideas throughout the organisation.

This HSEC Report was prepared in accordance with the Global Reporting Initiative 2002 Sustainability Reporting Guidelines. It should be recognised that, due to the size and complexity of our business, judgements have had to be made regarding the extent of the information that can be presented in relation to each GRI indicator.

Moving forward, our efforts continue to focus on improvement of HSEC performance, consistent with our belief that this is in the interest of all of our stakeholders, as we travel the journey to sustainability.

BHP Billiton Profile

BHP Billiton is the world's largest diversified resources company, with a portfolio of high-quality, long-life assets and a significant pipeline of growth projects. The Company has some 34 800 employees, working in more than 100 operations and offices in 26 countries (see BHP Billiton Locations).

The Company was created in 2001 through the Dual Listed Companies (DLC) merger of BHP Limited (now BHP Billiton Limited) and Billiton Plc (now BHP Billiton Plc). Headquartered in Melbourne, the Group has primary listings on the Australian and London Stock Exchanges and has a business model created around seven Customer Sector Groups (CSGs). These are based on customer-oriented groupings of commodities, reflecting our focus on the needs of our customers.

Each of the CSGs is a substantial business in its own right, and several are leaders in their respective fields. They have autonomy to optimise their businesses, with clear accountabilities. The CSGs are:

- Aluminium (mining of bauxite, refining to alumina and smelting to produce aluminium)
- Base Metals (mining of copper, lead, zinc, gold, and silver, processing of copper)
- Carbon Steel Materials (mining and processing of iron ore, mining of metallurgical coal and mining and smelting of manganese)
- Diamonds and Specialty Products (mining and processing of diamonds and titanium minerals, metals distribution, Exploration and Technology)
- Energy Coal (mining of thermal coal)
- Petroleum (onshore and offshore processing of oil, gas, liquefied natural gas, liquefied petroleum gas)
- Stainless Steel Materials (mining and processing of nickel, cobalt and chrome).

Volumes of production for some of our most significant commodities are in the order of:

- 1 million tonnes of aluminium and 4 million tonnes of alumina
- 0.9 million tonnes of copper
- 70 million tonnes of iron ore
- 35 million tonnes of metallurgical coal
- 80 million tonnes of thermal coal
- 4 million carats of diamonds
- 70 million barrels of crude oil and condensate
- 300 billion cubic feet of natural gas
- 0.1 million tonnes of nickel.

Our key markets downstream are refiners and processors of raw materials, for example, steelworks, smelters, petroleum refiners, thermal power stations, diamond cutters, and so on.

During the year, the following operations were demerged, divested or closed:

- BHP Steel, Australia/Asia (demerged)
- BHP Billiton stake in Alumbrera, Argentina (divested)
- Delmas Colliery, South Africa (divested)
- Tower Colliery, Australia (closed)
- Pering Mine, South Africa (closed).

This will be the first year that our HSEC Report does not include data for these operations. Due to the significance of contributions from BHP Steel, the Report identifies where information has been provided to facilitate year-to-year comparison of performance without BHP Steel.

BHP Billiton has an annual turnover of US$17.5 billion, attributable profit of approximately US$1.9 billion and an enterprise value of US$35 billion (at 30 June 2003). Summary financial information for the Group is presented in Figure 1.

Our shareholder base is widely diversified, with approximately 39 per cent of shares held in Australia, 30 per cent in the UK and Europe, 18 per cent in North America, 8 per cent in South Africa and 5 per cent in Asia.

The diversification extends to our markets and countries of operation, enhancing the stability of our cash flows and capacity to invest and grow throughout the business cycles. This stability also enables us to take a longer-term approach to all aspects of our business, including financial, social and environmental perspectives, improving our ability to deliver value for all our key stakeholders.

Figure 1. Summary Financial Information for the BHP Billiton Group

$US million (Year ending 30 June)	2002/03	2001/02
Turnover [1,2]	17 506	15 228
EBIT [1,2,3,4]	3 481	3 102
Earnings before tax excluding exceptional items	2 944	2 866
Attributable profit [1,2,3]	1 920	1 866
Net operating assets [1]	20 578	20 146
Taxation paid (net of refunds) [1]	1 002	518
Government royalties paid and payable	352	294
Dividends paid	900	784
R&D expenditure	40	30
EBITDA to interest cover (times) [1,2,3,4,5]	12.7	10.9
Debt to equity or gearing ratio [6]	31.9%	35.0%
Profit and loss account at end of year [7]	8 496	7 461

1. From continuing operations, excluding the results of the Group's Steel business, which was demerged in July 2002.
2. Including the Group's share of joint ventures and associates.
3. Excluding exceptional items.
4. EBIT is earnings before interest and tax. EBITDA is EBIT before depreciation and amortisation of Group companies of US$1648 million for the year ended 30 June 2003.
5. For this purpose, net interest includes capitalised interest and excludes the effect of discounting on provisions and exchange differences arising from net debt.
6. Gearing as at 30 June 2002 includes the Group's Steel business, which was demerged in July 2002.
7. Movement in retained earnings is represented by movement in cumulative profit and loss accounts.

HSEC Governance

Introduction

The year in review has seen continued growth in interest in the non-financial aspects of our performance, from traditional stakeholders and also from those in the investment community who have begun to assess more thoroughly the social and environmental aspects of our business.

Against this backdrop, it is clear that strong governance in both the financial and non-financial arena is a critical aspect of running a successful corporation. Our approach to corporate governance is outlined in our Annual Report and on our website at ***www.bhpbilliton.com/bb/investorCentre/annualReports.jsp***

This section outlines our approach to HSEC governance.

Structure and responsibilities

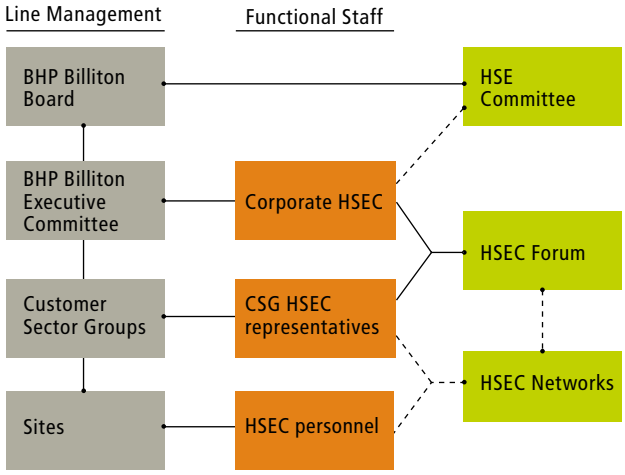
At every level of the organisation, our line managers are responsible for HSEC matters. Although they are supported by functional personnel who provide specialist advice and support in managing all aspects of HSEC, ultimate responsibility rests with the general and senior management teams. Executive remuneration is also directly linked to the financial and non-financial performance of the Company. Non-financial performance indicators include health, safety, environment and community targets.

As shown in Figure 2, the Company's peak HSE governance body is the HSE Committee, which is a subcommittee of the Board. Current membership of the Committee comprises two executive Directors; a non-executive Director (who is Committee Chair); the Vice President HSE; and recognised international experts in the fields of health, safety and the environment. The non-executive Director member is proposed by the Chair of the BHP Billiton Board and approved by the Directors. Appendix A presents profiles of HSE Committee members. Additionally, each site is required to establish committees representing both worker and management interests in HSEC matters. Further details on the HSE Committee can be found on our website at ***www.bhpbilliton.com/bb/aboutUs/governance.jsp***

HSEC standards across the Company are coordinated and monitored through the BHP Billiton Executive Committee, with HSEC issues included in the agenda for each meeting. This committee includes the heads of the CSGs, legal, marketing and human resources. The peak functional group is the HSEC Forum, comprising Corporate representatives and HSEC functional heads from each of the CSGs. The Forum is involved in setting direction for the HSEC function, identifying priority issues, monitoring HSEC performance and building consensus for the way forward. Development of HSEC practices and the response to issues of Company-wide significance are managed through specialist networks.

Our HSEC audit program is a critical component of the HSEC governance program, which has been specifically designed to ensure that our Charter, HSEC Policy and Management Standards are being effectively implemented across the Group.

Figure 2. HSEC Organisation Structure



Policy, Standards and Systems

The Company has combined health, safety, environment and community matters in one policy and one set of management standards. Wherever we operate, HSEC aspects are addressed in our decision-making processes, alongside other business considerations.

Knowing that much of our success as a global company depends on how effectively we work with our employees and the communities in which we operate, we see the HSEC Policy as being central to our future success. While our Policy broadly aligns with the United Nations Universal Declaration of Human Rights, it also requires that we meet and, where appropriate, exceed legal and other requirements. As such, the Policy recognises that where governments implement international conventions, such as those of the International Labour Organisation, we will comply. The Policy underpins our management systems worldwide and sets the foundation from which we operate. It is based on the principles contained in our Charter. This means that, while we strive to deliver strong financial returns to shareholders, we fully recognise and deliver on our wider responsibilities to our stakeholders – good HSEC is good business.

The HSEC Management Standards were revised during the year, resulting in a consolidated, yet more comprehensive, set of 15 standards. The Standards are well established, providing a strong basis for continual improvement in performance. The Standards, listed in Figure 3, were developed to ensure consistent interpretation and implementation of the HSEC Policy. They form the basis for the development and application of HSEC management systems at all levels of the Group.

The objectives of the Standards are to:

- support the implementation of the Charter and the HSEC Policy across the Group
- provide a risk-based HSEC management system framework, broadly consistent with international standards, such as ISO 14001, OHSAS 18001 and SA 8000
- set out the expectations of the Group for the progressive development and implementation of more specific HSEC management systems at all levels of the Group
- provide consistent auditable criteria against which HSEC management systems across the Group can be measured
- provide a basis from which to drive continuous improvement.

Figure 3. HSEC Management Standards (titles and intent statements)

Standard 1. Leadership and Accountability
Intent: BHP Billiton Directors, managers, employees and contractors understand their accountabilities and demonstrate leadership and commitment to HSEC.

Standard 2. Legal Requirements and Document Control
Intent: Relevant legal, regulatory and other HSEC requirements are identified, accessible, understood and complied with and an effective HSEC document control system is in place.

Standard 3. Risk and Change Management
Intent: HSEC hazards are identified and associated risks assessed, classified, documented and managed. New or proposed changes to processes, products or services are assessed for potential HSEC risks and managed to ensure HSEC performance is maintained at an acceptable level.

Standard 4. Planning, Goals and Targets
Intent: HSEC is an integral part of business planning with goals and targets established to drive continuous improvement in performance. (This Standard also requires that closure, decommissioning, remediation and rehabilitation plans are costed, documented and reviewed.)

Standard 5. Awareness, Competence and Behaviour
Intent: Employees, contractors and visitors are aware of relevant HSEC hazards, risks and controls and are competent to conduct their activities and behave in a responsible manner.

Standard 6. Health and Hygiene
Intent: Employees and contractors are assessed for their fitness for work and protected from health hazards associated with their work. Community health issues associated with BHP Billiton operations are identified and effectively managed.

Standard 7. Communication, Consultation and Participation
Intent: Effective communication and consultation is maintained with stakeholders associated with BHP Billiton activities, and they are encouraged to participate in and commit to HSEC performance improvement initiatives.

Standard 8. Business Conduct, Human Rights and Indigenous Affairs
Intent: Activities and operations are conducted in an ethical manner that supports fundamental human rights, respects the traditional rights of indigenous peoples and values their cultural heritage.

Standard 9. Design, Construction and Commissioning
Intent: Management of HSEC risk is an integral part of all projects through design, approval, procurement, construction and commissioning.

Standard 10. Operations and Maintenance
Intent: All plant and equipment is operated, maintained, inspected and tested using systems and procedures that manage HSEC risks.

Standard 11. Suppliers, Contractors and Partners
Intent: The contracting of services; the purchase, hire or lease of equipment and materials; and activities with partners are carried out so as to minimise any adverse HSEC consequences and, where possible, to enhance community development opportunities.

Standard 12. Product Stewardship
Intent: The responsible production, transport, storage, use, recycling and disposal of BHP Billiton products and by-products is promoted to minimise their life-cycle HSEC impacts.

Standard 13. Incident Reporting and Investigation
Intent: Incidents are reported, investigated and analysed. Corrective and preventive actions are taken and lessons shared.

Standard 14. Crisis and Emergency Management
Intent: Procedures and resources are in place to effectively respond to crisis and emergency situations.

Standard 15. Monitoring, Audit and Review
Intent: HSEC performance and systems are monitored, audited and reviewed to identify trends, measure progress, assess compliance and drive continuous improvement.

The scope of the Standards covers all operational aspects and activities that have the potential to affect, positively or negatively, the health and safety of people, the environment or the community. They cover the entire life cycle of our assets, from exploration through to construction, commissioning, operation, decommissioning, closure and rehabilitation.

Our occupational accident and disease reporting processes are designed to comply with the relevant laws in the regions where we operate. All sites are also required to have consultation and communication processes, comprising management and worker representation, to address HSEC issues.

Material safety data sheets (MSDSs) are available for all our products, identifying potential health, safety and environmental aspects associated with their use. Please contact the Company if you would like a copy of an MSDS for any of our products. Additionally, we are involved in a number of commodity association activities where we are progressively seeking improvements to the responsible use and life cycle impacts of our products.

All aspects of performance are incorporated in the Management Standards, including accountabilities; risk assessment and management; business planning; and target setting for improvement, communication, training and awareness, performance monitoring, auditing, and management review.

Supporting the risk basis of the Management Standards is our Enterprise-Wide Risk Management strategy, which is embedding risk management processes into all our critical business systems, allowing us to adopt a precautionary approach to business management. See Case Study No. 38 and ***www.bhpbilliton.com/bbContentRepository/AboutUs/Governance/EWRMPolicyStatement.pdf***

The requirements of the Standards apply to all BHP Billiton sites and operations throughout the world. These include facilities that are owned or operated by us, development projects, and major activities by contractors on our sites or under our management.

Where we have no operational responsibility but have an equity stake or significant BHP Billiton assets are involved, the Standards are made available to the operator so that comparable HSEC standards can be applied.

In addition, the Standards require operations to evaluate the social and environmental performance of our contractors and suppliers, including such issues as human rights records and previous environmental incidents.

Each of the 15 HSEC Management Standards includes a set of clear performance requirements. During any year, those sites not audited complete a self-assessment against the Standards and prepare performance improvement plans to progress to full compliance with the Standards. Conformance against the HSEC Management Standards is reported in the Audit and Self-Assessment section.

To ensure that our HSEC (including human rights) management requirements are embedded into significant investment decisions, we have established an investment process that covers a range of investment types and establishes the policy by which all investments are to be reviewed and authorised in BHP Billiton. The process also outlines key participants and includes the incorporation of independent peer reviews.

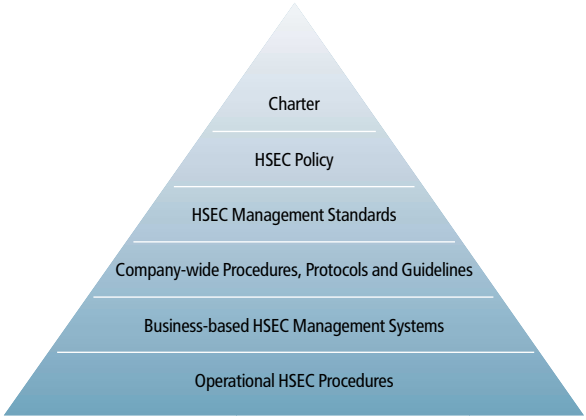
The Standards are reviewed at least every three years and, if required, revised and reissued.

The full HSEC Management Standards and performance requirements are available on our website at ***www.bhpbilliton.com/bbContentRepository/Policies/HSECManagementStandardsIssue2.pdf***

Hierarchy of systems and documents

The BHP Billiton Charter, HSEC Policy and HSEC Management Standards are mandatory at all our sites and operations, under a hierarchical management system where systems and documents must meet and support the requirements of those of higher levels, as shown in Figure 4.

Figure 4. Hierarchy of Systems and Documents



During the year, we made further progress preparing and revising our detailed protocols and guidelines, based on knowledge and best practices from around the Group. All our operations are able to access leading thinking through these protocols and guidelines, accelerating their rate of improvement. The following new documents have been prepared:

- Fatal Risk Control Protocols
- Hearing Conservation Guidelines
- Health Surveillance Guidelines
- Health Exposure Assessment Guidelines
- Energy and Greenhouse Guideline
- Energy and Greenhouse Gas Management Plan Template
- Human Rights Self-Assessment Toolkit.

We are aiming for some of our management systems to be certified. For example, we have achieved our target for ISO 14001 certification of our environmental management systems at all of our major operating sites. Some of our sites are now working towards certification of their safety management systems to OHSAS 18001, while others are progressing certification of their social management systems against SA 8000. A number of our sites are also certified to the ISO 9000 standards for quality management.

Business conduct

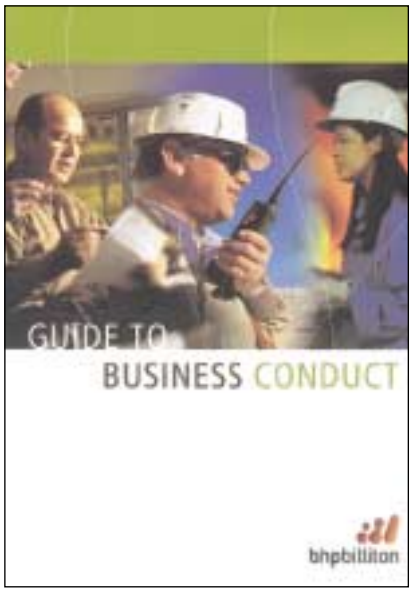
The BHP Billiton Guide to Business Conduct applies to all our employees and contractors, regardless of their specific job or location.

The foundation of the BHP Billiton Guide to Business Conduct is the Charter. The Guide seeks to provide direction and advice on conducting business and interacting with governments, communities and business partners. Clear guidelines are provided on general workplace behaviour, including issues related to discrimination. It also states our policies, standards and guidelines on a wide range of ethical issues, including conflict of interest, financial inducements and bribery, insider trading and political contributions. Managers and supervisors are held accountable not only for their own actions, but also for the actions of their staff.

The Board approved several changes to the Guide to Business Conduct in 2003 to ensure that it would meet or exceed the requirements of the US Sarbanes-Oxley Legislation, as well as voluntary guidelines issued by stock exchanges in the US and Australia. These include making it clear that the Guide applies to non-executive Directors where it is applicable to their duties as BHP Billiton Directors. The Guide is available in seven languages in addition to English.

Resolution of business conduct issues is encouraged at the local level. If this is not possible, the issue can be raised with regional points of contact or helplines based in southern Africa (Johannesburg), Europe (London), Australasia (Melbourne) and South America (Tintaya, Peru). For issues related to fraud or bribery, the Fraud Hotline is contacted. The final level of management review is the Global Ethics Panel.

Internal performance requirements regarding business conduct have been established under our HSEC Management Standards. Distribution of the Guide to employees and contractors, as well as presentation and discussion of its principles, is monitored and reported through the Company's HSEC audit program.



▸ *The Guide to Business Conduct is available on our website at* ***www.bhpbilliton.com/bb/peopleAndEmployment/globalBusinessConductGuide.jsp***

Auditing

Our HSEC Management Standards include a requirement for an auditing process to check that our Charter, HSEC Policy and Standards are being applied and to verify performance. The audits are designed to address the degree of implementation of our HSEC management systems and their effectiveness in meeting the Group's needs and those of the business being audited. Recommendations for improvement are made as required.

The HSEC Audit Protocol is based on the HSEC Management Standards and systems and performance management principles. The audit program is a triennial peer review process, with audit teams drawn from the HSEC function, operations personnel and external sources. It provides an objective view of site activities and systems and assists site managers through the identification of gaps in HSEC management programs. These gaps are addressed through monitored Performance Improvement Programs. The process provides assurance to the Group and the Board that HSEC risks are being satisfactorily managed and identifies leading practices that can be shared across the Company.

The audit process is proving invaluable in accelerating the rate of improvement in all aspects of HSEC management through the identification and communication of leading practices.

Part of the Global Community

Our stakeholders

BHP Billiton is committed to maintaining and promoting dialogue with stakeholders in the resources industry and remaining responsive to the global community's concerns and aspirations. The Company recognises the importance of accountability to stakeholders, and we seek to be transparent in relation to our communications and documentation. We are aiming for a higher level of engagement and interaction with stakeholders, particularly with the communities in which we operate.

Our Charter, HSEC Policy, Management Standards and Guide to Business Conduct all promote a commitment to acting with honesty, integrity and fairness in our interactions with all our stakeholders. We have progressed our efforts in this area over the past year through our individual actions and in collaboration with others.

Key stakeholders are generally identified as people who are adversely or positively impacted by our operations, those who have an interest in what we do or those who have an influence on what we do. Figure 5 illustrates the key BHP Billiton stakeholders, while Figure 6 outlines the nature of our relationships with those stakeholders. Maintaining constructive stakeholder relationships is a critical part of our journey towards sustainable development.

The relationships we build can be compared to the crafting of a rope. The core consists of those stakeholders with whom we engage regularly, while the sheath comprises those who are important influencers but with whom we do not have such regular contact. Building our relationships through engagement and interaction in effect strengthens each strand, thus enhancing the integrity of the rope, helping us to jointly travel the journey to sustainability.

Each of our sites prepares a community relations plan that helps them to effectively identify their key stakeholders, particularly those from vulnerable or marginalised groups. These plans also detail the contact, frequencies and engagement mechanisms that are unique to each site and situation. The information we receive from stakeholders helps refine the management of our activities and their potential impacts, in line with the goals set out in our Charter.

Financial community

During the year, we continued to participate in key external benchmarking initiatives that attempt to measure the Company's sustainable development performance against others in our sector. Such initiatives have proliferated recently, largely due to increased interest from financial institutions in assessing social, ethical and environmental issues. These initiatives help fund managers to screen investment targets on the basis of their environmental and social policies and performance or to identify those companies that manage their HSEC risks in the most effective way.

Over the period, we maintained our inclusion in the UK FTSE4Good Index, after passing the strengthened criteria on human rights in the extractive sector. We also maintained our position in the Dow Jones Sustainability Index, which selects the top 10 per cent of companies in the global metals and mining sector, based on over 90 different performance indicators.

One of the leading proponents of socially responsible investing, Storebrand in Norway, researched the mining industry and ranked BHP Billiton 'best in class' for its environmental and social performance out of 21 metals and mining companies covered.

The Carbon Disclosure Project, a survey of climate change risk mitigation strategies of the UK Financial Times top 500 Global Index companies (FT500), highlighted that, within the metals and mining sector, BHP Billiton was the only company to report that it applies carbon price sensitivity analysis to new projects and investments. The Project's matrix of corporate positioning suggests that, like many of our peer FT500 companies, we are active in climate change strategies.

Finally, in the UK, we took part in the first ever Corporate Responsibility Index, which is organised by Business in the Community for FTSE-listed companies. One hundred and twenty-two companies participated, and we were placed at the top of the second quintile with a score of 78 per cent. This Index builds on the former Business in the Environment (BiE) Index, which the Company has taken part in since 1998. Although the BiE Index still exists, it was felt that a new index was required that also looked at a company's impact on the workplace, the community and the marketplace.

Further information can be obtained from the Socially Responsible Investment websites included in the Directory of this Report.

Figure 5. BHP Billiton Stakeholders

Figure 6. BHP Billiton Stakeholder Relationships

Employees and contractors

- Employees and contractors are encouraged to discuss HSEC matters in their workplace with their supervisors and to work closely with HSEC staff at their operation.
- The BHP Billiton HSEC Intranet is a reference site for the BHP Billiton HSEC Policy and Guidelines. It provides information on our HSEC performance and acts as a network for leading practice.

Local and indigenous communities

- Each of our operations has a community relations plan to identify key stakeholders and work with local communities throughout project development, operational and closure phases.
- We have additional programs in place to ensure the unique needs of indigenous communities are addressed.

Shareholders

- Shareholders are regularly informed of the Company's performance via an investors page on our Internet site. Shareholders can attend Annual General Meetings and question Directors on financial and HSEC matters.
- BHP Billiton has primary listings on the Australian and London Stock Exchanges. We are also listed on the New York and Johannesburg Stock Exchanges.

Customers

- We participate in the work of our commodity associations to help develop products that meet the demands of society.
- We advise our direct customers on responsible use of our products, including consumption, storage, transport, recycling and disposal.

Investment community

- We have an Investor Relations group that provides information to mainstream investment organisations. We also provide targeted briefings to analysts to ensure they have the most up-to-date information about our operations and performance.
- We provide HSEC information to Socially Responsible Investment organisations.

Figure 6. BHP Billiton Stakeholder Relationships (continued)

Business partners

- Joint venture partners have a direct stake in the management and performance of our associated businesses.
- We communicate with our business partners and regularly share HSEC knowledge and programs through joint venture boards and operating committees.

Community organisations

- In conjunction with the development of community relations plans, sites are required to develop suitable engagement mechanisms with their host communities.
- The majority of our community support is through local foundations, which currently exist in Chile, Peru, South Africa, Colombia and Mozambique. We also have a Corporate Community Program that focuses on Australian and international partnerships and projects.

Unions

- We recognise the right of employees at all our operations to freely choose to join labour unions.
- We communicate with unions as required on topical issues and on general issues, such as changes to Company policies.
- We have a mix of collective and individual arrangements at our sites. Prospective employees are made aware of employment arrangements prior to joining the Company.

Non-government organisations

- This constitutes a diverse stakeholder group, ranging from environmental groups to human rights groups, from the local level to the international level.
- Each of our operations identifies their relevant local non-government organisations and includes them in their community relations plan.
- At the Corporate level, we regularly engage with relevant national and international non-government organisations. A number of major international non-government organisations are represented on our Forum on Corporate Responsibility.

Suppliers

- Our operations are required to identify and evaluate potential adverse HSEC impacts for existing and new purchased products and services.
- Our preference is to use local suppliers wherever possible.
- We also ensure that reporting and communication is carried out regularly between suppliers and the Company.

Governments (including Regulators)

- We respect the authority of governments. Our operations are required to work within relevant legislative frameworks at the local, national and international levels.
- We seek to have an open and constructive relationship with governments and regularly share information and opinions on issues that affect the Company. This communication is essential to informed decision-making by both government officials and BHP Billiton.

Media

- We communicate with the media via press releases and briefings.

Industry associations

- Our operations regularly work in collaboration with their regional industry associations and respective commodity associations. These associations represent the interests of our industry to governments and promote leading practice within the industry.
- At the corporate level, we are also involved with national and international industry associations and have taken a leading role with industry initiatives, such as the ICMM Sustainable Development Framework and the Australian Minerals Industry's Code for Environmental Management.

Indigenous relations
We aim to work cooperatively with indigenous peoples to ensure that our presence provides lasting benefits and causes as little disruption as possible to their communities. We will ensure we respect the rights of indigenous peoples to maintain their culture, identity, traditions and customs. We strive to ensure that host communities benefit from our operations being sited there.

Indigenous relations principles are embedded in our Charter, HSEC Policy and HSEC Management Standards. The HSEC Policy specifically states, 'Wherever we operate we will . . . respect the traditional rights of indigenous peoples . . . and value cultural heritage'.

Our HSEC Management Standards detail the performance expectations for all operations in this area. They also require that the effectiveness of our communication, consultation and participation processes be regularly reviewed, in collaboration with stakeholders, to ensure continual improvement. There are a number of case studies in this report that demonstrate our commitment to indigenous peoples, including the provision of educational resources in Chile (see Case Study No. 36) and the Black Economic Empowerment (BEE) program in South Africa (see Case Study No. 37). Our BEE Procurement Policy can be found on our website at ***www.bhpbilliton.com/bb/sustainableDevelopment/reportsAndPolicies.jsp***

Forum on Corporate Responsibility
The BHP Billiton Forum on Corporate Responsibility (FCR) brings together representatives of our senior management team, the leaders of several key non-government organisations and community opinion leaders to discuss and debate social and environmental matters relevant to the Company (see FCR Profiles in Appendix B). Members of the FCR have an opportunity to provide advice and to challenge the views of our senior management on broader sustainable development issues. The Company is not bound by the advice of the FCR, and the FCR does not necessarily endorse the Company's decisions. The FCR provides a means for direct and open dialogue about issues of interest to the wider community.

Building global links
BHP Billiton is committed to proactive involvement in a number of initiatives that contribute to improving the sustainability of the industry. Our individual businesses are also actively engaged through their sectoral organisations at national and international levels.

Some of the principal industry associations we have involvement in at the commodity level include:

- International Aluminium Institute and the Australian Aluminium Council
- International Nickel Development Institute, International Nickel Study Group, Nickel Producers Environmental Research Association, Cobalt Development Institute, International Chrome Development Association and the European Metals Association
- International Petroleum Industry Environmental Conservation Association Exploration and Production Forum, Australian Petroleum Production and Exploration Association, Australian Gas Association and UK Offshore Operators Association
- World Coal Institute, Coal Institute Advisory Board and Australian Coal Association
- International Lead Zinc Study Group, International Lead and Zinc Research Organisation, International Lead Management Centre, Global Forum for the Lead Producing Industry
- Asian Copper Council, European Copper Institute, Copper Development Association, International Copper Association, International Copper Study Group.

The major externally developed voluntary initiatives[1] that we are involved in or are progressively implementing include:

- Australian Minerals Industry Code for Environmental Management (1996)
- Global Reporting Initiative (2002)
- International Council on Mining and Metals Sustainable Development Framework (2003)
- ISO 14001 Environmental Management Systems (2002)
- Mining Certification Evaluation Project – Australian regional initiative (2002)
- United Nations Global Compact (2002)
- United Nations Universal Declaration of Human Rights (2001)
- US-UK Voluntary Principles on Security and Human Rights (2003)
- World Bank Guidelines on Involuntary Resettlement (2003).

Last year we produced our first report in accordance with the Global Reporting Initiative (GRI) 2002 Sustainability Reporting Guidelines. We were pleased with the response we received from our stakeholders, and this year we have again aligned the Report with the Guidelines. This will be an evolving process as our reporting systems continue to enhance the information reported. It should be recognised that, due to the size and complexity of our business, judgements have had to be made regarding the extent of the information that can be presented in relation to each GRI indicator. The Company is also involved with the Global Reporting Initiative Stakeholder Council, which is helping advance the Global Reporting Initiative.

During the year, we have been active in the International Council on Mining and Metals (ICMM) work program. The ICMM was established in 2001 as a global leadership body on sustainable development. An important part of the establishment process of the ICMM has been the development of the Sustainable Development Framework, a guiding set of principles, which have now been endorsed by all member companies. A gap analysis of our HSEC Management Standards and the Framework identified strong alignment in the majority of areas, with the exception of community relocation and human rights training and guidance. Following on from this work, we have since committed to implement the World Bank Guidelines on Involuntary Resettlement and the US-UK Voluntary Principles on Security and Human Rights. Through the ICMM, we also participate in joint programs in the area of mining and biodiversity, including the development of principles and related reporting criteria.

One of the ICMM's current projects is the GRI Minerals Sector Supplement, which is a collaborative project to develop additional guidelines on GRI Sustainability Reporting for the mining and minerals industry.

1. The date in brackets indicates the year in which we commenced our involvement or commitment.

In conjunction with industry, government, academic and financial sector stakeholders, we are actively involved in the Mining Certification Evaluation Project to evaluate whether an independent certification process of environmental and social performance can be applied to the mining sector. World Wide Fund for Nature is leading the project, which seeks to build consensus on measurable and auditable standards for site-based performance (see Case Study No. 41).

In June 2003, we reaffirmed our commitment to the United Nations Global Compact (a copy of our letter to the United Nations is available on our website at ***www.bhpbilliton.com/bb/sustainableDevelopment/reportsAndPolicies.jsp***). While fully recognising the right of our employees to freely associate and join trade unions, we have a number of locations where we have a mix of collective and individual arrangements. Prospective employees are made aware of employment arrangements prior to joining the Company. At all times, our businesses comply with local employment law requirements and treat employees in accordance with the values expressed in our Charter.

Appendix G provides our assessment of progress in relation to the principles of the Global Compact.

We also collaborate with governments, non-government organisations and academic institutions worldwide to undertake and support research on improving HSEC performance. For example, there are the HIV/AIDS programs in Mozambique and South Africa (see Case Study No. 2), and the Beenup minesite rehabilitation program in Australia (see Case Study No. 14).

Performance Summaries

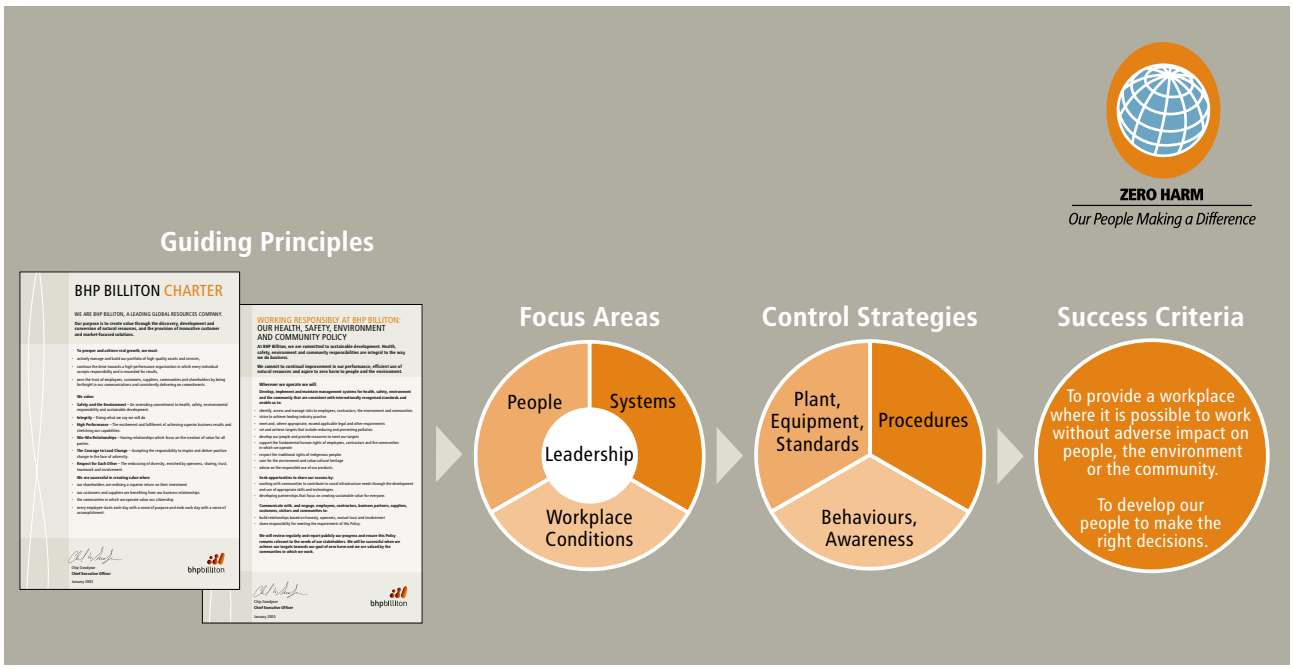
The Company's performance in the areas of health, safety, environment and community (HSEC) is driven by our commitment to people, the environment, our host communities and the pursuit of operational excellence to achieve great business outcomes for our shareholders.

Figure 7 illustrates our 'Road to Zero Harm'. This shows how the things we do contribute towards creating a workplace where Zero Harm is possible.

This section presents the key aspects of the Company's HSEC performance in 2002/03, with comments on performance trends. We have progressed a number of improvement activities, including the establishment of a significant incident website, a process for sharing knowledge of significant incidents and lessons learned, regional senior management HSEC workshops, and the development of processes to share leading practices across the organisation.

During the period, the organisation was recognised with awards by external groups for its HSEC performance (see Appendix H).

Figure 7. Road to Zero Harm



Health

► *Our operations provide personal protective equipment as a measure to reduce exposure*

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People are central to the success of our business; and, accordingly, understanding the potential for health risks and establishing suitable mitigation measures are integral to our journey towards Zero Harm.

Some of the potential health risks present in the organisation include:

- inherent occupational health risks associated with the nature of our operations, such as noise, dust, hazardous materials and gases, and vibration
- communicable diseases present in some of the countries in which we operate, including HIV/AIDS and mosquito-borne diseases
- travel-related risks
- ergonomic exposures relating to work requirements
- general suitability for job criteria and fitness for work.

The following section discusses our health performance over the year and highlights some of the initiatives and subsequent outcomes.

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Establishing a baseline understanding of potential health exposures and performance across the organisation was a focus of our health programs during the year.

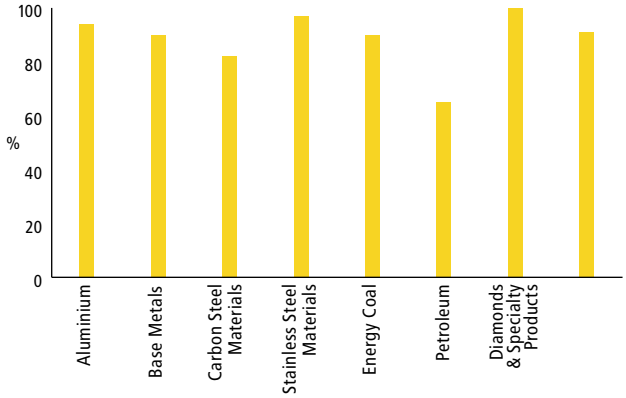
Ninety-seven per cent of sites reported undertaking a baseline survey on occupational exposure hazards and establishing associated monitoring programs. Ninety-one per cent of those employees requiring medical health surveillance completed the medical examination (see Figure 8). Occupational health and medical surveillance monitoring and reporting are essential components of our health program, with results central to the planning of mitigation measures and strategies.

In improving our understanding of potential adverse exposure of employees from our operations, we have focused on three distinct areas for measurement:

- Potential exposure of employees above noise exposure limits (NEL) (85 dBA 8-hour time-weighted average)
- Potential exposure of employees above action levels (50 per cent of the occupational exposure limit) but below the occupational exposure limit (OEL) for other exposures
- Potential exposure of employees above the occupational exposure limit for other exposures.

2

Employees Who Completed Medical Examination
(as % of employees requiring examination) *2002/03*



It should be noted that all exposures monitored are potential exposures and do not take into consideration the use of personal protective equipment (PPE) where it is utilised to mitigate exposure. Having said this, our aim, consistent with the 'hierarchy of controls', is to remove or avoid hazards through engineering or design solutions wherever possible. PPE is utilised where this is not readily feasible.

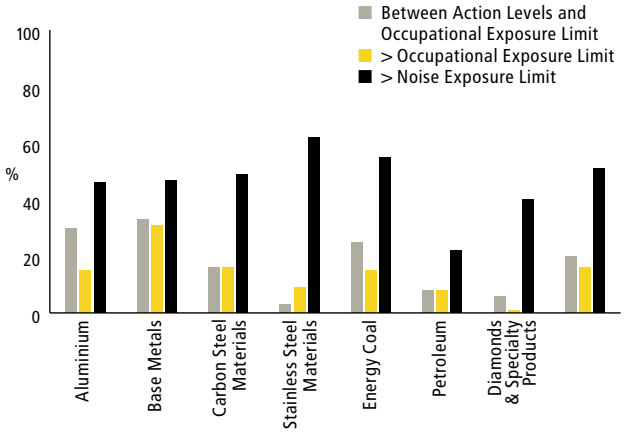
The requirement for reporting potential exposures above action levels but below occupational exposure limits has been established to give us an understanding of the potential for harm and enable us to establish proactive plans to mitigate exposures. At levels greater than the occupational exposure limits, it is accepted that harmful effects on health will eventually occur in a significant number of individuals if they are not adequately protected. While all operations provide personal protective equipment and other measures to reduce exposure, the reporting of employees in this group gives the Company a clear understanding of the exposures that need to be reduced to further minimise the chance of adverse health outcomes. The reporting of these two categories allows the tracking of our efforts to reduce exposures on-site over time and consequently reduce the incidence of occupational illness.

Noise has been identified as the most significant potential occupational exposure in our business, with noise-induced hearing loss affecting a number of our personnel. Fifty-one per cent of our employees are potentially exposed above the noise exposure limits. During the year, a survey across the organisation identified that our other significant potential exposures are associated with dust (including coal and silica); coal tar pitch volatiles; gases, mists or fumes (including fluoride, sulphuric acid, carbon monoxide, welding and caustics); vibration; and heat.

Additionally, data indicate that, without the use of PPE, 20 per cent of our site-based employees are potentially exposed to hazardous substances above action levels but below the occupational exposure limit and that 16 per cent of employees are potentially exposed above the occupational exposure limit (see Figure 9).

Health continued

4
Percentage of Employees in Potential Exposures*
2002/03



* I.e., would be exposed if not using PPE.

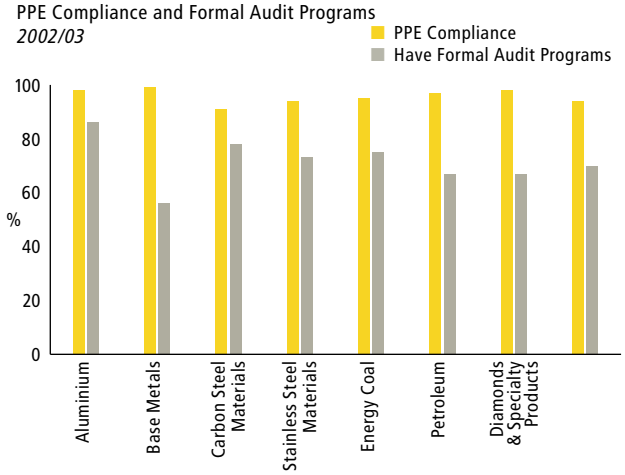
While every effort is made to protect all employees potentially exposed from any adverse health effect through the use of PPE, the drive within the Company will be to progressively reduce exposure over time.

This knowledge is being used to develop global BHP Billiton occupational exposure limits and occupational practices based on leading practice and incorporating knowledge drawn from literature and research.

With the incorporation of the BHP Billiton occupational exposure limits into the operating and reporting processes of all sites during full year 2004, there will be for the first time in the Company a minimum requirement that, in many cases, will be more stringent than that required through local regulation and reporting processes. As a consequence of this standardised process of reporting, it has been decided to review our target for exposure for the full year 2004 under these more stringent limits and require that all operations achieve an annual reduction in the number of people potentially exposed above the occupational exposure limit.

While the elimination of exposure risks is our key driver, often this is not readily possible or feasible, and PPE is utilised. Data from the year indicate that overall PPE compliance in the Company was, on average, 94 per cent. This is an area where we continually seek improvement and are encouraging operations to implement formal audit programs of PPE compliance. Currently, 70 per cent of operations have formal audit programs in place; and we will endeavour to expand this number over the coming year (see Figure 10).

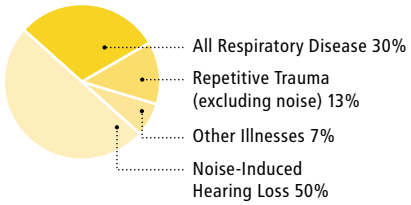
5
PPE Compliance and Formal Audit Programs
2002/03



The reporting of occupational illness within the Company is important in tracking our performance towards the 2007 target of a 20 per cent reduction in occupational illness throughout the Company, built on the reduction of exposures.

During 2003, there were 226 new cases of occupational illnesses reported throughout the Company. While more than half of these were due to noise exposure, there was also a significant number of new cases of respiratory disease and repetitive trauma diagnosed (see Figure 11).

New Illnesses by Type
2002/03



Analysis of the respiratory disease data indicates that a proportion of these cases would not have been associated with exposure at our operations. This factor indicates the importance of adequate medical surveillance to ensure detection of existing illnesses in new employees, so that these conditions will not be aggravated. Repetitive trauma cases are primarily due to musculoskeletal problems. This is an area of exposure that we are tracking closely, as our operations have ageing workforces and an associated increased risk in this area.

The full year health reporting has provided comprehensive data that indicate the extent to which we are potentially exposing employees to workplace hazards. It requires that we continue to be vigilant in protecting employees from these exposures while we seek ways to reduce the exposure from our processes and work environments. The illness data collected provide clear baseline information from which to measure the success of our efforts to reduce exposure to harm and potential development of illness.

Our health targets will ensure that we continue to look for opportunities – through engineering and design initiatives – to minimise the potential adverse health effects associated with work in our operations (see Case Study No. 1).

Safety

We are seeking to create a mindset where people believe it is possible to work injury free

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The safety of our employees and the communities in which we operate is an integral part of our business. Our goal is Zero Harm. To this end, we are seeking to create a mindset where people believe it is possible to work injury free – regardless of where they are in the world, what role they undertake or in which business they work.

Across the organisation we manage safety risks through our risk-based HSEC Management Standards and other dedicated systems. The key safety risks include:

- mobile equipment and related interactions, including light vehicles and surface and underground mobile equipment
- underground ground control, encompassing ground stability and ground support
- hazardous materials storage, handling, production, transport, recycling and disposal
- handling and processing of molten materials
- plant and equipment safeguarding and isolation
- working at heights.

The following section discusses our safety performance over the year and highlights some of the key initiatives and subsequent outcomes.

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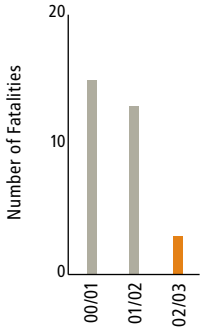
In 2003, we saw a significant improvement in our overall safety performance and a more consistent demonstration of safety as a core value at all levels within the organisation. The leadership team is determined to make Zero Harm a reality, and a critical milestone along the way is the complete elimination of fatalities from our operations.

We deeply regret that three people lost their lives in our controlled operations during the year. While this number of fatalities was significantly lower than last year (13), each death that occurs has a profound impact on our people and their families. Our resolve to attain our goal of zero fatalities is stronger than ever, and we will relentlessly pursue opportunities to achieve this. We are also monitoring and have established processes to learn from significant incidents, including fatalities, that result from activities related to our business but not directly within our management control (i.e., not at controlled operations). For example, employees travelling from their residence to work or an injury that is solely the result of an employee doing personal activities. (The Company broadly aligns reporting criteria with the US Occupational Safety and Health Administration Standards.) During this period, 16 fatalities within this category were reported. Of the 16 fatalities, eight were at joint venture operations managed by our partners, and nine occurred at or around our sites but were not part of our work activities.

Figure 12 presents Company fatalities from 2000/01 to 2002/03. A full list of these incidents is included in Appendix C. Each of these incidents has been thoroughly investigated, utilising our Incident Cause and Analysis Methodology (ICAM). Learnings from these incidents have been shared across the organisation.

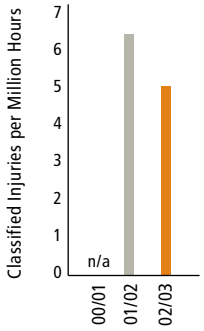
Fatalities (Controlled Operations)
2000/01 to 2002/03



During the period, we received five health and safety related fines totalling US$129 372. These are detailed in Appendix D.

A broader injury indicator, which we have called a classified injury, was introduced as the principal safety indicator this year. (A classified injury is any workplace injury that has resulted in the person not returning to their unrestricted normal duties after the day on which the injury was received. Classified injuries are the sum of lost day cases and restricted work cases. The Classified Injury Frequency Rate (CIFR) is the number of classified injuries per million workhours.) A 20 per cent reduction in our Classified Injury Frequency Rate, from 6.51 in 2001/02 to 5.18 in 2002/03 was a promising achievement during the period, reflecting efforts dedicated to safety improvement (see Figure 13).

3
Classified Injury Frequency Rate*
2001/02 to 2002/03



* Classified Injury Frequency Rate was introduced as a measure in the 2001/02 reporting period. The 2001/02 Lost Time Injury Frequency Rate was 2.24.

Safety continued

These improvements show encouraging signs that the initiatives undertaken to drive a step change improvement in safety performance are having an impact. Our strategies for safety improvement focus on people and systems, with emphasis on:

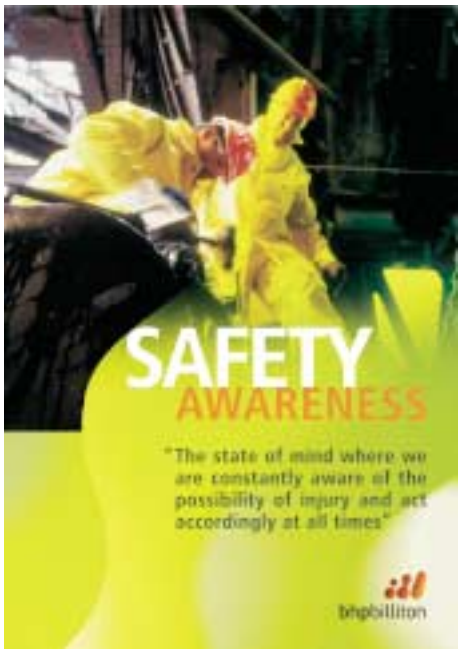
- leadership effectiveness
- behaviours and awareness
- rigorous standards and procedures for managing key risks.

To support these focus areas, the following safety initiatives were completed during the year:

- The development of Company-wide network groups for key risks
- The development and introduction of nine Fatal Risk Control Protocols to manage key operational risks (see below)
- Safety leadership training and development programs across all businesses
- The continued introduction of behavioural safety processes
- The introduction of broader lag indicators of safety performance
- The introduction of lead indicators of safety performance within business units.

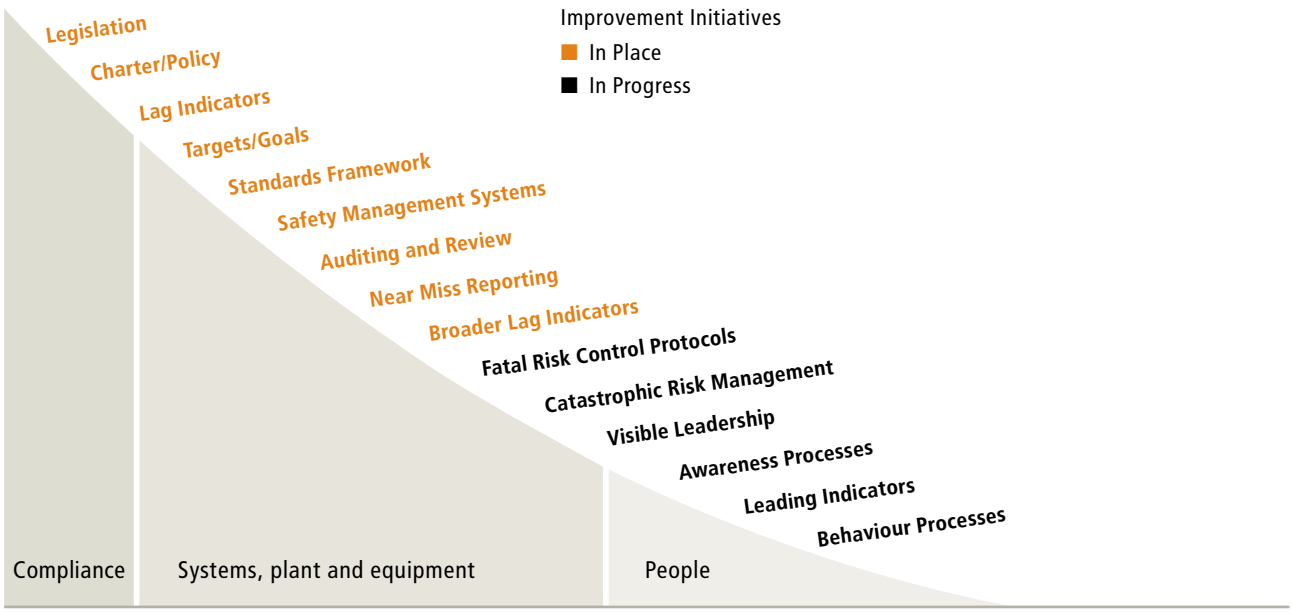
The safety improvement road map (see Figure 14) is our guide to safety excellence.

The diagram illustrates that, as the maturity of our organisation increases, our safety improvement initiatives become all-encompassing. The most mature organisations understand that the behaviours of their people are the key to their success.



▸ *Safety awareness poster*

Figure 14. Safety Improvement Road Map



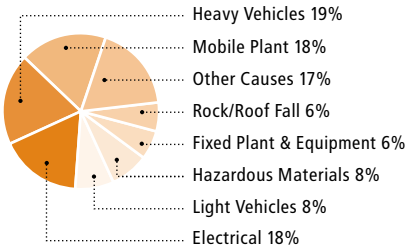
Safety continued

Fatal Risk Control Protocols

A review of our fatal and high potential incidents over the last ten years identified a number of common risks to our people – risks that require the development of sound practices to eliminate incidents that have the potential to cause fatalities.

Figure 15 provides an analysis of these incidents by cause for the 2002/03 period.

Figure 15.
Significant Incidents by Cause
2002/03



A significant step we have taken to support our drive to eliminate fatalities from our operations is the development of Fatal Risk Control Protocols in nine key areas.

The areas identified include:

- Light Vehicles
- Surface Mobile Equipment
- Underground Mobile Equipment
- Underground Ground Control
- Hazardous Materials Management
- Molten Materials Management
- Equipment Safeguarding
- Isolation
- Working at Heights.

The Protocols were written by experienced teams drawn from across the Company. These Protocols establish minimum performance expectations for managing risk in each of the key areas (see Case Study No. 6).

► *Fatal Risk Control Protocols are being implemented across the Company*

Environment

► *We are focusing on increasing our understanding of environmental issues*

)

Our approach to environmental management is incorporated in our Charter, which states that we have an overriding commitment to health, safety, environmental responsibility and sustainable development. This is expressed further in our HSEC Policy, which states that we will:

- strive to achieve leading industry practice
- meet and, where appropriate, exceed applicable legal and other requirements
- set and achieve targets that include reducing and preventing pollution.

In addition, we follow the Management Standards that form the basis for our management systems at all levels. They cover the entire life cycle of operations, including decommissioning, closure and rehabilitation.

We own and operate a diverse range of businesses in different countries and ecosystems around the world; and these businesses, by their nature, have the potential to affect the environment. This can occur in a variety of ways, including:

- greenhouse gas and other gaseous emissions, such as carbon dioxide and oxides of sulphur and nitrogen associated with combustion and smelting processes, fluorides from aluminium smelting and particulates from ore handling
- reductions in water quality as a result of the handling, use and production of hazardous materials, and acid rock drainage potential as a result of particular ore body characteristics at some of our sites
- impacts on land associated with land disturbance, land use changes and habitat removal
- alterations to biodiversity within terrestrial, fresh water and marine environments either directly or indirectly as a result of our operations
- indirect impacts encompassing any of the above as a result of the products and services we purchase, lease or provide.

Our focus for the past year has been on a number of fronts: working to improve environmental management systems and establish eco-efficiency plans at sites, increasing our understanding and refining our approaches to such issues as climate change and biodiversity, and improving our Company-wide environmental information systems to track performance.

A summary of our Company-wide environmental performance is presented in Figure 16, while CSG performances are presented in Appendix E. Further details on the environmental performance of our operations are available in the site-based HSEC Reports on our website at ***www.bhpbilliton.com***

< . Summary of Environmental Performance *1999/00 to 2002/03*[1]

	=	444855	55585	55 85	55 853
1 =					
Land disturbed	Hectares	4 170	4 930	4 520	3 540
Land rehabilitated	Hectares	2 090	2 120	2 230	1 790
Land requiring rehabilitation[2]	Hectares	77 770	81 320	82 910	77 160
0					
Fresh water	Megalitres	154 000	160 300	147 100	132 630
Recycled water[3]	Megalitres	64 100	99 700	543 000	175 350
Energy	Petajoules	382	390	396	292
% ([4]					
Hazardous waste	Tonnes	103 900	93 800	80 700	79 940
General waste to landfill	Tonnes	288 700	213 700	107 400	115 280
*					
Oxides of sulphur (SO_x)[5]	Tonnes	78 500	89 900	56 330	50 020
Oxides of nitrogen (NO_x)[5]	Tonnes	118 600	112 300	55 750	49 640
Fluoride	Tonnes	1 713	1 795	1 680	910
Greenhouse gases[6]	Tonnes CO_2-e	62 600 000	57 100 000	60 020 000	47 070 000

1. In the summary text of each performance category, information has been provided to facilitate year-to-year comparison of performance without BHP Steel.
2. Rehabilitation requirements assuming immediate closure of all operations. Escondida re-estimated its land area requiring rehabilitation in 2002/03.
3. Recycled water: Not all sites reported recycled water in 1999/00 and 2000/01.
4. Waste: Excludes recycled materials and mining-related materials, such as waste rock, tailings, coal reject and slag.
5. Transport and logistics operations were divested during 2001/02.
6. Greenhouse gases (1999/00 and 2000/01): Different methodologies of reporting were used prior to the BHP Billiton Dual Listed Companies merger.

Environment continued

* ! #

The following section discusses our environmental performance over the year and highlights some of the key initiatives and subsequent outcomes.

Environmental Management Systems and plans

By the end of June 2003, all of the sites requiring ISO 14001 certification of their Environmental Management Systems either received or were notified that they had been recommended for certification. A number of our joint venture partners are also certified, such as Valesul and Mineração Rio do Norte, along with some of our major contractors, such as those at our Escondida and Iron Ore operations.

Specific environmental management plans (with reduction targets aimed at driving eco-efficiencies) for energy conservation, greenhouse gas emissions, land management, water use, and waste management have been established at over 85 per cent of required sites. The plans that remain to be developed are still in progress, and it is anticipated that all sites will be completed by the end of calendar year 2003.

Environmental incidents and fines

No actual significant environmental incidents (level 3 or above in the BHP Billiton Consequence Severity Table, see Figure 17) occurred during the reporting period. Two incidents having the potential to be level 3 or above occurred. These related to hydrocarbon handling, where the hydrocarbons were released from a tank and pipeline, respectively, but were captured in secondary containment structures without entering the surrounding environment.

There were 1394 level 1 (low) and 84 level 2 (minor) environmental incidents reported, mainly due to spills and fugitive emissions.

Accidental discharges of hydrocarbons to land and water totalled 104 600 litres during the reporting period. This consisted of a number of small-volume spills, including hydrocarbons released from primary containment facilities but captured in secondary containment facilities. Details of accidental discharges of hydrocarbons are presented in Appendix E.

We received four environmental fines during the reporting period, totalling US$37 572. Details of fines are presented in Appendix D.

Additionally, there were 22 environmental infringements reported (an environmental infringement is defined as a notice of violation, order or other notification such as a statutory notice from a governmental authority that has not resulted in a prosecution or a fine).

Environmental spending

Environmental spending for the reporting period was US$134 million, which includes costs for rehabilitation, remediation, environmental monitoring, and other environmental-related activities including environmental research and development. The costs of research and development include collaboration with institutions and academia to investigate strategies to reduce the environmental impact of our activities or improve the environmental performance of our products such as low-emission coal technology. These costs exclude expenditure associated with the operation and maintenance of pollution control equipment and the like.

Rehabilitation, remediation and closure

The Company makes financial provisions for site closure, rehabilitation and remediation activities according to United Kingdom Generally Accepted Accounting Principles (UK GAAP) and, as of 30 June 2003, this amounted to US$2025 million. This figure excludes cost allowances for human resources and community programs associated with closure. The more significant sites covered by this provision and the type of rehabilitation and/or remediation work contemplated include:

- a provision for the closure costs of all our Southwest Copper facilities as well as the remediation costs for the Pinal Creek State Superfund site in the State of Arizona in the US (We, along with other parties, are remediating groundwater contamination from mining operations.)
- a provision for the demolition of the former steelworks in Newcastle, New South Wales, Australia, and for remediation of sediment in the Hunter River adjacent to the former steelmaking site
- provisions for decommissioning, closure and rehabilitation for our energy coal mines in the US and South Africa, metallurgical coal mines in Queensland, Australia, bauxite mines at Worsley in Western Australia, iron ore operations in Western Australia and oil and gas operations in the UK and Australia.

. BHP Billiton Environmental Consequence Severity Table

1 ! >1 ?	1 ! >9 ?	1 ! 3 >9 ?	1 ! 6 >9 @ ?	1 ! 7 > ?
No lasting effect. Low-level impacts on biological or physical environment. Limited damage to minimal area of low significance.	Minor effects on biological or physical environment. Minor short-term to medium-term damage to small area of limited significance.	Moderate effects on biological or physical environment but not affecting ecosystem function. Moderate short-term to medium-term widespread impacts (e.g., oil spill causing impacts on shoreline).	Serious environmental effects with some impairment of ecosystem function (e.g., displacement of a species). Relatively widespread medium-term to long-term impacts.	Very serious environmental effects with impairment of ecosystem function. Long-term widespread effects on significant environment (e.g., unique habitat, national park).

Environment continued

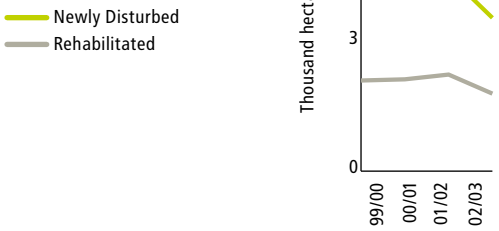
Resource use

Land

We require our sites to have land management plans that protect and enhance land potentially affected by their operations. At 30 June 2003, 96 per cent of the required sites had land management plans in place.

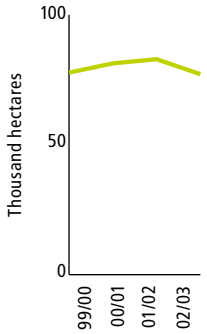
During the year, the total footprint of land owned, leased and/or managed by our operations was 1 037 000 hectares. Of this, 7 per cent was used for mining operations, 3 per cent for infrastructure and the remainder for other purposes, including exploration and buffer zones. At 30 June 2003, land newly disturbed was 3540 hectares compared to 4520 hectares for the previous year. The reason there was less newly disturbed land was primarily a result of our open-cut Queensland coal operations not needing to disturb any further land for mining during the year. The area rehabilitated was 1790 hectares, a decrease from last year of 2230 hectares. Total land requiring rehabilitation reduced from 82 910 hectares to 77 160 hectares, mainly due to a clarification of the estimate of land requiring rehabilitation at our Escondida operations from the previous year. This is presented in Figures 18 and 19. Details for each CSG are presented in Appendix E.

2
Land Rehabilitated and Newly Disturbed
1999/00 to 2002/03



4
Land Requiring Rehabilitation*
1999/00 to 2002/03

**Assumes immediate closure of all operations.*

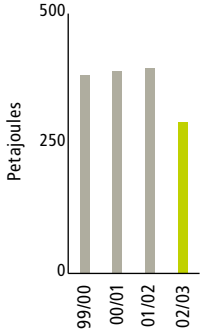


Energy

We established a target that all sites with emissions greater than 100 000 tonnes per annum of CO_2 equivalent must have energy conservation plans with specific targets by the end of the reporting period. Eighty-eight per cent of our sites achieved this target, with the remainder still in progress.

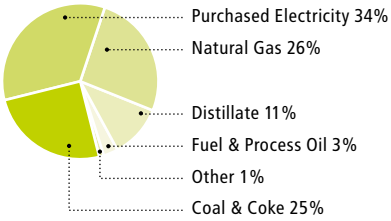
Total energy consumption was 292 petajoules, a decrease from 396 petajoules last year. This was primarily due to the demerger of BHP Steel, which contributed 131 petajoules in 2001/02. While energy consumption rose during the year due to production increases at a number of our operations, this was partially offset by improvements at our manganese and chrome operations and initiatives in improving energy efficiency, such as the EKATI mine's Energy Smart Program (see Case Study No. 18). The trend for the Company is shown in Figure 20.

5
Total Energy Use
1999/00 to 2002/03



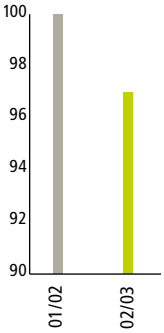
The major sources of energy use are from purchased electricity, natural gas, and coal and coke as shown in Figure 21.

Energy Use by Type
2002/03



The overall energy intensity index[1] for the Company is illustrated in Figure 22. Energy intensity for a range of our products is presented in Appendix F.

BHP Billiton
Overall Energy Intensity
2001/02 to 2002/03



1. The Intensity Index has been developed as a Company-wide performance indicator on environmental aspects, such as energy use, greenhouse gas emissions and fresh water consumption. The 'index' concept allows performance from different business groups or sites, all of which may have different operating conditions and product mixes, to be added together to form an overall indicator per unit of production. The baseline for the Intensity Indices is 2001/02 and, as such, has a value of 100.

Environment continued

Water

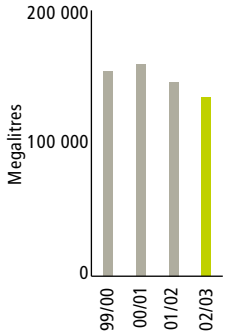
Availability of fresh water is an important global environmental issue. To this end, we required our sites with fresh water consumption greater than 500 megalitres per annum to have water management plans, including reduction targets, by the end of the reporting period. All but one of our sites were able to establish water management plans. However, many sites with water use below this threshold also reported that they had established management plans.

Total fresh water consumption for the reporting period was 132 630 megalitres, a decrease from last year's total of 147 100 megalitres. Recycled water was reduced from 543 000 megalitres from the previous reporting period to 175 350 megalitres. The reduction in the amount of fresh water consumed and water recycled was mainly due to the demerger of BHP Steel, which consumed 26 300 megalitres of fresh water and recycled 415 600 megalitres of water in 2001/02.

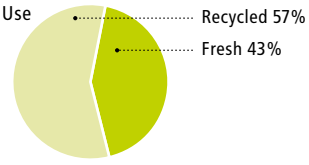
The Company also manages a number of additional licensed discharges at many of our worldwide operations; however, it is not practical to report these on a global basis.

Figure 23 presents water consumption trends for the Company, while Figure 24 provides the breakdown between fresh water consumed and water recycled.The overall fresh water intensity index[1] is presented in Figure 25. Water intensity for a range of our products is presented in Appendix F.

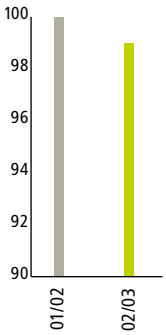
3
Fresh Water Consumption
1999/00 to 2002/03



6
Fresh and Recycled Water Use
2002/03



7
BHP Billiton
Overall Fresh Water Intensity
2001/02 to 2002/03



Gaseous emissions

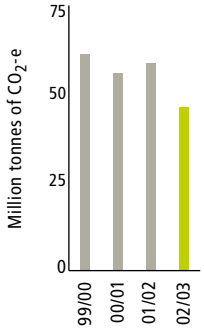
While we are phasing out the use of ozone-depleting substances across our operations, during the year 160 kilograms of CFC equivalents were consumed by airconditioning and refrigeration systems.

Greenhouse gas emissions

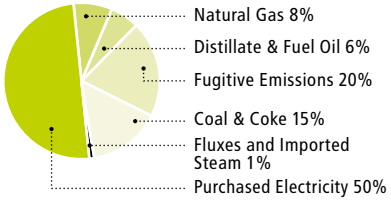
Our greenhouse gas emissions for the year totalled 47.1 million tonnes of carbon dioxide equivalent (CO_2-e), a reduction from last year's 60.0 million tonnes of CO_2 equivalent. The primary factor in the reduction of emissions was the demerger of BHP Steel, which contributed 13.4 million tonnes of CO_2 equivalent in 2001/02.

The greenhouse gas emissions for the past four years (1999/00 to 2002/03) are presented in Figure 26. The sources of greenhouse gas emissions are presented in Figure 27.

<
Greenhouse Gas Emissions
1999/00 to 2002/03

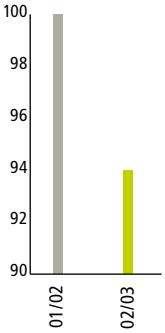


Sources of Greenhouse Gas Emissions
2002/03



The overall greenhouse gas intensity index[1] is presented in Figure 28. Greenhouse intensity for a range of our products is presented in Appendix F. The intensity reduction achieved for the year was 6 per cent; however, it should be noted that data can fluctuate on an annual basis.

2
BHP Billiton
Overall Greenhouse Gas Intensity
2001/02 to 2002/03



1. The Intensity Index has been developed as a Company-wide performance indicator on environmental aspects, such as energy use, greenhouse gas emissions and fresh water consumption. The 'index' concept allows performance from different business groups or sites, all of which may have different operating conditions and product mixes, to be added together to form an overall indicator per unit of production. The baseline for the Intensity Indices is 2001/02 and, as such, has a value of 100.

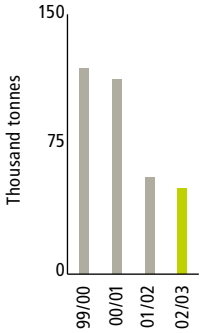
Environment continued

Oxides of sulphur and nitrogen

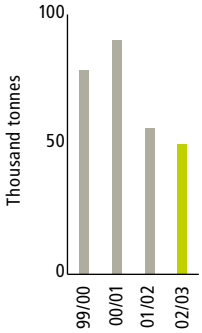
Oxides of nitrogen (NO_x) emissions for the reporting period were 49 640 tonnes, compared to 55 750 tonnes last year. Oxides of sulphur (SO_x) emissions totalled 50 020 tonnes compared to 56 330 tonnes last year. The Company's overall performance for NO_x and SO_x are presented in Figure 29 and Figure 30 respectively. Emissions by each CSG are presented in Appendix E.

The reduction in NO_x and SO_x emissions is mainly due to the demerger of BHP Steel. The purchase of diesel with low sulphur content by our sites also contributed to the reduction of SO_x.

4
NO_x Emissions to Air
1999/00 to 2002/03



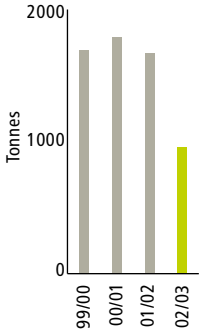
35
SO_x Emissions to Air
1999/00 to 2002/03



Fluoride

There was a significant decrease in fluoride emissions, from 1680 tonnes last year to 910 tonnes this year. This was due to substantial improvements in emission control at our aluminium smelters, including the environmental upgrade of potrooms B and C at Bayside, South Africa. The Company's fluoride emissions are presented in Figure 31, and emissions by CSGs are presented in Appendix E.

3
Fluoride Emissions to Air
1999/00 to 2002/03



Waste

Waste reduction programs have the potential to greatly reduce the consumption of a wide range of consumables, thus reducing the use of natural resources embodied in the materials and reducing the quantity of material disposed. We set a target for all of our sites to have waste minimisation programs in place by the end of the reporting period. All of the sites required to have the plans in place achieved the target.

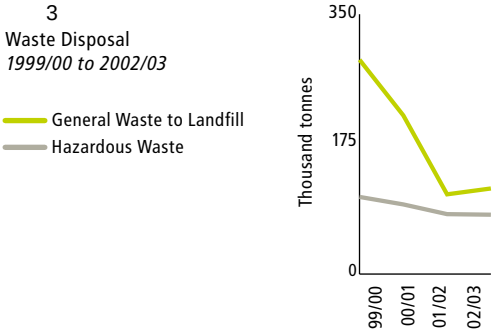
Total general waste (consisting of domestic and construction wastes) disposed of to landfill during the reporting period was 115 280 tonnes, an increase against the previous year's total of 107 400 tonnes. The increase was mainly due to construction associated with expansion activities at some of our sites.

Waste rock, tailings, coal reject and slag are excluded from our aggregate reduction target of 20 per cent in waste per unit of production by 30 June 2007.

Hazardous waste includes waste oil, chemical waste and hazardous baghouse dusts. Hazardous waste (excluding recycled materials, overburden, tailings and slags) generated in the reporting period was 79 940 tonnes. This consisted primarily of waste oil, chemical wastes, hazardous baghouse dusts and other hydrocarbon wastes.

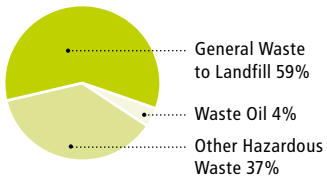
Indicative trends of waste disposed of by the Company are presented in Figure 32.

3
Waste Disposal
1999/00 to 2002/03



The different types of waste disposed of are presented in Figure 33. Waste disposal by CSGs is presented in Appendix E.

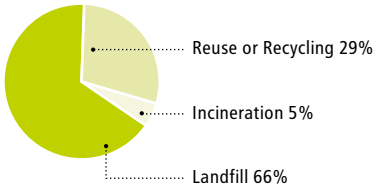
33
Waste Disposed (excluding recycled and mining-related materials, such as waste rock, tailings, coal reject and slag)
2002/03



Environment continued

As part of our waste minimisation program, we encourage our sites to reuse or recycle general wastes and minimise wastes going to landfill. Figure 34 shows the different methods employed to dispose of our general wastes. During the year, of the 36 300 tonnes of waste oil generated, 77 per cent was reused or recycled and the remainder disposed of in accordance with regulatory procedures (see Case Study No. 16).

36
General Waste Disposal Methods
2002/03



Biodiversity

Our biodiversity initiatives advanced in a number of areas over the past year. As an ICMM member company, we have undertaken not to explore or develop mines in World Heritage Properties, and we are reviewing the situation with regard to certain World Conservation Union (formerly International Union for the Conservation of Nature – IUCN) Protected Areas Management Categories. In that light, we have assessed each of our sites to determine whether any of our operations is within protective categories I to IV of the IUCN. We have several sites adjacent to protected areas; and the Minerva natural gas project, which has been given full authorisation, has horizontally drilled underneath the Port Campbell National Park in Victoria, Australia (Category ll National Park Recreation).

We also initiated an analysis of significant biodiversity issues identified across the organisation. During the course of next year we will be exploring the development of biodiversity-related metrics that would be used to measure post-mining land rehabilitation.

Environmental spending for biodiversity initiatives amounted to more than US$1 million. Included in this total is a grant to the United Nations Environment Program (UNEP) World Conservation Monitoring Centre for their work on protected areas research, contributions to the 'Revive our Wetlands' program with Conservation Volunteers Australia (see Case Study No. 15), and the Waterways Conservation Program with Zoos Victoria.

Climate change

We are working on activities related to climate change in a number of ways, including the setting of greenhouse gas (GHG) reduction targets, requiring sites to develop GHG management plans, collaboration with customers, pricing carbon in investment decision-making and funding research activities.

Greenhouse gas management plans have been developed at 85 per cent of the 41 required sites (those sites with emissions greater than 100 000 tonnes of CO_2 equivalent). Development of plans at the remaining required sites is in progress.

We have established a target to achieve an improvement in the greenhouse gas intensity of our operations' emissions (including emissions from purchased electricity) per unit of production of not less than 5 per cent over the period 2002 to 2007. To date we are on target.

We are committed to working with customers to improve energy efficiency in the downstream consumption of our Energy Coal products. In addition, we are assessing opportunities to use the Kyoto Protocol's Clean Development Mechanism to reduce emissions and promote sustainable development.

Carbon pricing sensitivity analysis is considered in our decisions for new projects and investments that would emit more than 100 000 tonnes of CO_2 equivalent per annum.

We are also funding research into geological sequestration of CO_2 and low-emission coal technologies (see Case Study No. 11).

Product stewardship

While the physical and chemical nature of metals ensures their infinite recyclability, we are working with commodity organisations to address life cycle and product stewardship considerations. For example, our Base Metals CSG is conducting Life Cycle Assessment studies for copper in conjunction with the International Copper Association and for zinc with the International Zinc Association. Additionally, they are taking a primary role in the efforts on lead stewardship through their involvement in the Green Lead™ project (see Case Study No. 40).

Our Stainless Steel Materials CSG has completed a Life Cycle Assessment with the Nickel Development Institute (see Case Study No. 39).

Our manganese business, in association with research institutes and universities, has embarked on an initiative to promote a selenium-free manganese product; and our Australian coal businesses have participated in the Australian Coal Association Research Program project, 'Coal in a Sustainable Society'.

Community

► *We recognise the importance of assisting in the development of communities wherever we operate*

Background

The Company owns and operates a diverse range of businesses in different countries and cultures around the world that, by their nature, may affect the community. We track a range of social issues relevant to sustainable development, including:

- human rights of our employees and contractors, our suppliers and the communities in which we operate, incorporating such issues as freedom of association, the exclusion of child labour and the prohibition of forced labour
- community development, which incorporates positive impacts, such as increased economic opportunities through employment, training and business spin-offs, as well as potential negative impacts, such as resettlement, impacts on food and water supplies, and loss of cultural sites or values
- indigenous communities that own the land impacted by our operations or live nearby. (We respect the rights of indigenous peoples to retain their culture, identity, customs and traditions and acknowledge the importance of their cultural heritage.)
- ethics and business conduct incorporating issues related to conducting business internationally and interacting with governments, communities and business partners, as well as workplace behaviour, equal employment opportunity, conflict of interest, financial inducements and bribery, insider trading and political contributions (see also HSEC Governance)
- indirect social impacts incorporating such issues as community dependency on our activities, our ability to attract further investment into the area and the location of our suppliers.

The following section discusses our community performance in 2002/03 and highlights some of the key initiatives and subsequent outcomes.

Community performance

Key initiatives

During the period, we adopted the World Bank Guidelines on Involuntary Resettlement and the US-UK Voluntary Principles on Security and Human Rights, so that our policies and systems are in line with the International Council on Mining and Metal's Sustainable Development Framework and key stakeholder expectations.

The Guidelines on Involuntary Resettlement will not be applied retrospectively and will only apply to new resettlement issues. The commitments under the US-UK Voluntary Principles on Security and Human Rights will require some initial actions, followed by progressive implementation as current systems are reviewed. The HSEC Management Standards will be amended during the next formal review to reflect these requirements.

We have also prepared a new internal tool for our operations, to assist them in appraising their potential exposure to human rights issues.

A new employee Matched Giving Program was piloted in South Africa, the United Kingdom and Australia. The program aims to strengthen local communities by supporting and encouraging employees who volunteer, fundraise or donate to not-for-profit organisations.

The pilot Matched Giving Program was well received, with over US$300 000 being contributed to 274 not-for-profit organisations. For example, more than 36 000 hours in personal volunteering were matched with cash donations to organisations where the employees offered their time. A second stage of the pilot will continue next year to further test application of the model in different cultures and operational sites.

In January 2003, BHP Billiton and Oxfam Community Aid Abroad ran the second Corporate Community Leadership Program in Orissa, India. Aiming to increase understanding of social issues relating to our operations, the program involved 12 employees from across the Company. Over a two-week period, participants were exposed to various development projects and the impact they have had on local communities (see Case Study No. 24).

Employee relations

Employee relations at BHP Billiton are the responsibility of local and business unit management. Each business is required to:

- put in place employment arrangements that deliver outcomes consistent with the BHP Billiton Charter, HSEC Policy and Guide to Business Conduct
- build open and productive relationships with employees and provide processes to assist in equitably addressing workplace issues
- ensure that employees have the opportunity to develop skills that allow them to contribute to business success and be recognised and rewarded for those results
- support fundamental human rights and freedom of association and ensure legal requirements governing employment are fully met (consistent with the United Nations Universal Declaration of Human Rights and the United Nations Global Compact).

Employee relations arrangements at individual workplaces are required to respect local legislative requirements and other local standards and circumstances.

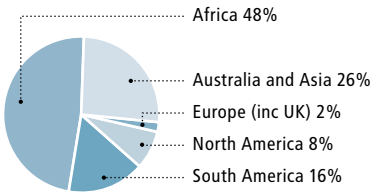
Employee profile

During the year, the average number of permanent employees across the Company (including BHP Billiton's owned and operated facilities, as well as our share of unincorporated joint ventures) was 34 800, compared to 51 000 reported in the previous period. A breakdown of employee numbers by region is presented in Figure 35. The demerger of BHP Steel accounted for a reduction in employees of 12 270, with the sale of transport and logistics businesses accounting for another 1380. About 98 per cent of employees at operated sites and corporate offices work full-time. The average turnover rate of employees at operated sites and corporate offices was 5 per cent.

Community continued

A total of about 32 000 contractors were employed at operated sites.

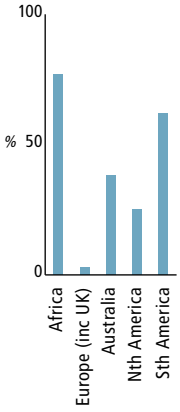
Figure 35.
Regional Geographic Breakdown of Total Number of Employees
2002/03



Freedom of association
While fully recognising the right of our employees to freely associate and join trade unions, we have a number of locations where we have a mix of collective and individual arrangements. Prospective employees are made aware of employment arrangements prior to joining the Company. The Company has a policy to consult with employees on major organisational changes.

Figure 36 presents a breakdown of the reported percentage of employees at operated sites and offices in each region who are covered by collective bargaining agreements.

Figure 36.
Reported Percentage of Employees Covered by Collective Bargaining Agreements by Region
2002/03



Diversity
The Company is committed to developing a diverse workforce and to providing a work environment in which everyone is treated fairly and with respect and has the opportunity to contribute to business success and realise their potential. In real terms, this means harnessing the unique skills, experience and perspectives that each individual brings and recognising that these differences are important to our success. Harassment in any form is unacceptable.

Employment with the Company is offered and provided on the basis of merit. All employees and applicants for employment are treated and evaluated according to their job-related skills, qualifications, abilities and aptitudes only. Employment decisions based on attributes other than a person's qualification to perform a job are prohibited – e.g., race, colour, gender, religion, personal associations, national origin, age, disability, political beliefs, HIV status, marital status, pregnancy, sexual orientation, or family responsibilities. Further information on our Employment Principles is available on our website at ***www.bhpbilliton.com/bb/peopleAndEmployment/employmentPrinciples.jsp***

The Company has identified some specific sites and countries where diversity issues are particularly sensitive. Examples of ongoing policies or programs undertaken to address employment diversity issues include the Employment Equity Policy in South Africa, which ultimately aims to achieve representation at all levels in our businesses consistent with the demographic profile of South Africa (see Case Study No. 37), and targeted indigenous employment programs in the Pilbara region of Australia (Iron Ore), the Northwest Territories in Canada (EKATI), and New Mexico in the United States (New Mexico Coal).

Of the Company's most senior 670 managers, 35 are female. In the year ending 30 June 2003, about 8 per cent of full-time employees at operated sites and offices were women. There were significant regional differences, with women representing about 50 per cent, 20 per cent and 12 per cent of full-time employees in Europe, North America and Australia respectively. In addition, most of the 950 part-time employees were women. There are no female members of the Board currently; however, the current Company Secretary is a woman.

Child labour
We continue to monitor Company practices in relation to the exclusion of child labour. All sites report the age of their youngest worker and the corresponding minimum working age in their jurisdiction. In the past year, the youngest employees were 17 years of age, working as apprentices in our Australian operations.

Remuneration
All Company employees earned greater than the stipulated minimum wage in the countries in which they worked.

Human rights
During the year, a Human Rights Self-Assessment Toolkit was developed and distributed to all Company sites to assist them in appraising their potential exposure to human rights issues. Development of the Toolkit is consistent with the Company's target to ensure there are no transgressions of the principles contained in the United Nations Universal Declaration of Human Rights.

The Toolkit enables sites to assess their level of impact on or exposure to human rights, encompassing child labour and forced labour, in nine aspects relevant to our operations: country, community, land acquisition, indigenous and minority groups, environment, security, employees, contractors and suppliers, and systems. The self-assessment will form part of the HSEC audit process.

Three sites reported human rights issues during the year. At the Tintaya copper mine in Peru, pending issues are being addressed by the 'Mesa de Diálogo', a dialogue process established with representation from the five communities in the Espinar region (see Case Study No. 34).

Two issues in South Africa are currently being resolved. One relates to squatters dwelling on a mine property and the other to the voluntary relocation of a person living in a house on a closed mine site.

Community continued

Indigenous employment and training

Indigenous employment is an important issue at a number of our sites. Some sites have set specific targets for indigenous employment and are publicly reporting their progress against these targets, while at other sites, various initiatives are being introduced to increase and maintain indigenous employment levels.

For example, since the launch in 2000 of BHP Billiton Iron Ore's five-year 'Investment in Aboriginal Relations' strategy, direct indigenous employment has grown from an estimated 3 per cent to a verifiable minimum of 5 per cent, with 55 indigenous persons placed in formal traineeship programs in a range of areas. A variety of educational and workplace support programs have also been put in place to provide a platform for continuing growth in indigenous employment.

Indirect (contractor) indigenous employment numbers are still being gathered, but a minimum current requirement of 5 per cent indigenous employment has been introduced for all service, construction and mining contracts as they fall due for renewal at Iron Ore. Though still in the early stages of establishing measurement mechanisms, preliminary assessments of contracts with indigenous employment targets show that employment numbers are currently being met or exceeded. Other specific indigenous contractor initiatives include:

- Western Desert Puntukurnuparna Aboriginal Corporation currently employing eight to ten indigenous persons on the Newman gardening contract
- Ngarda Civil and Mining, a 50 per cent indigenous-owned joint venture earthmoving company, employing 42 indigenous persons at Port Hedland's Finucane Island and Boodarie Iron operations with a further 16 opportunities becoming available in the near future
- Excel Resource Group, a 70 per cent indigenous-owned rigging and general mine services enterprise, currently employing six people to provide services at Nelson Point, with a capacity to expand significantly on that number
- active support in the establishment and operation of Indigenous Mining Services, formed by Area C Native Title claimants as a commercial labour supply enterprise and currently providing indigenous labour for the construction and operation phases of the Area C project.

At Groote Eylandt Mining Company (GEMCO) in the Northern Territory, Australia, 39 full-time employees of the total workforce of 207 are of indigenous descent, a total of 19 per cent. This number includes 21 full-time participants in GEMCO's Aboriginal employment strategy, which combines employment and training with activities undertaken by the Rehabilitation and Mine Services department.

New Mexico Coal in the US has a legal obligation to fill all positions at Navajo Mine with Navajo people if a qualified candidate is available for the job. The business voluntarily practices Native American preference at San Juan Coal Company and New Mexico Coal support services.

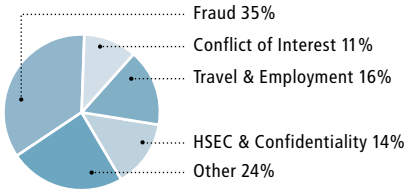
Our Native American employment numbers have remained at 64 per cent (of 897 employees) across New Mexico Coal and at 92 per cent (of 328 employees) at Navajo Mine.

Our EKATI Diamond Mine in the Northwest Territories of Canada is progressively moving towards its targets. Currently, 58 per cent of the workforce are from the local area (against a target of 62 per cent), with 28 per cent being Northern Aboriginal (against a target of 31 per cent). In addition, 80 to 100 Aboriginal employees are enrolled at any one time in a Workplace Literacy Program developed by EKATI, which was recognised this year by the Conference Board of Canada with an Excellence in Workplace Literacy Award.

Business conduct

There were 55 substantive calls to the Business Conduct Helpline and Fraud Hotline. A breakdown of these calls is included in Figure 37. The most common issues raised related to fraud, conflict of interest, travel policy, HSEC and confidentiality. Several cases required involvement of the Global Ethics Panel.

Figure 37.
Business Conduct Helpline and Fraud Hotline Categories of Calls
2002/03



During the year, internal performance requirements for Business Conduct were fully integrated in the HSEC Management Standards. Questions regarding business conduct were included in the HSEC audit and self-assessment, which has helped to quantify the extent to which employees and contractors have been made aware of the Guide to Business Conduct. While a large part of the Company has rolled out the Guide, communication is being improved at some sites and offices. Across all operations, communication about business conduct principles will need to be maintained. There is commitment from the most senior management to ensure the principles of the Guide are understood and practised.

Community relations plans and complaints

All sites are required to report publicly on their HSEC performance. This year 97 per cent of our sites have produced reports, which meets our target. These reports are available on the website at ***www.bhpbilliton.com/bb/sustainableDevelopment/operationsHSECReports.jsp***

Ninety-five per cent of our sites have community relations plans in place or were covered by a regional development plan developed by the business group.

All sites are required to have community complaints registers in place to record and track the management of community concerns. During the year, 57 (or 62 per cent) of our sites received a total of 361 complaints. Of these, 22 per cent were related to dust, 22 per cent to noise, 17 per cent to odour and the remainder to a range of other issues.

Community continued

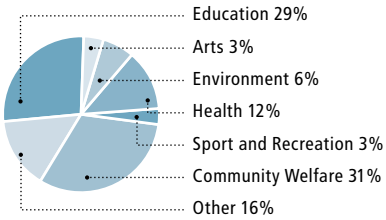
Community contributions

Community programs operated at both corporate and site level during the year. The contribution towards community programs totalled US$42 million, comprising cash, in-kind support and management time. This amount equates to 1.4 per cent of pre-tax profit (three-year rolling average), which exceeded our target of 1 per cent. The amount also includes our contribution to community programs at joint venture operations.

We recognise the importance of assisting in the development of healthy communities wherever we operate.

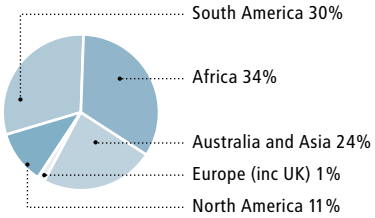
The distribution of our funding by program category and by geographic region is presented in Figures 38 and 39.

Figure 38.
Community Contributions by Program Category
2002/03



(US$ million)
Education: 12.1
Arts: 1.5
Environment: 2.4
Health: 5.3
Sport and Recreation: 1.2
Community Welfare: 13.1
Other: 6.7

Figure 39.
Community Contributions by Geographic Region
2002/03



In October 2001, PNG Sustainable Development Program Company was established as a result of an agreement between BHP Billiton and the Papua New Guinea Government, following our withdrawal from Ok Tedi Mining Limited (OTML).

Under the agreement, all of the dividends from OTML that would have gone to BHP Billiton now go to PNG Sustainable Development Program Company, which has the role of distributing profits from the mine to community development projects in Papua New Guinea.

During 2002, PNG Sustainable Development Program Company received one payment from OTML of gross dividends totalling US$7.2 million. Two more dividend payments totalling US$34.3 million were received during 2003 up to April 30. Plans for current and long-term funds for development programs have been established, but there was no expenditure during the period. A sustainable development program strategy is being developed (see Case Study No. 26).

Further examples of our community programs are presented in our Community Programs report, which is available on our website at ***www.bhpbilliton.com/bb/sustainableDevelopment/community/home.jsp***

Economic

The data in this section deal with the economic affairs of the BHP Billiton Group and cover both operated assets and our share of unincorporated joint ventures. Details on the financial definitions and further performance information are available in the BHP Billiton Limited Annual Report and BHP Billiton Plc Annual Report that are published at the same time as the HSEC Report. In our capacity as a member of the International Council on Mining and Metals and a signatory to the Global Compact and with our primary listings on the Australian and London stock exchanges, we are keenly aware of the various voluntary codes covering practices in sustainable development and governance more generally.

In formulating the governance principles that guide our operations, Directors have taken into account the various regulatory requirements, together with standards of best practice. Where governance principles vary across these jurisdictions, the Directors have resolved to adopt those principles that they consider to be the better of the prevailing standards.

The Company's diversification by operating assets and by market (turnover) across geographic regions is illustrated in Figures 40 and 41. Figures 42 and 43 provide a breakdown of earnings and employment by Customer Sector Group.

Globally, in 2002/03 the Company spent in the order of US$12.5 billion sustaining its businesses. The breakdown of this amount by category is presented in Figure 44, while Figure 45 shows expenditure by region and helps to quantify the regional economic contributions of the Group.

We have also confirmed our support for the Extractive Industries Transparency Initiative regarding disclosure of payments of taxes and royalties. We will work with our host governments that participate in this process to ensure public reporting of these payments. In the interim, we have presented these data on a regional basis in Figure 45.

Figure 40.
Diversification by Geographic Region (Net Operating Assets)
At 30 June 2003

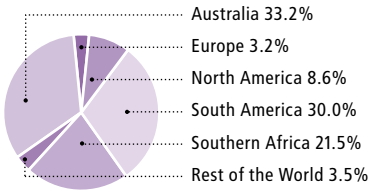


Figure 41.
Diversification by Market (Turnover)
At 30 June 2003

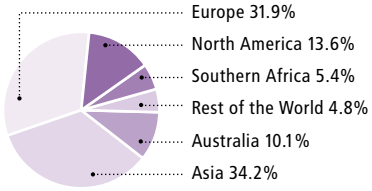


Figure 42.
CSG Earnings Before Interest and Tax (EBIT) Excluding Exceptional Items
At 30 June 2003

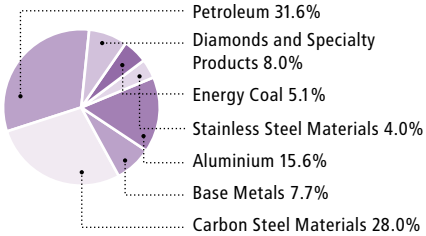


Figure 43.
Employment by CSG (Data based on Group Total Employment of 34 800)
Average in year to 30 June 2003

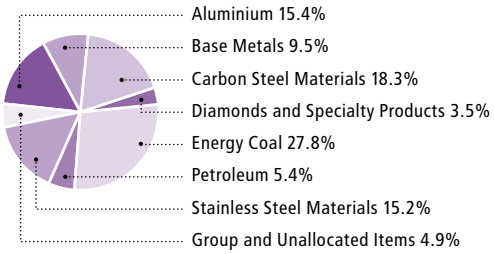
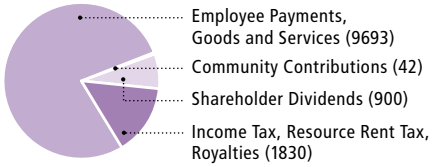
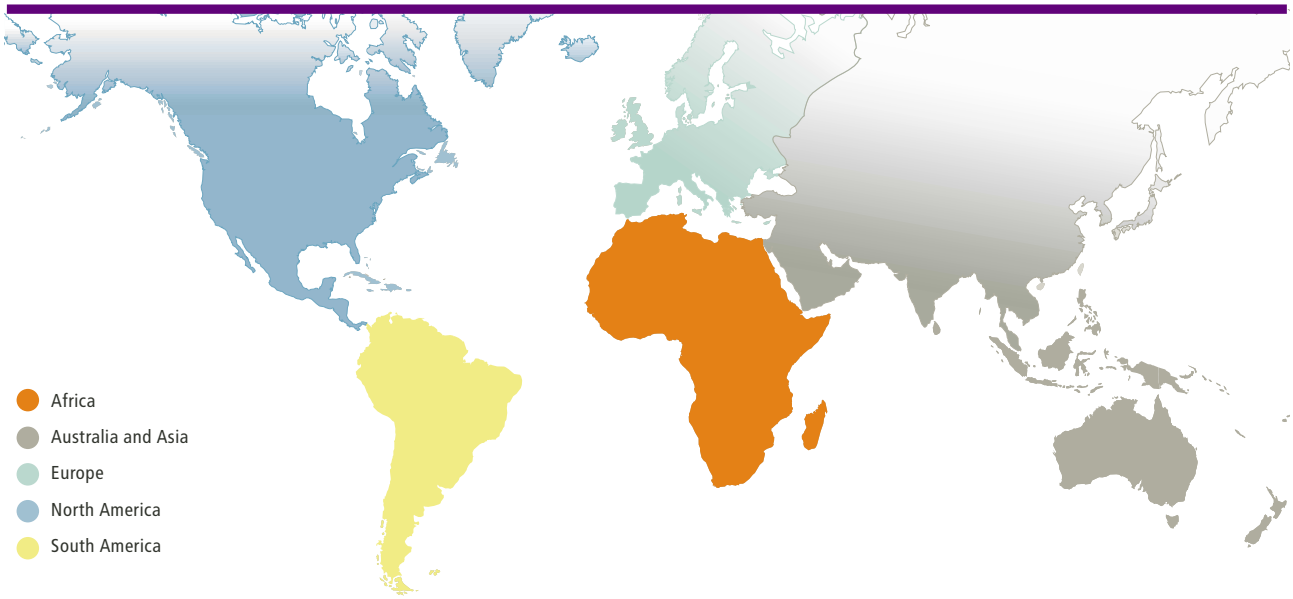


Figure 44.
Total Allocated Expenditure by Category
2002/03 (US$ million)



Economic continued

Figure 45. Expenditure by region (US$ million) *2002/03*



Expenditure by region (US$ million)[1] *2002/03*

	Income Tax Resource Rent Tax and Royalties	Employee Payments Goods and Services [2]	Community Contributions[4]	Shareholder Dividends [3]	Regional Totals
Africa	317	2 036	14	72	**2 439**
Australia and Asia	1 241	5 061	10	396	**6 708**
Europe	89	207	< 1	270	**567**
North America	95	913	5	162	**1 175**
South America	88	1 476	13	< 1	**1 577**
Global total	**1 830**	**9 693**	**42**	**900**	**12 466**

1. The data in this table have been rounded and cover operated assets and the Group's share of unincorporated joint ventures.
2. Due to the way that we currently document the sourcing of all imported materials and services, we have not been able to allocate all expenditure on goods and services. (Note: these data have not been audited.) Additional unallocated expenditure on goods and services totalled US$1302 million globally.
3. Shareholder dividends are based on a shareholder register analysis dated 30 June 2003 and total dividends payable in FY03.
4. Cover both operated assets and our share of joint ventures.

Audit and Self-Assessment

Audit
A total of 34 HSEC audits were conducted during the year to assess the level of implementation of the HSEC Management Standards.

The audit program involved 99 personnel from both HSEC functional roles and operational roles (13 of whom participated in audits last year) and eight external auditors (two of whom are members of the HSE Committee of the BHP Billiton Board).

The process is proving invaluable in accelerating the rate of improvement in all aspects of HSEC management through the identification and communication of leading practices.
The average level and range of conformance for each of the Standards is presented in Figure 46, which shows an overall conformance of 3.4 out of 5.

Self-assessment
Sites not audited during the year were required to undertake self-assessments against the Standards. The results from these 51 self-assessments have been combined with the audit results to give an overall conformance of 3.6 out of 5.

These results are also expressed in terms of the level of conformance with the Minerals Council of Australia Code for Environmental Management, as presented in Figure 47, which shows an average conformance for the Group of 3.6 out of 5.

Figure 46. Conformance Score Against Each of the HSEC Management Standards *2002/03*

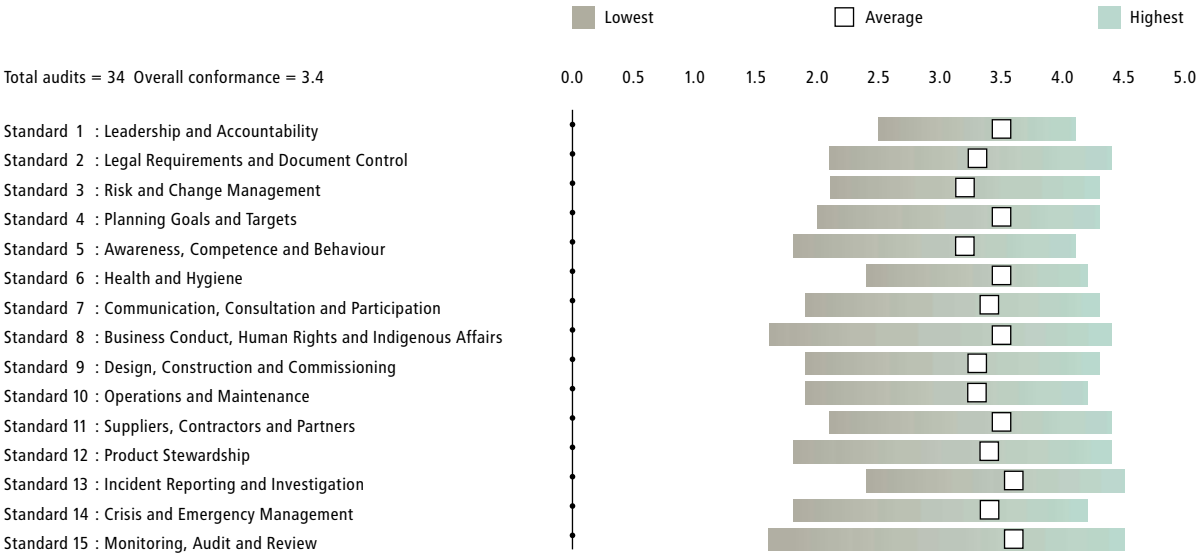
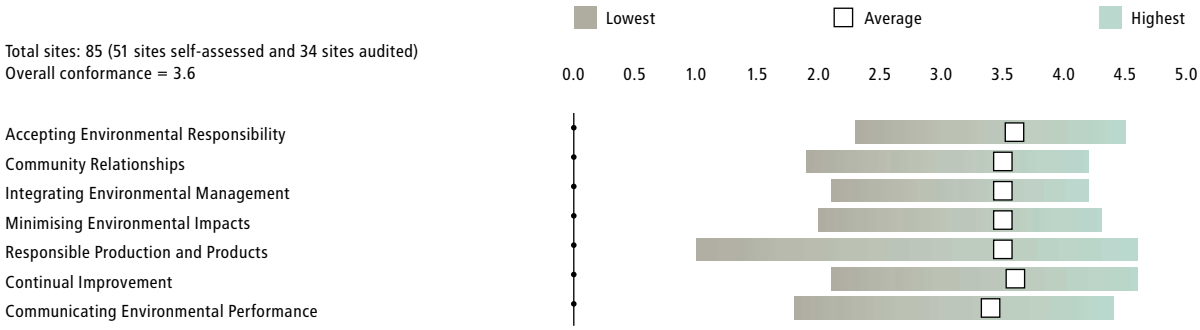


Figure 47. Conformance Score Against the Australian Minerals Industry Code for Environmental Management *2002/03*



Verification Statement

Environmental Resources Management (ERM) was requested by BHP Billiton Limited to assess and comment upon the accuracy of the data used in the Annual Health, Safety, Environment and Community (HSEC) Report for the period 1 July 2002 to 30 June 2003.

ERM undertook this assessment by reviewing the on-site data collection process, the data management and collation process, and the synthesis of this data into the tables, graphs and statements that are presented in this Annual HSEC Report.

Ten sites were selected from the operations managed by BHP Billiton in order to determine the robustness of data collection processes at the operational level. The sites were selected to provide a representative sample of BHP Billiton's total number of sites, geographical spread, operational types, the age of operations, and social and environmental settings. The sites were:

- Bayside – Aluminium Smelter in South Africa
- Western Chrome – Chromite ore mine in South Africa
- Koornfontein – Coal Mine in South Africa
- Griffin – Offshore Oil and Gas Production in Australia
- TEMCO – Manganese Smelter in Australia
- West Cliff – Coal Mine in Australia
- Yabulu – Nickel Refinery in Australia
- San Manuel – Copper Complex undergoing closure in the USA
- Cerro Colorado – Copper Mine in Chile
- Lelydorp – Bauxite Mine in Suriname

The data collection process was examined at each of these sites and key personnel involved in data collection were interviewed.

The collation of the data at BHP Billiton's offices in Melbourne, Australia, was examined. Members of the team in Melbourne who were instrumental in analysing the data were interviewed and their analytical activities were shadowed. Selected calculation steps were independently repeated by ERM to check the veracity of the interpreted data for samples of key HSEC parameters discussed in this Annual Report.

Conclusions drawn from the data and corresponding statements made in this Annual HSEC Report were reviewed by ERM in the context of the robustness of data. Case studies were not included in this review.

Observations

In general, the data collection, collation and interpretation processes exhibited by BHP Billiton at its individual operating sites and its offices in Melbourne, Australia, provide a sound basis for the credible reporting of performance. An overall improvement in data management both at operational and corporate level was noted from the previous two annual reports that were verified by ERM.

A number of minor errors were detected in the site data and immediately corrected. The errors were unlikely to have resulted in any material shifting of the results presented.

In order to assist BHP Billiton with continual improvement in HSEC reporting, ERM provided the Management Team with a number of recommendations made following observations by the audit team.

Some opportunities for improvement in future annual reporting are as follows:

- Definitions – Many of the minor errors identified could be attributed to different interpretations used in the questionnaires. Whilst a marked improvement has been shown since previous years, there is room for further improvement.
- Data Security – There are no restrictions on sites changing calculations embedded in the questionnaire which increases the cross-checking requirements and provides the potential for inaccurate data to be submitted to head office.
- Detail – A number of the minor errors appeared to be due to limited validation of data at the site level, prior to submission to head office. Greater attention to detail will reduce the number of errors and improve overall confidence in the results.

Opinion

On the basis of the activities undertaken to verify its content, ERM believe that the material presented in this Annual HSEC Report is a fair and reasonable representation of Company performance on reported HSEC issues across the operations managed by BHP Billiton.

David Snashall
Partner

Danny Ptak
Senior Auditor

Delivering sustainable solutions in a more competitive world

ERM

Appendices

Appendices Index

Appendix A **BHP Billiton Health Safety and Environment Committee of the Board**

► *David Brink*

► *Ben Alberts*

► *Chip Goodyear*

► *Jimmy L Perkins*

David Brink – Chairman
MSc Eng (Mining), DCom (hc)

David is a Director of BHP Billiton and, prior to the DLC merger, was a Director of Billiton Plc. He holds an RSA Mine Managers' Certificate of Competency (Metalliferous) and an RSA Mine Surveyors' Certificate of Competency. David started his career in deep-level mining in 1962 and moved on to manage a shaft sinking, tunneling and exploration contracting company from 1970, with operations mainly in South Africa and Australasia. Since 1983, David has been involved in construction and heavy engineering and, from 1994, in pulp and paper, life assurance and banking as a non-executive Director.

Charles (Chip) Goodyear
BSc, MBA, FCPA

Chip was appointed Chief Executive Officer of BHP Billiton Limited and BHP Billiton Plc in January 2003. He has been a Director since November 2001. He previously held positions of Chief Development Officer and Chief Financial Officer of BHP Billiton Limited and BHP Billiton Plc. Chip joined the Company as Chief Financial Officer in 1999, prior to which he had extensive financial, corporate restructuring, and merger and acquisition experience in the United States, including roles as President of Goodyear Capital Corporation and Executive Vice President and Chief Financial Officer of Freeport-McMoRan Inc.

Ben Alberts
BSc Eng (Agric), BSc Eng (Mining), Pr Eng, FSAIMM

Ben was with Iscor Ltd in South Africa for 35 years, working on iron ore, chrome ore and coal mines, both open pit and underground. He was CEO of the Iscor mining division for 17 years, with responsibility for 13 mines and also the Iscor Corporate Safety Program. He is a past President (and also an Honorary Fellow) of the South African Institute of Mining and Metallurgy. Ben is Chairman of the Council of the University of Pretoria, South Africa's largest residential university, and a former Director of BHP Billiton.

Jimmy L Perkins
PhD, CIH

Jimmy is Professor of Environmental Health Sciences at the University of Texas School of Public Health. He is a Certified Industrial Hygienist and has worked in the petroleum industry, with the US National Institute for Occupational Safety and Health, and with a wide range of industries, including foundries, specialty metals products, poultry production, printing, telecommunications, educational facilities and petrochemicals. He has presented short courses in Kenya, Australia, Colombia, South Africa, and Mexico. Jimmy's work is published in more than 40 publications spanning a wide range of topics, including environmental exposure assessment, dermal exposure risk management, air and water quality, and hazardous waste.

Appendices continued

Appendix A **BHP Billiton Health Safety and Environment Committee of the Board** continued

► *David Slater*

► *Mike Salamon*

► *Ed Spence*

► *Colin Bloomfield*

David Slater
CB, BSc, PhD, CChem, CEng, FRSC, FIChemE

David was educated at the University College of Wales and Ohio State University and initially taught chemical engineering at Imperial College London. Following that, he has had extensive experience in safety and environmental risk management, both in consultancy and in UK regulatory agencies. Through the 1970s and 1980s, as founder of Technica, he led the pioneering application of risk assessment techniques to the offshore and petrochemical industries. As Her Majesty's Chief Inspector of Pollution and Director of the Environment Agency, he had a leading role, through the 1990s, in developing and implementing risk-based pollution control legislation in the UK and Europe. He is currently a Principal Partner of the Anglo Norwegian Acona Group and a Director of the regulatory strategy organisation Cambrensis and holds a Royal Academy of Engineering Professorship at the University of Manchester. David advises Cardiff University and, as an adjunct Professor at King's College, London, is involved with the Kings Risk Forum.

Ed Spence
CEng, FIEE

Ed is Managing Director of Integral Safety Ltd in the UK. His clients include the UK Health and Safety Executive and the federal Australian and Norwegian equivalents, as well as several major oil and minerals companies. He retired as HSE manager for BP Exploration (Europe) some six years ago to start his own consultancy. Ed was previously Engineering Development Manager for BP Exploration. He is a chartered engineer and a Fellow of the Institution of Electrical Engineers and lectures part-time to the MSc course in Safety Engineering at Aberdeen (Scotland) University. Ed's focuses are inherently safer design and regression of incident causation to the deep ultimate causes rather than the more obvious ones.

Miklos (Mike) Salamon
BSc (Mining Engineering), MBA

Mike Salamon is the Senior Minerals Executive of the BHP Billiton Group. He was appointed an executive Director of BHP Billiton Limited and BHP Billiton Plc in February 2003. He is President of the Aluminium Customer Sector Group, a member of the Office of the Chief Executive and a member of the Petroleum and Stainless Steel Materials Customer Sector Group Boards. He is Chairman of Samancor and a Director of Richards Bay Minerals, Cerro Matoso and Escondida. From July 1997 to June 2001, Mike was an executive Director of Billiton Plc with responsibilities for nickel, chrome, manganese, stainless steel and titanium. He is former Executive Chairman of Samancor, Managing Director of Trans-Natal Coal Corporation and Chairman of Columbus.

Colin Bloomfield
BE (Mining), GradCertMgt

Colin is Vice President Health, Safety and Environment of BHP Billiton. He has worked with the Company for over 18 years, mostly in technical and management roles. He holds a First Class Certificate of Competency in Mine Management and has managed underground coal mines in Australia. Since 1998, he has undertaken corporate roles, including Project Director for the BHP Billiton merger integration, and was appointed to his current role in July 2001. Colin is a member of the Minerals Council of Australia Executive Committee and is a Director of Risk Management Technologies Pty Ltd.

Appendices continued

Appendix B **BHP Billiton Forum on Corporate Responsibility**

► *David Butcher*

► *James Ensor*

► *Tricia Caswell*

► *Andrew Hewett*

External Members

David Butcher BVSc, MRCVS
Chief Executive Officer, World Wide Fund for Nature Australia

David was appointed to his current position with World Wide Fund for Nature (WWF) Australia in 1994. He is a practising veterinarian and has worked in many fields of veterinary science. He was responsible for the construction and operation of the Western Plains Zoo, while working for the Zoological Parks Board of NSW. He became Assistant Director of Taronga Zoo, joined the RSPCA NSW as Director and then became CEO of WWF Australia. The organisation is crucially involved in many important issues, including the protection and conservation of Australian wildlife and the prevention of wildlife trafficking.

Tricia Caswell BA, BEd
Executive Director, Global Sustainability @ RMIT University, Melbourne, Australia

Tricia was appointed to her current position at RMIT University in October 2000, with responsibility for establishing the institute and creating its vision, mission and strategy. Tricia began her working life as a teacher at secondary, TAFE and tertiary levels. She became one of the nation's first women trade union leaders, secretary of the Teachers Trade Union of Victoria, an elected industrial officer at the Victorian Trades Hall Council, and a member of the ACTU Executive. From 1992 to 1995, Tricia held the position of Executive Director of the Australian Conservation Foundation. From there she went on to be the Executive Director of PLAN International Australia, an aid and development organisation. Tricia has been a representative on many public and private organisations, including UNESCO, the Australia Council and RMIT University Council, and Chair of Circus Oz.

James Ensor BEc, BAppSc, GradDipJournalism
Director of Public Policy & Outreach, Oxfam Community Aid Abroad

James has responsibility for the national and global advocacy and community outreach programs of Oxfam Community Aid Abroad (OCAA). These programs include the agency's Community Leadership Program and Corporate Community Leadership Program and its new International Youth Parliament. Since joining the organisation in 1997, James has also had responsibility for the management of a range of Oxfam's overseas development projects. Prior to joining OCAA, James spent seven years with the Central Land Council in the Northern Territory, a statutory authority established under the Aboriginal Land Rights (Northern Territory) Act, representing the interests of the indigenous landowners of Central Australia.

Andrew Hewett
Executive Director, Oxfam Community Aid Abroad

Andrew was appointed to his current position with Oxfam Community Aid Abroad (OCAA) in October 2001, having worked with OCAA since 1991. He initially established the agency's advocacy program, with increasing focus on lobbying governments, public education and campaigning on social justice and development issues. Over the years, his responsibilities expanded to include OCAA's domestic program and the coordination of Oxfam International's response to the crisis in Timor from 1999 to 2001. Andrew is a member of the Executive Committee of the Australian Council for Overseas Aid (ACFOA), the peak council of non-government overseas development agencies. He has visited OCAA programs in East Timor, Mozambique, El Salvador, India, Cambodia, Bangladesh, South Africa, Sri Lanka and, most recently, Mozambique.

Appendices continued

Appendix B **BHP Billiton Forum on Corporate Responsibility** continued

► *Paul Jennings*

► *Denis Perry*

► *Mokhethi Moshoeshoe*

► *Michael Rae*

Paul Jennings BComm (Hons), CAIB (SA), FSIA
Network Director – Victoria, Opportunity International Australia Limited

Opportunity International Australia (OIA) is a not-for-profit organisation providing small business loans, business training and leadership development to chronically poor people in the developing world. Prior to joining OIA in 2000, Paul was Head of Australian Shares for AXA Australia. Before joining AXA, he worked for 14 years with the Standard Bank of South Africa where he held a range of investment and banking positions. Paul has held Board positions in Optus Ltd and Austraclear Ltd.

Mokhethi Moshoeshoe BA (Law)
Director, African Institute of Corporate Citizenship

Mokhethi Moshoeshoe is founding director of the African Institute of Corporate Citizenship (AICC) and co-founder of the Institute for Social and Ethical Accounting and Auditing South Africa. Before founding the AICC, Mokhethi was the Executive Director of the Southern African Grantmakers' Association from June 1997. He pioneered the first community foundations in South Africa. He developed the Prodder NGO directory and Prodder Newsletter for the Human Sciences Research Council. Mokhethi serves on a number of governing boards, including PetroSA Development Trust, Desmond Tutu Education Trust, PLANACT and Boys Town. He is a member of the USAID regional advisory panel for SADC and of the International Learning Forum on the United Nations Global Compact.

Denis Perry BMin
Director & Chief Executive Officer, Opportunity International Australia Limited

Before moving to Sydney to work with Opportunity International in 1996, Denis pioneered a successful NGO in Christchurch, New Zealand, as Trustee and Director of Kingdom Resources Trust and Kingdom Resources Limited (1990–95). Kingdom Resources borrowed from the public and lent at no interest to people with excessive personal debt. Previously, Denis was Manager Business Banking, United Bank (1989–90) and Manager Corporate Banking and Regional Investment Manager, NZI Bank (1984–89), with particular emphasis on debt securitisation and portfolio analysis. Prior to that, he had 12 years' experience in the reinsurance industry, specialising in risk management and credit insurance.

Michael Rae BSc
Senior Policy Officer – Business and Industry, World Wide Fund for Nature Australia

Michael is employed in the conservation department of World Wide Fund for Nature (WWF) and is involved in sustainability policy development and advocacy, both in Australia and globally. He has been a WWF advocate at a number of international conferences, including mining, climate change, international trade, and forests. Michael heads the WWF Mineral Resources Unit, charged with leading WWF's international work on mining. He has worked for Australian non-government environment organisations for the past 19 years – first for the Total Environment Centre, then the Wilderness Society in Sydney, Brisbane and Melbourne, then the Australian Conservation Foundation and, since 1989, WWF.

Appendices continued

Appendix B **BHP Billiton Forum on Corporate Responsibility** continued

► *The Rt Hon Sir Ninian Stephen*

► *Colin Bloomfield*

► *Philip Aiken*

► *Graham Evans*

The Rt Hon Sir Ninian Stephen LLB

Sir Ninian Stephen served as Governor-General of Australia from 1982 to 1989. He began practising as a solicitor in 1949 and from 1952 was a barrister, principally in commercial, equity, taxation and constitutional areas. He was appointed Queen's Counsel in 1966, appointed to the Victorian Supreme Court bench in 1970, and in March 1972 appointed a Justice of the High Court of Australia. He retired from the High Court in 1982 to take up the appointment as Governor-General. He has been Special Ambassador for the Environment 1989–92 and Chairman of the Constitutional Centenary Foundation, the Antarctic Foundation, the National Library of Australia, the Australian Citizenship Council, the Australian Blood and Blood Products Review, and the Australian Banking Industry Ombudsman Council. In 1992, Sir Ninian was appointed as Chairman of the Talks on Northern Ireland. He was Judge of the International Criminal Tribunal for the former Yugoslavia 1993–97, Commonwealth of Nations Special Envoy to Bangladesh 1994, Chairman of the UN Expert Group on Cambodia 1998–99, Chairman of the Gene Technology Community Consultative Committee and is a member of the Ethics Commission of the International Olympic Committee.

BHP Billiton Members

Philip Aiken BE (Chemistry), Harvard Business School Advanced Management Program
President & Chief Executive Officer, BHP Billiton Petroleum

Philip was appointed to his current position with BHP Billiton in 1997. He joined the Company in 1997 as Executive General Manager Corporate Development, prior to which he was the Managing Director of BTR Nylex. In addition to his responsibilities as President and CEO Petroleum, Philip is a member of the BHP Billiton Office of the Chief Executive, the Executive Committee, the BHP Billiton Base Metals Board the Marketing Committee and is Chairman of the Energy Board. He is also Chairman of the Organising Committee of the 2004 Sydney World Energy Congress and Vice Chairman of the World Energy Council.

Colin Bloomfield BE (Mining), GradCertMgt
Vice President Health, Safety and Environment, BHP Billiton

Colin was appointed to his current position with BHP Billiton in July 2001. He has worked with the Company for over 18 years, mostly in technical and management roles. He holds a First Class Certificate of Competency in Mine Management and has managed underground coalmines in Australia. Since 1998, he has undertaken corporate roles, including Project Director for the BHP Billiton merger integration, before being appointed to his current role. Colin is a member of the Minerals Council of Australia Executive Committee and is a Director of Risk Management Technologies Pty Ltd.

Graham Evans AO MA, MIPP, DipEd
Vice President Government and Community Relations, BHP Billiton

Graham was appointed to his current position with BHP Billiton in 2002. From 1996 to 2002, he was Group General Manager, later Vice President, External Affairs, BHP. Prior to joining BHP in 1995, he served in a number of senior positions in the Commonwealth Public Service, including Secretary to the Departments of Transport, Transport and Communications, Primary Industries and Energy, and Resources and Energy. He was also Principal Private Secretary to the Prime Minister from 1983 to 1986. Graham has previously served as a Director of Fosters Brewing Group, Australia Post, Telecom and AIDC. He is currently a member of the Government's Trade Policy Advisory Council. He was awarded the Order of Australia in 1995.

Appendices continued

Appendix B **BHP Billiton Forum on Corporate Responsibility** continued

► *Chip Goodyear*

► *Mike Salamon*

► *Mike Oppenheimer*

► *Ian Wood*

Charles (Chip) Goodyear BSc, MBA, FCPA
Chief Executive Officer, BHP Billiton

Chip was appointed Chief Executive Officer of BHP Billiton Limited and BHP Billiton Plc in January 2003. He has been a Director since November 2001. He previously held positions of Chief Development Officer and Chief Financial Officer of BHP Billiton Limited and BHP Billiton Plc. Chip joined the Company as Chief Financial Officer in 1999, prior to which he had extensive financial, corporate restructuring and merger and acquisition experience in the United States, including roles as President of Goodyear Capital Corporation and Executive Vice President and Chief Financial Officer of Freeport-McMoRan Inc.

Mike Oppenheimer BSc (Chem Eng) (First Class Hons)
President Energy Coal, BHP Billiton

Mike joined BHP Petroleum in 1988. He was appointed Vice President North West Shelf in 1996, where he was responsible for BHP's interest in Australia's premier resources project. In 1999, he was appointed President Gas Commercialisation & Marketing and to the BHP Petroleum Executive Committee. In 2000, Mike joined BHP Minerals as President BHP Coal, and in 2001, following the merger of BHP and Billiton, he was appointed President Energy Coal Customer Sector Group, with responsibilities for all aspects of the Company's global energy coal business. In January 2002, he was appointed to the BHP Billiton Executive Committee.

Miklos (Mike) Salamon BSc (Mining Eng), MBA – Chair of the FCR
Executive Director, BHP Billiton

Mike Salamon is the Senior Minerals Executive of the BHP Billiton Group. He was appointed an executive Director of BHP Billiton Limited and BHP Billiton Plc in February 2003. He is President of the Aluminium Customer Sector Group, a member of the Office of the Chief Executive and a member of the Petroleum and Stainless Steel Materials Customer Sector Group Boards. He is Chairman of Samancor and a Director of Richards Bay Minerals, Cerro Matoso and Escondida. From July 1997 to June 2001, Mike was an executive Director of Billiton Plc with responsibilities for nickel, chrome, manganese, stainless steel and titanium. He is former Executive Chairman of Samancor, Managing Director of Trans-Natal Coal Corporation and Chairman of Columbus.

Ian Wood BSc (Env Sc) (Hons)
Vice President Sustainable Development, BHP Billiton

In his current role, Ian has responsibility for developing BHP Billiton's strategic response to global community relations issues, including the Sustainable Development agenda, corporate social responsibility, and public reporting on the Company's HSEC performance. In September 2002, he attended the World Summit on Sustainable Development as a member of the Australian Government delegation. Prior to taking on his current role, he was responsible for the provision of technical support to BHP's minerals businesses with particular emphasis on the Asia Pacific Region. From 1992 to 1995, he held the position of Manager Environment with Ok Tedi Mining Limited in Papua New Guinea. Before joining BHP, Ian had extensive site-based experience in the minerals industry.

Appendices continued

Appendix C Fatal Incidents (Controlled Operations)

Date of Incident	Site	CSG	Nature of Incident
12 August 2002	Escondida, Chile	Base Metals	The electric swing motor of a rope shovel was dislodged due to the uncontrolled rotation of the shovel while under maintenance.
27 August 2002	Ferrometals, Samancor Chrome, South Africa	Stainless Steel Materials	Hot metal ladle eruption.
2 June 2003	Rhourde Oulad Djemma (ROD) Project, Algeria	Petroleum	Dropped load due to lifting chain failure.

Appendix D Fines

Fines and Prosecutions (in relation to environmental, health and safety regulations)

Issue	Customer Sector Group	Description	Fine
Safety	Not Applicable – closed site	The former Newcastle Steelworks site was fined in relation to an incident in 1999 when the No. 3 Boiler exploded. No one was injured as a result of the explosion, but two employees were put at risk of serious injury.	US$80 154
Health and Safety	Base Metals	Southwest Copper sites were fined in relation to seven citations with the US Mine Safety and Health Administration on data reporting errors and general housekeeping issues.	US$390
Health and Safety	Base Metals	Escondida Operations received a fine related to a possible food poisoning incident of some contractors' employees during the reporting year. The matter is in the process of further clarification and discussions with the Health Service Antofagasta.	US$4 000
Health and Safety	Energy Coal	Navajo Mine and San Juan Coal were fined US$15 391 and US$29 437 respectively for a range of citations with the US Mine Safety and Health Administration (MSHA) resulting from routine inspections by MSHA officials during the year.	US$44 828
Environment	Energy Coal	Navajo Mine received a fine from the US EPA for a Toxic Release Inventory submittal interpretation error. A corrected form was subsequently sent.	US$18 390
Environment	Energy Coal	Mt Arthur Coal received a fine in July 2002 from the NSW EPA for dust generated from truck haulage. Response measures were taken, including a review of the current dust management system and awareness training.	US$829
Environment	Carbon Steel Materials	Elouera Colliery received a fine in January 2003 for an incident that occurred in December 2001. The incident was related to excessive dust emissions on site. While the EPA agreed that the emissions caused no damage to health or the environment, Elouera's EPA licence does not allow visible dust on site. (At the time of the incident, Elouera Colliery was operated by BHP Steel.)	US$17 479
Environment	Carbon Steel Materials	Tower Colliery received a fine in April 2003 from the NSW EPA, related to the minewater irrigation process. According to the EPA, the irrigation resulted in ponding and run-off, in contravention of the licence requirements. The irrigation system has been shut down and is in the process of being removed.	US$874
			Total US$166 944

Appendices continued

Appendix E **Environmental Data by Customer Sector Group**

Data in these tables are aggregate figures based on site data reported by our managed businesses for the financial year 2002/03. Totals may differ due to rounding of data.

Accidental Discharges of Hydrocarbons (litres)

	Aluminium	Base Metals	Carbon Steel Materials	Stainless Steel Materials	Energy Coal	Petroleum	Diamonds & Specialty Products	BHP Billiton Total
Discharged to land*	1 490	11 910	65 220	250	9 360	790	150	89 275
Discharged to water	0	7 570	6 450	0	0	1 300	0	15 320

*Includes hydrocarbons released to secondary containment facilities and subsequently recovered.

Land – Rehabilitation and Disturbance (land area – hectares)

	Aluminium	Base Metals	Carbon Steel Materials	Stainless Steel Materials	Energy Coal	Petroleum	Diamonds & Specialty Products	BHP Billiton Total
Newly disturbed	280	80	1 230	70	1 490	130	260	3 540
Rehabilitated	160	200	550	30	610	0	0	1 790[1]
Land requiring rehabilitation*	6 840	12 400	41 290	1 480	13 610	140	1 400	77 160

1. Includes 224 hectares of rehabilitated land at our Beenup site in Western Australia.

*Assumes immediate closure of all operations.

Water Consumption (megalitres)

	Aluminium	Base Metals	Carbon Steel Materials	Stainless Steel Materials	Energy Coal	Petroleum	Diamonds & Specialty Products	BHP Billiton Total
Fresh water	9 460	60 750	33 990	14 730	7 730	5 820	150	132 630
Recycled water	2 470	48 610	38 730	64 710	16 490	10	4 330	175 350

One megalitre is equal to 10^6 litres.

Total Energy Use by Type (petajoules)

	Aluminium	Base Metals	Carbon Steel Materials	Stainless Steel Materials	Energy Coal	Petroleum	Diamonds & Specialty Products	BHP Billiton Total
Coal and coke	29.2	0.0	15.7	27.5	0.0	0.0	0.0	72.4
Electricity	51.7	9.9	16.1	18.1	3.9	-0.1	0.0	99.6
Natural gas	22.1	1.5	34.4	6.9	0.0	10.2	0.0	75.1
Distillate	1.6	5.5	14.2	0.9	6.2	2.4	2.8	33.7
Fuel and process oil	0.5	0.5	0.3	7.0	0.2	0.2	0.0	8.7
Other types	0.0	0.0	0.0	1.1	0.0	1.9	0.0	2.9
Total	**105.2**	**17.3**	**80.7**	**61.4**	**10.3**	**14.6**	**2.8**	**292.4**

One petajoule is equal to 10^{15} joules. Totals may differ due to rounding of data.

Appendices continued

Appendix E **Environmental Data by Customer Sector Group** continued

Greenhouse Gas Emissions ('000 tonnes of CO_2-e)

	Aluminium	Base Metals	Carbon Steel Materials	Stainless Steel Materials	Energy Coal	Petroleum	Diamonds & Specialty Products	BHP Billiton Total
Carbon dioxide	17 964	1 982	7 905	7 664	1 497	975	199	38 190
Methane	0	0	5 461	0	1 883	209	0	7 550
Perfluorocarbons (PFCs)	1 328	0	0	0	0	0	0	1 330
Total	**19 292**	**1 982**	**13 367**	**7 664**	**3 380**	**1 184**	**199**	**47 070**

CO_2-e = Carbon dioxide equivalent (the basis of comparing the warming effect of greenhouse gases such as carbon dioxide, methane, perfluorocarbons, etc.)

Other Gaseous Emissions (tonnes)

	Aluminium	Base Metals	Carbon Steel Materials	Stainless Steel Materials	Energy Coal	Petroleum	Diamonds & Specialty Products	BHP Billiton Total
Oxides of sulphur	28 900	780	1 820	17 220	640	510	150	50 020
Oxides of nitrogen	5 680	5 590	16 430	5 960	5 740	5 590	4 630	49 640
Fluoride	910	0	0	0	0	0	0	910

Waste (tonnes)

	Aluminium	Base Metals	Carbon Steel Materials	Stainless Steel Materials	Energy Coal	Petroleum	Diamonds & Specialty Products	BHP Billiton Total
Waste oil disposed	550	3 280	3 180	280	760	250	0	8 310
Other hazardous waste	21 350	1 780	3 440	39 570	1 150	4 240	100	71 630
General waste to landfill	20 110	27 080	49 250	3 150	13 080	2 340	260	115 280

The data presented above do not include recycled materials, waste rock, tailings, coal reject and slag.

Appendices continued

Appendix F Energy, Greenhouse Gas and Water Intensity of Selected Products (consumption or emissions per unit of production)

Energy Intensity of Selected Products

Energy intensity for a range of our products is presented in Figures 48 to 51. Increased energy intensity from our petroleum products is due to a higher rate of drilling at Liverpool Bay in the UK and the Australian-operated assets. Energy intensity of our Queensland coal rose due to increased mining activities. Energy conservation initiatives, such as introduction of solar drying to reduce moisture content of the ore at QNI Yabulu Refinery resulted in the decrease of the energy intensity per unit of production. No significant changes were recorded for our aluminium products.

Figure 48.
Energy Intensity
of Selected Products
– Petroleum products
1999/00 to 2002/03

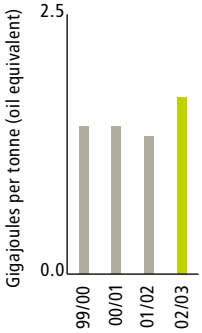


Figure 49.
Energy Intensity
of Selected Products
– QNI Yabulu Refinery
1999/00 to 2002/03

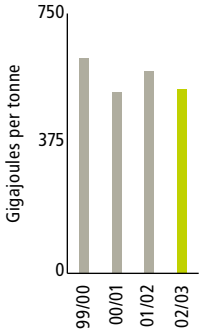


Figure 50.
Energy Intensity
of Selected Products
– Queensland coal
1999/00 to 2002/03

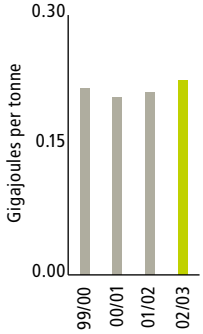
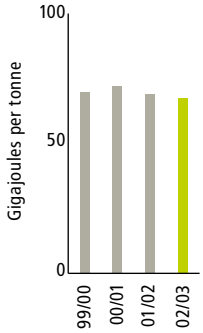


Figure 51.
Energy Intensity
of Selected Products
– Aluminium
1999/00 to 2002/03



Greenhouse Gas Intensity of Selected Products

Greenhouse gas intensity for a range of our products is presented in Figures 52 to 55. The greenhouse gas intensity for petroleum products rose slightly due to increased drilling activities, while the greenhouse gas intensity at QNI Yabulu Refinery decreased due to energy efficiency improvements in the refinery process.

Figure 52.
Greenhouse Intensity
of Selected Products
– Petroleum products
1999/00 to 2002/03

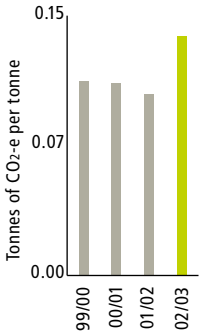


Figure 53.
Greenhouse Intensity
of Selected Products
– QNI Yabulu Refinery
1999/00 to 2002/03

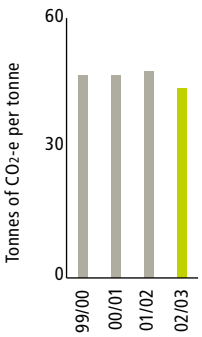


Figure 54.
Greenhouse Intensity
of Selected Products
– Queensland coal
1999/00 to 2002/03

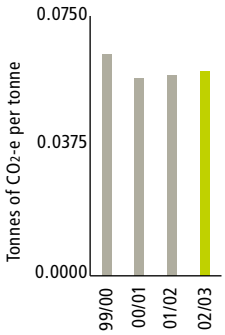
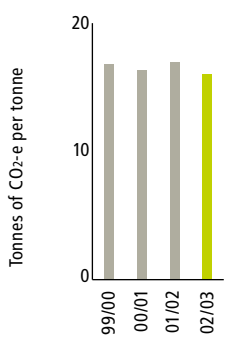


Figure 55.
Greenhouse Intensity
of Selected Products
– Aluminium
1999/00 to 2002/03



Appendices continued

Appendix F Energy, Greenhouse Gas and Water Intensity of Selected Products (Consumption or emissions per unit of production) continued

Water Intensity of Selected Products

Water intensity for a range of our products is presented in Figures 56 to 59. The sharp rise in water intensity for petroleum products is due to increased drilling and development activities. For Queensland coal and aluminium, there were reductions in fresh water intensity due to lower water consumption at the operations. No significant difference to previous years was recorded for QNI Yabulu Refinery.

Figure 56.
Fresh Water Intensity of Selected Products – Petroleum products
1999/00 to 2002/03

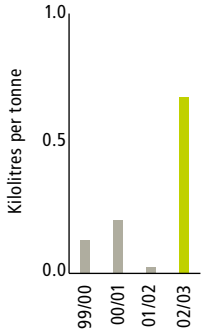


Figure 58.
Fresh Water Intensity of Selected Products – Queensland coal
1999/00 to 2002/03

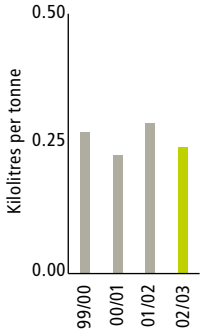


Figure 57.
Fresh Water Intensity of Selected Products – QNI Yabulu Refinery
1999/00 to 2002/03

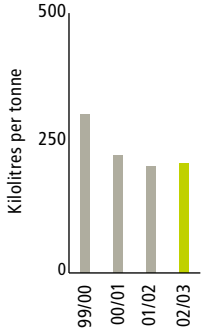
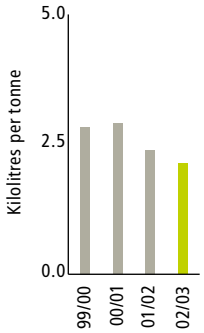


Figure 59.
Fresh Water Intensity of Selected Products – Aluminium
1999/00 to 2002/03



Appendix G United Nations Global Compact Progress Assessment

This progress assessment represents our judgement of how the principles of the Global Compact have been progressed through policy and actions during the year. Please contact the Company if you would like further information in relation to this assessment.

Global Compact Principle	BHP Billiton Policy/Systems	BHP Billiton Activities and Performance (2002/03)
1. Businesses are asked to support and respect the protection of international human rights within their sphere of influence.	• HSEC Policy (January 2003) • Guide to Business Conduct (May 2003) • HSEC Management Standards (December 2002)	***Revisions of Documentation*** *Policy, Standards and Systems* • The HSEC Management Standards were revised during the year resulting in a consolidated, yet more comprehensive, set of 15 standards. *Business Conduct* • The Board approved several changes to the Guide to Business Conduct in 2003 to ensure that it would meet or exceed the requirements of the US Sarbanes-Oxley legislation, as well as voluntary guidelines issued by stock exchanges in the US and Australia. These include making it clear that the Guide applies to non-executive Directors where it is applicable to their duties as BHP Billiton Directors.

Appendices continued

Appendix G **United Nations Global Compact Progress Assessment** continued

Global Compact Principle	BHP Billiton Policy/Systems	BHP Billiton Activities and Performance (2002/03)
2. Businesses are asked to make sure their own corporations are not complicit in human rights abuses.	• HSEC Management Standard 8 (December 2002) • Guide to Business Conduct (May 2003)	***New Documentation*** *Human Rights* • Human Rights (encompassing employee aspects) Self-Assessment Toolkit distributed to all assets to assist in appraisal of potential exposure to human rights issues and incorporation of the toolkit into the HSEC audit process. The kit enables sites to assess their level of impact/exposure on human rights in nine aspects relevant to our operations – country, community, land acquisition, indigenous and minority groups, environment, security, employees, contractors and suppliers, and systems. The self-assessment forms part of the HSEC audit process. *Business Conduct* • Internal performance requirements for business conduct were fully integrated into the HSEC Management Standards. Questions regarding business conduct were included in the HSEC audit and self-assessment. There is a commitment from senior management to ensure the principles of the Guide are understood and practiced. *Part of the Global Community* • During the period, we committed to implement the World Bank Guidelines on Involuntary Resettlement and the US-UK Voluntary Principles on Security and Human Rights. *HSEC Targets and Scorecard* • 'No transgressions (encompasses transgressions of employee rights) within the Group's activities of the principles embodied within the United Nations Universal Declaration of Human Rights.' • None reported.
3. Businesses are asked to uphold the freedom of association and effective recognition of the right to collective bargaining.	• Letter to UN Secretary General from Chip Goodyear (June 2003) • 2003 HSEC Report – Community Performance – Freedom of Association	***Freedom of Association*** All sites are required to report the extent of their workforce covered by collective agreements. • A total of 22 400 employees, or about 60 per cent of the workforce, were covered by collective bargaining agreements at operated sites and offices.
4. Businesses are asked to uphold the elimination of all forms of forced and compulsory labour.	• 2003 HSEC Report – Community Performance – Background	***Remuneration*** All sites are required to report the minimum wage. • All Company employees earned greater than the minimum wage.
5. Businesses are asked to uphold the effective abolition of child labour.	• 2003 HSEC Report – Community Performance – Background	***Employees*** All sites are required to report the age of their youngest worker and the corresponding minimum working age in their jurisdiction. • Youngest employee 17 years (apprentice in Australia).
6. Businesses are asked to uphold the elimination of discrimination in respect of employment and occupation.	• Guide to Business Conduct (May 2003) and BHP Billiton Employment Principle – Equality in Employment	***Diversity*** • Examples of ongoing policies and programs – Employment Equity Policy in South Africa ultimately aims to achieve representation at all levels in our businesses consistent with the demographic profile of South Africa. ***Indigenous Employment and Training*** • BHP Billiton Iron Ore Western Australia (support of 50 per cent indigenous-owned joint venture employing 42 indigenous persons), EKATI Diamond Mine, Canada (64 per cent of employees Native American), New Mexico Coal, United States (required to fill all positions at Navajo Mine with Navajos if a qualified candidate is available). ***Business Conduct*** • Roll out of the Guide to Business Conduct continued.

Appendices continued

Appendix G **United Nations Global Compact Progress Assessment** continued

Global Compact Principle	BHP Billiton Policy/Systems	BHP Billiton Activities and Performance (2002/03)
7. Businesses are asked to support a precautionary approach to environmental challenges.	• HSEC Policy (January 2003) • HSEC Management Standards Introduction (December 2002) • HSEC Management Standard 3 (December 2002) • Enterprise-Wide Risk Management Policy (January 2003)	***HSEC Targets and Scorecard*** Risk registers in place at all sites and within BHP Billiton businesses and Corporate. • Risk registers in place at all required sites, and Customer Sector Group and Corporate HSEC risk incorporated in Enterprise-Wide Risk Management framework. ***Case Studies*** Case Study No. 38 'HSEC considerations are integral to our Enterprise-Wide Risk Management strategy'.
8. Businesses are asked to undertake initiatives to promote greater environmental responsibility.	• HSEC Policy (January 2003) • HSEC Management Standard 5 (December 2002) • HSEC Management Standard 12 (December 2002)	***HSEC Targets and Scorecard*** • Zero significant environmental incidents. • Systems in place and audits or self-assessments completed at 99 per cent of required sites. • All sites (57 in total) requiring ISO 14001 are accredited or have been recommended for accreditation by their ISO Auditor. • Energy conservation plans in place at 88 per cent of required sites and at nine sites that were below the emissions threshold. • Greenhouse gas management programs in place at 85 per cent of required sites and eight sites that were below the emissions threshold. • Water management plans in place at 98 per cent of required sites and at 24 sites that were below this threshold. • Waste minimisation programs in place at 100 per cent of required sites and at 18 sites that were not required to meet the target. • Land management plans in place at 96 per cent of required sites and at 21 sites that were not required to meet this target. • This target is being monitored at the commodity level and is on track. ***Case Studies*** Case Study No. 15 ''Revive our Wetlands' program aims to protect and revitalise 100 of Australia's most important wetlands'. Case Study No. 19 'Ingwe develops innovative solution to stormwater run-off during mine site rehabilitation'. ***New Documentation*** *Hierarchy of Systems and Documents* • Energy and Greenhouse Guideline • Energy and Greenhouse Gas Management Plan Template.
9. Businesses are asked to encourage the development and diffusion of environmentally-friendly technologies.	• HSEC Policy (January 2003) • HSEC Management Standard 12 (December 2002)	***HSEC Targets and Scorecard*** • Greenhouse gas intensity reduction achieved was 6 per cent, which exceeded the long-range target (although data can fluctuate on an annual basis). • Water intensity reduction achieved was 1 per cent. • Increases in waste intensity were reported in both general waste and hazardous waste categories. The level of new project development impacted the amount of general waste generated. • The requirement for Life Cycle Assessments for all major BHP Billiton minerals products is on track and being monitored at the commodity level. ***Case Studies*** Case Study No. 11 'Developing new coal technologies to meet the world's energy needs in a sustainable way'. Case Study No. 12 'Greenhouse gas intensity reduction strategy is producing results'. Case Study No. 18 'Energy Smart Program exceeds target at EKATI Diamond Mine'.

Appendices continued

Appendix H **External Recognition *2002/03***

Award	Description
Banksia Environmental Foundation Award for Leadership in Sustainability in the Australian Minerals Industry	The award recognised the considerable effort we have undertaken to put 'Policy into Practice' and supports our belief that outstanding HSEC performance is in the interest of all of our stakeholders
Australian Prime Minister's Award for Excellence in Community and Business Partnerships and *The Australian Financial Review Magazine* Award for Corporate Partnership of the Year	Recognition of our successful partnership with Conservation Volunteers Australia in implementing the national 'Revive Our Wetlands' program to revitalise 100 of Australia's most important wetlands.
Association of Chartered Certified Accountants (Australasia) Award (joint) for Best Environment Reporting	Environmental reporting
Australasian Reporting Awards Award for Best Environmental Report	Environmental reporting
Australasian Reporting Awards Commendation Award in OHS Reporting	Occupational Health and Safety reporting
KPMG South African Reporting Award for Best Sustainability Report	HSEC reporting
Storebrand 'Best in Class' Award – Minerals Sector	Storebrand is one of the global leaders in the Socially Responsible Investment community
BHP Billiton is included in the Dow Jones Sustainability Index	The Dow Jones Sustainability World Indexes consist of more than 300 companies that represent the top 10 per cent of the leading sustainability companies in 59 industry groups in 34 countries.
BHP Billiton is included in the UK FTSE4Good Index	FTSE4Good Indexes have been designed to measure the performance of companies that meet globally recognised corporate responsibility standards and to facilitate investment in those companies.

Case Studies

The following case studies present examples of HSEC issues, initiatives, projects and programs across the Group and highlight some of the challenges faced by our operations in translating policy into practice.

Case Studies Index

Health

1

Developing a 'hierarchy of control' approach to managing our occupational health exposures

Across our Company, there are a variety of site-based exposures that have the potential to cause long-term health effects. The most appropriate approach to these risks is to reduce exposure to the individual. Personal protective equipment (PPE) has been a customary form of protecting employees from adverse exposures. However, in applying a 'hierarchy of control', our goal is to reduce the potential exposures in an absolute sense.

▸ *Alan Emery, Engineering Manager, conducting a safety talk 80 metres underground at Khutala Colliery, South Africa*

The 'hierarchy of control' approach involves methods to decrease the exposure source itself or to minimise the potential amount of employee contact. At the highest level, this involves removal of the exposure or substitution of the exposure to one with less or no harmful effects. Where the exposure source cannot be removed, there may be direct engineering solutions that can be employed to significantly reduce the exposure. This is particularly the case in responding to the problem of noise generated from machinery, which is a focus at a number of our operations.

PPE sits at the lower end of the 'hierarchy of control'. However, it is still a very important element in the efforts of mining and smelting industries to ensure the health of employees is not adversely affected. It is important that PPE programs are well managed. This includes selection of appropriate equipment for the exposure, adequate training of employees in use of the equipment, high standards of maintenance, and a system for ensuring compliance in the use of the equipment by all employees.

The target for our operations is to reduce exposures over time through a 'hierarchy of control' approach. A long-term aim would be to create a work environment where PPE is not required. However, in the interim, correct use of PPE remains critical to ensuring the health of our employees while programs to reduce exposure are implemented.

Noise is a significant exposure for employees in the mining and minerals processing industry. The application of engineering processes, particularly through the use of barrier and insulation techniques, may reduce exposure to a point where no hearing protection is required by employees. Our Iron Ore operation at Port Hedland, Australia, has recently installed fibreglass insulation in the crusher plant, which has significantly reduced noise levels in this area. They have also fully enclosed the blower units in the beneficiation plant, which has reduced the level of noise to below the exposure limit. The progress in noise reduction at the site is reinforced by a 'buy quiet' policy that has been developed through Engineering Services.

Noise and dust are constant sources of adverse exposure for those in underground mining in the coal industry. At our Khutala coal mine in South Africa, specific attention has been given to engineering underground mining machinery to enclose the cabins of operators. This has markedly reduced the noise and dust exposure. Another exposure for underground coal miners is that of diesel particulates. Our Illawarra Coal operation in Australia has been sponsoring a study of this exposure over many years, and a high-quality filter mechanism to reduce diesel particulate exposure in this group has now been developed.

Another good example of where we are employing the 'hierarchy of control' approach to reduce employee exposure is at our copper oxide plant in Tintaya, Peru. By applying world's best engineering processes, emissions of sulphuric acid from the system have been significantly reduced. Although emissions are now well below current exposure standards, employees still wear PPE as added protection to ensure minimum adverse effects.

In the aluminium industry, it has long been known that the smelting process can induce asthma in employees. Older forms of this smelting process are more prone to emissions that may produce asthma. At our Bayside aluminium smelter operation in South Africa, where these processes are used, guards and extraction units have been installed to significantly reduce exposure for employees.

As with many other areas of health management, occupational health requires a strong focus on prevention and therefore reduction of harmful exposures. A preventive approach to managing our health issues will focus our attention towards the concept and design phase of new operations, to ensure potential health exposures have been minimised as much as possible. Our targets reflect this as we seek to achieve a year-on-year reduction in the number of our employees who would be exposed above occupational exposure limits, if not for the protective effect of PPE.

Health

Health programs in southern Africa help provide care for HIV/AIDS patients

Many of our businesses in South Africa and Mozambique are in areas where the incidence of HIV/AIDS is among the highest in the world. In fulfilling our responsibility to care for our employees, we have developed support programs to help prevent them from acquiring the disease or, in the case of patients, to receive appropriate treatment. In line with our Charter, we are also assisting the broader community to cope with the effects of the epidemic by participating in a range of projects with government, community organisations, NGOs and industry groups.

► *Ethembeni Care Centre, Zululand*

► *Metalloys hostel under conversion to the Kotulong community support centre*

In recognising the severity of this devastating health issue, our sites have put into place various strategies to limit the impact of HIV/AIDS on our employees and our operations. These include supporting educational and awareness programs; promoting healthy lifestyles; and, in collaboration with trade unions, arranging anonymous testing and counselling.

To contain and better manage the problem, operations focus on local recruitment in preference to intakes of migrant workers and encourage private home ownership over high-density accommodation.

In South Africa, the Company contributes to each employee's remuneration package to enable them to become a member of a medical aid fund. Membership has given all employees and their families access to private health care. The medical aid schemes to which our employees belong now provide anti-retroviral treatment and treatment for HIV/AIDS-related illnesses. A similar program is in development in Mozambique.

As an example of our community-based projects, our Hillside and Bayside aluminium operations in Zululand support the Ethembeni Care Centre. Its name meaning 'a place of hope', Ethembeni provides infected patients with rehabilitation, respite and palliative care. The centre recently moved from makeshift premises to a large new community-owned support facility known as Amangwe Village.

Ethembeni has a 45-bed ward for adult patients and a 16-bed paediatric ward. The trained staff offer confidential HIV testing, counselling, medical consultations, lifestyle management workshops and training for designated care-givers and community support groups.

Positive Health Support group meetings are held regularly for former patients and their families, and community health care coordinators are trained to organise similar meetings in other areas. Outside the centre, staff conduct HIV/AIDS education programs in schools, churches, and community centres.

Ethembeni also supports the South African Food Gardens Foundation Program that provides for the nutritional needs of HIV/AIDS patients and encourages people to follow immune-building diets.

Our Metalloys operation, located in the Gauteng Province of South Africa, has converted its redundant hostel complex, originally constructed to house migrant workers, into the Kotulong community support centre.

The centre aims to enhance the quality of life of people infected or affected by HIV/AIDS by providing support, encouragement and self-development opportunities.

Facilities include a hospice for terminally ill patients, residential units for the care of children orphaned by HIV/AIDS, a central kitchen and multi-function dining hall, library, administration offices, recreation areas and gardens.

In Mozambique, the Mozal Community Development Trust is supporting an HIV/AIDS prevention initiative known as the Total Control of the Epidemic program. The program's initial cell targeted the Boane District, the area in which the smelter is located. The second cell focused on the Polana-Canica area in Maputo city.

At the inception of the program in 2000, 100 trained field officers were tasked with contacting 2000 people each. To date over 200 000 people have been contacted and informed about HIV/AIDS.

The team's mission has been to educate the community about the prevention of HIV/AIDS, encourage people to ascertain their status by being tested, and direct those suffering from the disease to facilities where treatment is available.

The Trust also supports the Government's voluntary testing centres situated in Maputo and surrounding areas. The Boane testing centre is run by trained professionals, assisted by volunteers, who offer testing and counselling for members of the community.

Health

Malaria control programs in Mozambique and Brazil are proving effective

Southern Mozambique, where our Mozal aluminium smelter is located, is an area where malaria is a major problem. We are supporting government initiatives to control malaria in order to improve social conditions and enhance the economic potential of the region. In Brazil, the northern state of Pará has the highest incidence of malaria in Latin America. In the county of Oriximiná, where our Mineração Rio do Norte (MRN) bauxite operation is located, a malaria control program we are supporting is also helping to alleviate the impact of the disease.

► *Mosquito control spraying, Mozambique*

► *Malaria testing, Mozambique*

The Lubombo Spatial Development Initiative (LSDI) is a program established by the governments of Mozambique, Swaziland and South Africa to develop the Lubombo region – southern Mozambique, eastern Swaziland and north-eastern Kwa-Zulu Natal – into a globally competitive economic zone.

The success of the initiative is threatened by malaria, which not only causes tragic loss of life but also impacts on productivity and tourism. In collaboration with the LSDI team, we have played a key role in implementing a malaria control program in the region around our operations.

The program involves the spraying of buildings and homes in the region and controlling mosquito breeding sites. Around 65 000 dwellings have been sprayed to date.

Other initiatives include the establishment of a dedicated malaria laboratory to facilitate early diagnosis and treatment. Bednets are being distributed to homes; and community awareness is being raised through educational activities, including local theatre performances.

Since the spraying program began in 2000, surveys show a significant decline in mosquito numbers and the rate of infections. There was a 50 per cent reduction in the incidence of malaria during the period 2001 to 2002 and a further 50 per cent reduction from 2002 to June 2003.

In the state of Pará in Brazil, the communities of the region are scattered along 250 kilometres of the Trombetas River, a tributary of the Amazon. The aim of the program is to reduce mortality rates and improve the quality of life of these riverside communities.

The program supports a malaria prevention team based at the local Porto Trombetas hospital. Their focus is to raise community awareness of ways to control and avoid malaria. They carry out a mosquito control spraying program and promote such activities as using bednets, installing screens on windows and doors, and not allowing still water to accumulate near homes.

The team faces numerous challenges. Incidence is highest during the few months of low and high water, but it takes time for spraying teams to visit the communities, as most can only be reached by boat or trekking through the jungle. The village huts mostly have neither windows nor doors, so mosquitoes have easy access; and cultural traditions mean changing habits can be slow.

Despite these difficulties, the vigilant team is achieving significant results, with reported cases in the region falling by 96 per cent since 1999.

Health

Cardiovascular assessment at Tintaya studies potential high-altitude health risks to employees' children

Our Tintaya copper operation is located at Espinar in the Peruvian Andes, 4000 metres above sea level. Recent medical reports from China indicated that life at high altitudes may pose a risk to cardiovascular function of children. Our medical team at Tintaya, concerned at the reports, decided to conduct an assessment of the children of families living in the employee accommodation quarters. A full cardiovascular examination was carried out; and, in general, it was found that the children's growth and cardiovascular functions were healthy. The conclusion from the assessment was that the children at Tintaya were fundamentally healthy and that life at high altitudes does not represent a risk to their health, growth or cardiovascular function.

► *Dr Manuel Muro, Tintaya Health Superintendent, with Dr Susan Niermeyer, University of Colorado Health Sciences Center, at the hospital at Tintaya*

► *Dr Susan Niermeyer and Dr Manuel Muro with Alberto Pacheco (centre), Head of HSEC, Tintaya, at the school*

Many communities in Peru and throughout the world live at high altitudes. When mining projects are established at high altitude, they encourage the migration of workers and their families, who then live at or near their workplaces. In high-altitude environments, the amount of oxygen decreases progressively with altitude. Acclimatisation and adaptation mechanisms in the body are triggered, particularly at the cardiopulmonary level, in order to lead a healthy life at the high altitude.

The medical reports from China concerned the Tintaya medical team because they included cases of severe pulmonary hypertension in children, some of which were fatal. To conduct the study, the team engaged the support of noted specialists in the field, including Dr Susan Niermeyer, a well-known paediatrician, neonatologist and researcher of high-altitude impact on children at The Children's Hospital of Denver; Dr Luis Huicho, a paediatrician at the Child Health Institute in Lima; Dr Emilio Marticorena, a cardiologist with over 35 years' experience and research at high altitudes; and Dr Edgar Gloria, a cardiac ultrasound specialist with paediatric experience from the National Heart Institute of Lima.

The assessment was carried out between October and November 2002. A total of 326 children were examined, representing 98.5 per cent of all the children residing at Tintaya. The few not included were away at the time. Conducted with the full consent of the families, the project involved a range of components including:

- a home survey to identify all the children living at Tintaya, their place and date of birth, population ancestry, time of residence at the site, travel undertaken, and family and pathology history
- information sessions with parents and teachers
- assessment of the children's body size, proportions and vital signs
- medical assessment
- electrocardiogram
- ultrasound of the heart
- haemoglobin measurement (testing one drop of blood obtained by micropunction).

The project was not without its challenges. Apart from assembling the team of specialists and coordinating the children's availability through the two-week exercise, cardiovascular assessment of children of various age groups requires infrastructure and equipment tailored to the purpose. Portable medical equipment was made available, along with electrocardiogram and ultrasound equipment suited to the smaller body sizes of children.

The assessment was coordinated with the families and schoolteachers, so the children could be available for their medical examinations without interfering with their schooling. Vehicles were made available to transport the children to the hospital and then return them to the school or to their homes.

The results showed that, although there were identifiable differences in cardiovascular development, most children examined enjoyed good health, full activity and normal growth. No cases of symptomatic high-altitude pulmonary hypertension were identified. Five cases of congenital cardiopathies were discovered, representing 1.5 per cent of the children in the study; this percentage is not statistically different from figures found in populations living at sea level. The five children received appropriate medical treatment for their condition.

The conclusion that the children at Tintaya were fundamentally healthy and that life at high altitudes does not represent a risk to their health, growth or cardiovascular function must be interpreted in light of the population resident at Tintaya. Most children have some native high-altitude ancestry that likely aids in their adaptation to the environment. Other populations, such as the Han (Chinese) or northern Europeans, who do not have a genetic history at high altitude, may respond differently.

The scientific knowledge gained from this study is being made available for use in other research projects into children's health, with particular benefit to the thousands of communities living at high altitudes around the world.

Health

5

Large-scale occupational health study at Cerro Matoso includes a pioneering epidemiological monitoring program

As part of the collective bargaining agreement process at our Cerro Matoso ferronickel smelter in the province of Cordoba, Colombia, it was agreed to conduct an occupational health study. The year was 1998, and the Antioquia University was selected as the independent institution to carry out the study. As well as reassuring our employees that their work is not affecting their health, the study has resulted in a major advance in large-scale epidemiological monitoring.

► *Medical monitoring at Cerro Matoso health centre*

The occupational health study that commenced at Cerro Matoso in 1998 covers five areas: visual health, hearing health, respiratory health, absenteeism and cell-genetic bio-monitoring.

To establish a sound foundation for the study, databases for each area were developed. Built up over two years, these were based on information gathered from all employee occupational health examinations at Cerro Matoso since 1982. For example, readings of all workers' thorax x-rays taken throughout the previous 16 years were incorporated.

While every worker's clinical history was transferred to the databases, care was taken to preserve the anonymity of each individual, in accordance with International Labour Organisation guidelines.

These databases not only provided the source data for the study, but also facilitated development of the monitoring systems for the pioneering cell-genetic bio-monitoring program. With 210 participants, the program is the first study of its type in the world – a world-class technical and scientific achievement. A key benefit from the program is that the monitoring systems can be applied to any working population worldwide.

Specialist assistance was brought in as required. For instance, definition of the cell-genetic study was conducted with a group of international experts from the Nickel Producers Environmental Research Association (NiPERA), McMaster University and John Hopkins University.

In the area of absenteeism, the human resources team carried out an analysis of general absenteeism over the period, incorporating existing records showing where occupational health issues contributed to absenteeism.

Conducting the study presented a number of challenges, key among them being the management of such large volumes of data and then gaining the confidence of workers on the accuracy of the results.

Results from the study were made available to all employees in a series of booklets and also presented to the Occupational Health Labour Committee.

Based on the results, recommendations were made in relation to procedures and equipment purchases, and these have been implemented. Subsequent surveys have shown increased peace of mind among employees regarding the effectiveness of the Company's occupational health programs and an overall reduction in occupational illnesses at Cerro Matoso.

Safety

In our drive to achieve zero fatalities, new Fatal Risk Control Protocols set minimum performance expectations for managing critical safety risks at sites

Following the BHP Billiton merger in June 2001, a review of safety performance over the previous ten years was conducted across the organisation. The study identified that, of the total fatalities that had occurred, 94 per cent were single fatality incidents. This finding has focused our attention on the key risk areas that have historically contributed to fatalities within the Company. Fatal Risk Control Protocols have now been developed as a key component of our Safety Strategy. We are committed to eliminating fatalities from our operations.

► *Mobile equipment interactions*

► *Molten materials management*

In implementing the Safety Strategy, it is vitally important that our people believe it is possible to work injury free – regardless of their role or location. Our strategies in working towards this goal have been in three main areas:

- leadership effectiveness
- behaviours and awareness
- rigorous standards and procedures for managing key risks.

All three strategies focus on our people and systems, with two key objectives:

- ensuring that our practices, procedures, conditions, equipment and behaviour all contribute towards creating a workplace where it is possible to work without adverse impact on people, the environment or the community
- developing our people to make the right decisions as they go about their day-to-day work.

Following the review of past fatal incidents, nine areas were identified that required more stringent controls. These are:

1. Light Vehicles
2. Surface Mobile Equipment
3. Underground Mobile Equipment
4. Underground Ground Control
5. Hazardous Materials Management
6. Molten Materials Management
7. Equipment Safeguarding
8. Isolation
9. Working at Heights.

Protocols have been developed for each of these risk categories. The requirements under each Protocol are classified into three broad focus areas – plant and equipment requirements, procedural requirements and people requirements.

People from across the Company worked in teams to help develop the Protocols. As part of the process, the teams looked at internal standards and reviewed those of peer companies.

The nine Fatal Risk Control Protocols are being implemented throughout the Company. Full implementation is planned for completion by June 2005.

Our Energy Coal CSG has developed a review process to monitor and drive the effective implementation of these Protocols. Known as the Fatal Risk Peer Review, it looks at the adequacy of fatal risk management processes and controls in place at a mine, including the Fatal Risk Control Protocols, as well as compliance with those controls. Opportunities for improvement are identified; and, at the end of the review, recommendations are presented to mine management for all identified hazards.

The Fatal Risk Peer Review process was successfully piloted at Ingwe's Middelburg mine last year. Since then, Khutala, Reitspruit, Koornfontein, Optimum, Douglas, Zululand Anthracite Colliery, Navajo and Mt Arthur Coal have participated in similar reviews.

Safety

Taking a safety-conscious approach to tapping the riches of the Sahara

In Algeria, we are in the process of completing the Ohanet oil and gas development, together with our joint venture partners and SONATRACH, the state-owned production company. The sheer size and scope of the project poses a wide variety of safety challenges. From the outset, there was senior management commitment from all parties to applying effective safety processes and training and to involving the whole workforce. As the project moves into the start-up phase, safety remains at the top of the agenda.

► *Barry Sweeting, BHP Billiton Construction Manager, Zainch Dimeta Field, Ohanet Project, Algeria*

Standing on a barren, flat and rocky desert surrounded by mesas in the southern Sahara, the Ohanet central processing facility (CPF) is an impressive sight. Capable of processing 20 million standard cubic metres of gas per day through its two processing trains, the CPF is fed by a gas gathering system comprising 150 kilometres of flowlines that will connect the 47 wells required to develop the reserves.

The Ohanet subsurface and drilling campaign involved two seismic acquisition crews and three rigs operating in the field. Simultaneously, the EPC (Engineer/Procure/Construct) contractor supervised some 25 subcontractor companies erecting 4500 tonnes of steel, pouring 13 000 cubic metres of concrete and installing 288 items of equipment. Furthermore, all the materials for the development, and everything to support the people working at site, were brought in by road, a distance of some 1300 kilometres from the coast.

The safety challenges presented by this huge and complex project included:

- managing safety on multiple workfronts to a tight budget and schedule
- instilling a common safety culture across a large number of contractors and subcontractors working in excess of 1 million workhours per month at peak
- working with multiple languages, cultures and work methods
- working in an environment where the entire labour force is replaced every six months
- the remoteness of the site, the climate and the lack of infrastructure and medical facilities in case of emergency.

At the same time, a new operating organisation for the development was being developed, which meant combining the safety cultures and values of SONATRACH and BHP Billiton.

To ensure continuous improvement, a safety improvement plan was introduced that focused on:

- raising safety awareness by ensuring safety is at the top of all agendas
- improving communication through regular safety meetings and multi-language communications, such as posters
- planning for risk mitigation by identifying and assessing risks and devising control measures and safe systems (These were discussed by teams at 'tool box' meetings at the start of every day.)
- targeting training and refresher training, from a comprehensive induction program (including for all visitors) through to specific activities, such as scaffolding, slinging/lifting, working with pressure and defensive driving
- audit and inspection programs that enable management to ensure that policy is being translated into practice
- disciplinary procedures for non-compliance balanced with safety incentives to encourage safer behaviour and improve performance.

Project management adopted a simple mantra, 'Safety first, then quality – and progress will follow automatically'. At the end of June 2003, with the majority of work completed, an excellent safety record has been achieved. But we are aware that there is no room for complacency – only continuous improvement as the project moves into its critical start-up phase.

While we are proud of our achievement on the Ohanet project, the safety imperative is brought into sharp perspective by a fatality that occurred in June 2003 at our Rhourde Oulad Djemma (ROD) project, also in Algeria. An employee of a drilling contractor died as a result of injuries sustained while mobilising equipment at a new well site. The tragedy reminds us all of the critical need to remain focused and vigilant about safety.

Safety

The road to Zero Harm at the Mozal 2 expansion project

Mozal 2 is a brownfield expansion of the Mozal primary aluminium smelter located at Maputo in Mozambique. The expansion, which essentially doubles capacity, was approved in June 2001; and construction commenced immediately. The first hot metal was produced in April 2003, and it is expected that full production will be achieved in the last quarter of 2003. At the peak of construction, almost 5000 people were employed on the site. During construction, classified injury frequency rates had risen to unacceptable levels. The introduction of a Zero Harm safety program has produced outstanding results.

▸ *Construction of potroom, Mozal 2 expansion project*

The challenge of achieving Zero Harm was introduced at Mozal 2 in April 2002, ten months after construction had commenced. From that time, the reporting of Classified Injury Frequency Rates (CIFRs), not just lost time injuries (LTIs), began to be implemented by the project team. A classified injury is any workplace injury that results in the person not returning to their unrestricted normal duties after the day on which the injury is received.

When the project team analysed the CIFR data over the months since construction had commenced, they found the rate had been increasing alarmingly. It became clear that a safety system based on changing behaviour was needed. However, the average time spent by a worker on the site was a little over six months – not much time to win over someone's heart and mind.

Local Mozambicans contributed around 69 per cent of the workhours on the site. For the large majority of these workers, their only training and experience had been gained during their time at Mozal. Language and cultural differences also had to be taken into account.

A dramatic improvement in the safety culture on the site was needed, along with the implementation of a comprehensive behavioural-based safety program. After a slow start in terms of performance improvement, the results of a lot of hard work began to be seen in September as the CIFR trend turned around. A rapid reduction in the CIFR then occurred; and by February 2003, the monthly rate was down to zero. Through to 30 June 2003, the CIFR remained at zero, and over 3.3 million workhours had passed without a classified injury.

A campaign of presenting the Zero Harm message to the CEOs of all the contracting companies on the project had commenced in October 2002. Then followed workshops with the direct contractors, site managers, front line supervisors and the workforce. By March 2003, across the entire site, there was total awareness of the safety team and its goals and the importance of Zero Harm, and all workers understood their individual role in the safety program.

At about the same time, an on-the-job behavioural observation program and near-miss reporting system were implemented, together with an information system that enabled the project team to identify the principal causes of incidents and the poor performers. The worst performing contracting companies were individually encouraged to produce safety systems that would make a difference.

Around December 2002, lead indicators were introduced to improve the level of proactive safety management. These indicators included compliance with personal protective equipment requirements, numbers of safe practice observations completed against target, and numbers of people who are aware of the risks associated with a task.

It was recognised that the most important factor in improving safety performance is visible safety leadership, which means every manager and supervisor setting an example by getting out of the office, walking around the site, engaging with the workforce and actively promoting safety.

When there is a safety problem on the Mozal expansion project, it is fixed immediately, even if it means stopping production. For example, fatigue was identified as a major contributor to accidents. It was discovered that contractors were not observing regulations requiring that workers have regular rest days. The tough decision was made to virtually close the site every Sunday. The rested workers were more productive, and there was no negative impact on progress.

The safety initiatives developed on the Mozal expansion project are transferable to other projects and operations environments. The Hillside 3 aluminium smelter expansion project in Kwa-Zulu Natal, South Africa, began with Zero Harm as a major focus; and the safety team has made full use of the Mozal lessons. From the beginning, safety performance has been exceptional. At 30 June 2003, with over 6.6 million workhours, the CIFR at Hillside 3 was 1.83. The drive towards Zero Harm continues at all levels of the organisation.

The results achieved on the Mozal and Hillside expansion projects demonstrate that dramatic improvements in safety performance can be achieved without sacrificing other aspects of performance. New industry benchmarks in schedule and cost performance have been set. The key is an overriding commitment to the safety program and the goal of Zero Harm.

Safety

Construction of Dendrobium ventilation shaft sets new safety and environment standards

Our Dendrobium underground coal mine is under development at Mt Kembla in the Illawarra region of New South Wales, Australia. As part of the ventilation system for the mine, the No 1 ventilation shaft was constructed. The shaft, 183 metres deep and 4.25 metres in diameter, was completed without one person entering the shaft during the construction period. The project has set new industry standards in safety performance and environmental care.

► *Drill head used in blind bore rotary drilling*

From a safety point of view, the technologically advanced method chosen for construction of the ventilation shaft proved to be superior to traditional approaches. There was only one classified injury, which occurred when a contractor's employee cut his hand while installing meshing.

Environmental performance on the project was also exceptional. There were seven distinct phases. Recognising that the location of the ventilation shaft lies within an environmentally sensitive water catchment area, the Company worked closely with the Sydney Water Catchment Authority and the former Department of Land and Water Conservation to implement measures to minimise the environmental impact of the project.

In the initial phase, a level area surrounding the shaft and a sedimentation pond of approximately 1200 cubic metres were constructed. The level area was used to erect and operate the drill rig, and the sedimentation pond was used to provide return water and remove drill cuttings from the vent shaft.

A shaft pad and collar was constructed to stabilise the top eight metres of the shaft and to provide a base for the vent air fan duct elbow. The drill rig was then assembled on the pad. It consisted of a 450-tonne lifting capacity derrick, with a winch powered by two 160-kilowatt variable speed controlled electric motors. The drill head of the rig consisted of six 55-kilowatt motors driving into gear reducers combined onto a final drive gear.

The shaft was excavated using a blind bore rotary drilling method. This method employed an assembly of drill weights attached to the drill head to maintain drilling pressure on the cutting face. The shaft was drilled approximately three metres beyond the floor of the mine tunnel to allow rebound shotcrete from the shaft lining to deposit.

The shotcrete lining to the shaft was applied by a tele remote rig, consisting of a rotating three-arm machine. The shaft was progressively dewatered and shotcrete finished to a final thickness of 50 to 100 mm, depending on strata type.

Water control was critical during the project. A series of holes was drilled and pre-grouted around the shaft area, forming a grout curtain to minimise loss of water to the surrounding substrata as the shaft was kept full of water during the drilling phase. The curtain also minimised the ingress of water after the shaft was emptied, minimising entry of water into the mine and assisting the integrity of shaft lining.

It wasn't all plain sailing. In the course of lining the shaft, a heavy localised ingress of water occurred. This prevented shotcrete adhering to the shaft strata. To overcome this, an air drill was attached to the tele rig, lowered into the shaft and remotely operated with vision from rig cameras. Polyurethane resin grout was applied, and this stopped the water ingress.

Once the shaft was lined to 177 metres, the shaft lining was filmed using on-board cameras as the tele rig was withdrawn. The drill rig was then demobilised and the site rehabilitated before the mine vent fan was installed.

The contractors' adherence to the Dendrobium Environmental Management Plan and procedures further assisted in minimising the risk of an environmental incident.

The ventilation fan construction will act as a benchmark for the industry in terms of environmental and safety performance.

Safety

Building safety assurances into the construction and operation of a new drillship underpins an excellent safety performance in the Gulf of Mexico

In 1998, as the Company moved ahead with its oil and gas exploration efforts in the Gulf of Mexico, a project team began working with our selected drilling contractor on the construction of a new drillship designed for ultra-deepwater drilling. From the commencement of design, the goal was to achieve 'best in class' operational capabilities with outstanding safety performance. The CR Luigs *spud its first well in April 2000 and has been employed on our operations for all but nine months since.*

► *The* CR Luigs *drillship at work in the Gulf of Mexico*

The *CR Luigs* can operate in water depths up to 9000 feet, with a drilling capability of 35 000 feet. It carries a crew of around 130 and operates 24 hours a day. Under our agreement with the drilling contractor, we charter the rig with crew and associated services on a project-by-project basis.

The drilling operations can run from 30 days to 120 days, depending on the depth and complexity of the well. Some of the ultra-deepwater projects in the Gulf of Mexico have been in water depths close to 9000 feet, with drilling depths greater than 25 000 feet. They are among the deepest wells in the world.

To ensure the rig would meet our operational and safety requirements, we assembled a team of Company personnel and specialist consultants to work collaboratively with the drilling contractor during the design and construction of the *CR Luigs*. Our team included engineers with expertise in rig building, subsea drilling, and ship commissioning and maintenance, as well as health, safety and environment professionals. As construction progressed, they conducted detailed assessments of the drilling plant and vessel systems and also helped develop the rig's operating procedures and management systems.

Following the launch, a detailed safety management system audit was conducted. At that time, we also commenced a program of frequent visits to the rig by the project team, to address issues directly with rig management and the crews and to ensure effective lines of communication are maintained. Our senior management also visit the rig at least quarterly to re-emphasise the commitment of the Company to our health, safety, environment and community obligations.

Of the 130 or so crew on the *CR Luigs*, typically about 75 are employees of the drilling contractor, and the remainder work for the ten or more companies providing onboard services. Around three of our supervisors and superintendents will also be on board at any one time. A lot of work goes into creating a common safety culture on board, through a series of practical and behavioural-based training programs. Progress is monitored and continuous improvements are implemented. As well, all crewmembers attend a weekly safety meeting to review incidents, conduct job safety analyses and discuss ideas for safety improvements. Drilling superintendents also schedule periodic themed audits of the safety systems to check how the systems are being implemented.

Because crew on a drillship are mostly working beneath suspended loads, the main safety hazard is dropped objects. We have developed a Dropped Object Prevention Program for the *CR Luigs* that is considered world's best practice. Initially, every item that could drop was catalogued and reviewed in terms of its purpose, necessity and ability to be secured. Unnecessary items were removed. For all the others, methods for securing them or catching them were developed, ranging from retaining pins to safety slings. A maintenance system was then developed, requiring that every item be frequently checked. Crewmembers participated throughout this process and now have a real sense of pride in the program and ownership of its implementation, a factor that has contributed significantly to its success.

With every well there is a bonus scheme based on safety performance. If the project is completed without an alternate duty injury (ADI), every crewmember receives a US$150 debit card redeemable at a popular recreational goods store. The cards are also used as an incentive to participate in an Unsafe Acts and Conditions Reporting Program as part of the regular safety audits, which are conducted up to 20 times per month. Crewmembers submit suggestions for improving safety, and the best are rewarded with debit cards.

The need for rigorous attention to safety on drilling projects is underlined by an incident off Trinidad in 2001. An uncontrolled gas release resulted from a breach of policy following a malfunction. Thankfully no injuries or environmental harm occurred from the incident. As a learning experience, this near miss led to improvements in training and auditing that have since been incorporated in our standard operating procedures.

Well control and dynamic positioning procedures are part of the stringent safety systems and programs in place on the *CR Luigs*, which is recognised in the industry as a high-performing rig in terms of both efficiency and safety. With a reputation among crews as a 'happy rig', it is the rig of choice in the Gulf of Mexico.

Environment

Developing new coal technologies to meet the world's energy needs in a sustainable way

Meeting the growth needs of developing countries and sustaining living standards in developed countries will continue to drive fossil fuel energy demand, which is forecast to rise by more than two-thirds over the next 30 years. Suppliers of fossil fuels, including coal as the largest power generation source, face the challenge of meeting that demand while responding to concerns about greenhouse gas (GHG) emissions. The future path for coal must be to continue the development of low emissions technology.

An eight-fold increase in thermal efficiency over the last century has greatly reduced the amount of coal required per unit of electricity generated, and further significant improvements in efficiency are in prospect. Allied with ultra-low emissions techniques – notably coal gasification and CO_2 capture and storage (see accompanying diagram) – technology developments currently being researched have the potential to virtually eliminate GHG emissions from coal-based power. Projects are in place, or are proposed, to move the technologies towards commercial viability in the next decade or two.

As the world's largest coal exporter, we are playing a leading role in realising this potential through a range of activities aimed at raising awareness within the Company and the industry, providing credible and informed input to government policy, and making a major contribution to coal technology R&D. Our activities fall into the following broad areas.

Understanding and managing our own GHG emissions including:

- an emissions inventory system throughout the Group that meets evolving best practice GHG measurement standards and has a high level of external credibility
- coal-based emissions reduction projects, such as the Illawarra Coal Waste Mine Gas Utilisation project that avoids CO_2 emissions directly through the use of methane drained from our mines in on-site electricity generation and indirectly by displacing grid-based power
- investigating options for collaborative GHG reduction projects in South Africa, along the lines of the Kyoto Protocol's Clean Development Mechanism.

Industry leadership at a national and international level, such as:

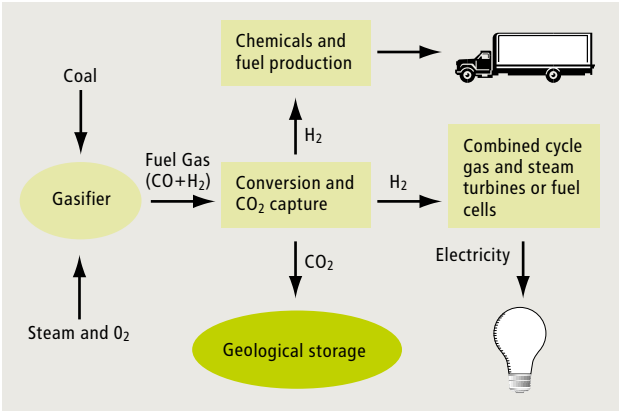
- the World Coal Institute which, under the Company's chairmanship, established sustainability principles and goals for coal and facilitated regional dialogue between producers and utilities on the means of realising them
- our foundation role in the Australian Coal Association Sustainable Development Program, which is dedicated to a more informed debate on coal and sustainable development within and outside the industry in Australia.

Direct participation in coal research and development, such as in Australia where we contribute about A$3.5 million per annum to a range of programs, such as:

- the 'Coal in a Sustainable Society' research project that investigated technology-based opportunities for reductions in emissions on a 'whole of life cycle' basis
- the Australian Coal Association Research Program, which has a substantial coal utilisation component
- the Cooperative Research Centres on Coal in Sustainable Development and Greenhouse Gas Technologies – as joint initiatives among industry, government and research providers focused, respectively, on improved coal utilisation and CO_2 capture and storage
- the Australian Coal Association's 'COAL21' Project, aimed at providing a technology road map and action plans for future coal-based power generation in Australia, potentially including demonstration of an ultra-low emissions coal plant.

In addition, we have provided one of the two coal company representatives in the government and industry delegation to the Carbon Sequestration Leadership Forum. The 15-nation forum is aimed at coordinating research and development efforts to realise the technical and commercial feasibility of carbon capture and storage as a key low-emission technology.

Through these activities, the Company is helping to meet its commitment to reduce the GHG emissions intensity of its operations by 5 per cent by 2007 and contributing to long-term global efforts to ensure environmental sustainability in an energy-hungry world.



▸ *Capture and storage of CO_2 from coal gasification*

Environment

Greenhouse gas intensity reduction strategy is producing results

In 2002, BHP Billiton committed to reducing greenhouse gas (GHG) intensity (per unit of production) from operations by not less than 5 per cent between 2002 and 2007. A major contributor to the improvement has been our Aluminium CSG and, in particular, the aluminium smelters Hillside and Bayside in South Africa and Mozal in Mozambique.

▸ *Potroom at Hillside smelter*

Over the past year, members of the BHP Billiton Aluminium team took part in an initiative, led by the International Aluminium Institute (IAI), to develop protocols for measurement and management of GHGs in the aluminium industry. The IAI developed voluntary targets for the industry to apply to improvement efforts in GHG and other critical HSE performance areas. Our Aluminium CSG has fully supported the intent, workload and outcomes of the IAI initiative.

GHGs emitted from aluminium smelters are derived from various sources, including fuels used in parts of the smelting process and carbon anodes employed in smelting cells. GHGs in the form of perfluorocarbons (PFCs) are also emitted from smelting cells during process disturbances called anode effects (AE), which are measured in terms of frequency (AE per cell per day) and AE duration measured in minutes. In addition to the direct sources of GHG from the smelting process, emissions from the power industry are an indirect effect but can also be reduced, from the consumer perspective, by improving the power efficiency of the smelting process.

BHP Billiton Aluminium has focused on the reduction of GHG intensity across all the areas of operations and from all sources. As shown by the accompanying graph, emissions of PFCs at Bayside smelter are a major challenge in reducing GHG intensity; and therefore Bayside has been a principal focus.

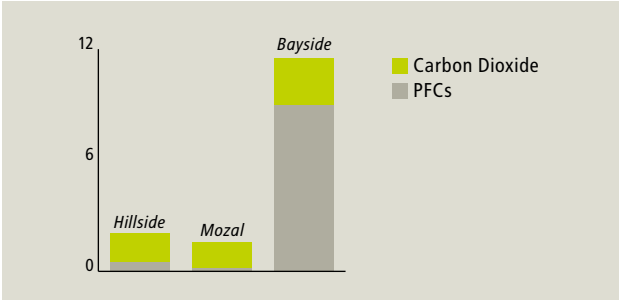
Improvements to existing technologies have included reduction of process instability through improved process control systems and work practices. At Bayside smelter, for example, improvements to these systems on the Søderberg cells in B and C lines have had a significant effect. As a result of the work completed to date, AE frequency has reduced from 2.6 to below 1.5 per cell per day, and AE duration has been improved by more than 15 per cent. A contributor to the improvements has been the fleet of new anode-effect quenching vehicles, which enable more rapid action to prevent or manage AEs as they occur.

At Hillside smelter, the introduction of slotted anode technology and improvements to the fuel efficiency in the baking furnaces through improved sealing have provided the basis for significant improvement by reducing fuel consumption and improving power efficiency. At Mozal smelter, slotted anodes and fuel burner optimisation in the anode-baking furnace have provided improvements. For the future, fuel substitution is a key strategy.

The Aluminium CSG sees improvement in GHG emissions as being part of a long-term plan, where emissions improvement and business improvement go hand in hand. In the implementation of new production capacity, GHG intensity is an important process criteria.

The reduction lines at Hillside and Mozal and new capacity being brought online, all benefit from world's best practice technologies.

Implementation of technology and management of ongoing operation practices provide the basis for improving performance. The training and development of personnel to operate these technologies to their capability have proved effective, achieving the outcomes to date.



▸ *Contribution from each smelter to GHG emissions (tonne CO_2 equivalent/tonne Al)*

Environment

13

Consultative process is addressing community concerns about mining beneath Appin township and Marhnyes Waterhole

The township of Appin is located near the upper Georges River in New South Wales, Australia. The Illawarra Coal operations undertake underground longwall mining some 500 metres below the surface. The mining can cause subsidence at the surface following extraction of the coal. Subsidence can cause cracking in the base of sandstone-bedded rivers and streams, redirecting water flow from the surface to the substrata. Mining has occurred beneath Appin and the Georges River, which has caused concerns to some local residents. These and other issues are being addressed through a comprehensive consultative process with key stakeholders.

► *Geologists at Marhnyes Waterhole, New South Wales*

Marhnyes Waterhole on the Georges River is of particular cultural and historic significance to the local Illawarra community. Concerns have been expressed by the community, government agencies and environmental groups about longwall mining beneath the waterhole.

A consultation program was initiated in 1998 and expanded in mid 2001. Meetings with more than 100 stakeholders were conducted, including local residents, community groups, government and environmental groups.

Those involved identified the need for stakeholder consultation and participation as a key concern. As a result, the Company developed a number of strategies to improve consultation and communication. A community office was opened in the Appin Village, providing a base for the Appin Area Community Working Group and for other community gatherings. Information about Illawarra Coal and the progress of longwall mining is provided at the office, which is staffed by Illawarra Coal representatives.

Regular newsletters and Community Information Sheets provide residents and other key stakeholders with up-to-date information regarding mining and other activities. The Company has also undertaken individual meetings with concerned residents and other stakeholders. A positive result of this consultation is that Property Subsidence Information Kits are prepared for all residents ahead of mining beneath their properties. The kits contain detailed information about the location of mining relative to their property, the expected impacts associated with cracking and any actions that may be required to address the cracking.

Mining beneath Marhnyes Waterhole was scheduled to be commenced by West Cliff mine in September 2002. The mining was planned several years in advance, and the longwall location could not have been modified without significant risk to the viability of West Cliff mine.

An innovative strain-relieving slot was drilled ahead of mining to reduce cracking of the rock bar that creates the waterhole. The slot, 29 metres long, 20 metres deep and 150 mm wide, was constructed adjacent to the river and was successful in limiting fracturing to the rock bar at the waterhole. However, some cracking did occur, with surface water redirected to the shallow substrata. Environmental flows of around 1.5 megalitres per day were provided to supplement the river during the period of mining effects and to provide water for aquatic life.

Now that mining beneath Marhnyes Waterhole is complete, remediation is being undertaken. This has included filling surface fractures, undertaken during November 2002, and grouting of the strain-relieving slot and riverbed to reinstate the integrity of the pools. The results of the remediation works to date have been encouraging. Paradoxically, the works have been hampered by rainfall, resulting in high water levels during the first half of this year. The works will continue once the water levels have receded.

Positive feedback has been received from stakeholders, indicating that the community consultation program has been effective and appreciated by participants. It has helped to build constructive relationships across government, community and environmental groups. The consultative strategies are resulting in the stakeholders having improved confidence in the Company's ability to address issues of concern.

However, some issues and concerns remain. Proposed mining areas intersect rivers and creeks across the Illawarra region, and stakeholders have expressed a desire for more input into the mine planning processes. People in the community have also raised concerns about impacts to homes and property from cracking. As a result of the concerns raised, Illawarra Coal is reviewing its mine planning to include a more rigorous assessment of surface features and to better communicate with key stakeholders during the planning process. The Company will continue to work closely with government agencies and community and environmental groups to address issues and concerns relating to mining in the area, within the context of sustainable mining plans.

Environment

Rehabilitation program at Beenup is restoring the mine site as a self-sustaining environment of native vegetation, wetlands and pasture

Our Beenup titanium minerals mine in south-west Western Australia closed in 1999. To restore the land that had been disturbed, a rehabilitation plan was developed in consultation with the government and the local Augusta-Margaret River community. Restoration works under way include retention of the dredge pond as a permanent water body, the creation of seasonal wetlands, recontouring of the site and an extensive revegetation program. The overall aim is to create an environment that supports a functioning, self-sustaining ecosystem.

▸ *Beenup rehabilitation program manager Jocelyn Bird checks revegetation progress at the site*

▸ *Declared Rare Flora,* Grevillea brachystylis ssp. australis, *is establishing significant populations at Beenup*

The Augusta-Margaret River region has many natural attributes that have given rise to strong environmental sentiment in the community. The Beenup site, located just 17 kilometres from the town of Augusta, lies near the confluence of two rivers, the Scott and the Blackwood, and adjacent to the Scott National Park. Both rivers are relatively pristine and support a high biological diversity, aquatic recreation activities and professional fishing. Nearby residential communities have been developed with environmental values in mind.

With the high degree of local interest in the restoration of the mine site, the community, through the Beenup Consultative Group (BCG), was invited to be involved in developing the Rehabilitation Plan. The BCG has been active since 1989, prior to construction of the mine. Its membership comprises representatives from the Shire Council, all sectors of the local community and BHP Billiton.

The area to be rehabilitated included 336 hectares of disturbed land, a 50-hectare dredge pond, a large storage area containing material that had been excavated from the pond and two ponds for storing clay fines.

Several options for rehabilitation were submitted to government, the Shire Council and the BCG for consideration. As well as the need to preserve the quality of the local river systems, a key environmental issue was the management of pyrite, a naturally occurring sulphide mineral that, if exposed to the air, has the potential to oxidise and form acid. A primary objective of the rehabilitation was to neutralise any disturbed acid soils and ensure all pyrite remained saturated to prevent exposure to the air.

Following extensive public consultation, implementation of the approved plan commenced in late 1999. The rehabilitated site will comprise around 80 per cent native vegetation and wetlands and around 20 per cent pasture. The plan has allowed the clay fines to be retained in the former dredge pond, which has been established as a permanent water body. More than 2.5 million tonnes of sand have been shifted from stockpiles and elsewhere and redistributed around the site, particularly for recontouring the pond.

Seasonal wetlands have been developed, which encourage the creation of diverse flora and fauna habitat and support functioning ecosystems. The pond and wetlands, together with the extensive use of lime sand, also facilitate long-term management of the pyrite.

A major component of the project has been the reinstatement of surface water drainage across the site. The recontouring of the pond and development of the wetlands have been designed to both facilitate and manage drainage. Meandering spillways link the wetlands, directing the surface water so the main outflow is to the Blackwood River. Additionally, the spillways are designed to control the water level to help minimise flooding and erosion. The wetlands and spillways are also arranged so the surface water passes through as many planted reeds and rushes as possible, enhancing bio-filtration.

The extensive revegetation program involves the propagation and planting or broadcasting of over 110 million native seeds, representing over 110 plant species. At least four declared rare flora species are being established on the site. The project is providing the general botanical community with significant data on innovative germination and propagation methodologies.

As rehabilitation nears completion, the Beenup site is taking shape as a self-sustaining botanical precinct with potential for flora and fauna research, environmental education and eco-tourism.

Environment

'Revive our Wetlands' program aims to protect and revitalise 100 of Australia's most important wetlands

'Revive our Wetlands' is a major environmental initiative implemented by the Company in partnership with Conservation Volunteers Australia (CVA) to address the ongoing loss of vital wetlands throughout the nation. Utilising CVA's expertise in attracting and managing large groups of volunteers, the initial three-year phase of the program has provided practical assistance, resources and training to communities around the selected wetlands. A team of trained wetlands officers employed by the program facilitates support to local conservation groups, parks and wildlife services, schools and private landholders.

▸ *CVA provides resources, skills and guidance to assist local communities to protect selected wetlands*

▸ *Through the program, volunteers are engaged to help at 'Revive' sites around Australia*

The program's origins date back to 2000, when the Company and CVA began researching environment issues of mutual interest and critical need. CVA is Australia's largest not-for-profit conservation organisation and a leader in attracting and managing a force of volunteers in practical projects.

We jointly wanted to develop a partnership program through which we could exchange skills, knowledge and resources and achieve a positive and measurable impact within three years.

Wetlands are among the most important life support systems on earth and are vital for ecological sustainability, yet it is estimated that more than half of Australia's wetlands have been destroyed since European settlement. Developing a program to help reverse this loss was identified by CVA as a worthwhile initiative and one of mutual interest. Water management is an important aspect of all BHP Billiton businesses, and many of our mines are in close proximity to wetlands that must be conserved. Post closure, our mine sites are often rehabilitated as wetlands.

The wetlands targeted in the 'Revive' program include coastal wetlands, river systems, lakes, watercourses, alpine marshes and floodplains. The aim was to implement a rehabilitation program in line with the strategies set out in the Federal Government's Wetland Policy and Implementation Plan.

A partnership team comprising representatives of the Company and CVA was formed to manage the program. A pilot project was then trialled in Queensland at the Townsville Town Common, a renowned conservation park and habitat for migratory birds, which had become severely degraded. A project aimed at achieving ongoing sustainability and management of the site produced encouraging results, and the 'Revive' program moved into the implementation phase.

During the 12 months of planning and developing the program, the 100 wetlands sites were selected through liaison with local land groups, environment agencies, councils, state governments and wetlands consultants. A national coordinator was appointed to the program, along with nine wetlands officers located around Australia. A public awareness campaign was conducted; and thousands of volunteers were engaged, including students, families, retirees, other interested community members and BHP Billiton employees.

A communications system has been established, including an interactive website, a regular newsletter and an annual progress report to key stakeholders, including government bodies, environmental NGOs and community groups. An international wetlands expert has been appointed to monitor the program and report against environmental outcomes on an annual basis.

In restoring the 100 wetlands, to date more than 15 000 volunteer days have been provided, 30 000 plants propagated, nearly 160 000 native seedlings planted, 650 hectares of weeds removed, 45 kilometres of new fences erected, 300 kilograms of carp removed, hundreds of bags of rubbish removed, 30 kilometres of walking tracks maintained and 8 kilometres of new tracks constructed. More than 500 BHP Billiton employees and their families have volunteered at 'Revive' sites.

Additional funds for the program have been gained through new funding commitments from the Federal Government and state governments and other corporate sponsors.

'Revive our Wetlands' received the Prime Minister's Business and Community Partnership Award (large business category) in December 2002. In the *Australian Financial Review Magazine* Corporate Partnership Awards announced in July 2003, the program was winner of the Science, Environment, Health and Education Category and also named Corporate Partnership of the Year.

Significantly, 'Revive our Wetlands' is being managed on the basis of it becoming a sustainable program, with local communities being provided with the resources and practical skills to continue wetlands protection and conservation into the future. As many as 30 per cent of the 'Revive' projects are already operating without CVA assistance. The Company and CVA are planning to extend the program for a further three years.

Environment

Waste management program at Cerro Matoso delivers environmental benefits and more

At our Cerro Matoso ferronickel smelter in the province of Cordoba, Colombia, solid residue is generated during the production process. Added to this is general waste produced in the course of operating the plant. To manage this waste, a project team at the plant has developed and implemented a waste handling and use program to encourage minimisation, facilitate recycling and ensure environmentally responsible disposal of unusable residue. The program has succeeded in raising environmental awareness among employees, contractors and visitors; adapting existing logistics and infrastructure to appropriately handle the waste; and delivering benefits to the local Montelíbano community.

► *Solid waste disposal site at Montelíbano*

Key components of the program, which was developed over two years with the assistance of the environmental team, were to design and implement an environmental awareness strategy, establish and put into effect the project logistics, and provide support to the community-based company responsible for the handling and use of waste materials.

The environmental awareness strategy centred on developing behavioural change among employees, contractors and also visitors, so that waste is appropriately classified at the point where it is generated. The strategy extended to encouraging the personnel handling the waste products to process the greatest volume of waste appropriately in order to obtain the greatest economic benefit.

With the program in place, 100 tonnes of scrap is recycled each month, along with 10 tonnes of waste (cardboard, paper, glass, plastic, metal). Up to 14 tonnes of organic waste is transformed into compost and 22 tonnes into pig feed each month. The profits from the utilisation of this recycled waste go to the San Isidro Foundation, which allocates the funds to community projects.

An additional social benefit is that the extra work undertaken by the company handling the waste provides around 40 jobs each month in Montelíbano.

Environmentally, waste volumes are minimised; and unusable waste is disposed of in such a way that there is no contamination of ground surfaces, underground water or the air. One of the initiatives in place is the use of covered evaporation cells to remove leachate from the sanitary landfill waste.

The project is a good example of how to involve the community in a program to responsibly manage waste while generating environmental and social benefits – and contributing to meeting the goal of sustainable development.

Environment

Yabulu refinery maintains an environmental assessment and management program to preserve local ecosystems

The QNI Yabulu nickel refinery at Halifax Bay in north Queensland, Australia, is situated on 2500 hectares of land that includes areas of conservation significance. Since operations commenced in 1974, environmental monitoring has occurred at the refinery. In 1997, the monitoring strategy was expanded, and the Environmental Assessment and Management (EA&M) program was established. This program includes actions to protect coastal wetlands and the adjacent Great Barrier Reef Marine Park.

▸ *Yabulu refinery wetlands are maintained as a wildlife habitat and serve as a haven for many birdlife species*

The EA&M program classified the refinery site into three management zones – buffer, infrastructure and industrial – based on their environmental values and proposed land uses. The objectives of the EA&M program are to:

- establish a model for the various ecosystems within the buffer zone
- monitor environmental conditions within the buffer zone and adjacent marine ecosystems
- establish key environmental 'health' indicators
- assess the health of the various ecosystems
- recommend remedial actions where required
- develop a scientifically defensible environmental monitoring data set.

The initial scope for the EA&M program was four years, and this period was concluded after completion of the 2001 monitoring season. Having proved to be a valuable management tool, the program was adopted by the refinery as part of its routine environment plan.

The monitoring program covers the marine zone, buffer zone, aquatic ecosystems and buffer zone terrestrial ecosystems.

Within the program there is a broad range of monitoring sub-programs and methods, reflecting the need to understand the key drivers of the various ecosystems and the range of ecosystems present.

Each year, the results from the EA&M program are compiled into a summary report supported by extensive appendices containing the monitoring data. This report is used to set annual environmental programs, as well as long-term objectives, within the context of the refinery's business plans.

Results of the studies show the refinery's long-term land management strategy has protected many ecosystems that would otherwise have been lost if the land had been cleared for residential development. The studies confirm that current environmental management activities and programs are effective in preserving valuable local ecology.

The buffer zone supports many species of plants and animals, with a diversity and richness comparable to other undisturbed lands along the north Queensland coast. The assessment of the zone shows that all key indicator species for each ecosystem are present and, importantly, each ecosystem is stable. Several distinct ecosystems have been identified, including sand dunes, mangroves and salt flats, open forest, and eucalypt and melaleuca woodlands. The broad variety of identified fauna includes endangered migratory birds that use the buffer zone for breeding.

The EA&M program is a Company initiative and does not form part of the statutory controls applied by the Queensland Environmental Protection Agency (EPA). Reflecting its open relationship with the EPA, the refinery provides the Agency with an annual briefing on the data from the program.

The program's detailed database has also proved useful for other purposes, such as the work undertaken by the refinery with local and state government organisations on regional initiatives to address risks posed by fire, weeds and feral animals.

The annual monitoring and assessment component of the EA&M program is conducted on behalf of the Company by Central Queensland University's Centre for Land and Water Resources Management. In turn, the Centre utilises resources of James Cook University and the University of Queensland.

Energy Smart Program exceeds target at EKATI Diamond Mine

Current Savings
(Litres)

1,012,031L *(June 18,2003)*
TARGET 1,000,000L
941,357L *(May 2003)*
865,638L *(Mar 2003)*
770,828L *(Feb 2003)*
690,000L *(Dec 2002)*
503,000L *(Oct 2002)*
210,000L *(Aug 2002)*
104,872L *(Jun 2002)*

Our EKATI Diamond Mine is located at Lac de Gras, 300 kilometres north-east of Yellowknife and 200 kilometres south of the Arctic Circle, in Canada's Northwest Territories. In April 2002, a team of highly motivated volunteers from a variety of departments at the mine formed an Operating Excellence Team on Energy Conservation. They set about tackling the inefficient use of energy at the site. Aiming at saving the equivalent of 500 000 litres of diesel fuel per year, they had reached their goal by October. Not content with their success, the team raised their target to 1 000 000 litres – and achieved it. They call their initiative the Energy Smart Program.

► *The Energy Smart Program at EKATI has reduced the requirement for fuel haulage to the mine*

The Operating Excellence Team established that, for every kilowatt hour of power used, 0.25 litres of fuel were consumed in the power house. The goal of 1 000 000 litres of fuel is equivalent to about 12 per cent of the mine's annual power generation consumption.

Taking a strategic approach to their Energy Smart Program, the team tackles the problem on a variety of fronts, including:

- easy wins – such as installing motion sensors on lights and thermostats on heaters
- big savings/more work – modifying power house radiator fans and reusing waste oil
- staff education – conducting Energy Smart presentations to crews
- tax incentives – gaining potential tax savings by reducing use of fossil fuels
- promotion – producing posters and stickers and awarding prizes for ideas
- new projects – incorporating Energy Smart ideas into building designs.

As part of the plan to build an energy-saving culture at the mine, the team invites fellow employees, who number around 700, to contribute ideas. The response has been overwhelming (more than 260 suggestions were received in the first six months). A key factor in the success of the suggestion scheme has been that employees who participate are recognised and rewarded with prizes, such as caps and golf shirts.

The suggestions are reviewed and categorised according to a 'pay-off' matrix – the ideas that can provide the biggest return for the least amount of work are implemented first.

Since the Energy Smart Program commenced, initiatives have included:

- installing motion sensors on lights in offices, laundries, lunchrooms and washrooms
- installing thermostat controls to regulate individual room temperatures during unoccupied times
- interlocking heat trace systems so they only become active when water flow stops
- installing dual-flush toilets in washrooms to reduce water consumption
- changing controls to slow down or shut off ventilation systems in areas that are unoccupied at nights
- shutting off fan motors, welders and pumps when they are not required
- installing timers on the electric heaters used on light vehicle engine blocks in the cold months.

The team is also working on a range of other energy-saving projects. For example, there is a surplus of waste oil, which is collected after oil changes on the large mobile fleet. The mine has had to truck the waste oil off-site and pay for its disposal. The conventional diesel-driven furnaces are now being replaced with waste oil furnaces. This will save fuel and do away with the need to transport the waste oil off-site.

Fuel is also consumed to burn garbage on site in six incinerators. The incinerator design is being re-engineered to also use waste oil as a combustion source. This innovative idea has the potential to save over 400 000 litres of fuel per year.

Another idea being investigated is putting controls on the air compressors that feed the underground operations. The controls will shut off the compressors between shifts when they are not required.

The team is also extending the Energy Smart Program to new projects. Energy-saving ideas from the program are forwarded to the engineering groups for consideration, so buildings can be designed to be energy efficient from the start. For example, a new underground office complex is totally heated with waste oil; and an extension to the site camp includes water-saving ideas, such as dual-flush toilets and low-flow showerheads.

With enthusiasm for the program still very much alive and a 'think Energy Smart' culture increasingly evident, the Operating Excellence Team at EKATI is confident the achievement of saving 1 000 000 litres of fuel per annum can be maintained.

Environment

Ingwe develops innovative solution to stormwater run-off during mine site rehabilitation

When one of our Ingwe coal mines in South Africa ceases production, the Mine Closure Operations (MCO) team is responsible for rehabilitation of the mine site. A major issue during rehabilitation can be the drainage of stormwater run-off from discard dumps. Conventional concrete drainage structures are not environmentally friendly and, at times of high rainfall, can be easily damaged. As an alternative, the MCO team has developed the concept of spiral contour drains. This solution is not only environmentally more responsible but also costs less and is less subject to failure.

▸ *Spiral contour drain at South Witbank*

With conventional stormwater drainage on a discard dump, the water is collected in chutes that direct it down a steep slope to the bottom of the dump. The chutes are typically constructed from concrete materials. As it rushes towards the bottom of the dump, the water can reach high velocities and sometimes gain sufficient energy to seriously damage the chute. At the bottom of the dump, specialised structures are required to dissipate the energy of the water to prevent excessive soil erosion.

There are other problems associated with this type of drainage. The concrete structures are costly to erect. As well as being subject to damage from the rushing water, they can fail due to differential sagging of the coal discard material. They are difficult and costly to remove once the dump is rehabilitated; and, if they remain on-site, they can impede access to the area.

Realising the need for a different approach, the MCO team developed a solution based on the spiral contour principle. The contour drain starts at the top of the dump and winds downwards in a gently spiralling manner until it reaches ground level, where the water is dissipated into the natural watercourse. The use of concrete structures is minimised and sometimes eliminated.

There are numerous benefits. The final product is more environmentally responsible due to the minimal use or absence of concrete structures. The cost is substantially lower, the risk of failure is vastly reduced, and all areas of the dump are accessible from between the spiralling contours.

The first spiral contour drain was constructed at South Witbank Colliery on a small discard dump covering approximately 5 hectares. The drain spirals down to the bottom of the dump, where the remaining energy of the water is dissipated in a delta-shaped outlet.

The second spiral contour drain was also built at South Witbank on a dump covering 8 hectares. This time a double spiral contour was installed, the first draining clockwise and the second anti-clockwise.

The double spiral contour system was also applied on the 65-hectare Ermelo Mines Services, but with both contours draining anti-clockwise. In this case, because of the steepness of the topography and the huge volume of water to be drained in the event of a heavy rainstorm, some concrete blocks are used to reinforce the outlets at the bottom of the dump.

The latest mine site where the principle has been implemented is Transvaal Navigation Collieries. Building on experience gained at the other sites, the aim was to install the minimum amount of contours to enhance accessibility. Farm machinery can operate more effectively, allowing for easier management of vegetation until closure of the mine. This facilitates future conversion to grazing on a sustainable level.

Because of the varying topography of this site, the drain outlets that dissipate the energy of the water were designed with different methods. On one side, which is very steep, the drain discharges at ground level into a concrete structure. On the less sheer side, two contours drain into a delta, so the energy of the water is released over a wide area and into the natural watercourse. Provided the topography allows for it, the ideal is to dissipate the water into such a delta-shaped outlet, as it costs less and is more environmentally responsible.

Based on these projects, spiral contour drainage has been shown to be a successful system for draining run-off stormwater drainage from discard dumps; and the MCO team has adopted the principle in preference to conventional drainage structures.

Environment

Trials show grazing can be a sustainable use of rehabilitated mine land in Australia's Bowen Basin

When mining commenced at five of the open-cut coal mines we manage in the Bowen Basin of central Queensland, Australia, the legal requirement was that, after mining, the land was to be returned 'to purposes connected with grazing'. The rehabilitation of these mines has focused on the establishment of pastures that could be used for grazing once mining had finished. To test the sustainability of grazing as a post-mining land use, trials have been conducted for several years at our Blackwater, Norwich Park and Goonyella mines, with positive results.

► *Test grazing on rehabilitated area at Norwich Park mine*

Establishment of pastures on post-mining landforms in this region not only provides opportunities for productive land use, but also has a significant benefit in minimising erosion.

However, in recent years, the sustainability of grazing as a post-mining land use in central Queensland has been questioned. Without sound management, non-mined lands in the semi-arid regions of Australia have exhibited significant degradation as a result of grazing.

To test the sustainability of grazing as a post-mining land use, grazing trials have been conducted for several years at our Blackwater, Norwich Park and Goonyella mines. These trials have demonstrated that grazing can be sustained on mined lands at stocking rates comparable to those in the region. Similar results have been achieved using the two different management regimes commonly applied in grazing management.

The trials included assessment of cattle liveweight gain, pasture condition and soil erosion at various stocking rates. The primary aim of the trials was to determine the long-term stocking rate for mine rehabilitation pastures.

Grazing at three stocking rates at Blackwater mine yielded good liveweight gains, better gains than on non-mine pasture nearby in the same season. This led to requests from several neighbours for agistment of cattle in other parts of the mine. At the highest of the stocking rates, the grazing pressure was heavier than desirable as the erosion rates measured after grazing were unacceptable. Cattle are now grazing at about the district average stocking rate on 72 hectares of rehabilitation pasture at the mine.

At Norwich Park mine, cattle are grazing on test areas in a second phase of the trial. The stocking rates applied in the first phase had little impact on the pasture condition, even at the higher stocking rate, even though this was close to the district average. Liveweight gains exceeded those from the adjoining unmined land in the same season. Cattle are now grazing on more than 270 hectares of rehabilitated mine land at the mine.

At Goonyella mine, the cell grazing management method was applied with reasonable liveweight gain, despite the drought conditions that prevailed during the season. A selected group of cattle from the herd have also free-grazed on about 80 hectares of rehabilitation pasture with good liveweight gains.

These trials and the extension of grazing to other areas of rehabilitation on the mine indicate that, with appropriate grazing management, mine lands can be used for cattle grazing.

Minerva development project applies an integrated approach to managing environment and community issues

The Minerva gas field is located approximately 10 kilometres offshore from Port Campbell in the Otway Basin of Victoria, Australia. Our development project management team understands the importance of a proactive approach to managing environment and community issues. They recognise that the community and other stakeholders have a diverse range of perspectives and inputs to offer that can prove valuable in the successful execution of the project. The Environmental Review Committee (ERC) is a formal communication mechanism that has been put in place to involve the project's key stakeholders, allowing them to review each phase of the project, including its planning, construction and operation.

► *Members of the Environmental Review Committee with coordinator Kirsty Couper (r) of BHP Billiton at Port Campbell*

The Minerva development project is scheduled for completion in 2004. Untreated gas from two wells will be transported via an undersea pipeline that crosses the shore at Two Mile Bay, traversing through a horizontally drilled hole under the Port Campbell National Park and continuing underground to a gas treatment plant located approximately 4.5 kilometres inland.

Key issues and concerns raised by the community during the Environmental Impact Assessment (EIA) process included the visual impact of offshore and onshore facilities; impact from shore crossing of pipelines; effects of air, water, noise or odour emissions from the plant; the impact of condensate trucking operations on local traffic; issues relating to Aboriginal sites and Native Title; the importance of protecting the iconic coastline and tourist routes; and the need to maintain the integrity of the Port Campbell National Park. These issues have been substantially addressed by such project decisions as careful selection of the plant site, design modifications, early landscaping of the site and seasonal restrictions on construction activities.

The ministerial approval conditions, together with recommendations made by a ministerially appointed review panel and the Company's own voluntary commitments during the EIA, resulted in a considerable list of commitments to be adhered to by the development. These commitments have been collated in the form of a register – The EIS/EES Commitments Register – that forms the basis of the commitments implementation strategy.

The ERC was established following the state and federal ministerial assessments of the EIA process. The Committee has prepared a formal charter that ensures its activities are conducted in an ordered and constructive manner. Operating as an active working group, it provides an opportunity for community members to understand the operations by being regularly informed on project activities and is the primary mechanism for the community to express concerns about issues related to the development. Members of the Committee are consulted on the design of monitoring programs, and they review results of monitoring in accordance with the consultative process recommended within the ministerial assessment.

Chaired by an independent chairperson who is an elected member of the local Corangamite Shire Council, the Committee's wide range of stakeholders includes representatives from federal and state government authorities, shire representatives, the local school, environment groups, the local Aboriginal community, neighbours, and representatives from the Company and the project.

The recommended level of consultation for the project has been exceeded and involves ERC members as full auditors in environmental audits carried out on the project. To ensure that their participation in audits is effective, ERC members nominated to represent the group in environmental audits have received formal auditor training, which has provided community members with additional skills.

As at June 2003, three audits involving trained representatives from the ERC had been conducted; and the results have been subsequently presented to ERC meetings by the audit representatives. These audits have checked conformance with the requirements of the Environmental Management Plan modules for offshore drilling and subsea installation of the gas production wells, for the horizontal directional drilling shore crossing, and for the onshore flow-line.

With the ERC in place as the main forum for community consultation, a number of community projects are also being undertaken, consistent with the BHP Billiton Community Programs Guidelines. As well as sponsorship of local projects that benefit the widest possible range of community sectors, initiatives include the provision of job training opportunities to students of the local school and career orientation seminars given to local school students by BHP Billiton professional staff.

Community

22

Acquisition of Tabaco village in Colombia provides lessons for future resettlement projects

BHP Billiton and its joint venture partners, Anglo American and Glencore, became equal owners of the Cerrejon Zona Norte (CZN) coal mine in Colombia in February 2002, when they acquired International Colombia Resources Corporation (Intercor) from ExxonMobil, which held the mine's remaining 50 per cent ownership and operational interests. A new company, Cerrejon Coal Company, was formed, combining CZN and Carbones del Cerrejon. Situated within the mining lease is the village of Tabaco.

In 1997, prior to the involvement of BHP Billiton, the acquisition of Tabaco commenced to enable future expansion of the mine's operations.

The acquisition has proceeded in accordance with Colombian law. As part of the legal process, a survey was conducted to determine whether the people of the village wanted to sell their possession rights or be relocated. The survey established that there were 213 possession rights in Tabaco, of which eight were municipal public properties, 151 were unoccupied lands or houses and 54 were occupied dwellings.

In the survey, 95 per cent of the possessors said they did not want resettlement and wanted to negotiate directly. Subsequently, 192 out of 213 possession rights were settled; and acquisition of the eight public properties was negotiated with the municipality of Hatonuevo. In August 2001, the remaining 13 possession rights were acquired through an expropriation process ordered by national judges in accordance with the Mining Law.

Court action was initiated on behalf of those people who had not agreed to sell their possession rights; and, in May 2002, the Colombian Supreme Court ordered that the municipality of Hatonuevo provide primary education and housing infrastructure support for children of this group. While schooling is provided free to students, there are associated expenses for such items as educational materials.

Some months earlier, Cerrejon had approached the municipality and offered to assist with the education of these children. An assistance program was implemented; and, during 2002, Cerrejon helped meet the schooling expenses of 21 children of former Tabaco residents. Eight of the children were attending school in Hatonuevo and nine in Patilla. The other four children had moved with their families to Barranquilla, and they were granted one-year scholarships.

Following a review at the end of 2002, it was decided the funding should be provided directly to the schools attended by the children. Through the Fundación Nuestra Señora del Pilar, assistance has been given to the school in Hatonuevo for a cafeteria and to the school in Patilla for school furniture and materials. As the four children living in Barranquilla could not continue their studies without individual support, their scholarships have been extended for another year.

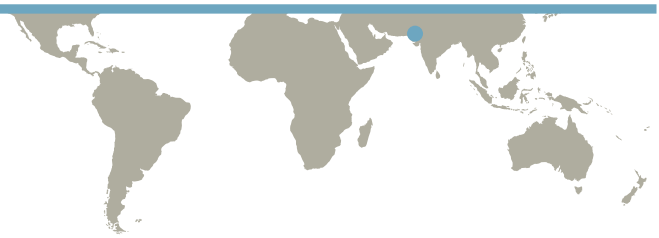
In May 2003, Cerrejon offered the municipality of Hatonuevo some land for community use; and it has been indicated by the municipality that this may also benefit the affected people from Tabaco.

The Cerrejon management team has reviewed the processes that it follows when the relocation of a community becomes necessary, so as to ensure that they are consistent with international best practice and are focused on the maintenance of sustainable livelihoods. To this end, Cerrejon will adopt relevant World Bank guidelines for any future resettlements.

The Company has also adopted the US-UK Voluntary Principles on Security and Human Rights to guide interactions between the Company's security providers and local communities. Cerrejon's approach is consistent with BHP Billiton's group-wide commitments.

Community

Pakistan community program focuses on education to improve quality of life



Our Zamzama gas project in Pakistan is located in the district of Dadu, which lies approximately 500 kilometres north of the coastal city of Karachi in Sindh Province. The area suffers from very low rainfall, lacks basic infrastructure and has limited educational facilities or opportunities. Our community development program is aiming to facilitate the empowerment process and improve the quality of life for the poor and the vulnerable people living in the areas where we operate. Education is considered to be a vital part of this process.

Prior to developing the program, consultative workshops were organised to ensure effective community participation and ownership of the project and to assess the critical needs in the area. These consultations revealed that access to quality education was the primary concern, with girls and women having been particularly disadvantaged.

Further research in Dadu showed that there were clear opportunities to improve school infrastructure; enhance teaching methodologies; and increase the motivation of teachers, children and parents towards education.

As part of its program, the Zamzama community development team has implemented a two-phase project. Initially, two local NGOs (Child Development Organization and Village Shadabad Welfare Organization) were selected to develop an education program. This then led to the establishment of five primary schools in the Johi area of Dadu. With support from the Company, the schools have been provided with appropriate infrastructure, furniture and equipment, and trained teachers.

The project has included a number of key components:

Capacity building – The aim has been to enhance the skills and knowledge of the local NGOs and schoolteachers through training, to ensure effective project management and improvement in the quality of education. Raising awareness of basic human rights and building confidence in the local community were integral parts of the project.

Livelihood opportunities – The project has provided income for the local NGOs, schoolteachers and vendors by ensuring that employment opportunities have been filled by people from the area.

Participation and partnership – Regular multi-stakeholder consultations and meetings have been convened before and during the execution of the project. In particular, community forums have been developed with an emphasis on encouraging the local community, especially women, to take part in the decision-making process.

Broad stakeholder involvement has been part and parcel of the development of the project. Regular consultations with the government, civic organisations and the community have taken place throughout the project phases. The local NGOs have overseen the smooth implementation of the project, while the community donated the school buildings. The government has further contributed by registering the local schools as part of the formal education framework and taking responsibility for routine monitoring of the schools.

While critical to the success of the project, the imperative to involve the community and other stakeholders has also provided a number of challenges. For instance, although the community development team has a set of criteria to select NGOs to engage in partnership, having as many as seven submitting proposals made for a complex process. Then, during the collaboration process with the selected NGOs and all the stakeholder groups, it was a matter of overcoming diverse interests and agendas in order to gain consensus.

A further challenge was to create awareness in the community that the people need to manage their own development and, importantly, to mobilise them into actively taking responsibility. Part of this involved bringing about an attitudinal change in order to allow the young local girls to have an opportunity to attend school. The aim was to achieve change while respecting and working within the cultural norms and traditions of the area.

These efforts have been worthwhile, and the benefits are now being realised. The project has provided education opportunities for the children, especially girls. Through interactive learning, the children are learning about issues related to literacy, health, hygiene and basic human rights.

The schoolteachers have benefited from their training and feel confident in their abilities to teach the children. They realise their roles and responsibilities and are actively involved in the decision-making process. Through their jobs, the women teachers have gained economic independence and can adequately support their families.

The parents too have been empowered. By involving the parents, especially the mothers, in the management of school issues, they now feel more confident about making an effective contribution to the decision-making process in matters affecting their lives.

The involvement of the parents, other members of the community, the government and NGOs is seen as a prerequisite to achieving sustainability of the project by instilling a sense of ownership and the motivation to take responsibility for maintaining the education program.

Key achievements	
Schools operational	5
Teachers employed and trained	13
Children enrolled	477
Villages benefiting from the schools	60
Partner NGOs engaged	2
Community-based organisations formed	5
School management committees formed	5
People directly involved in the project	23

Community

Corporate Community Leadership Program examines impact of community development activities in India

The Corporate Community Leadership Program is a joint learning initiative developed by the Company and Oxfam Community Aid Abroad (Oxfam CAA). This is the second year of the program, which aims to expose participants to the impact that community development projects can have on the livelihoods, living standards, health and rights of local communities. This year, 12 of our employees, accompanied by four Oxfam CAA facilitators, journeyed to India for two weeks, visiting villages in the eastern state of Orissa.

▸ *Women of Chikilmari village, Orissa*

▸ *CCLP participant Alana Birchall with women of Chikilmari village*

The Company participants in the program represented a diverse range of BHP Billiton businesses, locations and roles, from people involved in hands-on community affairs to senior management.

Following a comprehensive briefing in Vizag, the group travelled to Orissa for a series of village visits organised by WIDA, a local NGO whose acronym derives from Integrated Rural Development of Weaker Sections in India.

WIDA's focus is on empowering village communities by establishing community organisations and facilitating capacity-building projects. Much of their work is directed at forming committees of people within a village and then within a federation of villages. This is aimed at giving people the opportunity to have their opinions heard.

As well as seeing successful community development programs in practice, participants also saw close-up how communities can be negatively impacted by infrastructure development, especially when it involves displacing and relocating people. The group visited villages that have not participated in any community development work, as well as villages where WIDA has been active for many years. The difference between them was stark.

In the village of Putsil, for instance, a micro hydro plant had been built by the villagers with the assistance of WIDA and several overseas NGOs. The plant provides the village with a few hours of electricity a day, which is used for lighting and to run an oil pressing plant and a grain grinding mill. This frees the women from the long hours of work involved in grinding grain by hand and also gives them a means to earn money by grinding grain for other villages.

This is a good example of how WIDA helps people to develop income-generating enterprises through small-scale projects. Other examples are handicrafts and new activities, such as building dams to farm fish. Women are also being trained in non-customary roles, such as masonry and carpentry.

The group then travelled to Berampur where they were hosted by Gram Vikas, one of India's largest NGOs. Gram Vikas takes a different community development approach to that of WIDA, focusing on large-scale community infrastructure projects. They work with villagers to install water plants and sanitation systems and to develop basic education and healthcare programs.

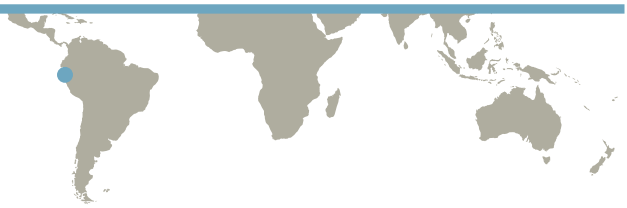
A key learning from the Corporate Community Leadership Program is that leading-edge community development work is based on human rights. This means going beyond providing services and physical infrastructure and focusing on helping people through building social capital and organisational capacity.

This aspect of the program highlights the complexities of the Company's community development involvement. On returning from India, one of the participants noted that 'One of the things I hadn't anticipated is what a political process community development is. The aim of a rights-based approach to community development is to empower people; and, as a consequence, you can end up with politicised communities because they are fully aware of their rights and they demand them. Doing the right thing is not necessarily going to be comfortable for us. But, after all, it is the communities who will decide when the Company is successful at community development'.

This comment is a reflection of our recognition that local communities are key stakeholders in the resource development process and that we have a responsibility to acknowledge and respect their rights. Through our involvement in the Corporate Community Leadership Program, we aim to further our understanding of social issues related to our operations, so that we can continue to improve our skills in planning and implementing effective and sustainable community programs.

Community

Reversing resettlement in northern Peru benefits local families



The La Granja copper project, in a remote mountain valley in the province of Chota in northern Peru, was acquired in 2000 and closed in 2002. Families who had been displaced by the project in the mid-nineties are now buying back their former lands on a time-payment plan, and income from the sales are funding the development of their community.

► *Community meeting at La Granja*

The La Granja mining concession was acquired in November 2000. A feasibility study concluded, in November 2001, that the project was not viable. A social and environmental closure program was developed, which was completed in December 2002.

The rural families in the area of the project, and the families who had been relocated away from the project area prior to our acquisition, were living in poverty. The prior relocation of local families was not compatible with World Bank guidelines, and relocated families were worse off than when they lived in the La Granja area. Families who continued to live in the area also suffered social and economic impacts from the project prior to our acquisition. The local schools and medical centre had been closed as a result of the presence of the project.

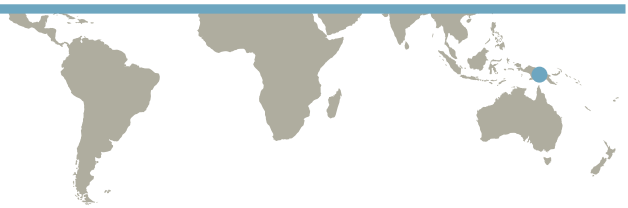
A socio-economic study of the earlier relocation process provided the basis for developing the initial social program. The primary concerns of the population were found to be health and education. As a result, the program prioritised reopening the schools and the medical centre. The Company paid the cost of operating the schools for two school years and the medical centre for a year, until agreement was reached for the government to reassume its responsibilities in these areas. Until the medical centre could be reactivated, free medical services were provided to the community by La Granja's medical personnel. They continued to supplement the activities of the medical centre until project closure was complete.

Once the decision had been made to exit the project, a risk assessment was conducted to support the exit strategy. The assessment focused on the environmental and social consequences of various exit scenarios and was highly effective in supporting the final plan of returning relocated people to the La Granja area and in re-establishing a self-sustaining support infrastructure through the development of a foundation. The steps taken to implement the plan included:

- an intensive consultation campaign in December 2001, involving meetings in La Granja and each of the areas where there were concentrations of relocated people
- subsequent ongoing consultations, resulting in some modifications to the plan
- sale of approximately 2000 hectares of land back to its relocated original owners or, where the previous owner declined to buy, to other community members (these sales took place at less than half the price that the Company had paid for the land)
- access to independent legal advice for relocated families before they made the decision whether to rebuy their former land
- transportation for families returning to La Granja
- free medical checkups for returning families
- creation of the Foundation for the Development of the Upper Paltic with NGO participation (The Mountain Institute) at the board level
- support to the community in establishing a development association in each of the four villages in the immediate area of project influence to facilitate community interaction with the Foundation
- a project by The Mountain Institute to build the community's institutional capacity and help it identify development priorities for the Foundation
- publication of user-friendly guidebooks on each aspect of the closure process (land sale, return process, environmental remediation, the Foundation)
- donation of all proceeds of the land sales to the Foundation
- provision of materials or livestock to help returning families re-establish their livelihood (to be repaid to the Foundation over ten years)
- donation of materials or livestock to families who decided not to rebuy their former land, to help them consolidate their livelihood in their new location
- rehabilitation of school and medical centre infrastructure
- negotiation with the Ministries of Health and Education, at national and regional levels, for the reopening of the schools
- strict local hiring policy for environmental remediation work, resulting in the temporary employment of more than 200 people.

Unsold land, and land in the village centres, has been donated to the community development associations; and much of the camp furniture and equipment has been donated to local institutions.

Community



PNG Sustainable Development Program Company begins planning community programs

As reported previously, in February 2002 we transferred our 52 per cent equity in Ok Tedi Mining Limited in Papua New Guinea (PNG) to PNG Sustainable Development Program Company. Establishment of the company has progressed well during the year. Program Company now receives all dividends that would formerly have flowed to BHP Billiton. The dividends will provide a sound basis for supporting investments in community development programs in the Western Province and in PNG more broadly, during and beyond the remaining life of the mine.

► *Typical village setting, Western Province, Papua New Guinea*

Our withdrawal from the OK Tedi operation occurred because we were unable to gain agreement from the other shareholders in Ok Tedi Mining Limited – the PNG Government and Inmet Mining Corporation – for early closure of the mine. We sought early closure because of concerns about the environmental impacts of the mine. The government preferred to continue operation of the mine because of the significant social and economic benefits it provides to Papua New Guinea. We recognised the importance of those benefits and respect the wishes of the PNG Government. The exit arrangements we put in place were designed to maximise these benefits while limiting the potential for further environmental impacts.

Program Company has been established with a strong emphasis on governance arrangements. Incorporated in Singapore, it has an independent Board of Directors comprising Dr Ross Garnaut (Chair appointed by BHP Billiton), Donald Manoa (appointed by the PNG Chamber of Commerce and Industry), Sir Ebia Olewale (appointed by the PNG Minister for Treasury), Dr Jacob Weiss (appointed by the Bank of PNG), The Hon Jim Carlton (appointed by BHP Billiton), Patricia Caswell (appointed by BHP Billiton) and Lim How Teck (appointed by the Program Company Board). The company has produced its first public annual report and held a public meeting to discuss the report on 12 June 2003.

To date, the company has received dividend payments totalling US$41.5 million. These funds have been invested in short-term, low-risk investments pending commencement of the program implementation phase. Under the terms of the company arrangements, two-thirds of the dividends, after meeting taxation and administrative costs of the company, are to be invested in a long-term fund. This will enable the contribution of the company to continue beyond the life of the mine for a period of at least four decades. The remaining one-third of the dividends, after meeting company costs, is to be spent on current development programs in PNG, one-third in the Western Province and two thirds elsewhere in PNG.

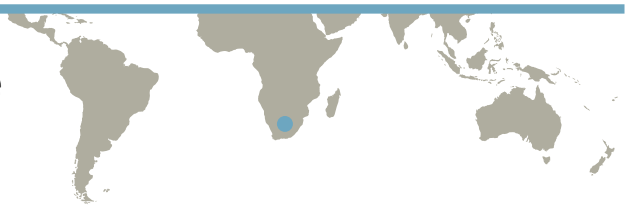
The establishment of the development program is progressing well, with a number of projects identified for possible support. These include rehabilitation of the Highlands Highway and development of sustainable rubber, oil palm, cocoa and other agricultural industry in the Western Province and several other provinces. Also under consideration are eco-forestry and tourism projects and the generation of power from domestic gas, geothermal and hydro resources to support economic production and social services. Other projects have been identified in the areas of education, health and capacity building at the local level.

The company has six full-time staff in Port Moresby, Papua New Guinea. The establishment of partnerships with international aid agencies, government agencies, churches, other NGOs and private enterprise will facilitate implementation of the company's community development programs.

The company's annual report is available via PO Box 1786, Port Moresby, Papua New Guinea.

Community

Pering mine – meeting the challenges of closure



The Pering lead/zinc mine in the remote North-West Province in South Africa ceased production in February 2003. Throughout its life, the mine has contributed to the communities around it. Now the mine's closure is presenting new challenges for its employees and communities.

Pering, which began production in 1986, is situated 20 kilometres from Reivilo, about 500 kilometres south-west of Johannesburg. The region is arid and rural, and beef farming and mining are the main activities. A local dairy factory, which employed up to 300 people for many years, closed in 1999. Pering employed approximately 200 people, mainly from the local communities of Reivilo, Taung and Kuruman, with the majority from Reivilo.

The mine had been expected to produce until 2004; but, by mid 2002, it was clear that market conditions and ore reserves would force an earlier closure. The last concentrate was produced in February 2003.

When the mine was built, a Housing Assistance Plan helped employees to purchase property. The mine developed and partially funded a sports and recreation facility with the community. It also built and stocked a library and developed sewerage and water reticulation systems for the mine houses. After these systems were given to the municipality in 1996, the mine assisted employees to pay for the service, increasing municipal funding and helping to develop further infrastructure.

The mine has paid the salaries of two teachers throughout the mine life. A computer training centre, funded by the mine, teaches people of all ages at no cost and will be expanded to provide a computer-based adult basic education and training centre. The mine has sponsored a community garden and a meals scheme for underprivileged pre-school children. Pering employees have participated actively in local affairs, and a number have served as town councillors and mayors.

Pering commenced closure discussions with labour, local NGOs, and local and national government organisations in November 2001, operating under the Department of Labour's Social Plan guideline, which was later passed into law. The relationships between this broad range of stakeholders proved extremely challenging; and, for a time, there was little progress with project delivery. This was largely because of the various stakeholders' lack of experience with the process, as it is new in the country. Political pressures, issues relating to control of resources and a lack of continuity of the government representatives involved all interfered with progress.

The closure process took a turn for the better when a consulting company was engaged to facilitate and to conduct community baseline studies and surveys, with the goal of identifying possible projects to mitigate the effect of job losses on Reivilo's economy. The consultants provided a strong chairperson who drove the process much more effectively than the mine had been able to do before. Despite some community resistance, the consultants were effective in getting the process moving and giving it direction. At the same time, the National Productivity Institute conducted a study that confirmed there was no alternative to closure.

The consultant's studies showed that, while Pering had contributed positively to the community, it was also responsible for most of the economic activity and was the only multiplier industry. Reivilo is an extremely poor, isolated community largely made up of the very young and the very old. There are few job-creation opportunities, and the town is only marginally sustainable.

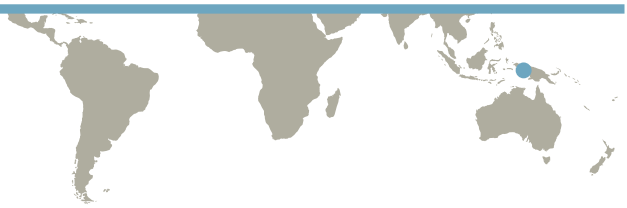
In 2002, a senior national official of the Department of Minerals and Energy stepped in to take custodianship and act as facilitator in the closure process. All the participants had to adapt to a changing legal system. Politics remained a stumbling block, and the formal process appears not to have given adequate voice to the concerns of the local community and non-employees. The main outcome has been a non-profit company, formed to obtain and manage funds to drive projects. Structures and processes are about to be regulated.

Future closures in South Africa will remain a challenge, but there will be more experience and guidelines on which to operate. The key learning has been that the various stakeholder organisations must be engaged at as high a level as possible, as early as possible, because the top echelons of the organisations have the best understanding of their needs, strategies, and capabilities. Once objectives and strategy have been aligned at the top levels, in an atmosphere of cooperation, each organisation can then use its people to implement those objectives and strategy. Of course, the mine also needs to formulate its own objectives and strategy well beforehand. To participate fully in the process, local communities should be encouraged to form NGOs, to build common goals and to take charge of their future and aspirations.

Success depends not just on the mine but on all the stakeholders. Government organisations should provide guidance while being seen to be fair. A social closure plan, if it is to result in sustainable projects, must begin before the project starts and must live throughout the operation. In this way, trust and understanding, with positive contributions from all, can result in sustainability by the time the operation reaches closure. Failing that, a closing operation will not have the resources to deliver a desirable outcome.

Community

Gag Island nickel project remains on care and maintenance



Our nickel exploration project on Gag Island in Papua commenced in August 1996, when PT Gag Nikel was established following the signing of a Joint Venture Agreement between BHP Billiton (75 per cent) and PT Antam (25 per cent). A Contract of Work was awarded in February 1998, and a program of exploration and preliminary evaluation was conducted. Since early 2000, following a change in forestry status that precluded open pit mining on the island, the project has been on care and maintenance status. PT Gag Nikel is maintaining close relationships with the local community and continuing a low-level environmental monitoring program.

► *Gambier Bay, near the Gag Island nickel exploration project camp*

Gag Island is located 150 kilometres west of Sorong. It is approximately 12 kilometres long and 8 kilometres wide, with terrain consisting of hills and plateaus. Dutch geologists first discovered nickel mineralisation on Gag in the 1950s. Subsequent investigations have confirmed that approximately two-thirds of the island is mineralised; however, the commercial viability of the deposit has yet to be confirmed.

A community of approximately 450 people live at Gambier Bay, adjacent to the Company's exploration camp. The community was established in the early 1960s by people from neighbouring islands who moved there in the hope of finding work. They have remained on the island since that time, despite a series of long delays in the development of the deposit, and remain supportive of mining and the related employment opportunities it may bring.

PT Antam, which is owned by the Indonesian Government, acquired Gag Island's mineral rights in the early 1990s. Following the establishment of PT Gag Nikel in 1996 and the undertaking of exploration and preliminary evaluation, the Company received a Contract of Work in February 1998. At that time, Gag Island was classified as 'Production Forest', allowing open pit mining.

In September 1999, as a result of Forestry Law (Number 41/1999) being enacted by the Indonesian Government, Gag Island was reclassified as 'Protection Forest', prohibiting open pit mining. No mine development work had commenced on the island at the time of reclassification.

As we will not operate in any protected forest area if it is contrary to Indonesian law, no development work has occurred since the reclassification. Studies associated with baseline environmental and social impact assessment have also been suspended.

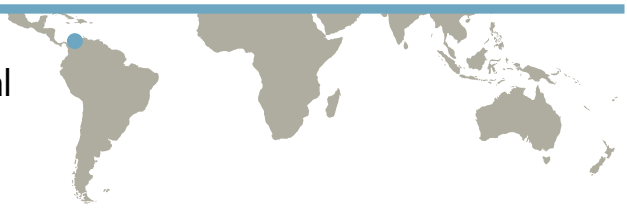
These studies would need to be recommissioned before any further feasibility of the Gag Island project could be assessed. The studies would need to determine the most appropriate method of disposing of waste material from any mining or processing of nickel ore on the island. Preliminary options have included conventional dam storage, returning waste to the mined-out pits and the use of deepsea tailing placement.

Our consideration of this third option has attracted some criticism from NGOs concerned about potential impacts to reef environments around the island. We have made it clear in our communications on this issue that we would only consider this option if investigations prove that it is environmentally acceptable. Any decision will involve extensive consultation with the local community and the approval of the local government and the Indonesian Government.

The deferral of activity on Gag Island has been a major disappointment to the community at Gambier Bay, as short-term employment opportunities have had to be curtailed and the prospect of long-term, meaningful employment delayed once again. While the nickel project is in suspension, a small crew of Indonesian staff on Gag Island and Sorong in Papua are continuing to provide the community with potable water, assistance with a ferry service and local development activities.

Community

Cerro Matoso's support for a central educational resource in Montelíbano, Colombia, enhances learning for thousands of students



Our Cerro Matoso nickel plant is located near the town of Montelíbano in the remote northern province of Cordoba in Colombia, South America. The area has historically been disadvantaged in terms of educational resources. Teacher training is insufficient, and schools lack facilities. As it is economically impossible to upgrade every school in Montelíbano, a shared central resource has been created – the Centre of Municipal Educational Resources. Cerro Matoso has led the development of the Centre, which opened its doors in 2002. Thousands of students from local primary and high schools are now accessing its educational programs and facilities.

► *Students at the Centre of Municipal Educational Resources, Montelíbano*

► *A class in progress at the Centre*

The Centre of Municipal Educational Resources is presently equipped with three classrooms, two physics laboratories, two biology and chemistry laboratories, two computer rooms and the latest technology. These resources are available to all students in the municipality of Montelíbano, from fifth grade to high school. Nearly 6000 students will benefit in 2003; and, with the planned addition of a further three classrooms, the number is expected to grow to 10 000 next year.

Teachers from the municipality have been able to improve, and in many cases begin, their basic training, particularly in such areas as information technology. Additionally, agreements have been made with five Colombian universities to utilise the Centre for undergraduate and distance education programs. This not only broadens the level of activities at the Centre, but also helps ensure its economic sustainability. The Centre has also become the focus of community development in Montelíbano, providing opportunities for the people from the wider community to acquire new skills.

The idea for the Centre arose in 1999, following a study that showed a major issue in the community was the poor standard of education and a high student drop-out rate. The local teachers were strongly in favour of the creation of a central education resource; and Cerro Matoso took the lead in promoting and developing the project, assisted by the Municipality of Montelíbano, the Diocese of Montelíbano, the Government of Cordoba, the Ministry of Education and the community at large.

With the support of Cerro Matoso, a committee of 25 teachers from different schools was formed to define the scope of the project. To assist their work, they undertook training in strategic planning and visited similar educational centres throughout the country. Guided by the vision of a brighter future for education in the region, they formulated a five-year strategic plan for the development of the Centre.

In 2001, the committee, with help from the local mayor and the teaching community, searched for and selected a site that met the criteria for the Centre, especially in terms of being close to the poorest student population in the municipality. The land was then purchased by the Governor's Office.

Later that year, the committee gained approval from the Municipality of Montelíbano and the Government of Cordoba to construct the Centre. A trust, managed by the San Isidro Foundation, was established to fund the development. Construction of the first phase of the Centre was completed in 2002, at a cost of US$500 000.

From the beginning of the project, a lot of effort went into gaining the interest and approval of all levels of the community for the development of a shared central educational resource. This broad community involvement is reflected in the cross-section of people involved in administration of the Centre, which has helped underpin its success to date.

School headmasters in the province support the continuing growth of the Centre as the correct path for improving the quality of education and, consequently, providing young people with better educational opportunities so they in turn can contribute more to society.

The project has attracted attention in neighbouring municipalities, such as Puerto Libertador and La Apartada. There is growing interest in building a network of similar centres in the region, so that future generations can be better educated and more prepared to face the challenges of the new millennium.

Community

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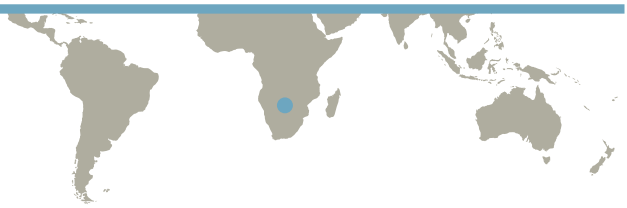
2. Pre-assessment of SME capabilities
- SMEs financial/technical capabilities pre-assessed
- Capable SMEs recommended to the project by CPI
- SME database established and periodically updated.

Community



Planned diamond exploration in the Kalahari Game Reserve is unrelated to relocation of indigenous people

The Company is a 20 per cent shareholder in Kalahari Diamonds Limited, a joint venture operation that holds prospecting licences in Botswana, including areas of the Kalahari Game Reserve. The Botswana Government has been undertaking a program to resettle Indigenous people from the Reserve under its Remote Area Dwellers program. We are aware of the concerns of some people that there is a link between the relocation of the indigenous people and planned exploration activities by Kalahari Diamonds. However, we reject this assertion.

▸ *Light plane equipped with the Falcon™ system on an aerial survey in Canada*

At any one time since 1974, between 20 per cent and 75 per cent of the landmass of Botswana has been covered by prospecting licences, including large areas of the Kalahari Game Reserve. Year by year, the number of licences and area covered has expanded or contracted according to a range of factors, such as market demand, the findings of geological surveys or the introduction of new technologies.

In that time, more than 1400 new licences have been issued by the Government of Botswana. If there were any link between prospecting and the resettlement of people in Botswana, then much of the country's population would have been subject to relocation at one time or another, in advance of prospecting activity. In reality, any resettlement takes place strictly in terms of the Government's Remote Area Dwellers program, and there have been instances of communities being resettled into areas covered by existing exploration licences.

The area of land covered by the exploration leases held by Kalahari Diamonds is very large and will not be explored in its entirety. It is very likely that the leases for a substantial proportion of land will be surrendered, on the basis of desktop studies that involve no exploration at all.

Of the remaining areas, specific zones will be selected for airborne exploration utilising our Falcon™ system. The system enables high-resolution gravity gradiometer surveys to be performed from a light plane without any impact on the ground. Conventional ground-based surveys can be limited to tightly focused areas of interest, if any, minimising the potential for any disruption to local communities.

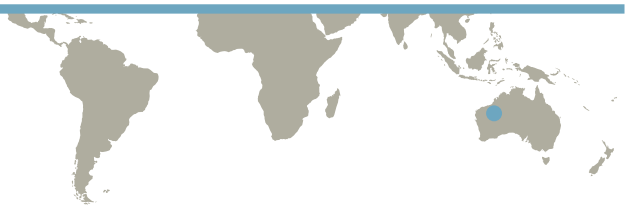
The relocation of indigenous communities is not a prerequisite for exploration activities to proceed. We routinely explore over similar areas and have never advocated the removal of indigenous or local communities prior to the commencement of exploration. An example is the exploration and development of our EKATI Diamond Mine on indigenous land in the Northwest Territories of Canada. The indigenous communities were not displaced and have been active participants in the development and success of the project.

Although we are a minority partner in the venture in Botswana and are not the operator, we recognise that we have an important role to play as a shareholder, in accordance with our Company Charter and HSEC Policy. We do not proceed with any activity that is in breach of our values.

Kalahari Diamonds has undertaken to conduct its activities in accordance with our policies and management standards. These prescribe consultation with affected communities, respect for the traditional rights of indigenous peoples and care for the environment and cultural heritage.

At present, there are no plans to explore in the central Kalahari Game Reserve before the second half of 2004; and extensive community consultation will take place beforehand. Kalahari Diamonds is already engaging with a number of community groups in Botswana, and we are confident the company will continue to engage responsibly and in a timely manner.

Community



At the Area C project in Australia, an agreement with the traditional owners has enabled unique archaeological sites to be excavated and relocated

Native Title agreements that allowed development of the rich Area C iron ore deposits in the central Pilbara, Western Australia, were finalised in June 2001. As part of the agreements, the Company negotiated with the site's traditional owners to excavate and relocate a number of stone arrangements of great archaeological significance. They have now been moved to a safe location where they can remain undisturbed by future mining operations.

► *Traditional owners Brian Tucker, Darren Smith, Alec Tucker and David Stock with archaeologists Bruce Veitch, Adrian Dilello and Fiona Hook*

In 1982, surveyors came across the stone arrangements, which consisted of banded ironstone and chert stones buried upright in the ground. After consulting with the Aboriginal custodians, a decision was made to leave the arrangements untouched and to record the find with the then Western Australian Museum's register of heritage sites.

On taking over the site in 1990, BHP Billiton Iron Ore also took on responsibility for recording and protecting the stone arrangements. A survey, undertaken by archaeologists engaged to map the extent of the sites, showed there were well over 1000 stones in different-sized groups, ranging from just a few to several hundred. It was clear they had been deliberately placed and that some had been transported considerable distances to the site.

Applying a formal process appropriate to any activity related to indigenous archaeological sites, the Company consulted with the Aboriginal custodians regarding the proposal to conduct mining in the vicinity of the stone arrangements. Many of the local Aboriginal elders knew of the stone arrangements and, while uncertain of their origin, confirmed their significance in Aboriginal lore.

The Company began liaising with the traditional owners and archaeologists with expertise in Aboriginal heritage to plan for protection of the stone arrangements. One solution discussed was to place a buffer fence around the archaeological sites; but there was concern that, over time, mining activity could impact indirectly on the stones and damage their integrity. A request was presented to the Aboriginal custodians for the stone arrangements to be moved. After a period of deliberation, the custodians agreed that they could be relocated without destroying their cultural significance.

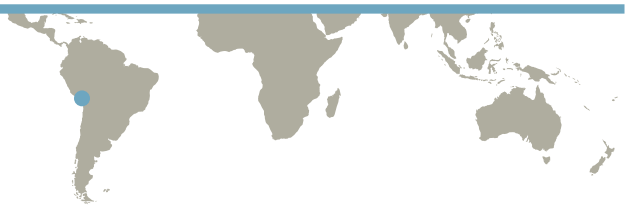
An agreement was reached that the custodians, the Company and archaeologists be involved in a joint project to relocate the stone arrangements to a safe area where they could be preserved, and this was enshrined as part of the Native Title agreements. In 1998, all parties formally signed the agreement to move the stone arrangements. An application was made to the Minister for Aboriginal Affairs, and approval was granted in 2000.

In 2002, the Company consulted with the custodians to find an appropriate location where the stones could be safely repositioned. A site with similar geographic features seven kilometres from the main stone arrangement was selected. A team of surveyors used global positioning technology to document the position of every stone. The information was then transferred to a grid map, and pegs were placed at the new site to ensure the stones would be relocated in exact matching positions.

Archaeologists photographed every stone with north points marked so they could be positioned with the correct orientation. Working with the archaeologists, teams from the two Aboriginal groups then used trowels and other digging equipment to carefully remove the soil from around the stones. Samples of sediment were taken from beneath a number of the stones so that tests could be undertaken to determine an age for the construction of the arrangements. Once excavated, the stones were wrapped in plastic, numbered and made ready for reburial at exactly the same depth and orientation.

The stone arrangements are now all in place at the new site. Studies are under way to date samples of the sediment taken from the stone arrangements, using optically stimulated luminescence dating techniques. Preliminary results suggest the arrangements could have been constructed and maintained from approximately 3000 years ago.

Community



Tintaya addresses community concerns through formal consultation processes with stakeholders

For the past few years, long-standing community concerns about environmental and land management issues at our Tintaya copper operations in Peru, many dating from the days of state ownership, have been addressed through ongoing consultative processes with key community stakeholders. Recently, issues with regard to development of a new tailings dam have been raised by a group of community stakeholders not traditionally involved with the mine. The formal community consultation processes in place have provided a model for addressing this issue and seeking a solution that alleviates community concerns.

► *Meeting with community leaders at Anta Collana*

► *Huinipampa dam site looking towards the Río Ccañipia*

In December 2001, a facilitated meeting between Tintaya management and community representatives about environmental and social issues associated with the operation's activities led to the development of the Mesa de Diálogo, or Dialogue Table.

Since that time, participants in this forum have worked diligently to assess and resolve outstanding issues of concern. Considerable progress has been made, and recommendations from the work programs are being progressively implemented.

Despite good progress on historical issues of concern, a recent matter has arisen that requires careful management. In early 2001, Tintaya management sought environmental approval for a new tailings dam to enable the life of the mine to be extended for a further ten years.

The approvals process followed by the mine was specified by, and complied with, relevant legislation in Peru. Although all legal requirements were met, it has recently become apparent, after the approvals were granted and the dam construction largely completed, that stakeholder representatives from areas downstream of the dam had not fully participated in the approval process.

The stakeholder representatives have expressed concern about the potential for seepage from the dam to contaminate their agricultural activities in the valley below the dam. Technical reviews by international experts have confirmed the acceptability of the basic design of the dam, given the benign nature of the tailings material to be stored. Despite this information, concerns have remained.

The Company is working with the communities involved to explain the data and provide assurances regarding compensation in the unlikely event that any impacts should occur.

In an attempt to fully address the concerns of the downstream communities, a decision has been made to implement additional environmental controls. These will include:

- a seepage control pond and associated pump-back system
- further hydrological investigation and mapping of natural seepages
- additional monitoring bores across the valley floor
- a joint monitoring program to enable community members to jointly collect and independently analyse water samples
- formalisation of compensation agreements in the unlikely event that impacts occur.

The Company will continue to consult with the communities to explain these additional controls and seek to address any outstanding concerns.

To further enhance its relationship with the local communities, Tintaya has participated in the development of a Convenio Marco, or Framework Agreement, that specifies the Company's environmental and social commitments going forward.

As part of this process, the mine has committed to spending up to 3 per cent of its pre-tax profits on community programs over the remainder of its life. This commitment, which is in excess of the Company's corporate target of 1 per cent of pre-tax profits, has been proposed due to the extreme needs of the impoverished local communities around the mine site. The Convenio Marco is now being formalised.

General

Escondida: contributing to the progress of Chile

The Escondida copper mine in northern Chile is the world's largest source of copper. The mine plays a significant role in the country's economy. Chile's copper sales are equivalent to approximately 40 per cent of its exports and 7 per cent of its Gross Domestic Product (GDP). Presently, Minera Escondida accounts for 20 per cent of the country's copper production and is listed among the top ten national companies. Since mining began in 1990, the Company has contributed considerable amounts to the economy, through employment, the payment of taxes and the purchase of goods and services. In addition, the Company has supported local communities through health and education programs and other initiatives.

► *The township of Antofagasta*

BHP Billiton is major shareholder and operator of the Escondida mine, which is located in the Atacama Desert in Chile's Second Region. The site is 170 kilometres south-east of the coastal city of Antofagasta. A slurry pipeline carries the concentrate to a mechanised port built by the Company at Coloso, 14 kilometres south of Antofagasta. Offices are maintained in Antofagasta, Coloso and Santiago, the capital city of Chile.

Our efforts to become a valued and respected citizen commenced at the early pre-operational stages of Escondida in 1983 and have been ongoing since. An important decision was taken to structure the Company in a way that favoured payment of taxes in Chile rather than back to the countries of earnings consolidation. Another pivotal decision was not to apply accelerated depreciation, which benefited the Chilean economy by facilitating the early payment of tax.

It was also considered essential that the community should benefit immediately from the mine's development. When the camp for employees was constructed at the mine site, it was designed with their wellbeing in mind and included modern accommodation and recreation facilities. Hundreds of Company houses and apartments were also built for employees and their families in Antofagasta. These were located throughout the city to avoid creating a 'miners quarter'. There was an emphasis on recruiting local people and purchasing local goods and services, and employees were encouraged to direct their spending power back into the community.

A proactive community assistance program was also developed. This was managed by the Company's corporate affairs department until, six years after the start-up of mine operations, the Minera Escondida Foundation was established. Guided by a philosophy of developing human and social capabilities, the Foundation has continued to make significant contributions in the areas of education, health, and social and indigenous development, with an emphasis on young people.

In 2002, the Foundation expanded the program to support employees in their own social responsibility initiatives. In less than a year, projects co-funded through the program have involved the participation of 465 employees and an estimated 3365 beneficiaries.

The Company takes an active role in the local Mining Council to foster the development of mining as a sustainable industry in the region and to promote the social benefits contributed by the large private mining industry. For instance, the industry has played a key role in alleviating poverty in the country. While Chile has reduced poverty by 38 per cent in the last decade, the best performing area has been the Second Region, whose GDP is 65 per cent mining.

Escondida is playing its part. After 13 years of operation, the Company has invested a total of US$4 billion in the mine and paid US$1.7 billion in taxes. For the purchase of goods and services, Escondida spends US$475 million annually, mostly in Antofagasta and the Second Region.

In addition, in line with BHP Billiton's Group-wide policy, the Company is committed to contributing 1 per cent of its pre-tax profit to social development programs, based on a three-year rolling average. As part of this, the Minera Escondida Foundation has spent US$13 million over the last six years, principally in Antofagasta and the Second Region.

In recognising the contribution of mining, successive governments have supported the development and expansion of Escondida, with all parties focusing on creating sustainable value for everyone. This was summed up by Chilean President Ricardo Lagos in April 2003 when officially inaugurating the start-up of operations of Escondida's Phase 4 Expansion Project.

President Lagos stated that Escondida 'has understood that the modern way of doing business implies commitment to the community, to the people where its activities are carried out. This has been undertaken since a long time ago through the Escondida Foundation. You have invested in Chile because you know our country and you believe in it. And Chilean people are also working hard to continue progressing with you. Let us continue working together as we have worked so far'.

Of the total investment in the Escondida Phase 4 Project, 60 per cent was invested in Chile through contracts for services, materials and equipment. Over the 22 months of construction, employment peaked at 10 000 people, with 40 per cent coming from the Second Region. The expansion constitutes the platform on which future projects will be developed to support the production of copper at Escondida for at least another 40 years.

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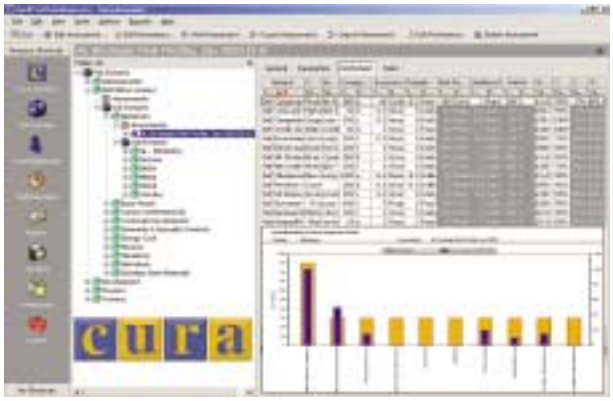
General

HSEC considerations are integral to our Enterprise-Wide Risk Management strategy

The effective management of risk is seen as being central to the continued growth and success of the Company. To this end, risk management processes are being embedded into all our critical business systems and processes through implementation of an Enterprise-Wide Risk Management (EWRM) strategy. When critical decisions are being made, managers are required to look beyond the obvious risks and recognise all sources of uncertainty, including issues related to health, safety, environment and community.



► *Purpose-designed risk management information system*

The embedding of risk management processes is taking place at all levels of the organisation, so that risks associated with changes or investments can be systematically identified and managed in a comprehensive and integrated way.

Particularly, EWRM requires managers to understand the risks associated with the activities under their control and to manage them accordingly; and this acts to stimulate and reinforce accountability. The context of all our risk management activity is always the achievement of our business plan and strategic objectives. Because there is a continuous focus on the events and issues that might affect how and when those strategic objectives are achieved, we are building resilience into our business at all levels.

To steer the implementation, an advanced EWRM framework has been developed, comprising policy, standards and guidelines that set exacting standards for management. The HSEC Risk Management Guidelines are consistent with this framework.

Each asset and business has gone through an objective process of risk assessment and has evaluated its current risk management approach and systems against a standard. The risk assessments have highlighted where further control action is required, and this is now being taken. Where gaps in the system of risk management were identified, a risk management plan has been prepared and is being implemented.

Corporate governance requirements are satisfied by the assessment of progress in risk management plans and in improvements in risk control, which is reported to business-level risk management and audit committees that in turn all report to the Risk Management & Audit Committee of the Board.

To coordinate all risk management activities, risk management 'champions' have been appointed at each operational location or function. They work as a Community of Practice, sharing information about initiatives and best practice.

A central element of the EWRM strategy is leveraging risk management information. The Company-adopted system assigns risks, controls and actions to accountable managers and enables management to track and report progress on all risk control activity. This system is also being used to 'roll-up' risk issues so that the Company can see all its major residual risks, along with opportunities for greater value creation through strategic risk management. The system is being used specifically to roll-up HSEC risks to obtain such a Company-wide perspective.

The ultimate aim of the Company's EWRM strategy is to embed risk management in all we do so that it truly becomes everyone's responsibility – as part of the BHP Billiton way.

General

New study indicates potential for improving the environmental performance of stainless steel made from our nickel and chrome products

All products in our Stainless Steel Materials portfolio have life cycles that begin with the extraction of raw materials and progress through manufacturing to consumption and finally disposal or reuse of the end products. Throughout the product life cycles, inputs include resources and energy, while outputs include air emissions, water, wastes and commercial products, many of which play useful roles in our everyday lives. This year we completed a study to help us better understand the environmental strengths and weaknesses of our processing operations and the environmental impacts and benefits of stainless steel (made from our products) during its life cycle.

► *Nickel and chrome are key components of items we use in our everyday lives*

Following our previously reported life cycle assessments (LCAs) of our main nickel and chrome products, the new study centred on our QNI Yabulu Refinery in north Queensland, Australia. Conducted with the BHP Billiton Newcastle Technology Centre, the study was undertaken to determine how changes in eco-efficiency of the plant operation since 1998, and the proposed introduction of new technology as part of future expansion, could deliver improvements in the environmental performance of stainless steel made from our nickel and chrome products.

The impact assessment is based on the following inventory values:

- Resource energy
- Greenhouse gas emissions
- Oxides of nitrogen
- Oxides of sulphur
- Suspended particulate material
- Acidification potential
- Nutrification potential
- Photochemical ozone formation potential
- Solid waste.

The study found that, when compared with the current mining and refining process, the expanded Yabulu Refinery would significantly reduce the environmental impacts of nickel production. This is particularly pleasing when it is considered that approximately 40 per cent of production from the proposed expanded Yabulu Refinery would still be provided by the current process, meaning there is scope for even greater improvement.

We have conducted and been involved with previous LCA studies on nickel and chrome products, including the Nickel Development Institute (NiDI) worldwide nickel LCA study and the pilot project performed at the BHP Billiton Newcastle Technology Centre for the purpose of establishing a baseline stainless steel case study. Both these studies were described in the 2002 BHP Billiton HSEC Report.

In addition to details of our LCA studies, we have information on health, safety and environmental issues associated with our products available on-line. This system provides BHP Billiton businesses with access to relevant current and proposed legislation, life cycle inventory and assessment information, safety data sheets on different materials, and health and environmental data on our products.

Based on this and other relevant information, we provide advice on the responsible use of our products to immediate customers, end-users and other interested parties. This advice includes information on product use, storage, transport, recycling and disposal.

Ultimately, by taking a whole-of-life view of our products, we aim to ensure that they are sustainable and valuable to our customers and shareholders. Nickel and chrome are key components of long-life, recyclable products, including stainless steel. When the life cycles of these products finish, there is always the same amount of nickel or chrome existing as at the beginning.

At the end of their product life, stainless steel and most nickel and chrome alloys are recycled into new stainless steel, which usually contains around 50 per cent recycled material. Properly applied, materials containing nickel and chrome can help maintain and improve our quality of life and provide sustainable product solutions.

General

Green Lead™ project aims to achieve Zero Harm from lead exposure

The global Green Lead™ project, as reported in our 2002 HSEC Report, is an initiative of the lead industry. Our Base Metals business is actively involved, primarily through the Cannington silver/lead/zinc mine in north Queensland, which initiated the project. The vision of the Green Lead™ project is to independently certify that producers are applying best practice to all aspects of the product life cycle – mining, processing, transporting, treating, manufacturing, storing, using and recycling. A group of foundation project partners, representing industry stakeholders involved in mining, smelting, manufacturing and recycling, is involved in implementing the project.

The Green Lead™ project proposes to take a 'whole of life cycle' approach to lead and its impacts on people and the environment and to analyse all of them. The Life Cycle Analysis (LCA) will be the foundation stone upon which the industry's mitigation responses will be built.

A formal plan for progressing the Green Lead™ project is currently being drafted, and the project's founding partners are developing two initial activities around the LCA framework – site facility pilot programs and certification audit trails.

The pilot programs will aim to identify and quantify the environmental, safety, health and social impacts associated with lead exposure throughout the lead life cycle, utilising LCA as one of the tools. Specifically, participants will identify all the potential sources for lead leakage into the environment. The pilot programs will also aim to identify any remediation issues and evaluate how to address them through remedial site management programs, plans and reports.

It is proposed that the results and outcomes of these pilot programs will help in creating an entire industry LCA and contribute to the development and drafting of Green Lead™ performance criteria and standards. These will cover such areas as environmental protection, workplace health and safety, and community issues associated with lead exposure.

The second activity, certification audit trails, will be developed in conjunction with the pilot programs. These will also be undertaken to assist in the development of the performance criteria and standards and an industry-wide certification criteria and processes. Certification would be achieved when an operation is managing its environmental, workplace and community impacts in a way that meets the agreed criteria.

As a key part of the whole process and following on from the LCA framework, it is proposed to develop a Product Stewardship Protocol. This will document the measures to be taken by each of the project participants to eliminate, offset or minimise any adverse consequences of the impacts of lead and to maximise its benefits.

An example may be the prescribing of covered transport vehicles to prevent the lead concentrate from escaping to the environment during transport, or it may address the use of renewable energy. There will be many detailed measures addressed in the Protocol, varying across the different sectors of the industry. The aim is to produce actions that are transparent, robust and verifiable.

All aspects of the development of the LCA and the Product Stewardship Protocol will be reviewed and validated by independent experts. In addition, a broad group of stakeholders will be invited to contribute their opinions and views, including environment NGOs, governments, communities and other members of the lead industry.

While the Green Lead™ project will be complex and difficult, it offers the potential to deliver significant benefits to the industry, the economy, users of lead products, their communities and the environment.

Further information on the Green Lead™ project can be found at www.greenlead.com

▸ *Green Lead™ Certification Criteria*

General

Mining industry stakeholders look at developing a system for independent certification of environmental and social performance

We are actively involved in the Mining Certification Evaluation Project to evaluate whether an independent certification process of environmental and social performance can be applied to the mining sector. The project seeks to build consensus on measurable and auditable standards for on-ground performance and is led by the World Wide Fund for Nature, in conjunction with industry, NGO, union, academic, financial sector and government stakeholders.

► *The MCEP ultimately hopes to enable differentiation of minerals operations on the basis of environmental and social performance*

Poor environmental performance and consequent social impacts by some mining companies have affected the reputation of the whole resources industry. The industry has responded to public concerns by introducing a range of voluntary initiatives to better manage environmental and social issues arising from mining operations and to communicate these to the public. While some companies have made advances in environmental and social performance, these advances have largely gone unrecognised and unrewarded because of the absence of a credible mechanism that can differentiate on the basis of performance.

Independent third party certification of environmental and social performance is proposed as a mechanism to enable mining companies to operate to an agreed level of on-ground performance and to be able to credibly demonstrate this to stakeholders.

The project aims to:

- allow for a structured and focused debate among key stakeholders on issues of environmental and social performance
- result in a series of reports detailing stakeholder views on the issues and identifying points of agreement and conflict and any options identified for a certification system
- identify whether a system with broad industry and NGO support for the independent certification of the on-ground performance of individual companies in the mining sector is feasible.

A project Working Group has been formed, comprising participants from the mining industry, environmental and social NGOs, unions, governments, academics, the financial sector and certifiers. The Working Group is exploring options for building consensus on principles of environmental and social performance in the minerals sector.

Through the Working Group, the project is:

- exploring options for, and seeking to build, consensus on measurable and auditable standards for on-ground performance
- undertaking an evaluation in a field trial of the model or models developed (this stage requires companies to volunteer a mining facility to be the subject of the field trial)
- planning to prepare and publish a report containing recommendations for further action.

Should this initial evaluation project succeed in developing a model with broad support from the Working Group participants, it is hoped that the project's scope will be broadened to include a wider debate with other members of the Australian and international community.

If successful, the broader international consensus could lead to the development of a global system for independent certification of on-ground performance. This would allow mining companies to credibly demonstrate their competence, thereby attaining the competitive advantage available to those able to prove their commitment to sustainable development.

BHP Billiton Employee HSEC Awards Program

The BHP Billiton Employee HSEC Awards recognise those employees and their teams who openly embody the values expressed in our Charter and go beyond what is required in their day-to-day jobs to care for their fellow employees, the community and the environment.

Awards have been presented in the four categories of Health, Safety, Environment and Community. This year, an award for Individual Excellence has been introduced, with the recipient personally selected by the Chair of the Judging Panel, the Rt Hon Sir Ninian Stephen. Nominations were assessed by a separate judging panel for each category, comprising one representative from the Company and four experts from non-government, government and education sectors.

Having received more than 190 nominations from around the world, the judges selected a shortlist of finalists in each category. From these, the recipients of Excellence, Highly Commended and Merit awards were chosen. In recognition of their initiative, each Excellence award and Highly Commended award recipient has been presented with a specially designed trophy, and each Merit award recipient has received a certificate. The finalists each nominated a non-profit organisation to share in their award. These organisations have received a donation of US$5000 (Excellence Award), US$2500 (Highly Commended) or US$1000 (Merit).

All the recipients are to be congratulated for the high standard of their contributions.

We wish to thank the judges who participated in the assessment of entries and acknowledge their contribution to the awards process.

Individual

Excellence Award

Personally selected by the Chair of the Judging Panel, the Rt Hon Sir Ninian Stephen

Boet du Plessis

Middelburg Mine, Mpumalanga, South Africa

Boet du Plessis is Human Resources Superintendent at Middelburg Mine. Over the last four years, outside of his normal work duties, he has been actively involved in helping disadvantaged people in the local communities. He presently runs 15 projects focused on helping physically and mentally disabled people and destitute groups.

One of the community projects established by Boet is the Witbank Victim Support Centre's 'House of Safety'. Through his involvement in the communities, he identified the need to accommodate abused women and children in a safe facility while investigations and court cases associated with their plight were being conducted.

Following submissions from Boet, Middelburg Mine provided a Company house in Witbank to be used as the 'House of Safety'. Not only was Boet instrumental in securing the house, he also collected funds for furnishings, appliances and a security system; obtained donations of household goods; and arranged for a trained local woman to move in as 'house mother' to care for the women and children.

Boet negotiated with local magistrates, prosecutors and the South African Police Services to arrange the necessary judicial assistance and ensure the house would be viable. It is so highly regarded by the Police Services, they are encouraging other communities across the country to replicate the concept. They have made a video of the house to showcase the idea and illustrate how a safe house should be managed.

The Witbank Victim Support Centre safe house was officially opened in April 2002. To the end of March 2003, six adults and 64 children had been accommodated. Victims typically reside in the house for an average of 21 days, pending police investigations, court hearings and foster home placements.

As well as being involved in his other community activities, Boet visits the 'House of Safety' up to three times a week and continues to organise funding to run and maintain the house and provide food, clothing and toys for the residents.

Health

Excellence Award

Penelope Taylor (team representative)

Boodarie Iron, Port Hedland, Western Australia

Penelope Taylor and an Operating Excellence team developed a solution to a significant dust problem in the briquetting press area of the Boodarie Iron plant in Port Hedland, Western Australia.

Excessive dust was creating an unpleasant work environment and contributing to health, safety and environmental issues. Employee turnover was high. The measured dust levels had risen above acceptable limits, as had the incidence of eye injuries. A permanent cleaning crew was required to continuously clean the plant from one end to the other.

The team's role was to identify and verify root causes of the dust problem, develop solutions and manage their initial implementation. The task was challenging. Dust is not easy to measure consistently, and its severity can be influenced by a variety of factors. Finding and implementing solutions is as much a people exercise as a technical one. For example, organising the wearing of dust monitors requires negotiations with two departments and the operators themselves.

The team determined that the cause of the problem did not stem from a lack of de-dusting capability but from limited understanding of how the briquetting presses and de-dusting systems interact. The solutions came from the engagement of people working in briquetting, with numerous small operation and maintenance improvements that cumulatively led to significant improvements in dust levels.

Three months were spent identifying the causes and developing the solutions, which were then implemented over six months through a series of scheduled plant shutdowns. The employees provided the expertise and practical verification throughout the process and gained an enormous sense of purpose and accomplishment through the success of this project. The building of relationships with work groups to harness improvement ownership through honest facts, open communication and team involvement to complete actions and implement the solutions contributed greatly to its success.

Within the briquetting press area, the project has resulted in a 75 per cent reduction in eye injuries. Dust mask and goggle issues have decreased by 80 per cent, and the scale of floor cleaning has reduced significantly. Overall, there has been a one-off capital saving of A$1.29 million and an estimated saving in operating costs of A$300 000 a year. Other benefits include improved morale, lower staff turnover, greater attention to detail through improved work environment, and the demonstration to the workforce that management does care about their work environment and will see improvement projects through to the implementation of real solutions.

Health

Highly Commended

Anselmo Gregorio (team representative)

Mozal Aluminium Smelter, Maputo Province, Mozambique

Anselmo and his team developed the Mozal Respiratory Health Program to minimise the risk of employees developing asthma. Developing occupational asthma is a common risk in aluminium smelters, mainly in potroom areas; but the cause remains unknown. The Mozal program has been operating since 1999, prior to the commissioning of the first stage of the smelter.

Based on international best practice, the program aims to prevent the onset of occupational asthma. Activities include occupational hygiene monitoring to identify health risks, a comprehensive respiratory protection program, pre-employment screening and ongoing health surveillance, and employee training and education on the potential health risks and exposure control options associated with their work areas. The team coordinates all facets of the program.

Since the implementation of the program, there have been no cases of occupational asthma reported in the potrooms.

Manuel Muro (team representative)

Tintaya Copper Mine, Espinar, Peru

Manuel and the medical team became concerned at international reports about the risk to children of living at high altitudes. The Tintaya operation is 4000 metres above sea level in the Peruvian Andes. The team conducted a cardiovascular assessment of children living in the Tintaya employee accommodation quarters, in order to evaluate the risks to the cardiovascular system. Eminent cardiologists and paediatricians participated in the study.

A full examination was carried out on the 326 children living at the camp at the time of the assessment. Undertaken with full consent from the families, the project involved information sessions with parents and teachers, documentation of the children's medical and lifestyle profiles, and a range of medical tests.

The conclusion from the assessment was that the children at Tintaya were fundamentally healthy and that life at high altitudes does not represent a risk to their health, growth or cardiovascular function.

Avril Robson (team representative)

Samancor Manganese, Mpumalanga, South Africa

Avril and the Manganism Awareness Team team implemented a program to raise awareness about the disease among employees at the Nelspruit plant. Manganism is a progressive disease that may develop after chronic exposure to high levels of manganese over a long period of time. The team, comprising members from HR, HSEC, R&D, production and contractors, decided to focus the program on prevention through protection against over-exposure but faced a challenge in that many employees are illiterate and several primary languages are spoken.

The team defined '10 golden rules of prevention' and conducted an ongoing series of activities to promote them, including developing a logo, pocket-sized cards, posters and banners. These were supported by interactive workshops, industrial theatre, competitions, counselling and medical examination procedures based on manganism prevention.

Since the program began in March 2002, manganese blood levels in employees have reduced significantly.

Health

Merit

Leah Fay

BMA Norwich Park Mine, Queensland, Australia

Leah initiated a community program designed to address the major health and wellbeing issues of the workforce and community, where information and resources are not readily available. The program has included information sessions with guest speakers, newsletter articles, health assessments, improvements to the local gym, distribution of exercise equipment, flu vaccinations and a quit smoking campaign.

Innocent Ndaba (team representative)

Hillside Aluminium Smelter, Kwa-Zulu Natal, South Africa

Innocent and the Hillside Aluminium Peer Educators team coordinate an HIV/AIDS intervention program, which aims to minimise the impact of the disease on the smelter and its employees through education, prevention programs and disease management. Surveys have shown the program has contributed to improvements in the knowledge, attitudes and practices of employees regarding HIV/AIDS issues.

Sandra Gongora (team representative)

Cerro Matoso, Cordoba, Columbia

Sandra and her team carried out an occupational health study based on 15 years of employees' clinical histories, with the assistance of Antioquia University. The project involved developing epidemiological surveillance systems and an international cell-genetic bio-monitoring study. The results were made available to all employees, and recommendations for procedures and equipment purchases have been carried out.

Bertha van der Spuy (team representative)

Douglas Colliery, Mpumalanga, South Africa

Bertha and the Ingwe Medical Services team have developed an occupational health management system that includes a medical surveillance program driven by an electronic occupational risk profile. The system allows employees to make objective fitness-for-work decisions and screens employees for occupational disease. Ingwe Medical Service is implementing the system at all of its sites.

Helen Stanton and Russell Grech (team representatives)

Cannington Silver/Lead/Zinc Mine and Hay Point Services, Queensland, Australia

Helen, Russell and their teams are reducing the risk of strain and sprain injuries, the most common form of injury at the workplace and in the community. They are achieving this through holistic personalised programs aimed at improving levels of health and fitness. The activities, based on the concept of the 'industrial athlete', lessen the risk of injury or illness. The program is now running across a spectrum of our Customer Sector Groups and assets and is proving to be adaptable to the sites' demographic and cultural conditions.

Neil Wood (team representative)

Liverpool Bay Oil and Gas Project, North Wales, United Kingdom

Neil and his team have been operating wellness clinics on the Douglas Platform in a proactive approach to healthcare. The clinics include an examination to provide a baseline health indicator and then six-monthly follow-ups to check progress and identify irregularities. Early signs of health problems have been identified in several employees, who have been treated and not suffered any loss of health or worktime.

Safety

Excellence Award

Scott Lowe

BHP Billiton Energy Coal, Melbourne, Australia

Scott Lowe developed and implemented a Fatal Risk Peer Review Program for the Energy Coal Customer Sector Group.

The driver for the project was the unacceptable fatality rate at Energy Coal sites and the need for continual safety improvement if the Company's target of Zero Harm to people is to be achieved.

The project was undertaken in two phases. Commencing in early 2002, Scott began analysing past safety incidents to identify the causes of workplace fatalities and accidents that resulted in significant injury.

This analysis identified 11 hazard areas across Energy Coal: mobile equipment operations; use of explosives; uncontrolled energy sources; geotechnical; fall of person from height; fall of material/lifting and load security/materials handling; fire; moving machinery; drowning; confined space incidents; and hazardous materials and chemicals.

Once the analysis phase was completed, Scott developed the Fatal Risk Peer Review Program for implementation across all Energy Coal sites. The review system in the program incorporates the Company's Fatal Risk Control Protocols and builds on existing audit and review processes, particularly the Behavioural Based Safety Observations program.

The Fatal Risk Peer Review Program involves a team of people from a number of sites going to a specific operation to review the adequacy of fatal risk controls at that site and the extent to which these controls are being implemented. Compliance against those controls and the associated requirements is then assessed. A pilot review was conducted at Middelburg Mine in South Africa in May 2002; and, since that time, every Energy Coal asset has had such a review.

The formal Fatal Risk Peer Review Program is now being implemented; and, to date, more than 100 opportunities to reduce fatal risks have been identified. These are being addressed through site action plans.

The program is a valuable knowledge-sharing exercise, enabling sites to exchange a wide range of ideas and information about issues, opportunities and best practice procedures.

The Fatal Risk Peer Review Program is to be conducted at all Energy Coal sites on an annual basis.

Safety

Highly Commended

Chris Faure (team representative)

Samancor Manganese, MMC Krugersdorp, Gauteng, South Africa

Chris and his team implemented a project that has eliminated the risk of employee exposure to toxic hydrogen sulphide gas. During the last 30 years, the Krugersdorp operation has recorded two fatalities related to the production of ammonium sulphide, which produces hydrogen sulphide in an intermediate step. Ammonium sulphide is a primary reagent in the processing of manganese.

A nearby company was identified as producing an excess of hydrogen sulphide gas from their fuel production plant. During a three-year cooperative project, an off-site production facility was commissioned to utilise waste hydrogen sulphide for the production of ammonium sulphide. This has enabled closure of the sulphide production facility at Krugersdorp.

In addition to the safety benefits, the project has significant economic and environmental benefits. Key learnings for the program have been transferred to the Nelspruit site.

Philip Forster (team representative)

BMA Blackwater Mine, Queensland, Australia

Phil and his team were asked to identify and implement new engineering controls for vehicle loading cranes (VLC), in response to a fatality that occurred at the mine in 2002. An operator sustained injuries to his chest when he was trapped against an operator's control panel by the movement of a VLC jib.

The innovative solution developed by the team reduces the risk of this type of accident recurring by preventing the boom of a VLC from entering the operator's zone. It addresses the potential for human error by ensuring the crane will not operate unless protective bars are in place. The new control does not reduce the efficiency or function of the VLC and has been fitted to all VLCs on site. Contractors are also fitting the control to comply with BMA Blackwater Standards. These standards are also enforced across all BMA-managed operations.

The effectiveness of the modifications has led to draft changes in the Australian Standard.

Ian Long (team representative)

Mozal Aluminium Smelter, Maputo Province, Mozambique

Ian and his team have been implementing a behaviour-based safety program to improve the safety performance at the Mozal 2 expansion project and to help achieve the goal of Zero Harm.

After the expansion project commenced, the Classified Injury Frequency Rate rose to unacceptably high levels. Since the safety program, enhanced in line with the Zero Harm imperative, was introduced at the site in April 2002, the rate has declined significantly, with zero classified injuries being recorded through the months February to June 2003.

The team has achieved this through the implementation of a Zero Harm toolbox, incorporating a wide range of initiatives including visible safety leadership by management; an extensive communication program integrated into day-to-day work activities; multilingual industrial theatre; identification of trends and issues; use of lead indicators; targeted risk activities for rigging, lifting, scaffolding and working at heights; the introduction of compulsory eye protection; and improved safety harness use.

Safety

Merit

Bob Myatt (team representative)

Appin Colliery, New South Wales, Australia

Bob and the Emergency Escape System team have implemented a system that will facilitate mineworkers escaping in the event of an underground fire or explosion. The system provides individual breathing apparatus, additional compressed air storage throughout the mine, and electronic communications. Using the system, workers can follow lifelines through areas of contaminated atmosphere and poor visibility.

James Pile (team representative)

San Juan Underground Mine, New Mexico, USA

James and his team have addressed premature failing of cable trusses by designing a new roof support truss to withstand the effects of corrosive groundwater and hydrogen sulphide that occur at the site, with the aim of reducing the risk of roof falls. The project involved international research and field trials of prototypes. The new truss is also easier and safer to install.

Earl Robinson (team representative)

Worldwide Drilling, Houston, USA

Earl and the Houston Drilling Team have achieved an outstanding safety record in the high-risk area of ultra-deepwater drilling. The team managed the incorporation of safety features and systems in the design and construction of a new drillship, the *CR Luigs*, contracted by the Company for drilling operations. Since commissioning, a comprehensive safety program has been implemented on the drillship.

Phillip Sinel (team representative)

Griffin Venture *FPSO, Offshore from Onslow, Western Australia*

Phillip and his team have developed an electronic version of the *Griffin Venture's* Safety Case (a document detailing safety hazards) to replace the existing large paper-based technical document. The e-Safety Case, which was designed in conjunction with on-board personnel, has been integrated into existing job safety analysis procedures and incorporates triggers to promote regular use.

Jody Todd (team representative)

EKATI Diamond Mine, Northwest Territories, Canada

Jody and the Open Pit Geology Group designed an innovative 'draping' project to maintain the safety of personnel working at the base of a potentially unstable wall in subarctic conditions. The 'draping' method used rock reinforcement and a unique anchoring system installed by the Geology Group, Mine Services and the construction contractor. Through a consultative process, employees and government regulators were involved throughout the project.

Peter Whittall (team representative)

Dendrobium Mine Project, New South Wales, Australia

Peter and the Dendrobium Mine Project Team have set new safety standards in the construction of a mine ventilation shaft. The shaft, 183 metres deep and 4.25 metres in diameter, was constructed using a blind bore technique, with cement lining sprayed onto the shaft walls to minimise breakaway. The technique negated the need for anyone to enter the shaft during construction, contributing to zero lost time injuries.

Environment

Excellence Award

James Keenan (team representative)

EKATI Diamond Mine, Northwest Territories, Canada

James Keenan is sponsor of an Operating Excellence team formed at EKATI with the objective of saving half a million litres of diesel fuel per year as part of a commitment to reduce greenhouse gas emissions at the mine.

Coined the Energy Smart Program, the initiative commenced in May 2002. By October that year, the objective had been reached; and the team doubled the target to one million litres, which represents about 12 per cent of the mine's annual power generation consumption. That goal was achieved in June 2003.

Located 200 kilometres south of the Arctic Circle, the remote mine site is only accessible by air or seasonal ice road. Fuel must be purchased in advance and transported in by road tanker during an eight-week period, at comparatively high cost.

The team focused on cutting fuel use and tackling inefficient uses of energy at the mine. To help build an energy-saving culture, employees were invited to provide suggestions. The response has been overwhelming. Ideas adopted have included installing motion sensors on office lights; regulating room temperatures with thermostat controls; installing dual-flush toilets in washrooms; and shutting off ventilation systems, fan motors, welders and pumps when not required. Employees who contribute accepted ideas are recognised and rewarded.

Other initiatives include shutting off the airport lights when no planes are scheduled and recycling waste oil from the mobile fleet. Rather than paying for it to be carted off-site, the mine now uses the oil as an energy source for boilers. Converting incinerators to waste oil burners is also being investigated. New buildings are being designed to be energy efficient.

Following the success of the EKATI initiative, the Company is implementing a Global Energy Smart Project, with James as sponsor. A project team from Australia, South Africa, Chile, Colombia and Canada is developing a program that can be shared across all our businesses worldwide.

Environment

Highly Commended

Márcia Sanna Moreira Neves (team representative)

Mineração Rio do Norte SA (MRN), Pará, Brazil

Márcia and her team have been working on a project to help conserve significant plant species threatened by deforestation in the Amazon forest. Epiphyte plants, such as orchids and bromeliads, grow on other plants and trees but do not rely on them for nutrients as they derive their moisture and nutrients from the air and rain. In areas recovering from deforestation, these plants are often the last to become established.

The team has been preserving Epiphyte plant species from areas prior to exploration activities and relocating them in areas of reforestation. As the plants are removed, they are documented, contributing to scientific knowledge, such as species distribution, level of occurrence, luminosity requirements, site forest stratum, and preferred host tree species.

The plants are propagated to increase their number and allow distribution in areas reforested up to 20 years ago and still lacking Epiphytes. To date, more than 6000 plants from approximately 70 Epiphyte species have been rescued.

Maurício Macedo Santos (team representative)

Alumar Smelter and Refinery, Maranhão, Brazil

Maurício and a multi-disciplinary team from the plant's HSE, Operations, and Procurement areas developed a waste management program that has achieved significant results. Through a range of practical initiatives, waste generation has been reduced by 12 per cent. A key part of the program has been the recycling of stockpiled process residues. The proportion of residues recycled has nearly doubled, to more than 90 per cent.

The team has also ensured the industrial waste is recycled in a way that benefits the environment. Collaborative research with other industries and universities showed that ash residue from the boiler house, when combined with sludge from a nearby brewery, could assist revegetation in the rehabilitation of the bauxite residue disposal area.

This innovative use of waste has resulted in significant cost savings, reduced the risk of possible contamination from the stockpiles and avoided the need for construction of new waste disposal areas.

Albert van der Westhuizen (team representative)

Bayside Aluminium Smelter, Kwa-Zulu Natal, South Africa

Albert and the Upgraders Team initiated a project aimed at meeting an Environmental Impact Assessment requirement that fluoride emissions from the aluminium smelter be reduced from 14 kilograms of fluoride per tonne of aluminium to below six kilograms of fluoride per tonne of aluminium.

The project was a resounding success, exceeding the goal to achieve consistent emissions of below three kilograms of fluoride per tonne of aluminium. In addition, the project was completed six months ahead of schedule and within budget. A good project safety record was also achieved in a high-risk work environment, with three minor injuries recorded in the 300 000 workhours completed.

The project has resulted in reduced health risks to employees and the community and has significantly improved the potroom working environment for employees.

Environment

Merit

Carl Bagnall (team representative)

Mt Arthur Coal, New South Wales, Australia

Carl and his team managed an innovative noise monitoring and attenuation project that has resulted in equipment noise at the mine being reduced to the lowest levels in the industry. The monitoring system can accurately measure, record and assess noise from different directions, which allows the site to respond proactively to noise issues before they impact on the community.

Bill Lyon (team representative)

Beenup Mine, Augusta-Margaret River, Western Australia

Bill and the Beenup Rehabilitation Team are implementing a program to reinstate surface water flow across the rehabilitated mine site. A system of wetlands has been designed to facilitate controlled water flow and encourage diverse flora and fauna habitat. The program is a key part of the team's rehabilitation plan, which aims to restore the site as a self-sustaining environment of native vegetation, wetlands and pasture.

Mónica Arrieta Bechara (team representative)

Cerro Matoso Nickel Mine and Smelter, Cordoba, Columbia

Mónica and her team have developed a waste management program that minimises waste at the plant and provides benefits to the community. The program has led to extensive recycling of scrap and waste and the transformation of organic waste into compost and pig feed. The program has also provided jobs for local people. Profits from the recycling initiatives are allocated to community projects.

Alexandre Vianna (team representative)

Valesul Aluminio, Rio de Janeiro, Brazil

Alexandre and the casthouse team developed a new mould to reduce oil consumption in the Horizontal Direct Chill (HDC) casting machine. The high oil consumption was causing unacceptable levels of oil content in the water effluent. The innovation has resulted in an 80 per cent reduction in oil consumption and a 90 per cent reduction in oil content in the water effluent.

Jannie Cronje

Samancor Manganese, Metalloys, Gauteng, South Africa

Jannie developed a methodology to identify, quantify and prioritise environmental issues at the site as the basis for developing an environmental plan. This facilitated the preparation of an action plan, detailing all planned projects, for submission to the governing authorities. The plan has improved on-site awareness of environmental issues and allows progress of the plan to be tracked against measurable objectives.

Ross Wilson (team representative)

Cannington Silver/Lead/Zinc Operation, Queensland, Australia

Ross and the Cannington Environment Team have implemented a waste management and sustainable land use program that has helped Cannington achieve a recycle to waste ratio of about 4:1. Practices include colour-coded waste bins to maximise opportunities for recycling, composting food scraps in a worm farm and washing gloves for reuse. The program has increased the expected life of the landfill from one year to three.

Community

Excellence Award

Bongani Mqaise (team representative)

Bayside and Hillside Aluminium Smelters, Kwa-Zulu Natal, South Africa

Bongani Mqaise and his colleagues were instrumental in developing Ethembeni Care Centre to provide care to people with HIV/AIDS. In Zululand, where our aluminium smelters are located, around 38 per cent of the people are HIV positive. This is among the highest rates of HIV infection in South Africa.

Ethembeni – a Zulu word meaning 'a place of hope' – was established by Bayside and Hillside Aluminium and several other local companies to provide affordable care for infected employees, under the management of the Zululand Chamber of Business Foundation. The idea was initiated by the Bayside and Hillside occupational health team.

Launched in December 1996 as a 12-bed facility in a former forestry building, the Centre consistently operated beyond its capacity. During 2002, the need for expansion became increasingly evident. Simultaneously, plans were under way to develop Amangwe Village, a community-operated complex for tackling the social problems related to HIV/AIDS.

Bayside and Hillside Aluminium, together with the BHP Billiton Development Trust, supported the funding of the Amangwe Village project, including the relocation of Ethembeni to the six-hectare site and its expansion to a 45-bed facility with an additional 16-bed paediatric ward.

At the Centre, the trained staff offer confidential HIV testing and counselling, palliative care, lifestyle management workshops and medical consultations. Training is provided to healthcare coordinators, designated caregivers, schoolteachers and community support groups.

Positive Health Support Group meetings are held regularly for former patients and family and friends who require further counselling; and HIV/AIDS education workshops are conducted at schools, churches, youth groups and other community organisations.

The Centre also supports the South African Food Garden Foundation, which encourages rural communities to grow nutritional immune-boosting vegetables and herbs for medicinal purposes.

For Bongani and his team, the objective is for Ethembeni Care Centre to become the flagship resource centre for HIV/AIDS interventions in Zululand. Since its opening, assistance has been provided to hundreds of in-patients and to thousands of other people with HIV/AIDS through community outreach initiatives.

Community

Highly Commended

Humera Malik (team representative)

Zamzama Gas Field, Islamabad, Pakistan

Humera and the Community Development team identified through a multi-stakeholder consultative process that lack of access to education was the primary concern of local people. The team initiated a project to provide education to the poorest and most vulnerable groups in the community, especially girls, with the cooperation of community groups, government, and local NGOs.

Five primary schools have been established in the area, providing schooling to nearly 500 children from 60 villages. School management committees have been organised and teachers receive ongoing training. Planned as a capacity-building exercise, the program has involved active community participation at every stage.

The Community Development team provides technical assistance and facilitates the planning and implementation of the project through NGO partners. This helps ensure that local people are involved in the decision-making process and enables stakeholders to gain the skills and experience to carry out similar initiatives in the future.

Rick Peters (team representative)

GEMCO, Groote Eylandt, Australia

Rick and his team initiated an Aboriginal Employment Strategy at GEMCO's Groote Eylandt operation, which combines employment and training for Aboriginal people. They are employed in full-time positions with the Rehabilitation and Mine Services (RMS) section.

The training, carried out by the Northern Territory University, covers literacy and numeracy as well as skills associated with the scope of work of the RMS section. After completing the basic training, employees may continue with further studies in chosen areas, including specialist skills applicable to other positions at GEMCO. The program, which has been operating since 1997, has been highly successful.

Most of the participants are now either employed in mainstream mining activities, continuing their studies or undertaking leadership roles in their communities. Turnover of Aboriginal employees has reduced, and the Company has a growing pool of skilled local employees.

Norah Segoati (team representative)

Johannesburg Head Office, Gauteng, South Africa

Norah and the BHP Billiton Development Trust team developed the Victim Empowerment Program, in response to violence against women and children. The program aims to contribute towards victim empowerment initiatives through trauma counselling, training and capacity building, research, and advocacy.

In partnership with a local NGO, a model for prosecution of cases relating to child sexual abuse and rape was developed. An intermediary room was introduced, allowing children to testify in front of closed-circuit television cameras rather than having to face the accused in a courtroom situation, so helping reduce trauma for the victim. The time taken for cases to be resolved has been reduced from approximately two years to nine months or less. This has led to an increase in the conviction rate, as evidence is more reliable.

Following its inception four years ago, the program is now being used in four provinces, servicing 13 courts, and has benefited nearly 8000 children.

Community

Merit

Luis Alberto Ponguta Gomez (team representative)

Cerro Matoso Nickel Mine and Smelter, Cordoba, Columbia

Luis and his team, together with some teachers and the Mayor of Montelíbano, have led the establishment of the Centre of Municipal Education Resources, in order to make possible the training of low-income students in a single place and improve the quality of their education. Thousands of students from local primary and high schools are now accessing the Centre's educational programs and facilities.

Alcido Mausse (team representative)

Mozal Aluminium Smelter, Maputo Province, Mozambique

Alcido and the Mozal Community Development Trust team coordinate sustainable community projects supported by the Trust. Two cooperative agricultural centres have been established to provide training for local farmers. To encourage diversification, two chicken broiling businesses have been set up that are managed by the farmers, who are learning both technical and business management skills through the process.

Herbert Moreschi (team representative)

Mineração Rio do Norte SA (MRN), Pará, Brazil

Herbert and his team have implemented a malaria control program in remote riverside communities where the incidence of malaria is among the highest in Latin America. The aim is to reduce mortality rates and improve the quality of life in the communities. Since 1999, the incidence of malaria has fallen by 96 per cent; and the cost of treating people with malaria at the local hospital has fallen significantly.

Sally McGann (team representative)

BHP Billiton Iron Ore, Western Australia

Sally and her team in the Aboriginal Affairs Department have managed a unique archaeological project at the Area C project. In collaboration with the Aboriginal traditional owners of the site, the team excavated stone arrangements of great archaeological significance and relocated them to a safe location where they can remain undisturbed and protected. The project involved replicating the exact arrangement of the stones, which number more than 1000.

Bongani Mqaise (team representative)

Bayside and Hillside Aluminium Smelters, Kwa-Zulu Natal, South Africa

Bongani and his team have established a crèche for HIV/AIDS orphans and vulnerable children in one of the poorest rural areas of Kwa-Zulu Natal. The crèche provides care and food for children in a community where some households have a child as young as nine as the head of the family. Part of the funding for the project came from the prize money Hillside received in the 2002 BHP Billiton HSEC Awards.

Lucio Rios (team representative)

Tintaya Copper Mine, Cusco, Peru

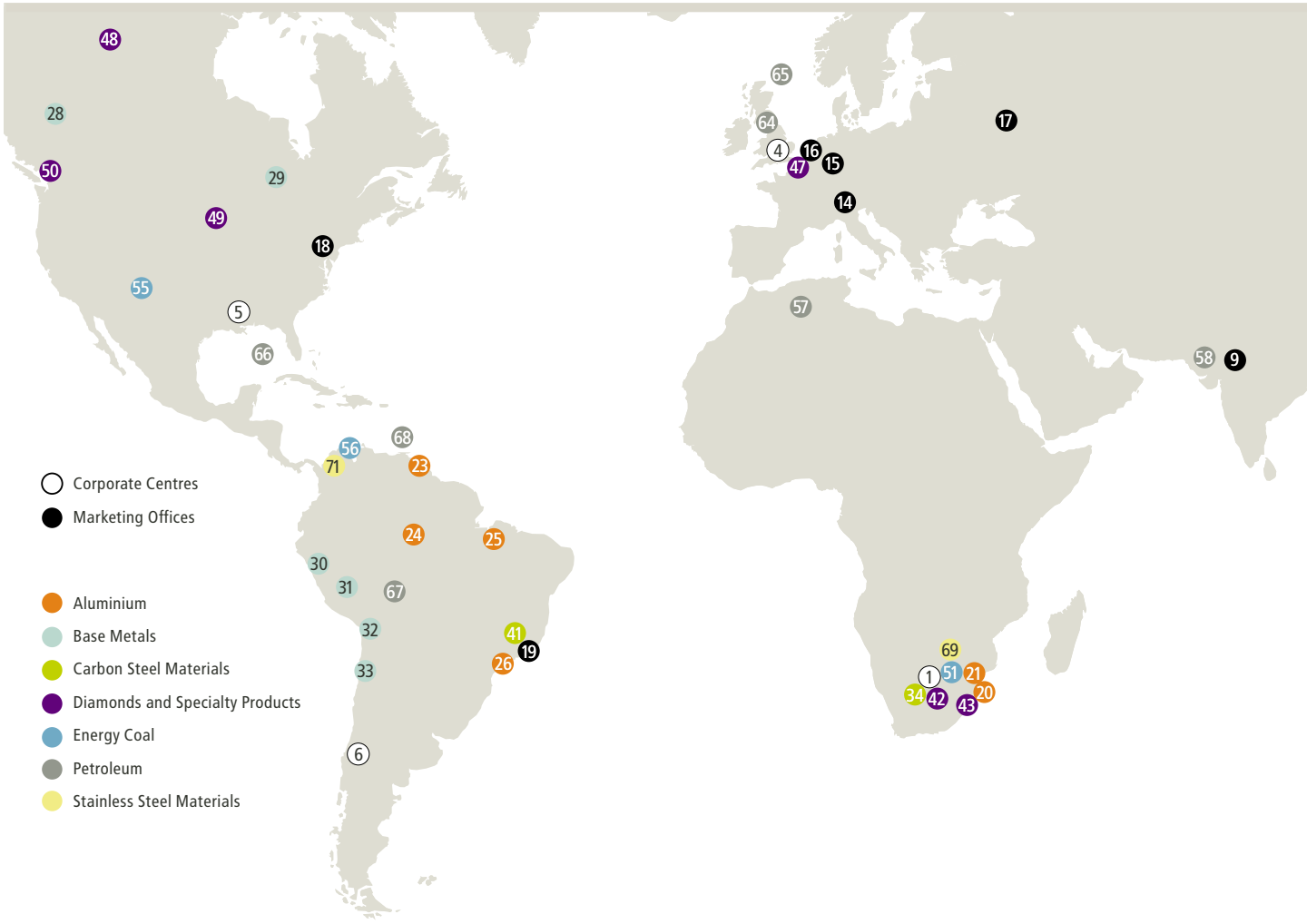
Lucio and his team have established a 'dialogue table' with mine stakeholders, including neighbouring communities and NGOs. The first stage of the process identified community concerns, the second stage identified the extent of issues, and the third stage has involved progressive implementation of solutions. The consultative process is the first of its kind among mining operations in Peru.

Our Resources at Work

Customer Sector Group		Petroleum	Aluminium	Base Metals				
Commodity		Oil and Natural Gas	Aluminium	Copper	Gold	Zinc	Silver	Lead
	Energy	Fuel, heating, electricity generation	High-tension power lines, wires and cables	Wire and cables, electrical wiring in buildings, electrical generators and motors		Zinc carbon batteries		Lead-acid storage batteries (car batteries), remote area power storage
	Construction	Carpets, paints, plastics	Door and window frames, wall cladding, roofing, awnings	Electrical wiring, plumbing pipes and tanks, roofing, light fixtures, treated timbers	Gold leaf for decoration	Roofing, fences, doors, handles, paints, plumbing, nuts and bolts	Solder	Roofing, plumbing, soundproofing, stained glass windows
	Industry	Electricity generation, transport, furnace fuel	Propellers, body sheet (for ships, aeroplanes, vehicles), gearboxes, motor parts, wires, cables, packaging	Wires and cables, electrical wiring in buildings and vehicles, robotics, airconditioning and refrigeration units, scientific instruments	Electronics for computers, industrial equipment, aerospace technology, tinted-glass windows	Galvanising and corrosion protection, car bodies, carburettors, tyres	Photographic paper and film, medicines, super conductors	Lead foil, radiation shields, toxic waste storage containers, dyes, solder
	Household appliances	Plastic components, packaging	Components for TV sets, radios, refrigerators and airconditioners	Electrical appliances, telephone cables, microwave equipment, radio and TV sets	Electronic technology	Door handles and other household components, brass fittings		Electronic and electrical appliances such as radios and TV sets (soldered connections)
	Personal use	Electricity, fuel for vehicles, fuel for cooking and heating, clothing fabric, plastic toys, pens	Beverage cans, bottle tops, foil wrap, foil semi-rigid containers, kettles and saucepans, cutlery, tennis racquets, softball bats, indoor and outdoor furniture	Ornaments, telephones, cooking utensils, home heating systems, decorative applications, coins	Jewellery, watches, currency, dentistry, decoration for dinnerware and ornaments	Medications, zinc cream, TV sets, computer parts, toys	Jewellery, watches, dinnerware and ornaments, mirrors, cutlery, currency, medallions (e.g., Sydney Olympics medals)	Computers, leadlight windows, glass in TV and computer screens for radiation protection

Carbon Steel Materials			Diamonds and Specialty Products		Energy Coal	Stainless Steel Materials		
Manganese	**Iron Ore**	**Coking Coal**	**Diamonds**	**Titanium**	**Thermal Coal**	**Chrome**	**Nickel**	**Cobalt**
Dry cell batteries					Electricity generation, heating		Electricity generation turbines, batteries	Rechargeable lithium batteries for mobile telephones and laptop computers, jet engine turbines
	Steelmaking, buildings, bridges, tools, cranes		Diamond grit and powder impregnated rock drilling bits, masonry drilling, machine tool tips and cutting discs	Pigment for paints, fabric, plastics, paper		Treated timbers, street furniture, building cladding, stainless steel	Street furniture, building cladding, stainless steel	Tyre adhesives, magnets, carbide cutting tools
Steel alloys	Steelmaking, transport equipment, motor vehicles, farm machinery	Steelmaking	Polishing compounds in fine optical surfaces, jewel bearings, wire drawing dies	Titanium metal for aerospace equipment, engines, abrasives, ceramics, robotics	Electricity generation, heating, cement	Pigments for paints, food and beverage equipment, vehicles	Computer hard disks, surgical implements and implants, jet engines, food and beverage equipment, pharmaceutical equipment, vehicles, metal hardening	Paints, enamels, glazes
	Refrigerators, washing machines, ovens		Knife 'sharpeners'	Paper products, computer and TV screens		Electrical appliances	Colour TV tubes, kitchen sinks, white goods	Videotape coatings, heating elements on electric stoves
Glass, ceramics, dry cell batteries	Food cans, cars, tools, cutlery, jewellery, watches		Jewellery	Cosmetics and sunscreens, fabric, clothing, jewellery, heart pacemakers, hip replacements, food colouring		Bathroom and kitchen fittings	Kitchen utensils, coins, mobile telephones, bathroom and kitchen fittings and fixtures	

BHP Billiton Locations



Corporate Centres

Ref	Continent	Location
1	Africa	Johannesburg
2	Australia	Melbourne (Global Headquarters)
3	Australia	Adelaide
4	Europe	London
5	North America	Houston
6	South America	Santiago

Marketing Offices

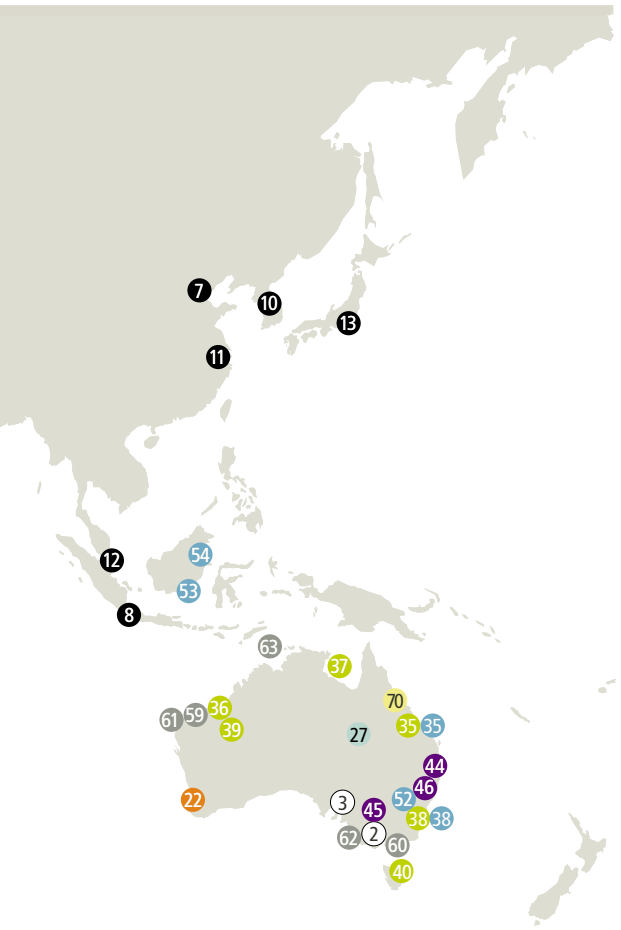
Ref	Continent	Location
7	Asia	Beijing
8	Asia	Jakarta
9	Asia	New Delhi
10	Asia	Seoul
11	Asia	Shanghai
12	Asia	Singapore
13	Asia	Tokyo
14	Europe	Baar
15	Europe	Essen
16	Europe	The Hague
17	Europe	Moscow
18	North America	Pittsburgh
19	South America	Rio de Janeiro

Aluminium

Ref	Continent	Site/Asset	Description	Ownership
20	Africa	Hillside/Bayside, South Africa	Two aluminium smelters	100%
21	Africa	Mozal, Mozambique	Aluminium smelter	47%
22	Australia	Worsley, Australia	Integrated alumina refinery/bauxite mine	86%
23	South America	Paranam, Suriname	Alumina refinery and Lelydorp bauxite mine	45–76%
24	South America	MRN, Brazil	Bauxite mine	14.8%
25	South America	Alumar, Brazil	Alumina refinery and aluminium smelter	36–46%
26	South America	Valesul Aluminio, Brazil	Aluminium smelter	46%

Base Metals

Ref	Continent	Site/Asset	Description	Ownership
27	Australia	Cannington, Australia	Silver, lead and zinc mine in north-west Queensland	100%
28	North America	Highland Valley Copper, Canada	Highland Valley Copper mine in British Columbia	33.6%
29	North America	Selbaie, Canada	Open pit operation producing zinc and copper concentrate and by-products including gold and silver. Due to close in January 2004.	100%
30	South America	Antamina, Peru	Large copper-zinc mine	33.75%
31	South America	Tintaya, Peru	Produces copper concentrate and copper cathode within the 'Skarn Belt' of south-eastern Peru	100%
32	South America	Cerro Colorado, Chile	Copper mine in northern Chile, producing cathode copper through a SXEW leach operation	100%
33	South America	Escondida, Chile	One of the largest copper mines in the world	57.5%



Carbon Steel Materials

Ref	Continent	Site/Asset	Description	Ownership
34	Africa	Samancor Manganese, South Africa	Integrated producer of manganese alloys and ferroalloys	60%
35	Australia	Queensland Coal, Australia	World's largest supplier of high-quality metallurgical coal for steel production	50–80%
36	Australia	Boodarie Iron, Australia	Hot briquetted iron plant	100%
37	Australia	GEMCO Australia	Producer of manganese ore (part of Samancor)	60%
38	Australia	Illawarra Coal, Australia	Four underground coal mines	100%
39	Australia	WA Iron Ore, Australia	The Pilbara iron ore mines rank among the world's best long-life iron ore assets	85–100%
40	Australia	TEMCO, Australia	Producer of manganese alloys (part of Samancor)	60%
41	South America	Samarco, Brazil	An efficient low-cost producer of iron ore pellets	50%

Diamonds and Specialty Products

Ref	Continent	Site/Asset	Description	Ownership
42	Africa	Johannesburg, South Africa	Technology Centre	100%
43	Africa	Richards Bay Minerals, South Africa	World's largest producer of titanium slag	50%
44	Australia	Brisbane, Australia	Mineral Exploration Office	–
45	Australia	Melbourne, Australia	Mineral Exploration Office	–

Diamonds and Specialty Products continued

46	Australia	Newcastle, Australia	Technology Centre	100%
47	Europe	Antwerp, Belgium	Diamonds marketing	100%
48	North America	EKATI, Canada	Diamond mine in the Northwest Territories of Canada	80%
49	North America	Integris Metals, US	Metals distribution	50%
50	North America	Vancouver, Canada	Mineral Exploration Office	–

Energy Coal

Ref	Continent	Site/Asset	Description	Ownership
35	Australia	Queensland Coal, Australia	Marketing agent for energy coal output	–
38	Australia	Illawarra Coal, Australia	Marketing agent for energy coal output	–
51	Africa	Ingwe, South Africa	Largest coal producer in South Africa	100%
52	Australia	Hunter Valley Energy Coal, Australia	New 12-Mt/a mine (Mount Arthur North) being developed	100%
53	Asia	PT Arutmin, Indonesia	Marketing agent for 75% of coal output	–
54	Asia	PT Kendilo, Indonesia	Infrastructure for third party trading	100%
55	North America	New Mexico Coal, US	Mine-mouth operations including new underground mine	100%
56	South America	Cerrejon Coal, Colombia	Largest coal producer in Colombia	33%

Petroleum

Ref	Continent	Site/Asset	Description	Ownership
57	Africa	Algeria	ROD and Ohanet developments	36.04–45%
58	Asia	Zamzama, Pakistan	Operator of gas development	38.5%
59	Australia	North West Shelf	One of Australia's largest resource projects, producing liquids, LNG and domestic gas	8.33–16.67%
60	Australia	Bass Strait	The Bass Strait operations produce oil, condensate, LPG, natural gas and ethane	50%
61	Australia	Griffin	Operator of oil and gas project offshore WA	45%
62	Australia	Minerva	Gas field under development in the Otway Basin	90%
63	Australia	Laminaria/ Corallina	Oil production in the Timor Sea	25–32.6%
64	Europe	Liverpool Bay	Operator of oil and gas development in the Irish Sea	46.1%
65	Europe	Bruce/Keith	Oil and gas production in the UK North Sea	16–31.83%
66	North America	Gulf of Mexico	Interests in five producing assets in the Gulf of Mexico; development activities and exploration interests	4.95–50%
67	South America	Bolivia	Oil and gas production	50%
68	South America	Trinidad	Operator of the Angostura oil field development	45%
–	Various	Exploration	Exploration interests in South Africa, Brunei, Brazil, Australia, US, Trinidad and the UK	–

Stainless Steel Materials

Ref	Continent	Site/Asset	Description	Ownership
69	Africa	Samancor Chrome, South Africa	Integrated producer of chrome ores and ferrochrome comprising mines and chrome alloy plants at three major sites in South Africa	60%
70	Australia	QNI Yabulu Refinery, Australia	The Yabulu refinery is one of the world's major laterite nickel-cobalt processing plants	100%
71	South America	Cerro Matoso, Colombia	Integrated ferronickel mining and smelting complex in north Colombia	99.8%

Feedback Form

We value your feedback. Please let us know what you think, so we can continue to improve the way we inform you about our HSEC performance.

1. I am interested in BHP Billiton's HSEC performance as an: (Please tick)

- ◯ Employee
- ◯ Shareholder
- ◯ Customer
- ◯ Member of the same industry
- ◯ Regulatory body
- ◯ Media representative
- ◯ Community or environmental group
- ◯ Financial analyst
- ◯ Socially Responsible Investment (SRI) analyst
- ◯ Resident near a BHP Billiton operation
- ◯ Academic/Student
- ◯ Other, please specify

_____

2. Please rank the three sections you found most useful. (1 = best, 2 = second, 3 = third)

- _____ Message from the Chief Executive Officer
- _____ HSEC Targets and Scorecard
- _____ Executive Summary
- _____ HSEC Governance
- _____ Part of the Global Community
- _____ Performance Summaries
- _____ Auditor's Verification Statement
- _____ Appendices
- _____ Case Studies
- _____ GRI Content Index

3. Please indicate your view of the following features of the Report. (Please tick your choice)

a. Openness and honesty
◯ very good ◯ good ◯ fair ◯ poor ◯ very poor

b. Layout and design
◯ very good ◯ good ◯ fair ◯ poor ◯ very poor

c. Writing style
◯ very good ◯ good ◯ fair ◯ poor ◯ very poor

d. Amount of information provided
◯ very good ◯ good ◯ fair ◯ poor ◯ very poor

e. Verification Statement
◯ very good ◯ good ◯ fair ◯ poor ◯ very poor

f. Overall rating
◯ very good ◯ good ◯ fair ◯ poor ◯ very poor

4. If you could change something about this Report, what would you change? (Please tick)

- ◯ More data
- ◯ Less data
- ◯ More case studies
- ◯ More photos
- ◯ More health emphasis
- ◯ More safety emphasis
- ◯ More environmental emphasis
- ◯ More community emphasis
- ◯ Shorter report
- ◯ Other, please specify

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5. In your opinion how could BHP Billiton improve its health, safety, environmental and/or community performance?

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6. Any other comments?

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Thank you for your feedback.

Please email this form to: hsec@bhpbilliton.com

Or fax to: +61 3 9609 3015

Or post to: Reply Paid
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External Links

The following websites provide additional information relevant to this Report.

Industry Initiatives and Organisations

Business in the Community	www.bitc.org.uk
Global Mining Initiative	www.globalmining.com
Green Lead™ Project	www.greenlead.com
International Aluminium Initiative	www.world-aluminium.org
International Chromium Development Association	www.chromium-asoc.com
International Council on Mining and Metals	www.icmm.com
Minerals Council of Australia	www.minerals.org.au
Mining, Minerals and Sustainable Development	www.iied.org/mmsd
Nickel Development Institute	www.nidi.org

International Standards, Agreements and Activities

Global Reporting Initiative	www.globalreporting.org
ISO 14001 – Environmental Management Systems	www.iso.org
IUCN – World Conservation Union	www.iucn.org
OHSAS 18001 – Occupational Health and Safety Management Systems	www.bsi-global.com
SA8000 – Social Accountability Standard	www.cepaa.org
United Nations Environment Program	www.unep-wcmc.org
United Nations Global Compact	www.unglobalcompact.org
United Nations Universal Declaration of Human Rights	www.un.org/rights
World Business Council for Sustainable Development	www.wbcsd.ch
World Health Organisation	www.who.int

Socially Responsible Investment

Dow Jones Sustainability Indices	www.sustainability-index.com
FTSE4GOOD	www.ftse4good.com
Storebrand	www.storebrand.com